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YEAR(S):

1994

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
NORTHERN NATURAL GAS COMPANY
EUNICE COMPRESSOR STATION

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Environmental Bureau
Oil Conservation Division

Prepared for

ENRON Operations Corp.

Environmental Affairs Department

Houston, Texas

December 19, 1994

6020 ACADEMY NE • SUITE 100 • ALBUQUERQUE, NM 87109 • (505) 822-9400

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EXECUTIVE SUMMARY

Daniel B. Stephens & Associates, Inc. was retained by ENRON Operations Corp. to conduct an environmental investigation at Northern Natural Gas Company's Eunice Compressor Station, located in southeastern New Mexico. The compressor station transmits dry natural gas originating from the adjoining gas plant (to the south) currently operated by Texaco Corporation. This environmental investigation supplements the previous work performed by Metric Corporation in 1991 and Brown & Root Environmental in 1993.

The objective of this investigation was to characterize the distribution of organic and inorganic constituents in underlying soils and ground water and, if possible, identify potential on- and off-site sources responsible for the subsurface contamination detected during previous site investigations. The scope of work included a background data review, completion of four additional monitor wells and one soil boring, soil and ground-water quality sampling, and in-situ tests of aquifer hydraulic properties.

The site is underlain by semiconsolidated sandy caliche and unconsolidated silty sands which regionally comprise the Pliocene-age Ogallala Formation. The Triassic-age Dockum Group, consisting primarily of siltstone and claystone, is present at approximately 130 feet below ground surface. Regionally, ground-water flow in the Ogallala aquifer is to the southeast. Ground water at the site is present approximately 52 feet below ground surface and flows generally to the south. In-situ hydraulic tests indicate that the aquifer is moderately permeable with an average hydraulic conductivity of 6.3 feet per day.

During the investigation, soil samples were analyzed using field and laboratory techniques to determine if volatile organic compounds were present. Based on these analyses, the extent of actionable soil contamination appears to be limited to the southwestern corner of the site. In addition, the minimal hydrocarbon mass is limited to the soil column immediately above the water table. To date, the soil contaminant data collected from borings and monitor wells have not substantiated any on-site releases that could have impacted ground water beneath the site.

Actionable ground-water contamination has been identified along the entire southern fence line joining the Northern Natural Gas compressor station and the Texaco gas plant. Ground-water impacts extend approximately 75 to 140 feet north of this property boundary. The New Mexico Water Quality Control Commission numerical standards for benzene, toluene, ethylbenzene, xylene, naphthalene, total dissolved solids, chloride, manganese, iron, and barium were exceeded in at least one of the samples collected from the seven site monitor wells. In addition, phase-separated hydrocarbons were measured in one site monitor well located in the southwestern corner of the facility.

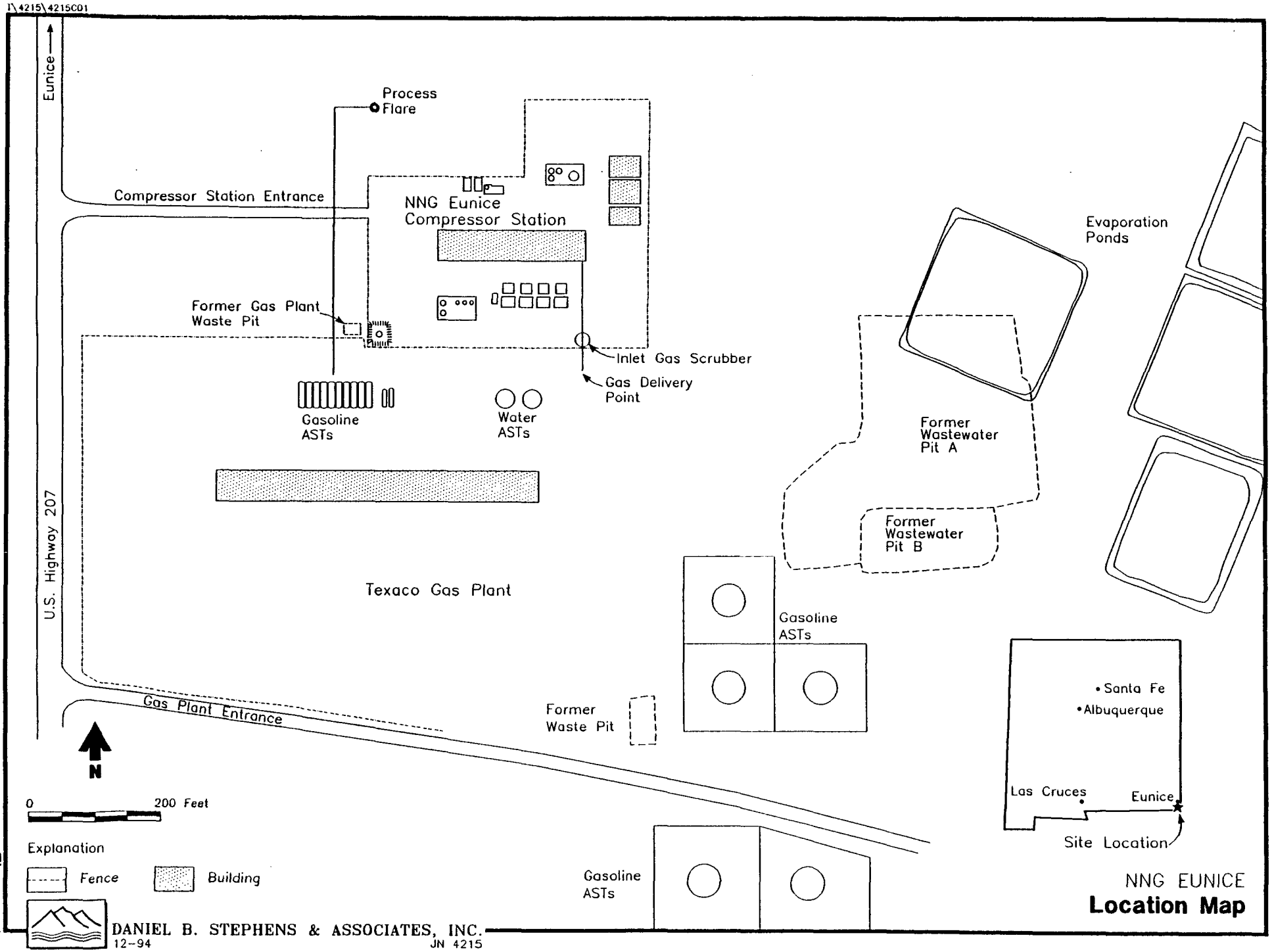
1. INTRODUCTION

ENRON Operations Corp. (EOC) retained Daniel B. Stephens & Associates, Inc. (DBS&A) to conduct a supplemental environmental investigation of soils and ground water underlying Northern Natural Gas Company's (NNG) Eunice Compressor Station, located approximately 5 miles south of Eunice, New Mexico (Figure 1). The NNG compressor station is currently operated by Transwestern Pipeline Company (TPC). Both NNG and TPC are subsidiaries of EOC.

The compressor station boosts the pressure of the natural gas stream originating from the adjoining Texaco gas plant (Figure 1). Routine operation of the two facilities has resulted in the release of petroleum hydrocarbons and wastewaters to the subsurface, primarily through the use of disposal pits, underground storage tanks (USTs), and aboveground storage tanks (ASTs). The objectives of this investigation were to determine the extent of on-site subsurface impacts and to assess the contributions from potential on-site sources.

The supplemental environmental investigation was conducted October 3 through 7, 1994. In order to evaluate areas of potential hydrocarbon releases, DBS&A analyzed soils for volatile organic compounds (VOCs) using field and laboratory techniques and submitted ground-water samples for analyses of organic and inorganic constituents to determine if water quality standards set by the New Mexico Water Quality Control Commission (NMWQCC) were exceeded. Specifically, the DBS&A investigation included the following work:

- Three existing monitor wells were sampled.
- Four monitor wells and one soil boring were drilled.
- Soil samples were collected from each boring.
- The newly installed monitor wells were sampled.
- Two soil vapor samples were collected.


I:\4215\4215C01
Eunice
Process Flare
Compressor Station Entrance
NNG Eunice Compressor Station
Evaporation Ponds
Former Gas Plant Waste Pit
Inlet Gas Scrubber
Gas Delivery Point
Gasoline ASTs
Water ASTs
Former Wastewater Pit A
Former Wastewater Pit B
U.S. Highway 207
Texaco Gas Plant
Gasoline ASTs
Gas Plant Entrance
Former Waste Pit
• Santa Fe
• Albuquerque
Las Cruces
Eunice
Site Location
N
0
200 Feet
Explanation
Fence
Building
Gasoline ASTs
NNG EUNICE
Location Map
DANIEL B. STEPHENS & ASSOCIATES, INC.
12-94
JN 4215
Figure 1

- Three aquifer hydraulic tests were conducted.

- The locations of all monitor wells were surveyed.

This report presents the methods and results of the investigation. Section 2 provides background information on the NNG and the adjoining Texaco facilities, including a summary of previously completed environmental work at the compressor station. Section 3 describes the field procedures used during the investigation and the findings of the subsurface investigation. Finally, Section 4 provides a summary of and the conclusions derived from the investigation.

2. SITE BACKGROUND

This section provides background information relevant to DBS&A's supplemental environmental investigation. Section 2.1 describes the NNG and adjoining Texaco facilities in detail. Sections 2.2 and 2.3 discuss the physical setting and regional hydrogeology of the area. Sections 2.4 and 2.5 provide a summary of previous environmental investigations and corrective actions undertaken at the NNG compressor station.

2.1 Facility Description and Operational History

The compressor station is situated on approximately 3 acres of land within township 22 S, range 37 E, section 27 of Lea County, New Mexico. The compressor station was built in 1962 to facilitate transport of dry natural gas originating from the adjoining gas plant. The gas plant, which is currently operated by Texaco, was built in the late 1940s to extract the primary distillates (natural gasoline, butane, and propane) from the raw natural gas stream obtained from local gas production wells. The general layout of both facilities is shown in Figure 1; Figure 2 provides a more detailed layout of the NNG compressor station, including the locations of on-site monitor wells.

The pits and tanks shown on Figures 1 and 2 have been used for the management of waste liquids generated during routine facility operations, as described below:

- At the compressor station, waste liquids are generated by the removal of pipeline condensate and used engine lubricating oils. The waste liquids are stored in ASTs near the compressor building prior to off-site disposal.

- The gas plant generates an assortment of natural gasolines, waste oils, and wastewaters that may have contributed to the subsurface impacts detected at the compressor station. In the past, gas plant operations included the use of several unlined liquid pits near the compressor station.

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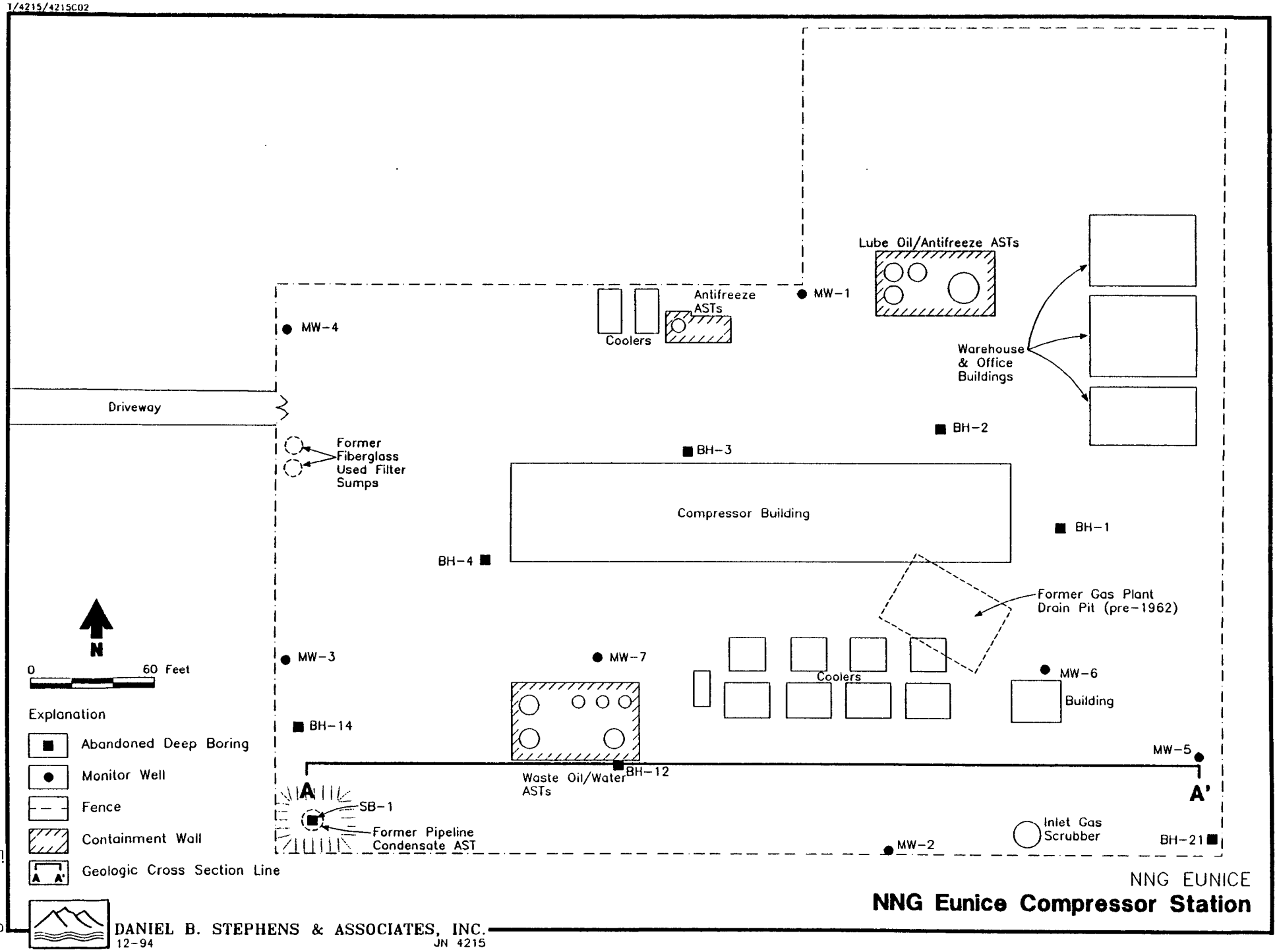

Figure 2

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NNG EUNICE

NNG Eunice Compressor Station

In order to clarify the number and location of the former and present impoundments, DBS&A obtained historical aerial photographs showing the compressor station and adjoining gas plant. The following sources were contacted during this effort: the Earth Data Analysis Center (EDAC) in Albuquerque, the New Mexico State Highway and Transportation Department (NMSHTD) in Santa Fe, and Koogle & Pouls, an engineering firm in Albuquerque. Four aerial photographs showing the two facilities were located, and the following contact prints were obtained:

Photograph Date	Approximate Scale	Source
04/28/54	1:63,000	EDAC Albuquerque
02/04/68	1:19,000	EDAC Albuquerque
01/16/84	1:5,000	NMSHTD Santa Fe
05/12/92	1:3,000	Koogle & Pouls

The 1954 aerial photograph shows the gas plant prior to construction of the NNG compressor station. In 1954, two unlined wastewater disposal pits were in operation near the current location of the evaporation ponds (former wastewater pits A and B on Figure 1). An additional unlined pit was present southwest of the wastewater disposal pits. A former gas plant drain pit near the present location of the NNG compressor building (Figure 2) is not distinguishable on this photograph, but is shown on NNG site diagrams prior to construction of the facility in 1962.

The 1968 photograph reveals a gas plant waste pit near the southwestern corner of the compressor station (Figure 1). The photograph also shows the first lined evaporation pond. Excess wastewaters continued to be held in the unlined pits east and southeast of the gas processing area (former pits A and B on Figure 1). No impoundments or pits were distinguishable within the compressor station boundaries in this photograph.

The 1984 photograph indicates that the disposal pit near the southwestern NNG property boundary (Figure 1) had been decommissioned. According to documents on file at the New Mexico Oil Conservation Division (OCD), the former waste pits and former wastewater pits A and B were backfilled in 1980 (York, 1980). The photograph shows that NNG was using a

pipeline condensate AST near the southwest corner of the property (Figure 2) and the gas plant was using three lined evaporation ponds (Figure 1) by this time.

The 1992 aerial photograph shows that an additional lined evaporation pond was added to the wastewater storage system. The most noticeable feature on the 1992 photograph is the dark staining near the gasoline storage tank area directly south of the NNG property line (Figure 1). The dark staining is not present on earlier aerial photographs. The photograph also shows several concrete containment structures built for the new ASTs used by NNG (Figure 2).

2.2 Physical Setting

The site is located within the Pecos Valley section of the Great Plains physiographic province. The land near the site is comprised of a relatively flat surface that gently slopes toward the south. The surface is underlain by a hard sandy caliche that is often covered by a 5- to 10-foot thick veneer of dune sand and alluvial sediments. The area is sparsely vegetated with native grasses and mesquite.

The majority of the surface runoff is retained in shallow depressions until it seeps into the ground or evaporates. Monument Draw, located east of the site, is the only significant water course in the region (Nicholson and Clebsch, 1961). The climate is semi-arid, with a mean annual precipitation of about 13 inches (Nicholson and Clebsch, 1961). The bulk of the annual precipitation occurs during intense summer thunderstorms.

2.3 Regional Hydrogeology

The NNG compressor station site is covered with a thin veneer of Quaternary sands below which lies unconsolidated sandy caliche and silty sand, which regionally comprise the Pliocene-age Ogallala Formation. The Ogallala Formation unconformably overlies the Triassic Dockum Group. Near the site, the Dockum Group is encountered at approximately 130 feet below ground surface (bgs). The uppermost formation of the Dockum Group is the Chinle Formation, which consists of reddish siltstone and claystone units ranging in thickness from 0 to 1,270 feet in southern Lea County (Nicholson and Clebsch, 1961). The Chinle Formation thickens toward the east.

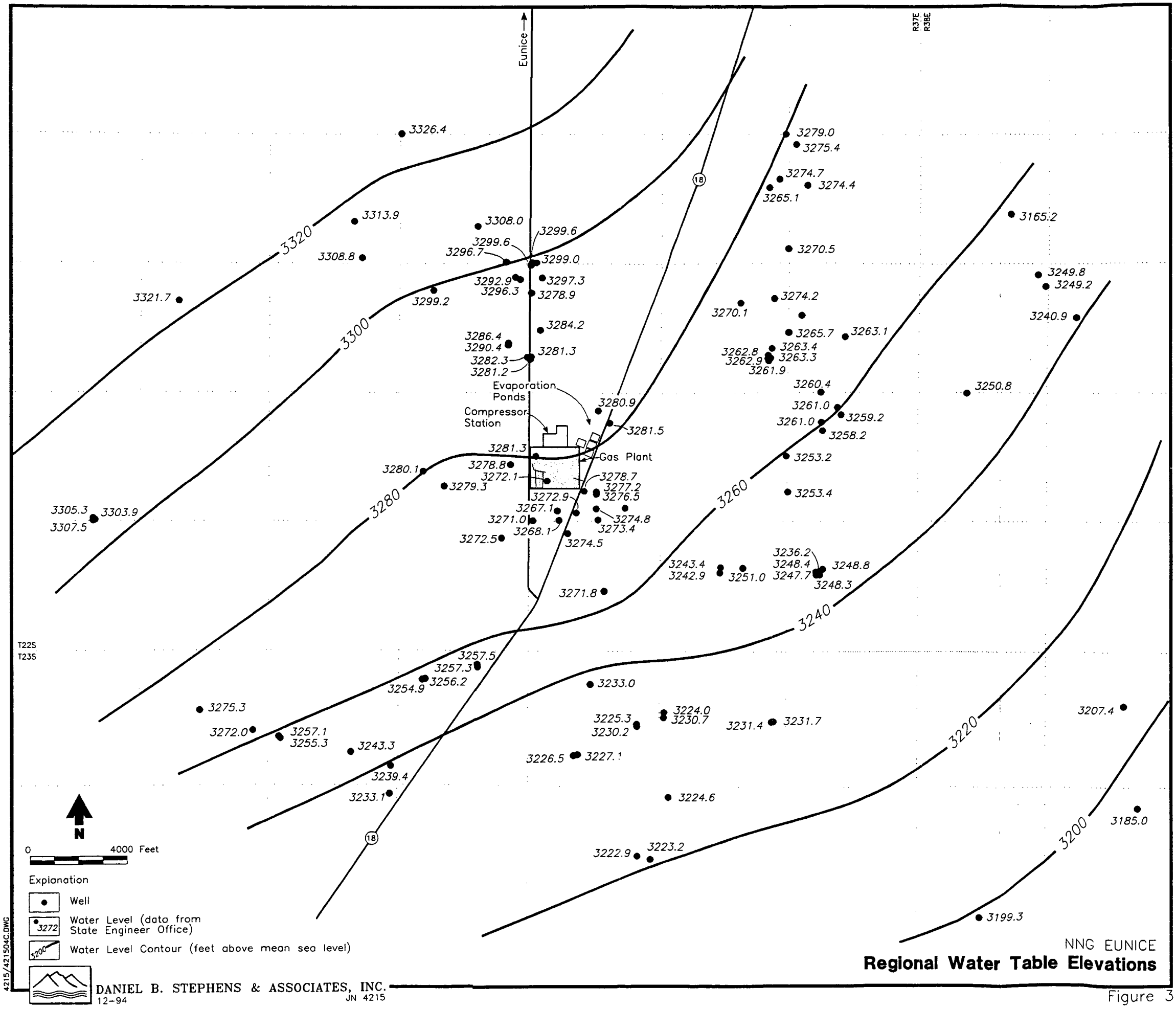
The Ogallala Formation is the major freshwater-bearing formation in southeastern New Mexico. Recharge to the unconfined aquifer occurs primarily by infiltration of precipitation within shallow surface depressions. Regional water level data obtained from the New Mexico State Engineer Office (SEO) indicates that ground-water flow is toward the southeast (Figure 3). Locally, however, ground-water flow appears to be due south. Local recharge of wastewaters from the evaporation ponds and discharge of ground-water from pumping may have altered the flow field near the site.

Nativ (1988) reported hydraulic conductivity (K) values ranging between 3 and 262 ft/day and specific yields (S_y) of 0.07 to 0.20 for the Ogallala aquifer with average K and S_y values of 42 ft/day and 0.16, respectively. The hydraulic gradient is estimated to be approximately 0.0035 ft/ft based on the regional water level data obtained from the SEO.

2.4 Previous Hydrogeologic Investigations

Two previous hydrogeologic investigations have identified impacts to the soil and ground water underlying both the NNG and Texaco properties. The first hydrogeologic investigation was performed by Metric Corporation in 1991. Metric advanced a total of 21 borings (BH-1 through BH-21) and installed 2 monitor wells (MW-1 and MW-2) in order to investigate subsurface conditions throughout the site. Of the 21 borings, 12 were drilled to a total depth of 4 feet or less in order to evaluate shallow impacts. The remaining 9 borings were advanced to the water table (approximately 52 feet bgs) to characterize soil contamination throughout the vertical extent of the vadose zone. These borings, two of which were completed as monitor wells MW-1 and MW-2, are shown on Figure 2.

Soil samples collected by Metric during drilling were analyzed for total recoverable petroleum hydrocarbons (TRPH) using EPA method 418.1 and for benzene, toluene, ethylbenzene, and xylene (BTEX) using EPA method 8020. Samples recovered from the shallow borings contained high levels of petroleum hydrocarbons. Below the 4-foot depth, however, the regulatory guidelines set by the OCD (1993) for TPH and BTEX were exceeded only in soil boring BH-14, located near the former pipeline condensate AST (Figure 2). Further, total BTEX concentrations


Eunice
R37E
R38E
T22S
T23S
3320
3300
3280
3260
3240
3220
3200
18
3326.4
3313.9
3308.8
3321.7
3308.0
3299.6
3299.6
3296.7
3299.0
3292.9
3296.3
3297.3
3278.9
3299.2
3284.2
3286.4
3290.4
3281.3
3282.3
3281.2
Evaporation Ponds
Compressor Station
3280.9
3281.5
Gas Plant
3281.3
3278.8
3280.1
3272.1
3279.3
3278.7
3277.2
3276.5
3272.9
3267.1
3271.0
3268.1
3274.8
3273.4
3272.5
3274.5
3271.8
3279.0
3275.4
3274.7
3274.4
3265.1
3270.5
3274.2
3270.1
3265.7
3263.1
3262.8
3263.4
3262.9
3263.3
3261.9
3260.4
3261.0
3259.2
3261.0
3258.2
3253.2
3253.4
3165.2
3249.8
3249.2
3240.9
3250.8
3243.4
3242.9
3251.0
3236.2
3248.4
3247.7
3248.8
3248.3
3257.5
3257.3
3254.9
3256.2
3233.0
3275.3
3272.0
3257.1
3255.3
3243.3
3239.4
3233.1
3225.3
3230.2
3224.0
3230.7
3231.4
3231.7
3226.5
3227.1
3224.6
3207.4
3185.0
3222.9
3223.2
3199.3
3305.3
3303.9
3307.5
N
0
4000 Feet
Explanation
Well
3272
Water Level (data from State Engineer Office)
3200
Water Level Contour (feet above mean sea level)
4215/421504C.DWG
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NNG EUNICE
Regional Water Table Elevations

Figure 3

exceeded the OCD 50-ppm criterion in only one of the samples collected from soil boring BH-14: the one collected at the water table.

Ground-water samples collected by Metric were analyzed for purgeable halocarbons and metals; soil samples were analyzed for organics and metals using the toxic characteristic leaching procedure (TCLP). The purgeable halocarbon and TCLP analyses yielded concentrations below regulatory standards. However, ground-water samples contained concentrations of barium, iron, lead, and manganese that exceeded NMWQCC standards. Further details regarding this investigation may be found in Metric Corporation's report (1991).

During the spring of 1993, Brown & Root Environmental installed a third monitor well (MW-3 on Figure 2) and sampled each site monitor well for VOCs and semivolatile organic compounds (SVOCs) using gas chromatography/mass spectrometer (GC/MS) methods (EPA methods 8240 and 8270, respectively). Samples were also collected for total dissolved solids (TDS) and metals analyses. NMWQCC standards exceeded in each well are outlined below:

- TDS and barium in monitor well MW-1
- Benzene, ethylbenzene, TDS, and barium in monitor well MW-2
- Benzene, toluene, naphthalene, TDS, and barium in monitor well MW-3

Further details regarding this investigation may be found in Brown & Root Environmental's report (1993).

2.5 Corrective Actions

The shallow soils that contained high levels of TRPH (as identified by the 4-foot borings) were excavated by TPC during the summer of 1993. Soils were excavated near the southern and eastern sides of the compressor building, the former pipeline condensate AST, and the former fiberglass used filter sumps (Figure 2). In general, these soils were excavated to a caliche layer present at approximately 4 feet bgs. TPC has also removed all below-grade sumps and drain tanks and replaced them with the new liquid waste ASTs depicted on Figure 2. Approximately

2,000 cubic yards of soils were excavated during the corrective action undertaken by TPC. These soils were stockpiled within the northeastern portion of the site to await final disposition.

During October 1994, Benge Construction Company of Lovington, New Mexico provided hauling services for the disposal of the stockpiled hydrocarbon-contaminated soils. The soils were delivered to C&C Landfarm, Inc. (C&C), located near Monument, New Mexico. C&C is a commercial surface waste disposal facility permitted by the New Mexico Oil Conservation Commission.

3. SUBSURFACE INVESTIGATIONS

The following sections describe the subsurface investigation conducted by DBS&A in order to define the on-site extent of impacts identified by previous investigators. The general field procedures followed during this investigation are outlined in Section 3.1. Sections 3.2 and 3.3 describe site-specific procedures and the outcome of the investigation at the site. All field work was conducted in accordance with DBS&A standard operating procedures and a site-specific health and safety plan developed for the field program.

3.1 Drilling and Sampling Procedures

Four monitor wells and one soil boring were installed to establish the distribution of soil and ground-water impacts, the direction of ground-water flow, and aquifer hydraulic characteristics. Drilling at the site was completed by Eades Drilling Company of Hobbs, New Mexico, using an Ingersoll Rand TH-75W air-rotary drilling rig. Drilling equipment and sampling devices were steam-cleaned and inspected by DBS&A personnel prior to beginning each boring. In addition, all sampling equipment was decontaminated prior to each use by washing with Liquinox® detergent followed by a deionized water rinse.

3.1.1 Soil and Soil Vapor Sampling

As each borehole was advanced, split-spoon samples were collected at 5-foot intervals for geologic logging. In addition, cuttings were inspected to aid in logging. Lithologic descriptions were produced using the Unified Soil Classification System (USCS) and the Munsell color system. Appendix A contains the lithologic logs produced for each boring and, where applicable, the corresponding well construction diagrams.

Soil samples collected during drilling were tested for the presence of VOCs using an organic vapor meter equipped with a photoionization detector (PID). Field PID measurements were used to determine the presence of contaminated soils above guidelines (those with PID readings greater than 100 parts per million volume [ppmv]) as described by OCD (1993). Where contaminated soils were detected using the PID, soil and soil vapor samples were collected for

laboratory analyses. Soil samples were analyzed to evaluate sorbed phase concentrations of selected organic constituents. Soil vapor samples were analyzed for BTEX and extended refinery gases to determine the chemical composition and the potential source(s) of VOCs detected in vapor phase.

Soil vapor samples were collected through a sampling port, constructed of ¼-inch copper tubing, which was set directly above the water table. The annular space surrounding the open portion of the sampling device was backfilled with 10-20 silica sand followed by a 50/50 (by weight) mixture of dry bentonite powder and 10-20 silica sand to seal the sampling zone. Prior to sample collection, an air vacuum pump was used to purge soil gas from the monitored zone until vapor concentrations stabilized, as determined by PID readings. Soil gas samples were collected in stainless steel canisters and analyzed by Core Laboratories of Houston, Texas. The analytical report for soil vapor analyses is provided in Appendix B.

At the predetermined monitor well locations, the soil sample yielding the highest PID reading above background measurements and the soil sample collected from immediately above the water table were retained for laboratory analysis of TPH (EPA method 8015 modified) and BTEX. In order to determine if the pipeline condensate AST was a contributing source, soil samples collected from boring SB-1 at 5-foot intervals (from approximately 5 feet bgs to the water table [approximately 55 feet]) were also retained for analyses of TPH and BTEX. Drill cuttings generated during the investigation were stockpiled on clean plastic; one composite sample was collected to determine proper disposal. All samples were collected in 250-ml glass jars and placed in an ice-filled cooler for shipment to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico.

3.1.2 Monitor Well Installation

Borings were drilled to a depth of 10 feet below the water table, whereupon a 2-inch-diameter monitor well was constructed in order to evaluate ground-water quality. The monitor wells were constructed with 15 feet of 2-inch 0.010-inch machine-slotted polyvinyl chloride (PVC) screen, approximately 50 feet of flush-threaded 2-inch PVC blank casing, and 17 feet of 10-20 silica sand filter pack. A bentonite seal was emplaced on top of the filter pack, followed by a cement-

bentonite grout to the ground surface. The surface completion consisted of 12-inch-diameter flush-grade vaults set within concrete.

Following monitor well installation, all borings and monitor wells were surveyed relative to the plant grid system and mean sea level by John W. West Engineering Co. of Hobbs, New Mexico. Additionally, monitor wells installed by previous investigators were surveyed to the same reference so that accurate determination of ground-water flow directions could be made. A summary of monitor well completion information is provided in Table 1.

3.1.3 Ground-Water Sampling

During the environmental investigation, ground-water samples were collected from each monitor well at the site. Prior to sampling, the depth to water was measured. The presence of phase-separated hydrocarbons was checked using product-finding paste, and the well was bailed until approximately three casing volumes were purged. During purging, field parameters (pH, temperature, and electrical conductivity) were measured and recorded every half casing volume. Purged ground water was contained in 55-gallon drums to be disposed of by TPC upon receipt of analytical results. Ground-water samples were collected using dedicated, disposable polyethylene bailers. In addition to the above procedures, each newly installed monitor well was developed (prior to the sampling procedure outlined above) by the surge and bail method until the well yielded relatively sediment-free ground water.

Ground-water samples were analyzed for halogenated and aromatic VOCs (EPA method 8010/8020), TPH (EPA method 8015 modified), polynuclear aromatic hydrocarbons (PAHs) (EPA method 8100), major ions, TDS, and metals regulated by the NMWQCC. Samples were shipped in ice-filled chests to HEAL for the analysis of organic compounds and to Analytical Technologies, Inc. (ATI) for the analysis of inorganic compounds. Both laboratories are located in Albuquerque, New Mexico.

During the field program quality assurance/quality control samples, consisting of trip blanks and sample replicates, comprised approximately 5 percent of the water samples in order to check intralaboratory precision during the field program. Appendix B contains the HEAL and ATI reports

Table 1. Monitor Well/Soil Boring Locations and Water Table Elevation Data, October 1994 NNG Eunice Compressor Station

Well/Boring[1]	Location		Date of Completion	Measuring Point[3] Elevation (feet above msl)	Depth to Water from Measuring Point[3] (feet)	Water Table Elevation (feet above msl)	Total Boring Depth (feet bgs)	Screened Interval (feet bgs)	Top of Silica Sand (feet bgs)
	North[2] (feet)	East[2] (feet)							
MW-1	267.9	-197.7	09/27/91	3337.94	55.64	3282.30	60.0	50.0-60.0	48.0
MW-2	2.1	-157.3	09/30/91	3336.75	54.45	3282.30	59.0	49.0-59.0	45.0
MW-3	81.0	-442.2	04/13/93	3337.72	55.47[4]	3282.25	65.0	50.0-60.0	47.0
MW-4	250.7	-430.3	10/04/94	3335.93	53.60	3282.33	67.0	49.0-64.0	46.0
MW-5	47.4	-10.6	10/05/94	3334.17	51.80	3282.37	67.0	48.0-63.0	45.0
MW-6	88.9	-82.8	10/05/94	3334.20	51.86	3282.34	70.0	45.0-60.0	41.5
MW-7	94.2	-294.4	10/06/94	3334.73	52.45	3282.28	67.0	48.0-63.0	43.0
SB-1	16.0	-429.9	NA	NA	NA	NA	NA	NA	NA

Survey conducted by John W. West Engineering, Hobbs, NM; all measurements were made on October 7, 1994.

[1] Refer to Figure 2 for locations
[2] North and east coordinates relative to plant survey grid
[3] Measuring point is top of PVC casing
[4] Corrected for PSH: DTW = 55.92 - (0.56 x 0.8)

NA = Not applicable

with the supporting quality assurance and chain-of-custody documents for all water samples submitted for analysis.

3.2 Site Hydrogeology

The lithology of soils directly underlying the site, as determined from the borings advanced during DBS&A's investigation, consists generally of sandy caliche and calcareous sandstone that are moderately to well cemented from roughly 4 feet bgs to approximately 15 feet bgs. Above the caliche, which is locally referred to as the *caprock,* is approximately 4 feet of fine- to medium-grained silty sand. Below the 15-foot depth the soils consist primarily of fine- to medium-grained, well sorted, poorly cemented sands. As mentioned in Section 2.3, the base of the Ogallala deposits at the station are approximately 130 feet bgs. A geologic cross section developed from lithologic descriptions is provided as Figure 4; Figure 2 shows the cross section location.

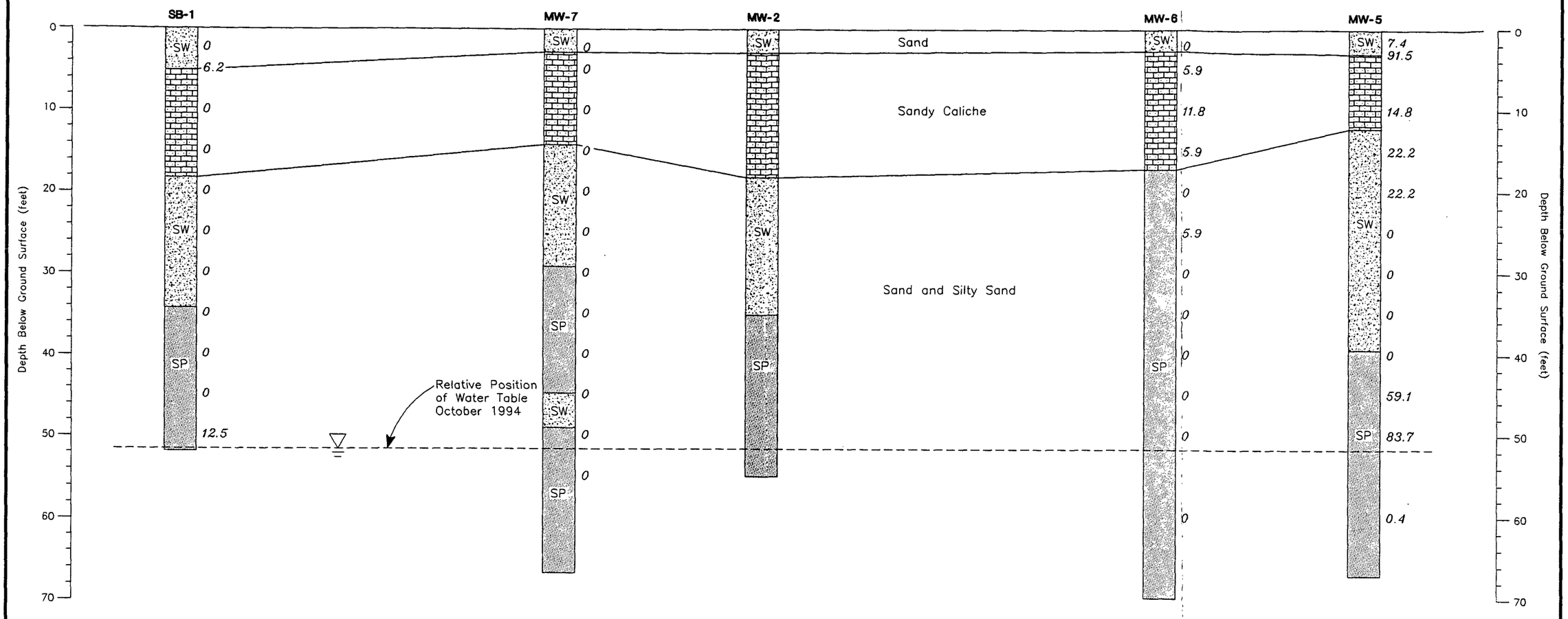
Ground water beneath the site is unconfined and occurs approximately 52 feet bgs based on October 7, 1994 measurements (Table 1). A water table elevation map generated from depth to water measurements is shown in Figure 5. This map indicates that ground water generally flows toward the south-southwest, a finding that generally agrees with the regional flow direction shown on Figure 3. However, accurate determination of ground-water flow directions may be complicated by the low hydraulic gradient present at the site. Based on the October 7, 1994 measurements, the local hydraulic gradient is approximately 0.0003 ft/ft or approximately an order of magnitude less than the regional gradient (Section 2.3). Factors such as ground-water pumping and seepage from the wastewater disposal cells have likely altered the local flow direction significantly during the operation of the two facilities.

3.2.1 Aquifer Hydraulic Tests and Data Analysis

Following well completion, DBS&A used slug withdrawal (rising head) tests on monitor wells MW-4, MW-5, and MW-7 to evaluate the in-situ hydraulic conductivity of the upper portion of the Ogallala aquifer in the vicinity of these wells. The three tests provided an expedient means of estimating local hydraulic conductivity (K); however, estimates of specific yield (S_y) cannot be

West
A

East
A'



Note: Information for MW-2 from Metric Corp. (1991).

0 50 Feet
Horizontal Scale

Explanation

SP USCS Symbol

1.2 PID Reading (ppmv)

T:\4215\421503C.DWG

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NNG EUNICE
EUNICE COMPRESSOR STATION
Geologic Cross Section A-A'

Figure 4

T/4215/4215056

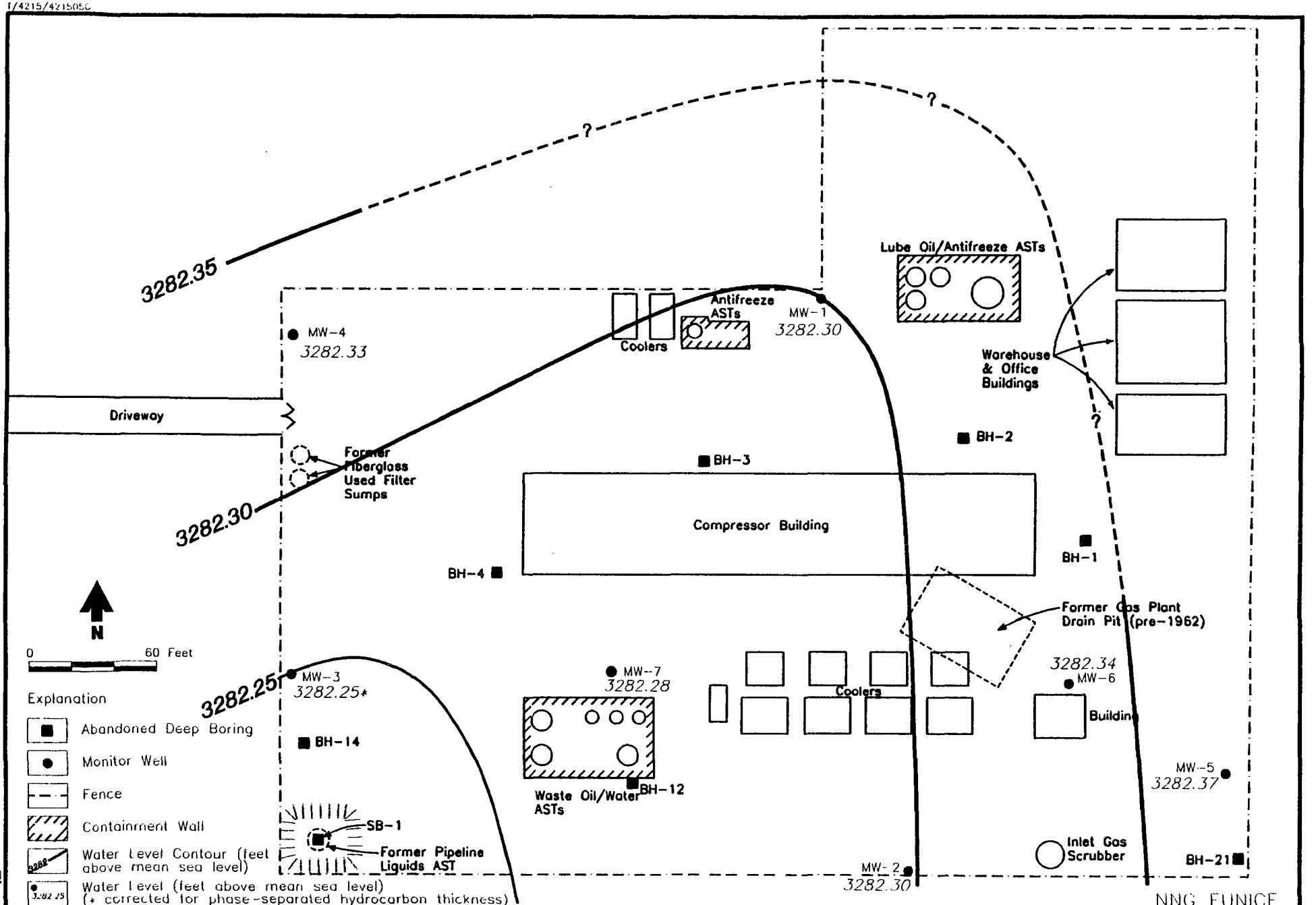

Figure 5

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NNG EUNICE

Water Table Elevations, October 7, 1994

obtained by this method. Instead, S_y estimates were made based on the observed grain size distributions and published values.

The slug test procedure consisted of submerging a sealed bailer of a known volume below the water table, allowing the water level to equilibrate, and then quickly removing the bailer, thereby creating a slug withdrawal. Recovery of the water level to initial static conditions was recorded at frequent intervals using a pressure transducer and a datalogger. In addition, an electrical sounder was used to verify the water level data recorded by the datalogger.

The slug test data were analyzed by the method developed by Bouwer and Rice (1976) for water table aquifers. The Bouwer-Rice procedure requires a graphical plot of residual head or recovery (logarithmic scale) versus time (arithmetic scale) resulting from the "instantaneous" removal of water from a well within an unconfined aquifer. The straight line fitted to the data set and factors determined from the well geometry are used to estimate values of K. Data plots resulting from the slug withdrawal test analyses are included in Appendix C.

The estimated values of K for the three tests ranged from 5.6 ft/day to 7.4 ft/day with a geometric mean of 6.3 ft/day (Table 2). These values are in close agreement with values report by Nativ (1988) for the Ogallala aquifer. Based on the observed grain size distribution and values published by Nativ (1988), S_y values are probably on the order of 0.15 to 0.25 for the aquifer.

Table 2. Results of Slug Tests
NNG Eunice Compressor Station

Monitor Well	Hydraulic Conductivity[1] (ft/day)
MW-4	7.4
MW-5	5.9
MW-7	5.6
Geometric mean	6.3

[1] Calculated using the Bouwer-Rice (1976) method

3.2.2 Rate of Ground-Water Movement

Average ground-water flow velocities can be estimated from the following equation:

$$v = \frac{Ki}{n_e}$$

where

v = average pore velocity

K = hydraulic conductivity

i = hydraulic gradient

n_e = effective porosity

Assuming an effective porosity of 0.20, a hydraulic gradient of 0.0003, and a geometric mean hydraulic conductivity of 6.3 ft/day (2.2×10^{-3} cm/sec), the ground-water velocity is approximately 3.4 ft/yr. This equation provides a higher estimate of contaminant transport rates since it does not take into account retardation effects nor varying flow directions, which inhibit contaminant migration.

3.3 Delineation of Subsurface Impacts

The results of DBS&A's supplemental environmental investigation were consistent with those of previous environmental investigations. The extents of soil and ground-water impacts, as delineated by the October 1994 investigation, are discussed in Sections 3.3.1 and 3.3.2, respectively.

3.3.1 Soil Impacts

Headspace analysis of soil samples collected during the drilling program revealed that soil vapor concentrations are below the 100-ppmv guideline described by OCD. The highest PID readings were recorded during the drilling of monitor well MW-5, which is located near the southeastern

corner of the site. The highest PID readings were recorded near the top of the caliche layer (approximately 4 feet bgs) and near the water table (approximately 45 to 50 feet bgs). Appendix A contains the results of the headspace analysis for each boring advanced during the investigation.

Analyses of soil vapor samples collected from soil boring SB-1 and MW-5 confirmed that aromatic VOC concentrations above the water table are below the 50-ppmv BTEX criterion set by OCD; however, significant concentrations of C_1 through C_9 aliphatic hydrocarbons are present. Table 3 summarizes the results of vapor analyses performed on the soil gas samples collected from SB-1 and MW-5.

Table 3. Summary of Vapor Analyses in Soil Gas Recovered from Above the Water Table NNG Eunice Compressor Station

Constituent	Location (Sample Date)	
	MW-5 (10/06/94)	SB-1 (10/07/94)
Benzene	19	8
Toluene	10	9
Ethylbenzene	1	3
Xylene (total)	<1	1
Non-methane hydrocarbon	605	476
Methane	1095	404

All analyses performed by Core Laboratories, Houston, TX
All concentrations in ppmv

Soil samples collected from each boring were submitted to HEAL and analyzed for TPH and BTEX. Tables 4a and 4b provide a summary of the TPH and BTEX concentrations measured in soils sampled by DBS&A. Based on the data collected during this investigation and others, it appears that subsurface soil impacts are limited to the southwestern corner of the site. The only sample containing detectable concentrations of petroleum hydrocarbons was the one collected from soil boring SB-1 at the water table interface. To date, the soil contaminant data collected

Table 4a. Summary of Soils Analyses for Organic Constituents
Monitor Well Borings
NNG Eunice Compressor Station

Constituent	Detection Limit	Sample No. (Sample Date)						
		MW-4 @ 9' (10/04/94)	MW-4 @ 52' (10/04/94)	MW-5 @ 52' (10/06/94)	MW-6 @ 12' (10/04/94)	MW-6 @ 52' (10/04/94)	MW-7 @ 17' (10/06/94)	MW-7 @ 52' (10/06/94)
Total petroleum hydrocarbons by EPA method 8015 modified (mg/kg)								
Gasoline range (C_6-C_{16})	10	ND	ND	ND	ND	ND	ND	ND
Diesel range (C_{16}-C_{36})	10	ND	ND	ND	ND	ND	ND	ND
Aromatic VOCs by EPA method 8020 (mg/kg)								
Benzene	0.05	ND	ND	ND	ND	ND	ND	ND
Toluene	0.05	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.05	ND	ND	ND	ND	ND	ND	ND
Total xylenes	0.05	ND	ND	ND	ND	ND	ND	ND

Note: All analyses performed by Hall Environmental Analysis Laboratory, Albuquerque, NM

ND = Not detected
VOCs = Volatile organic compounds

Table 4b. Summary of Soils Analyses for Organic Constituents
Soil Boring SB-1
NNG Eunice Compressor Station

Constituent	Detection Limit	Sample No. (Sample Date)									
		SB-1 @ 7' (10/07/94)	SB-1 @ 10-12' (10/07/94)	SB-1 @ 15-17' (10/07/94)	SB-1 @ 20-22' (10/07/94)	SB-1 @ 27' (10/07/94)	SB-1 @ 32' (10/07/94)	SB-1 @ 37' (10/07/94)	SB-1 @ 42' (10/07/94)	SB-1 @ 47' (10/07/94)	SB-1 @ 52' (10/07/94)
Total petroleum hydrocarbons by EPA method 8015 modified (mg/kg)											
Gasoline range (C_6-C_{16})	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
Diesel range (C_{16}-C_{36})	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	570
Aromatic VOCs by EPA method 8020 (mg/kg)											
Benzene	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17
Total xylenes	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.84

Note: All analyses performed by Hall Environmental Analysis Laboratory, Albuquerque, NM

ND = Not detected
VOCs = Volatile organic compounds

from borings and monitor wells have not substantiated any on-site releases that could have impacted ground-water beneath the site. Further, the analytical data suggest that minimal hydrocarbon mass is contained within the soil column above the water table in the areas of investigation.

3.3.2 Ground-Water Impacts

As mentioned in Section 3.1, ground-water samples were collected from each monitor well and analyzed for organic and inorganic constituents. Tables 5 and 6 summarize the constituents detected in the ground water beneath the site. The NMWQCC standard is also given in each table for comparison. Based on analytical results, it appears that the ground water underlying the southern portion of the site has been significantly impacted by a release of petroleum hydrocarbons. Potential on-site sources have been characterized and apparently are not contributing to ground-water impacts. The potential off-site source(s) for the organic compounds detected in the ground water beneath the site remain to be characterized.

As shown in Table 5, ground-water samples from three of the seven monitor wells contained concentrations exceeding NMWQCC standards of several organic constituents. Ground water containing the highest concentrations of organic constituents is next to the southern and western property boundaries, as represented by the analytical results from monitor wells MW-2 and MW-3. In addition, approximately 0.8 foot of phase-separated hydrocarbons (PSH) were measured in monitor well MW-3.

Based on the analysis of aromatic and halogenated VOCs and PAHs, the compounds that exceed the NMWQCC standards are BTEX and total naphthalenes (naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene). Figure 6 shows the estimated on-site extent of actionable ground water (i.e., water containing one or more regulated constituent at a concentration that exceeds the NMWQCC standards for that constituent) based on the BTEX concentrations. The areal extent of total naphthalenes exceeding the NMWQCC standard of 30 µg/L appears to be limited to the southwestern portion of the site.

Table 5. Summary of Ground-Water Analyses for Organic Constituents
NNG Eunice Compressor Station
Page 1 of 2

Constituent	Detection Limit	Well No. (Sample Date) MW-1 (10/03/94)	MW-2 (10/03/94)	MW-3 (10/03/94)	MW-4 (10/04/94)	MW-5 (10/06/94)	MW-6 (10/05/94)	MW-7 (10/07/94)	NMWQCC Standard
Total petroleum hydrocarbons by EPA method 8015 modified (mg/L)									
Gasoline range (C_6-C_{16})	0.05	0.08	15[a]	19[b]	ND	0.27	ND	1.2	None
Diesel range (C_{16}-C_{36})	1.0	ND	ND	12	ND	ND	ND	ND	None
Aromatic VOCs by EPA method 8020 (µg/L)									
Benzene	0.5	1.6	**6300**[a]	**3000**[b]	ND	**70**	0.7	8.1	10
Toluene	0.5	0.6	ND[a]	**1000**[b]	ND	ND	ND	ND	750
Ethylbenzene	0.5	1.1	**1300**[a]	**1200**[b]	ND	44	ND	42	750
Total xylenes	0.5	0.9	ND[a]	**2600**[b]	ND	0.9	ND	99	620
Halogenated VOCs by EPA method 8010 (µg/L)									
1,2-Dichlorobenzene	0.2	0.8	ND[a]	ND[b]	ND	ND	ND	ND	None
1,4-Dichlorobenzene	0.2	0.9	ND[a]	ND[b]	0.5	ND	ND	ND	None
1,1-Dichloroethane	0.2	ND	ND[a]	ND[b]	0.4	ND	ND	ND	25
1,2-Dichloroethane	0.2	ND	ND[a]	ND[b]	0.4	ND	ND	ND	10
cis-1,2-Dichloroethene	0.2	0.3	ND[a]	ND[b]	ND	ND	ND	ND	None
1,2-Dichloropropane	0.2	0.3	ND[a]	ND[b]	0.7	ND	ND	ND	None
1,1,2-Trichloroethane	0.2	ND	ND[a]	ND[b]	0.4	ND	ND	ND	10

Notes: All analyses performed by Hall Environmental Analysis Laboratory, Albuquerque, NM
Bold values indicate concentration exceeds NMWQCC ground-water standard

NMWQCC = New Mexico Water Quality Control Commission
ND = Not detected
VOCs = Volatile organic compounds

[a] Sample analyzed at 40x dilution; accordingly, detection limits were 40x the value listed
[b] Sample analyzed at 20x dilution; accordingly, detection limits were 40x the value listed

Table 5. Summary of Ground-Water Analyses for Organic Constituents
NNG Eunice Compressor Station
Page 2 of 2

Constituent	Detection Limit	Well No. (Sample Date) MW-1 (10/03/94)	MW-2 (10/03/94)	MW-3 (10/03/94)	MW-4 (10/04/94)	MW-5 (10/06/94)	MW-6 (10/05/94)	MW-7 (10/07/94)	NMWQCC Standard
Polynuclear aromatic hydrocarbons by EPA method 8100 (µg/L)									
Naphthalene	0.5	ND	6.3	**95**	ND	0.5	ND	0.7	30[c]
1-Methylnaphthalene	0.5	0.9	1.7	**200**	ND	ND	ND	0.9	
2-Methylnaphthalene	0.5	ND	2.3	**88**	0.5	ND	ND	1.9	
Acenaphthene	0.5	ND	ND	17[d]	1.1	0.8	0.7	0.6	None
Fluorene	0.5	ND	0.9	15[d]	ND	ND	ND	ND	None
Pyrene	0.5	ND	ND	130[d]	ND	ND	ND	ND	None

Notes: All analyses performed by Hall Environmental Analysis Laboratory, Albuquerque, NM
Bold values indicate concentration exceeds NMWQCC ground-water standard

NMWQCC = New Mexico Water Quality Control Commission
ND = Not detected
VOCs = Volatile organic compounds

[c] NMWQCC standard is for total naphthalene, which includes naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene
[d] Sample analyzed at 2x dilution; accordingly, detection limit was 1.0 µg/L

Table 6. Summary of Ground-Water Analyses for Inorganic Constituents NNG Eunice Compressor Station

Constituent	Detection Limit	Well No. (Sample Date) MW-1 (10/03/94)	MW-2 (10/03/94)	MW-3 (10/03/94)	MW-4 (10/04/94)	MW-5 (10/06/94)	MW-6 (10/05/94)	MW-7 (10/07/94)	NMWQCC Standard
Major ions (mg/L)									
Calcium	0.1	133	96.2	77.2	89.9	16.1	54.6	129	None
Potassium	1.0	3.1	5.8	4.8	6.5	20.1	12.2	8.5	None
Magnesium	0.1	119	98.2	42.1	68.8	29.7	59.8	162	None
Sodium	0.1	346	2120	100	626	1840	1560	1130	None
Total alkalinity (as $CaCO_3$)	1.0	582	1110	794	510	803	576	433	None
Chloride	0.5	**750**	**3000**	**620**	**940**	**2400**	**2100**	**2100**	250
NO_2 /NO_3 - N, total	0.06	ND	ND	ND	ND	0.08	ND	ND	10.0
Sulfate	5	ND	20	20	ND	9	ND	ND	600
Total dissolved solids	10	**1700**	**5900**	**2800**	**2000**	**4700**	**4000**	**4000**	1000
Metals (mg/L)									
Silver	0.010	ND	ND	ND	ND	ND	ND	ND	0.05
Arsenic	0.005	0.039	0.029	0.027	0.015	0.027	0.017	0.012	0.1
Barium	0.01	**1.52**	**1.33**	**5.01**	0.445	0.934	0.997	**9.72**	1.0
Cadmium	0.0005	ND	0.0011	ND	ND	ND	0.0012	ND	0.01
Chromium	0.010	ND	ND	ND	ND	ND	ND	ND	0.05
Copper	0.010	ND	ND	ND	ND	ND	ND	ND	1.0
Iron	0.020	**2.26**	0.345	**16.9**	ND	0.047	ND	ND	1.0
Mercury	0.0002	ND	ND	ND	ND	ND	ND	ND	0.002
Manganese	0.010	0.058	**0.262**	**1.48**	**0.206**	0.020	0.065	0.100	0.2
Lead	0.002	ND	ND	0.003	ND	ND	ND	ND	0.05
Selenium	0.005	ND	ND	ND	ND	ND	ND	ND	0.05
Zinc	0.020	ND	ND	ND	ND	ND	ND	ND	10

Notes: All analyses performed by Analytical Technologies, Inc., Albuquerque, NM
Bold values indicate concentration exceeds NMWQCC ground-water standard.
Metals samples were field filtered.

NMWQCC = New Mexico Water Quality Control Commission
ND = Not detected

T/4215/421506C

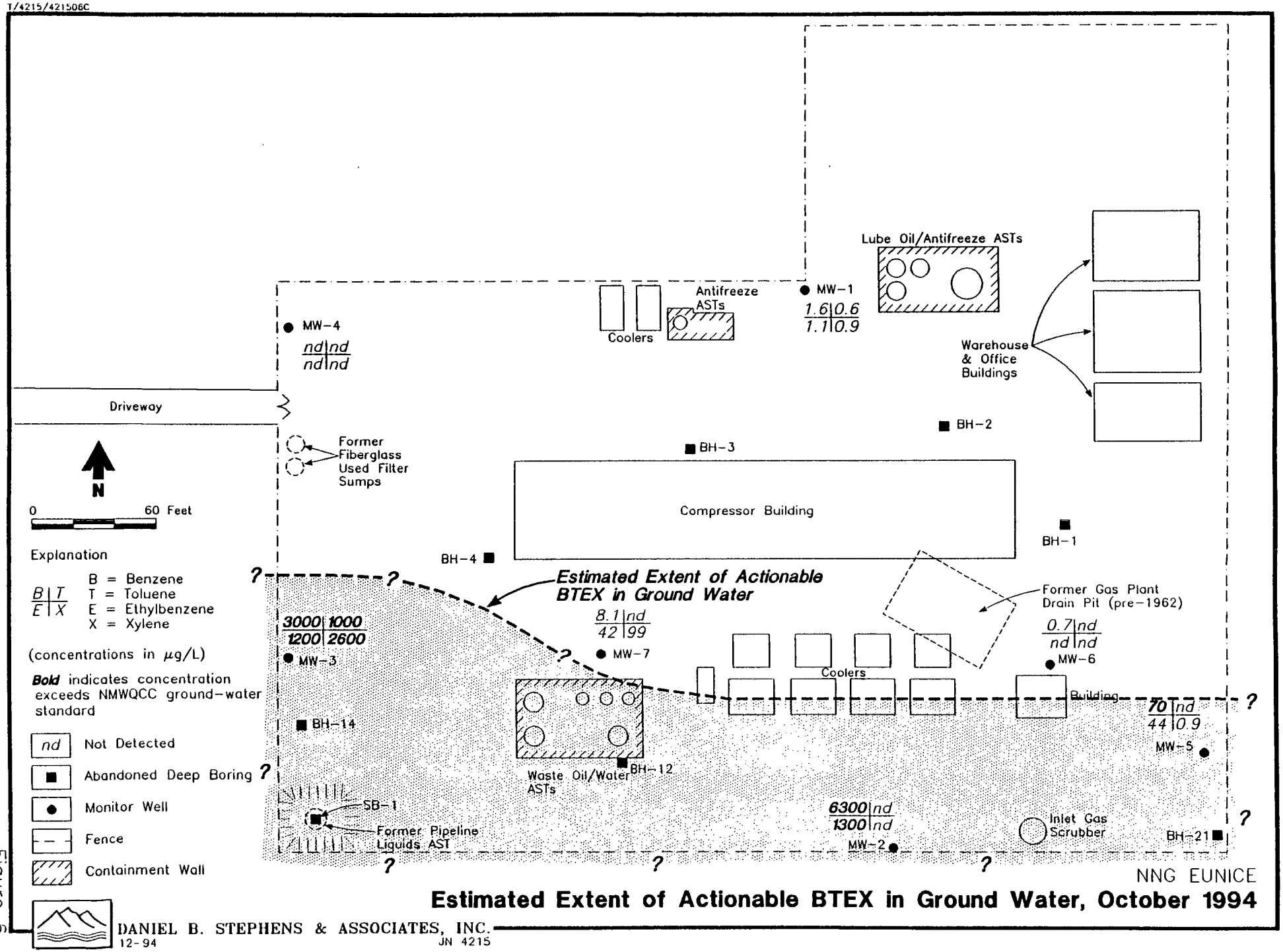

Figure 6

NNG EUNICE

Estimated Extent of Actionable BTEX in Ground Water, October 1994

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The TPH analyses indicate that the petroleum hydrocarbons detected in ground water are primarily low-molecular-weight (gasoline range) hydrocarbons, with the exception of samples collected from monitor well MW-3, which contains a mixture of low- and high-molecular-weight (diesel range) hydrocarbons (Table 5). The compositional difference between samples collected from monitor wells MW-2 and MW-3 suggests that separate sources may be responsible for ground-water contamination identified at these two locations.

The inorganic chemical analyses indicate that ground-water samples from all monitor wells (including upgradient monitor wells) exceed NMWQCC standards for TDS and chloride (Table 6). Figure 7 shows the distribution of TDS in ground water underlying the site.

Several samples also exceeded NMWQCC standards for manganese, iron, and barium. The elevated concentrations may result from a combination of depleted dissolved oxygen in the aquifer near the hydrocarbon source areas, and a resultant mobilization of metals under reducing conditions, and/or recharge of process water containing elevated concentrations of these constituents.

T/4215/421507C

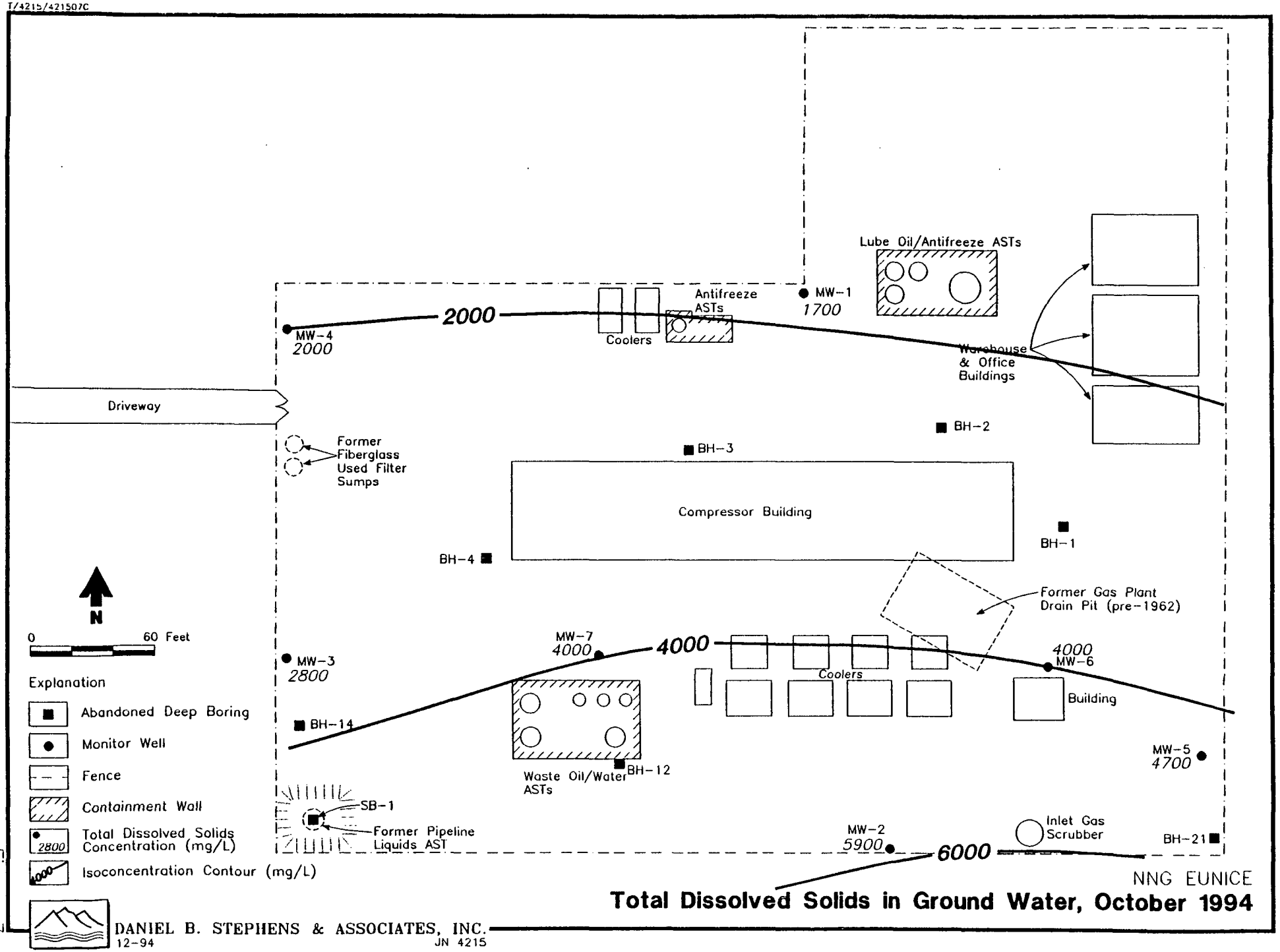

Figure 7

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Total Dissolved Solids in Ground Water, October 1994

4. SUMMARY AND CONCLUSIONS

This report summarizes the October 1994 supplemental environmental investigation undertaken by Daniel B. Stephens & Associates, Inc. at Northern Natural Gas Company's Eunice compressor station. The purpose of the investigation was to evaluate the extent of subsurface impacts related to the possible release of petroleum hydrocarbons and wastewaters from the Northern Natural Gas compressor station. During the course of the investigation, background information was reviewed, one soil boring and four monitor wells were installed, three aquifer hydraulic tests (rising head slug tests) were conducted, fluid levels were measured, all seven site wells were surveyed to a common datum, and all site monitor wells were sampled.

Based on the data gathered to date, the following conclusions can be made regarding the site hydrogeologic properties and the extent of subsurface contamination:

- Ground water beneath the site is unconfined and is present at approximately 52 feet below ground surface. Ground-water flow is generally to the south; however, local flow directions appear to vary, perhaps in response to local recharge and/or ground-water pumping.

- Slug tests indicate that the average hydraulic conductivity of the upper portion of the Ogallala aquifer is approximately 6.3 feet per day. The local ground-water velocity is estimated to be 3.5 feet per year.

- Field headspace and laboratory analyses indicate that the extent of actionable soil contamination is limited to the water table interface in the southwestern portion of the site.

- Benzene, toluene, ethylbenzene, and xylene and polynuclear aromatic hydrocarbons are present in ground water beneath the site in concentrations exceeding the New Mexico Water Quality Control Commission (NMWQCC) standards. The total petroleum hydrocarbons (TPH) in ground water are composed of both gasoline- and diesel-range constituents near monitor well MW-3, whereas TPH consists primarily of gasoline-range constituents near monitor well MW-2.

- Phase-separated hydrocarbons (PSH) are present in the southwestern portion of the site, as evidenced by the 0.8 foot of PSH measured in monitor well MW-3.

- Inorganic chemical analyses of water samples indicate that NMWQCC standards were exceeded for total dissolved solids (TDS), chloride, barium, iron, and manganese. However, TDS and chloride concentrations were also exceeded in samples collected from upgradient wells.

- Actionable ground water is present along the entire southern fence line, which is shared with the Texaco gas plant, and extends 75 to 140 feet north of the fence.

- No significant source areas for contamination were identified within the boundary of the NNG facility.

To date, the soil contaminant data collected from borings and monitor wells have not substantiated any on-site releases that could have impacted ground water beneath the site. Further, the analytical data suggest that minimal hydrocarbon mass is contained within the soil column above the water table in the areas of investigation.

However, the results of this investigation do indicate that the ground water underlying the southern portion of the site has been significantly impacted by a release of petroleum hydrocarbons. Although the source(s) of this contamination have not been identified, the compositional difference between samples collected from monitor wells MW-2 and MW-3 suggests that separate sources may be responsible for the ground-water contamination identified at these two locations. Further investigation that addresses potential off-site sources would be necessary to characterize the source area(s) for the organic compounds detected in the ground water beneath the site.

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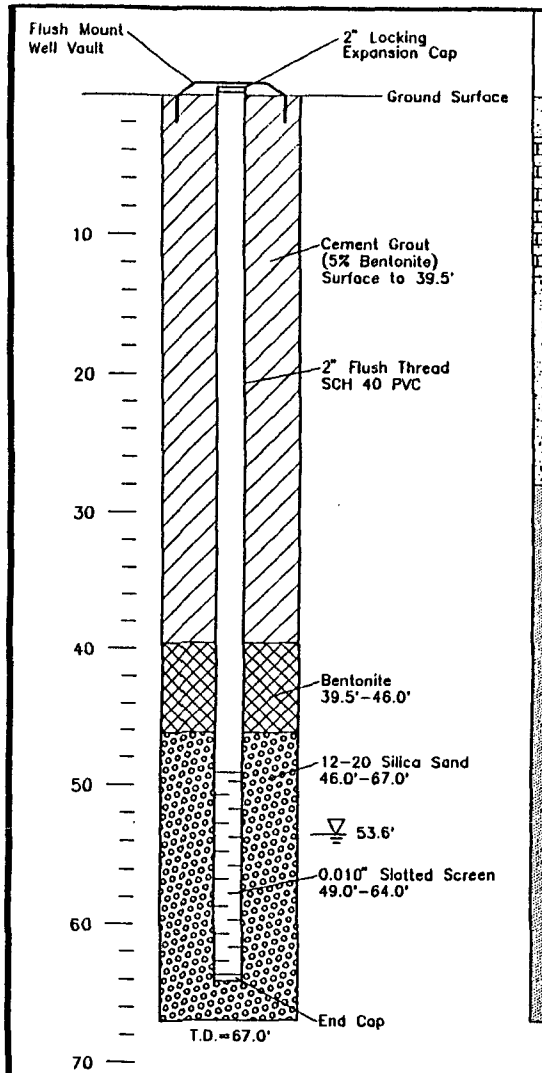
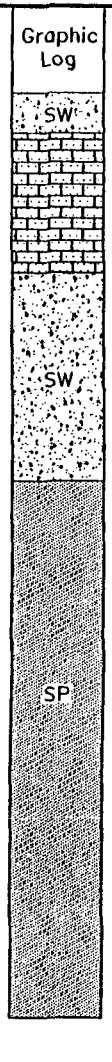
APPENDIX A

BORING LOGS AND SURVEY DATA





PID Reading (ppm)	Sampling Device	Comments and Lithology
	Cuttings	1 foot – Sand with gravel (SW), pale red (2.5 YR 6/2) to light gray (5 YR 7/1), fine-grained sand to 2mm gravel, poorly sorted, angular grains, damp, unconsolidated
2.9	Split Spoon	5 feet – Limestone with minor calcareous sandstone, very pale brown (10 YR 8/2), strongly consolidated, dry, minor pink limestone
61.7	Split Spoon	10 feet – Calcareous sandstone, white (10 YR 8/1), fine- to medium-grained, moderately sorted, subrounded grains, strongly to moderately consolidated, dry, carbonate matrix, matrix supported
55.8	Split Spoon	15 feet – Sandstone (SW), pink (7.5 YR 7/4), very fine- to fine-grained, moderately sorted, subangular grains, moderately to poorly consolidated, unconsolidated at 16'
38.2	Split Spoon	20 feet – Sand (SP), reddish yellow (5 YR 7/6), fine- to medium-grained, well sorted, subrounded grains, poorly consolidated to unconsolidated, moist
2.9	Split Spoon	25 feet – Sand (SW), reddish yellow (5 YR 6/6), very fine- to fine-grained, moderately sorted, subrounded grains, unconsolidated, moist
2.9	Split Spoon	30 feet – Sand (SP), pink (7.5 YR 7/3), very fine- to fine-grained, well sorted, subrounded to rounded grains, carbonate matrix, dry, poorly consolidated to unconsolidated
2.9	Split Spoon	35 feet – Sand (SP), yellowish red (5 YR 5/6), fine- to medium-grained, well sorted, rounded grains, carbonate cement, poorly consolidated to unconsolidated, dry
2.9	Split Spoon	40 feet – Sand (SP), yellowish red (5 YR 5/6), fine- to medium-grained, well sorted, rounded grains, unconsolidated, moist
2.9	Split Spoon	45 feet – Sand (SP), strong brown (7.5 YR 5/6), very fine- to fine-grained, well sorted, rounded grains, unconsolidated, moist. Strongly cemented layer at 46-46.5 feet
2.9	Split Spoon	50 feet – Same as 45 feet
2.9	Split Spoon	60 feet – Sand (SP), reddish brown (5 YR 5/4), fine- to medium-grained, well sorted, rounded grains, unconsolidated, saturated
		Note: Background PID reading = 2.9 ppm

Hydrologists: CMP
Driller: Eades Drilling
Date Completed: 10/4/94

Drilling Method: Air Rotary
Bit Diameter: 5.75 In.

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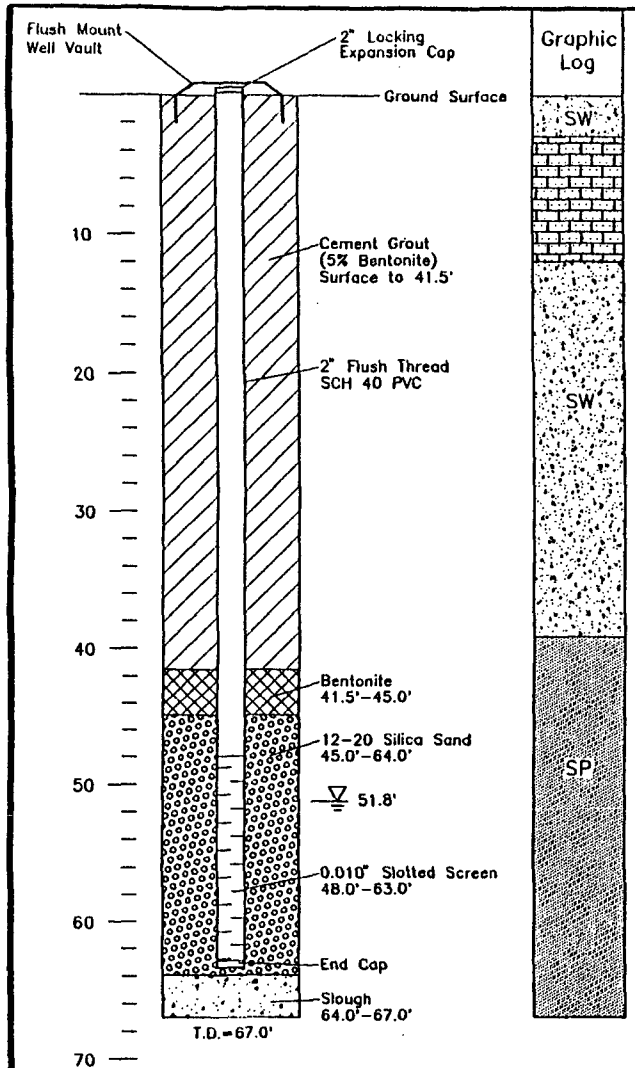
WELL LOG: MW-4



Graphic Log	PID Reading (ppm)	Sampling Device	Comments and Lithology
	11.1	Cuttings	1 foot – Silty sand (SW), very dark gray (2.5 Y 3/1), fine– to medium–grained, moderately sorted, rounded grains, slight plasticity, hydrocarbon stain and odor
	95.2	Split Spoon	5 feet – Calcareous sandstone, pale yellow (2.5 Y 8/3), silt to medium–grained sand, most grains carbonate, 10% quartz grains, poorly sorted, calcareous matrix, poorly consolidated, dry
	18.5	Split Spoon	10 feet – Same as above, except with black to gray mottling (hydrocarbon staining?)
	25.9	Split Spoon	15 feet – Silty sand (SW), pink (7.5 YR 7/3), silt to fine–grained, moderately sorted, subrounded to rounded grains, poorly consolidated to unconsolidated, calcareous matrix, dry
	25.9	Split Spoon	20 feet – Same as above
	3.7	Split Spoon	25 feet – Same as above
	3.7	Split Spoon	30 feet – Sand (SW), very pale brown (10 YR 7/3), fine– to medium–grained, moderately sorted, subrounded grains, damp, unconsolidated. Well sorted zone, also darker in color, brown at 28 to 31 feet. Strongly cemented, fine–grained calcareous sandstone at 33 to 34 feet
	3.7	Split Spoon	35 feet – Sand (SW), very pale brown (10 YR 7/3), fine– to medium–grained, moderately sorted, subrounded grains, unconsolidated to well consolidated layers, moist
	3.7	Split Spoon	40 feet – Sand (SP), brown (7.5 YR 5/4), fine– to medium–grained sand, well sorted, rounded grains, unconsolidated, wet, slight hydrocarbon odor
	62.8	Split Spoon	45 feet – Same as above, strong hydrocarbon odor, dissipates rapidly
	87.4	Split Spoon	50 feet – Sand (SP), yellowish red (7.5 YR 6/6), fine– to medium–grained, well sorted, rounded grains, unconsolidated, wet, hydrocarbon odor
	4.1	Cuttings	60 feet – Same as above
			Note: Background PID reading = 3.7 ppm

Hydrologists: CMP
Driller: Eades Drilling
Date Completed: 10/5/94

Drilling Method: Air Rotary
Bit Diameter: 6.5 In.

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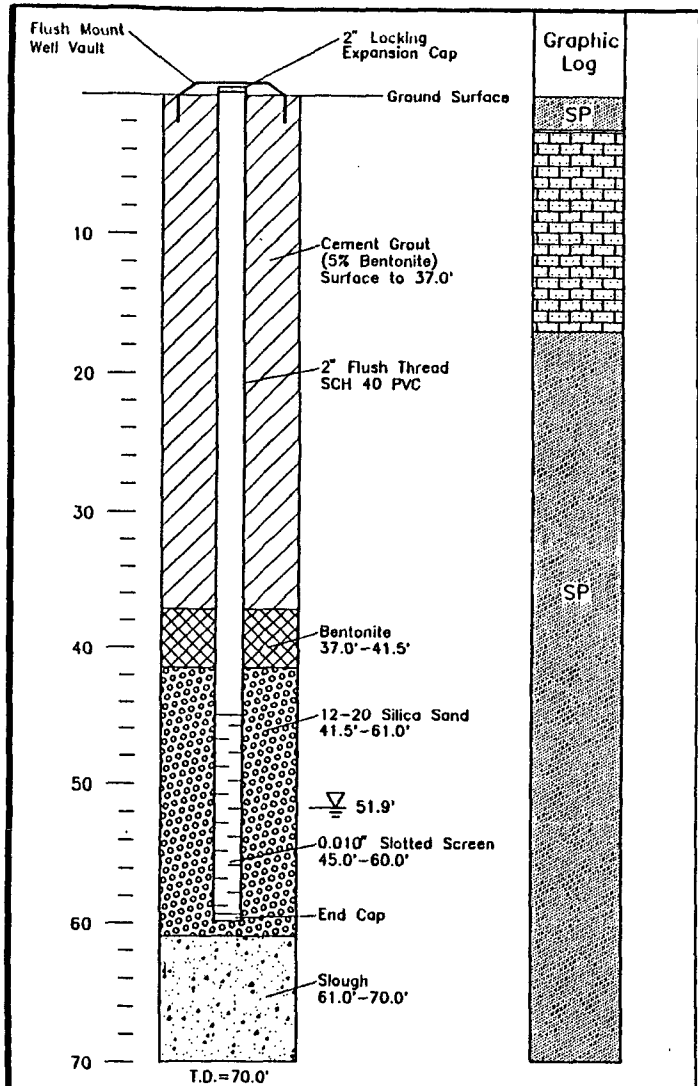
12-94 JN 4215

NNG EUNICE
Eunice, New Mexico

WELL LOG: MW–5



PID Reading (ppm)	Sampling Device	Comments and Lithology
2.9	Cuttings	2.5 feet – Sand (SP), black (7.5 YR 2.5/1), fine- to medium-grained, well sorted, subrounded grains, damp, unconsolidated
8.8	Split Spoon	5 feet – Calcareous sand (SW), white (10 YR 8/1), silt to medium- grained sand, mostly carbonate grains with minor quartz grains, poorly sorted, grains angular to rounded, poorly consolidated to unconsolidated, light gray stain mottling, dry
14.7	Split Spoon	10 feet – Same as above. End of gray staining at 14 feet
8.8	Split Spoon	15 feet – Calcareous sand (SW), pinkish white (7.5 YR 8/2), very fine- to fine-grained, 65% carbonate sand, 35% quartz, poorly sorted to moderately sorted, poorly consolidated to unconsolidated
2.9	Split Spoon	20 feet – Sand (SP), light brown (7.5 YR 6/4), very fine- to fine-grained, well sorted, subrounded grains, mostly unconsolidated, damp, slightly cemented
8.8	Split Spoon	25 feet – Same as above
2.9	Split Spoon	30 feet – Sand (SP), light brown (7.5 YR 6/4), fine- to medium-grained, well sorted, subrounded to rounded grains, unconsolidated, damp, slightly cemented
2.9	Cuttings	35 feet – Same as above, except lighter in color
2.9	Split Spoon	40 feet – Same as above, light yellowish brown (10 YR 6/4), thin cemented layers
2.9	Cuttings	45 feet – Same as above, except moist
2.9	Split Spoon	50 feet – Same as above
2.9	Split Spoon	60 feet – Same as above, except wet
		Note: Background PID reading = 2.9 ppm

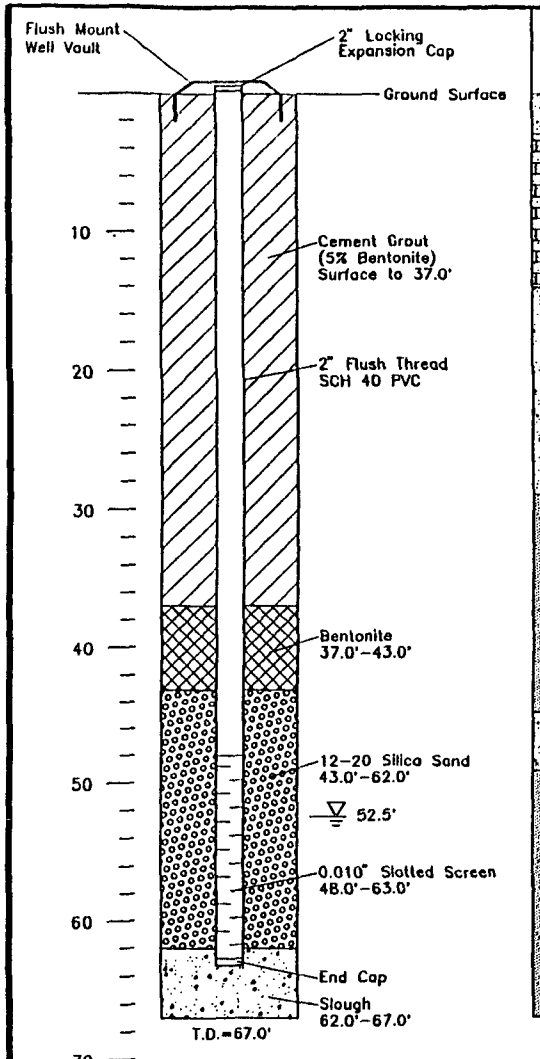
Hydrologists: CMP
Driller: Eades Drilling
Date Completed: 10/5/94

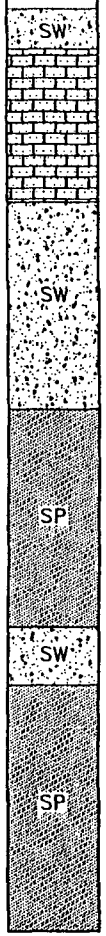
Drilling Method: Air Rotary
Bit Diameter: 5.75 In.

DANIEL B. STEPHENS & ASSOCIATES, INC.
12-94 JN 4215

NNG EUNICE
Eunice, New Mexico

WELL LOG: MW-6





PID Reading (ppm)	Sampling Device	Comments and Lithology
4.1	Cuttings	2 feet – Sand with silt (SW), dark brown (7.5 YR 3/2), mostly medium-grained, poorly to moderately sorted, subrounded grains, unconsolidated, moist, possible hydrocarbon staining
4.1	Split Spoon	5 feet – Calcareous sandstone, pinkish white (7.5 YR 8/2), carbonate silt matrix, medium-grained, quartz grains, poorly sorted, quartz grains rounded, poorly to moderately consolidated, dry
4.1	Split Spoon	10 feet – Same as above
4.1	Split Spoon	15 feet – Silty sand (SW), pinkish white (5 YR 8/2) silt to fine- grained sand, poorly sorted, rounded grains, moderately to poorly consolidated, calcareous matrix of silt-size particles, dry, faint hydrocarbon odor
4.1	Split Spoon	20 feet – Same as above, little darker pink (5 YR 7/4), poorly consolidated
4.1	Split Spoon	25 feet – Same as above
4.1	Split Spoon	30 feet – Sand (SP), pale brown (10 YR 6/3), fine- to medium-grained, well sorted (clean), subrounded to rounded grains, unconsolidated, damp
4.1	Split Spoon	35 feet – Sand (SP), strong brown (7.5 YR 5/6), fine- to medium-grained, well sorted, subrounded grains, unconsolidated, moist, layers of strongly cemented sandstone, carbonate cement
4.1	Split Spoon	40 feet – Same as above, fewer cemented layers, mostly unconsolidated
4.1	Split Spoon	46 feet – Silty sand (SP), reddish brown (10 YR 5/4), very fine- to fine-grained, well sorted, rounded grains, unconsolidated with strongly cemented layers, carbonate cement, damp
4.1	Split Spoon	50 feet – Sand (SP), yellowish red (5 YR 5/6), fine- to medium-grained, well sorted, rounded grains, unconsolidated, wet, faint hydrocarbon odor
4.1	Cuttings	55 feet – Same as above, with minor 1/4" gravel
		Note: Background PID reading = 4.1 ppm

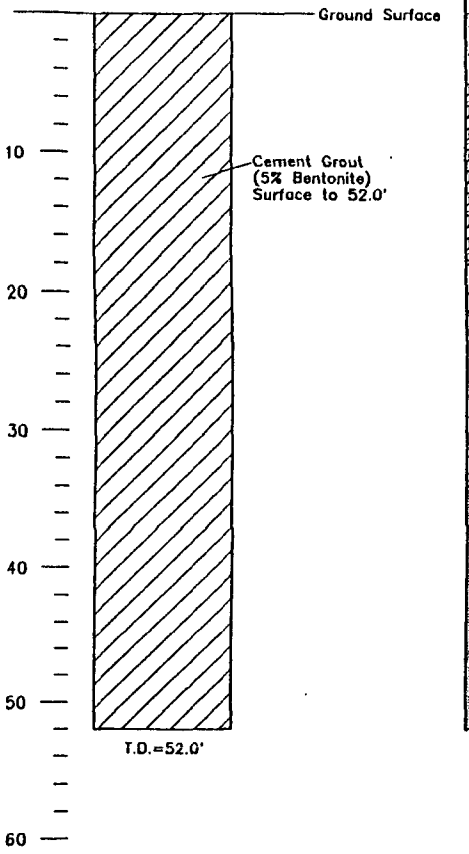
Hydrologists: CMP
Driller: Eades Drilling
Date Completed: 10/6/94

Drilling Method: Air Rotary
Bit Diameter: 6.5 In.

DANIEL B. STEPHENS & ASSOCIATES, INC.
12-94 JN 4215

NNG EUNICE
Eunice, New Mexico

WELL LOG: MW-7



Graphic Log	PID Reading (ppm)	Sampling Device	Comments and Lithology
SW		Cuttings	0 feet – Sand with silt (SW), dark gray, fine– to medium–grained, moderately sorted, rounded grains, possible hydrocarbon staining
	3.1	Split Spoon	3 feet – Calcareous (SW), brown (10 YR 5/3), mixed with silt to gravel size grains, mostly medium– to coarse–grained sand, unconsolidated, dry
	9.3		5.5 feet – Sandy limestone and calcareous sand, very pale brown (10 YR 8/3), minor medium–grained, well rounded, quartz grains in silty calcareous matrix, poorly consolidated, dry, hydrocarbon odor
	3.1	Split Spoon	10 feet – Same as above except moderately consolidated
	3.1	Split Spoon	15 feet – Same as above except increased sand content with depth
	3.1	Split Spoon	18 feet – Sand (SP), pinkish white (7.5 YR 8/2), fine–grained, well sorted, rounded grains, calcareous matrix, matrix supported, poorly consolidated, dry
SW	3.1	Split Spoon	25 feet – Silty sand (SW), pink (7.5 YR 7/4), silt to fine–grained, poorly sorted, subrounded grains, unconsolidated, dry
	3.1	Split Spoon	30 feet – Same as above, hydrocarbon odor
	3.1	Split Spoon	34 feet – Sand (SP), pink (7.5 YR 7/3), fine– to medium–grained, well sorted, rounded grains, unconsolidated, damp, hydrocarbon odor
SP	3.1	Split Spoon	40 feet – Sand with silt (SP), yellowish red (5 YR 5/6), very fine– to medium–grained, moderately sorted, unconsolidated, moist, some layers of moderately cemented sandstone, hydrocarbon odor
	3.1	Split Spoon	45 feet – Sand (SP), yellowish red (5 YR 5/6), same as above, unconsolidated
	15.6	Split Spoon	50 feet – Same as above. Hydrocarbon oil staining (dark gray), strong hydrocarbon odor at 51.7 to 52 feet

Note: Background PID reading = 3.1 ppm

Hydrologists: CMP
Driller: Eades Drilling
Date Completed: 10/7/94

Drilling Method: Air Rotary
Bit Diameter: 6.5 In.

DANIEL B. STEPHENS & ASSOCIATES, INC.
12-94 JN 4215

NNG EUNICE
Eunice, New Mexico

BORING LOG: SB–1

AREA 505
393-3942

AREA 505
393-3117

JOHN WEST
ENGINEERING
COMPANY
EMPLOYEE OWNED

412 North Dal Paso
Hobbs, New Mexico 88240

October 10, 1994

Bob Morley
Daniel B. Stephens & Associates, Inc.
6020 Academy NE, Suite 100
Albuquerque, New Mexico 87109

Dear Bob:

Here are the results of the Survey performed at the Enron Eunice Plant in Sec.27, T22S, R37E, Lea County, New Mexico on October 07,1994.

WELL NO	NORTH (Y)	EAST (X)	ELEV. GROUND	ELEV. TOP/PVC
MW-1	2+67.9	-1+97.7	3335.83	3337.94
MW-2	0+02.1	-1+57.3	3334.74	3336.75
MW-3	0+81.0	-4+42.2	3335.61	3337.72
MW-4	2+50.7	-4+30.3	3336.11	3335.93
MW-5	0+47.4	-0+10.6	3334.36	3334.17
MW-6	0+88.9	-0+82.8	3334.33	3334.20
MW-7	0+94.2	-2+94.4	3334.83	3334.73
SB-1	0+16.0	-4+29.9	3335.45	N/A

NOTE: North (Y) 0+00 East (X) 0+00 is a rebar with Aluminum cap marked "N 0+00 E 0+00" at the southeast corner of the plant. Elev.-3333.96

Please feel free to contact me if we can be of any further assistance.

Sincerely,

Gary Eidson

GE/ca

APPENDIX B

ANALYTICAL LABORATORY REPORTS

Soil Vapor Analyses

CHAIN-OF-CUSTODY RECORD

[redacted]

Client: DANIEL B, STEPHENS & ASSOC	Project Name: ENRON - EUNICE
Address: 6020 ACADEMY NE #100 ALBUQUERQUE NM 87109	Project #: 4215
	Project Manager: BOB MARLEY
Phone #: 505-822-9400	Sampler: CMP/BM
Fax #: 505-822-8877	Samples Cold? ☐ Yes ☒ No

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HCl	Preservative: Other	[redacted]
10/6/94	1155	VAPOR	MW-5	1L			NONE	
10/7/94	1235	VAPOR	SB-1	1L			NONE	

ANALYSIS REQUEST

BTEX (Method 602/8020)	BTEX + MTBE (602/8020)	TPH Method 8015 MOD (Gas/Diesel)	BTEX + TPH + MTBE (Gasoline Only)	BTEX + MTBE + TPH (Gas + Diesel)	TPH (Method 418.1)	601/602 Volatiles	EDB (Method 504.1)	EDC	610 (PNA or PAH)	EXTENDED REFINERY GASES		Air Bubbles or Headspace (Y or N)
X										X		
X										X		

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
10/7/94	1430	Cheree Pryor	Bernadette A. Jones
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
			Tom Thompson

Remarks:
- Received Samples on 10/11/94

WESTERN ATLAS

Core Laboratories

LABORATORY TESTS RESULTS
11/07/94

JOB NUMBER: 945277 CUSTOMER: DANIEL B. STEPHENS & ASSOCIATES ATTN: BOB MARLEY

CLIENT I.D.....: Enron-Eunice #4215
DATE SAMPLED.....: 10/06/94
TIME SAMPLED.....: 11:55
WORK DESCRIPTION...: MW-5

LABORATORY I.D...: 945277-0001
DATE RECEIVED....: 10/11/94
TIME RECEIVED....: 12:24
REMARKS.....: Cylinder# 1545

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Benzene, Toluene, Xylenes in Gas		*1			10/20/94	MJW
Benzene	19	1	ppm v/v			
Toluene	10	1	ppm v/v			
Ethyl Benzene	1	1	ppm v/v			
meta-Xylene	<1	1	ppm v/v			
para-Xylene	<1	1	ppm v/v			
ortho-Xylene	<1	1	ppm v/v			
Refinery Gas Analysis, Extended		*1			10/20/94	MJW
Hydrogen	<0.01	0.01	Mol %	ASTM D-1945		
Oxygen	17.78	0.01	Mol %	ASTM D-1945		
Nitrogen	82.05	0.01	Mol %	ASTM D-1945		
Carbon Monoxide	<0.01	0.01	Mol %	ASTM D-1946		
Carbon Dioxide	<0.01	0.01	Mol %	ASTM D-1945		
Hydrogen Sulfide	<0.01	0.01	Mol %			
Methane	0.1095	0.0001	Mol %	ASTM D-1945		
Ethylene	<0.0001	0.0001	Mol %	ASTM D-1946		
Ethane	0.0116	0.0001	Mol %	ASTM D-1945		
Propylene	<0.0001	0.0001	Mol %	ASTM D-2163		
Propane	0.0143	0.0001	Mol %	ASTM D-1945		
Isobutane	0.0034	0.0001	Mol %	ASTM D-1945		
Isobutylene	<0.0001	0.0001	Mol %	ASTM D-2163		
1-Butene	<0.0001	0.0001	Mol %	ASTM D-2163		
n-Butane	0.0201	0.0001	Mol %	ASTM D-1945		
trans-2-Butene	<0.0001	0.0001	Mol %	ASTM D-2163		
cis-2-Butene	<0.0001	0.0001	Mol %	ASTM D-2163		
Isopentane	0.0033	0.0001	Mol %	ASTM D-2163		
n-Pentane	0.0011	0.0001	Mol %	ASTM D-2163		
Hexanes	0.0017	0.0001	Mol %			
Heptanes	0.0033	0.0001	Mol %			
Octanes	0.0015	0.0001	Mol %			
Nonanes	0.0002	0.0001	Mol %			
Decanes	<0.0001	0.0001	Mol %			
Undecanes	<0.0001	0.0001	Mol %			
Dodecanes Plus	<0.0001	0.0001	Mol %			
Total	100.00	0.01	Mol %			

P O BOX 34766
HOUSTON, TX 77234-4282
(713) 943-9776

WESTERN ATLAS

Core Laboratories

LABORATORY TESTS RESULTS
11/07/94

JOB NUMBER: 945277 CUSTOMER: DANIEL B. STEPHENS & ASSOCIATES ATTN: BOB MARLEY

CLIENT I.D.....: Enron-Eunice #4215
DATE SAMPLED.....: 10/07/94
TIME SAMPLED.....: 12:35
WORK DESCRIPTION...: SB-1

LABORATORY I.D...: 945277-0002
DATE RECEIVED....: 10/11/94
TIME RECEIVED....: 12:24
REMARKS.....: Cylinder# 1548

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Benzene, Toluene, Xylenes in Gas		*1			10/20/94	MJW
Benzene	8	1	ppm v/v			
Toluene	9	1	ppm v/v			
Ethyl Benzene	3	1	ppm v/v			
meta-Xylene	1	1	ppm v/v			
para-Xylene	<1	1	ppm v/v			
ortho-Xylene	<1	1	ppm v/v			
Refinery Gas Analysis, Extended		*1			10/20/94	MJW
Hydrogen	<0.01	0.01	Mol %	ASTM D-1945		
Oxygen	19.06	0.01	Mol %	ASTM D-1945		
Nitrogen	80.86	0.01	Mol %	ASTM D-1945		
Carbon Monoxide	<0.01	0.01	Mol %	ASTM D-1946		
Carbon Dioxide	<0.01	0.01	Mol %	ASTM D-1945		
Hydrogen Sulfide	<0.01	0.01	Mol %			
Methane	0.0404	0.0001	Mol %	ASTM D-1945		
Ethylene	<0.0001	0.0001	Mol %	ASTM D-1946		
Ethane	0.0054	0.0001	Mol %	ASTM D-1945		
Propylene	<0.0001	0.0001	Mol %	ASTM D-2163		
Propane	0.0057	0.0001	Mol %	ASTM D-1945		
Isobutane	0.0034	0.0001	Mol %	ASTM D-1945		
Isobutylene	<0.0001	0.0001	Mol %	ASTM D-2163		
1-Butene	<0.0001	0.0001	Mol %	ASTM D-2163		
n-Butane	0.0076	0.0001	Mol %	ASTM D-1945		
trans-2-Butene	<0.0001	0.0001	Mol %	ASTM D-2163		
cis-2-Butene	<0.0001	0.0001	Mol %	ASTM D-2163		
Isopentane	0.0034	0.0001	Mol %	ASTM D-2163		
n-Pentane	0.0024	0.0001	Mol %	ASTM D-2163		
Hexanes	0.0051	0.0001	Mol %			
Heptanes	0.0069	0.0001	Mol %			
Octanes	0.0045	0.0001	Mol %			
Nonanes	0.0009	0.0001	Mol %			
Decanes	0.0008	0.0001	Mol %			
Undecanes	0.0008	0.0001	Mol %			
Dodecanes Plus	0.0007	0.0001	Mol %			
Total	100.00	0.01	Mol %			

P O BOX 34766
HOUSTON, TX 77234-4282
(713) 943-9776

WESTERN ATLAS

Core Laboratories

CORE LABORATORIES
A N A L Y T I C A L R E P O R T

Job Number: 945277
Prepared For:

DANIEL B. STEPHENS & ASSOCIATES
BOB MARLEY
6020 ACADEMY NE
ALBUQUERQUE, NM 87109

Date: 11/07/94

Signature M. Jean Waits

11-7-94
Date:

Name: M. Jean Waits

CORE LABORATORIES
P O BOX 34766
HOUSTON, TX 77234-4282

Title: Supervising Chemist

Organic Analyses

Hall Environmental Analysis Laboratory

Hall Environmental Analysis Laboratory
2403 San Mateo NE, Suite P-13
Albuquerque, NM 87110

10/17/94

Daniel B. Stephens and Associates, Inc.
6020 Academy NE, Suite 100
Albuquerque, NM 87109

Dear Mr. Bob Marley,

Enclosed are the results for the analyses that were requested. These were done according to EPA procedures or the equivalent.

Detection limits are determined by EPA methodology. Unless noted on sample page, all criteria for QA/QC acceptance levels fall within established parameters. These parameters are modeled from the EPA-600 14-79 019, March 1979, "Handbook for Analytical Quality Control in Water and Waste Water."

Please don't hesitate to contact me for any additional information or clarifications

Sincerely,

Scott Hallenbeck 10/21/94

Scott Hallenbeck, Lab Manager

Project: ENRON - Eunice

Results for sample: MW-5

Date collected: 10/6/94	Date received: 10/10/94
Date extracted: NA	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-1
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	70	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,4-Dichlorobenzene	nd	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	nd	0.2	PPB (UG/L)
1,2-Dichloroethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	nd	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	44	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	0.9	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 100 %
BCM (Surrogate) Recovery = 90 %
Dilution Factor = 1

Results for sample: MW-5

Date collected: 10/6/94	Date received: 10/10/94
Date extracted: 10/12/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410026-1
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	0.5	0.5	PPB (UG/L)
2-Methyl Naphthalene	nd	0.5	PPB (UG/L)
1-Methyl Naphthalene	nd	0.5	PPB (UG/L)
Acenaphthalene	nd	0.5	PPB (UG/L)
Acenaphthene	0.8	0.5	PPB (UG/L)
Fluorene	nd	0.5	PPB (UG/L)
Phenanthrene	nd	0.5	PPB (UG/L)
Anthracene	nd	0.5	PPB (UG/L)
Fluoranthrene	nd	0.5	PPB (UG/L)
Pyrene	nd	0.5	PPB (UG/L)
Benzo (a) anthracene	nd	0.5	PPB (UG/L)
Chrysene	nd	0.5	PPB (UG/L)
Benzo (b) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (k) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (a) pyrene	nd	0.5	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	1.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	1.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	1.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = 80 %

Dilution Factor = 1

Results for sample: MW-5

Date collected: 10/6/94	Date received: 10/10/94
Date extracted: 10/12/94	Date analyzed: 10/12,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410026-1
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	0.27	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 118 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 96 %

Dilution Factor = 1

Results for sample: MW-7

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: NA	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-2
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	8.1	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,4-Dichlorobenzene	nd	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	nd	0.2	PPB (UG/L)
1,2-Dichloroethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	nd	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	42	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	99	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 86 %
BCM (Surrogate) Recovery = 101 %
Dilution Factor = 1

Results for sample: MW-7

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/12/94	Date analyzed: 10/12,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410026-2
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	1.2	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 107 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 129

Dilution Factor = 1

Results for sample: MW-99

Date collected: NA	Date received: 10/10/94
Date extracted: NA	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-3
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	71	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,4-Dichlorobenzene	nd	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	nd	0.2	PPB (UG/L)
1,2-Dichloroethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	nd	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	43	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	1.6	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 105 %
BCM (Surrogate) Recovery = 98 %
Dilution Factor = 1

Results for sample: MW-99

Date collected: NA	Date received: 10/10/94
Date extracted: 10/12/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410026-3
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	nd	0.5	PPB (UG/L)
2-Methyl Naphthalene	nd	0.5	PPB (UG/L)
1-Methyl Naphthalene	nd	0.5	PPB (UG/L)
Acenaphthalene	nd	0.5	PPB (UG/L)
Acenaphthene	nd	0.5	PPB (UG/L)
Fluorene	0.7	0.5	PPB (UG/L)
Phenanthrene	nd	0.5	PPB (UG/L)
Anthracene	nd	0.5	PPB (UG/L)
Fluoranthrene	nd	0.5	PPB (UG/L)
Pyrene	nd	0.5	PPB (UG/L)
Benzo (a) anthracene	nd	0.5	PPB (UG/L)
Chrysene	nd	0.5	PPB (UG/L)
Benzo (b) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (k) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (a) pyrene	nd	0.5	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	1.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	1.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	1.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = 89 %

Dilution Factor = 1

Results for sample: MW-99

Date collected: NA	Date received: 10/10/94
Date extracted: 10/12/94	Date analyzed: 10/12,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410026-3
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	0.26	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 110 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 112 %

Dilution Factor = 1

Results for sample: Trip Blank

Date collected: NA	Date received: 10/10/94
Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-4
Project Manager: Bob Marley	Sampled by: NA
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	nd	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,4-Dichlorobenzene	nd	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	nd	0.2	PPB (UG/L)
1,2-Dichloroethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	nd	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	nd	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	nd	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 81 %
BCM (Surrogate) Recovery = 89 %
Dilution Factor = 1

Results for sample: Trip Blank

Date collected: NA	Date received: 10/10/94
Date extracted: NA	Date analyzed: 10/16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410026-4
Project Manager: Bob Marley	Sampled by: NA
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 96 %

Dilution Factor = 1

Results for sample: MW-5 @ 52'

Date collected: 10/6/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-5
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 72 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 82 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 87 %

Dilution Factor = 1

Results for sample: MW-7 @ 17'

Date collected: 10/6/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-6
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 78 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 88 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 84 %

Dilution Factor = 1

Results for sample: MW-7 @ 52'

Date collected: 10/6/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-7
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 80 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 89 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 86 %

Dilution Factor = 1

Results for sample: SB-1 @ 7'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-8
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 85 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 97 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 102 %

Dilution Factor = 1

Results for sample: SB-1 @ 10-12'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-9
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 81 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 92 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 72 %

Dilution Factor = 1

Results for sample: SB-1 @ 15-17'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-10
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 90 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 100 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 94 %

Dilution Factor = 1

Results for sample: SB-1 @ 20-22'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-11
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 83 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 96 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 76 %

Dilution Factor = 1

Results for sample: SB-1 @ 27'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-12
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 82 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 97 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 81 %

Dilution Factor = 1

Results for sample: SB-1 @ 32'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-13
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 80 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 96 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 87 %

Dilution Factor = 1

Results for sample: SB-1 @ 37'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-14
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 81 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 88 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 101 %

Dilution Factor = 1

Results for sample: SB-1 @ 42'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-15
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 88 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 100 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 91 %

Dilution Factor = 1

Results for sample: SB-1 @ 47'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-16
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 84 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 96 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 75 %

Dilution Factor = 1

Results for sample: SB-1 @ 52'

Date collected: 10/7/94	Date received: 10/10/94
Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410026-17
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	0.17	0.05	PPM (MG/KG)
Total Xylenes	0.84	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 107 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	110	10	PPM (MG/KG)

BFB (Surrogate) Recovery = ** %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	570	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 72 %

Dilution Factor = 1

** Surrogate non-recoverable due to matrix interference

Results for QC: Reagent Blank

Date extracted: NA	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: RB 10/15
Project Manager: Bob Marley	
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	nd	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,4-Dichlorobenzene	nd	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	nd	0.2	PPB (UG/L)
1,2-Dichloroethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	nd	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	nd	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	nd	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 97 %
BCM (Surrogate) Recovery = 85 %
Dilution Factor = 1

Results for QC: Reagent Blank

Date extracted: 10/12/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: RB 10/12
Project Manager: Bob Marley	
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	nd	0.5	PPB (UG/L)
2-Methyl Naphthalene	nd	0.5	PPB (UG/L)
1-Methyl Naphthalene	nd	0.5	PPB (UG/L)
Acenaphthalene	nd	0.5	PPB (UG/L)
Acenaphthene	nd	0.5	PPB (UG/L)
Fluorene	nd	0.5	PPB (UG/L)
Phenanthrene	nd	0.5	PPB (UG/L)
Anthracene	nd	0.5	PPB (UG/L)
Fluoranthrene	nd	0.5	PPB (UG/L)
Pyrene	nd	0.5	PPB (UG/L)
Benzo (a) anthracene	nd	0.5	PPB (UG/L)
Chrysene	nd	0.5	PPB (UG/L)
Benzo (b) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (k) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (a) pyrene	nd	0.5	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	1.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	1.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	1.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = 76 %

Dilution Factor = 1

Results for QC: Reagent Blank

Date extracted: 10/12/94	Date analyzed: 10/12,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: RB 10/12,16
Project Manager: Bob Marley	
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 93 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 110 %

Dilution Factor = 1

Results for QC: Reagent Blank

Date extracted: 10/11/94	Date analyzed: 10/12/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: RB 10/11
Project Manager: Bob Marley	
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 97 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 105 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 72 %

Dilution Factor = 1

Results for QC: Matrix Spike / Matrix Spike Dup

Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410022-1 MS/MSD
Project Manager: Bob Marley	
Matrix: Aqueous	Units: PPB (UG/L)

Test: EPA 8010/8020

Compound	Sample Result	Amount Added	Matrix Recov.	MS %	MSD Recov.	MSD %	RPD
Chlorobenzene	<0.2	20.0	18.1	91	18.0	90	1
Ethylbenzene	<0.5	20.0	17.6	88	17.7	89	1
1,1-DCE	<0.2	20.0	16.6	83	16.9	85	2
Trans-1,2-DCE	<0.2	20.0	16.6	83	16.4	82	1
Carbon Tetrachloride	<0.2	20.0	18.7	94	17.9	90	4
1,2-DCA	<0.2	20.0	18.5	93	16.8	84	10
1,2-Dichloro-propane	<0.2	20.0	18.4	92	17.6	88	4
1,1,2-TCA	<0.2	20.0	17.9	90	16.3	82	9
PCE	<0.2	20.0	17.8	89	16.6	83	7
1,3-Dichloro-benzene	<0.2	20.0	18.4	92	16.5	83	11
1,3-Dichloro-benzene	<0.2	20.0	19.3	97	17.7	89	9

Results for QC: Blank Spike/Blank Spike Dup

Date extracted: 10/12/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: BS/BSD 10/12
Project Manager: Bob Marley	
Matrix: Aqueous	Units: PPB (UG/L)

Test: EPA 8100

Compound	Sample Result	Amount Added	Blank Recov.	BS %	BSD Recov.	BSD %	RPD
Naphthalene	<0.5	10.0	7.5	75	8.5	85	13
Acenaphthylene	<0.5	10.0	7.9	79	8.5	85	7
Acenaphthene	<0.5	10.0	7.9	79	8.5	85	7
Flourene	<0.5	10.0	9.2	92	9.1	91	1
Phenanthrene	<0.5	10.0	10.2	102	9.8	98	4
Anthracene	<0.5	10.0	10.7	107	9.5	95	12
Pyrene	<0.5	10.0	9.6	96	9.7	97	1
Benzo(a)pyrene	<0.5	10.0	9.4	94	11.4	114	19
Benzo(g,h,i)-perylene	<1.0	10.0	10.0	100	11.1	111	11

Results for QC: Blank Spike / Blank Spike Dup

Date extracted: 10/11/94	Date analyzed: 10/11,13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: BS/BSD 10/11,13
Project Manager: Bob Marley	
Matrix: Aqueous	Units: PPM (MG/L)

Test: EPA 8015 Modified

Compound	Sample Result	Amount Added	Blank Recov.	BS %	BSD Recov.	BSD %	RPD
Gasoline	<0.05	0.50	0.54	108	0.51	102	6

Test: EPA 8015 Modified

Compound	Sample Result	Amount Added	Blank Recov.	BS %	BSD Recov.	BSD %	RPD
Diesel	<1.0	5.4	6.3	117	5.6	104	12

Results for QC: Matrix Spike / Matrix Spike Dup

Date extracted: 10/10/94	Date analyzed: 10/11/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-8 MS/MSD
Project Manager: Bob Marley	9410026-12 MS/MSD
Matrix: Non-Aqueous	Units: PPM (MG/KG)

Test: EPA 8020

Compound	Sample Result	Amount Added	Matrix Recov.	MS %	MSD Recov.	MSD %	RPD
Benzene	<0.05	1.00	0.96	96	0.84	84	13
Toluene	<0.05	1.00	1.05	105	0.93	93	12
Ethylbenzene	<0.05	1.00	0.97	97	0.87	87	11
Total Xylenes	<0.05	3.00	3.09	103	2.79	93	10

Test: EPA 8015 Modified

Compound	Sample Result	Amount Added	Matrix Recov.	MS %	MSD Recov.	MSD %	RPD
Gasoline	<10	50	36	72	38	76	5

Test: EPA 8015 Modified

Compound	Sample Result	Amount Added	Matrix Recov.	MS %	MSD Recov.	MSD %	RPD
Diesel	<10	54	49	91	54	100	10

Hall Environmental Analysis Laboratory

Hall Environmental Analysis Laboratory
2403 San Mateo NE, Suite P-13
Albuquerque, NM 87110

10/21/94

Daniel B. Stephens and Associates, Inc.
6020 Academy NE, Suite 100
Albuquerque, NM 87109

Dear Mr. Bob Marley,

Enclosed are the results for the analyses that were requested. These were done according to EPA procedures or the equivalent.

Detection limits are determined by EPA methodology. Unless noted on sample page, all criteria for QA/QC acceptance levels fall within established parameters. These parameters are modeled from the EPA-600 14-79 019, March 1979, "Handbook for Analytical Quality Control in Water and Waste Water."

Please don't hesitate to contact me for any additional information or clarifications.

Sincerely,

Scott Hallenbeck 10/21/94

Scott Hallenbeck, Lab Manager

Project: ENRON - Eunice

Results for sample: MW-1

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-1
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	1.6	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	0.8	0.2	PPB (UG/L)
1,4-Dichlorobenzene	0.9	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	nd	0.2	PPB (UG/L)
1,2-Dichloroethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	0.3	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	0.3	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	1.1	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	0.6	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	0.9	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 91 %
BCM (Surrogate) Recovery = 92 %
Dilution Factor = 1

Results for sample: MW-1

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-1
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	nd	0.5	PPB (UG/L)
2-Methyl Naphthalene	nd	0.5	PPB (UG/L)
1-Methyl Naphthalene	0.9	0.5	PPB (UG/L)
Acenaphthalene	nd	0.5	PPB (UG/L)
Acenaphthene	nd	0.5	PPB (UG/L)
Fluorene	nd	0.5	PPB (UG/L)
Phenanthrene	nd	0.5	PPB (UG/L)
Anthracene	nd	0.5	PPB (UG/L)
Fluoranthrene	nd	0.5	PPB (UG/L)
Pyrene	nd	0.5	PPB (UG/L)
Benzo (a) anthracene	nd	0.5	PPB (UG/L)
Chrysene	nd	0.5	PPB (UG/L)
Benzo (b) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (k) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (a) pyrene	nd	0.5	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	1.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	1.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	1.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = 94 %

Dilution Factor = 1

Results for sample: MW-1

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: 10/11/94	Date analyzed: 10/11,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-1
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	0.08	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 100 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 108 %

Dilution Factor = 1

Results for sample: MW-3

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-2
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	3,000	10	PPB (UG/L)
Bromodichloromethane	nd	4.0	PPB (UG/L)
Bromoform	nd	20	PPB (UG/L)
Bromomethane	nd	20	PPB (UG/L)
Carbon Tetrachloride	nd	4.0	PPB (UG/L)
Chlorobenzene	nd	4.0	PPB (UG/L)
Chloroethane	nd	4.0	PPB (UG/L)
Chloroform	nd	4.0	PPB (UG/L)
Chloromethane	nd	4.0	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	20	PPB (UG/L)
Dibromochloromethane	nd	4.0	PPB (UG/L)
1,3-Dichlorobenzene	nd	4.0	PPB (UG/L)
1,2-Dichlorobenzene	nd	4.0	PPB (UG/L)
1,4-Dichlorobenzene	nd	4.0	PPB (UG/L)
Dichlorodifluoromethane	nd	4.0	PPB (UG/L)
1,1-Dichloroethane	nd	4.0	PPB (UG/L)
1,2-Dichloroethane	nd	4.0	PPB (UG/L)
1,1-Dichloroethene	nd	4.0	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	4.0	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	4.0	PPB (UG/L)
1,2-Dichloropropane	nd	4.0	PPB (UG/L)
cis-1,3-Dichloropropene	nd	4.0	PPB (UG/L)
trans-1,3-Dichloropropene	nd	4.0	PPB (UG/L)
Ethylbenzene	1,200	10	PPB (UG/L)
Dichloromethane	nd	20	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	4.0	PPB (UG/L)
Tetrachloroethene (PCE)	nd	4.0	PPB (UG/L)
Toluene	1,000	10	PPB (UG/L)
1,1,1-Trichloroethane	nd	4.0	PPB (UG/L)
1,1,2-Trichloroethane	nd	4.0	PPB (UG/L)
Trichloroethene (TCE)	nd	4.0	PPB (UG/L)
Vinyl Chloride	nd	4.0	PPB (UG/L)
Xylenes (Total)	2,600	10	PPB (UG/L)
Trichlorofluoromethane	nd	4.0	PPB (UG/L)
MTBE	nd	50	PPB (UG/L)

BFB (Surrogate) Recovery = 89 %
BCM (Surrogate) Recovery = 80 %
Dilution Factor = 20

Results for sample: MW-3

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-2
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	95	1.0	PPB (UG/L)
2-Methyl Naphthalene	88	1.0	PPB (UG/L)
1-Methyl Naphthalene	200	1.0	PPB (UG/L)
Acenaphthalene	nd	1.0	PPB (UG/L)
Acenaphthene	17	1.0	PPB (UG/L)
Fluorene	15	1.0	PPB (UG/L)
Phenanthrene	nd	1.0	PPB (UG/L)
Anthracene	nd	1.0	PPB (UG/L)
Fluoranthrene	nd	1.0	PPB (UG/L)
Pyrene	130	1.0	PPB (UG/L)
Benzo (a) anthracene	nd	1.0	PPB (UG/L)
Chrysene	nd	1.0	PPB (UG/L)
Benzo (b) fluoranthene	nd	1.0	PPB (UG/L)
Benzo (k) fluoranthene	nd	1.0	PPB (UG/L)
Benzo (a) pyrene	nd	1.0	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	2.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	2.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	2.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = ** %

Dilution Factor = 1

** Surrogate non-recoverable due to matrix interference

Results for sample: MW-3

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: 10/11/94	Date analyzed: 10/11,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-2
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	19	1.0	PPM (MG/L)

BFB (Surrogate) Recovery = 118 %

Dilution Factor = 20

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	12	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 111 %

Dilution Factor = 1

Results for sample: MW-2

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-3
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	6,300	20	PPB (UG/L)
Bromodichloromethane	nd	8.0	PPB (UG/L)
Bromoform	nd	20	PPB (UG/L)
Bromomethane	nd	20	PPB (UG/L)
Carbon Tetrachloride	nd	8.0	PPB (UG/L)
Chlorobenzene	nd	8.0	PPB (UG/L)
Chloroethane	nd	8.0	PPB (UG/L)
Chloroform	nd	8.0	PPB (UG/L)
Chloromethane	nd	8.0	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	20	PPB (UG/L)
Dibromochloromethane	nd	8.0	PPB (UG/L)
1,3-Dichlorobenzene	nd	8.0	PPB (UG/L)
1,2-Dichlorobenzene	nd	8.0	PPB (UG/L)
1,4-Dichlorobenzene	nd	8.0	PPB (UG/L)
Dichlorodifluoromethane	nd	8.0	PPB (UG/L)
1,1-Dichloroethane	nd	8.0	PPB (UG/L)
1,2-Dichloroethane	nd	8.0	PPB (UG/L)
1,1-Dichloroethene	nd	8.0	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	8.0	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	8.0	PPB (UG/L)
1,2-Dichloropropane	nd	8.0	PPB (UG/L)
cis-1,3-Dichloropropene	nd	8.0	PPB (UG/L)
trans-1,3-Dichloropropene	nd	8.0	PPB (UG/L)
Ethylbenzene	1,300	20	PPB (UG/L)
Dichloromethane	nd	20	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	8.0	PPB (UG/L)
Tetrachloroethene (PCE)	nd	8.0	PPB (UG/L)
Toluene	nd	20	PPB (UG/L)
1,1,1-Trichloroethane	nd	8.0	PPB (UG/L)
1,1,2-Trichloroethane	nd	8.0	PPB (UG/L)
Trichloroethene (TCE)	nd	8.0	PPB (UG/L)
Vinyl Chloride	nd	8.0	PPB (UG/L)
Xylenes (Total)	nd	20	PPB (UG/L)
Trichlorofluoromethane	nd	8.0	PPB (UG/L)
MTBE	nd	100	PPB (UG/L)

BFB (Surrogate) Recovery = 93 %
BCM (Surrogate) Recovery = 89 %
Dilution Factor = 40

Results for sample: MW-2

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-3
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	6.3	0.5	PPB (UG/L)
2-Methyl Naphthalene	2.3	0.5	PPB (UG/L)
1-Methyl Naphthalene	1.7	0.5	PPB (UG/L)
Acenaphthalene	nd	0.5	PPB (UG/L)
Acenaphthene	nd	0.5	PPB (UG/L)
Fluorene	0.9	0.5	PPB (UG/L)
Phenanthrene	nd	0.5	PPB (UG/L)
Anthracene	nd	0.5	PPB (UG/L)
Fluoranthrene	nd	0.5	PPB (UG/L)
Pyrene	nd	0.5	PPB (UG/L)
Benzo (a) anthracene	nd	0.5	PPB (UG/L)
Chrysene	nd	0.5	PPB (UG/L)
Benzo (b) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (k) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (a) pyrene	nd	0.5	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	1.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	1.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	1.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = 101

Dilution Factor = 1

Results for sample: MW-2

Date collected: 10/3/94	Date received: 10/6/94
Date extracted: 10/11/94	Date analyzed: 10/11,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-3
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	15	2.0	PPM (MG/L)

BFB (Surrogate) Recovery = 103 %

Dilution Factor = 40

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 110 %

Dilution Factor = 1

Results for sample: MW-4

Date collected: 10/4/94	Date received: 10/6/94
Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-4
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	nd	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,4-Dichlorobenzene	0.5	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	0.4	0.2	PPB (UG/L)
1,2-Dichloroethane	0.4	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	0.7	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	nd	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	0.4	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	nd	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 88 %
BCM (Surrogate) Recovery = 83 %
Dilution Factor = 1

Results for sample: MW-4

Date collected: 10/4/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-4
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	nd	0.5	PPB (UG/L)
2-Methyl Naphthalene	0.5	0.5	PPB (UG/L)
1-Methyl Naphthalene	nd	0.5	PPB (UG/L)
Acenaphthalene	nd	0.5	PPB (UG/L)
Acenaphthene	1.1	0.5	PPB (UG/L)
Fluorene	nd	0.5	PPB (UG/L)
Phenanthrene	nd	0.5	PPB (UG/L)
Anthracene	nd	0.5	PPB (UG/L)
Fluoranthrene	nd	0.5	PPB (UG/L)
Pyrene	nd	0.5	PPB (UG/L)
Benzo (a) anthracene	nd	0.5	PPB (UG/L)
Chrysene	nd	0.5	PPB (UG/L)
Benzo (b) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (k) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (a) pyrene	nd	0.5	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	1.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	1.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	1.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = 96 %

Dilution Factor = 1

Results for sample: MW-4

Date collected: 10/4/94	Date received: 10/6/94
Date extracted: 10/11/94	Date analyzed: 10/11,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-4
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 99 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 103 %

Dilution Factor = 1

Results for sample: MW-6

Date collected: 10/5/94	Date received: 10/6/94
Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-5
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	0.7	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,4-Dichlorobenzene	nd	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	nd	0.2	PPB (UG/L)
1,2-Dichloroethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	nd	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	nd	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	nd	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 88 %
BCM (Surrogate) Recovery = 95 %
Dilution Factor = 1

Results for sample: MW-6

Date collected: 10/5/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-5
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	nd	0.5	PPB (UG/L)
2-Methyl Naphthalene	nd	0.5	PPB (UG/L)
1-Methyl Naphthalene	nd	0.5	PPB (UG/L)
Acenaphthalene	nd	0.5	PPB (UG/L)
Acenaphthene	0.7	0.5	PPB (UG/L)
Fluorene	nd	0.5	PPB (UG/L)
Phenanthrene	nd	0.5	PPB (UG/L)
Anthracene	nd	0.5	PPB (UG/L)
Fluoranthrene	nd	0.5	PPB (UG/L)
Pyrene	nd	0.5	PPB (UG/L)
Benzo (a) anthracene	nd	0.5	PPB (UG/L)
Chrysene	nd	0.5	PPB (UG/L)
Benzo (b) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (k) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (a) pyrene	nd	0.5	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	1.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	1.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	1.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = 83 %

Dilution Factor = 1

Results for sample: MW-6

Date collected: 10/5/94	Date received: 10/6/94
Date extracted: 10/11/94	Date analyzed: 10/11,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: 9410019-5
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 99 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 73 %

Dilution Factor = 1

Results for sample: MW-4 @ 9'

Date collected: 10/4/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/11/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-6
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 82 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 91 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 81 %

Dilution Factor = 1

Results for sample: MW-4 @ 52'

Date collected: 10/4/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/11/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-7
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 84 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 92 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 99 %

Dilution Factor = 1

Results for sample: MW-6 @ 52'

Date collected: 10/4/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/11/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-8
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 83 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 92 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 102 %

Dilution Factor = 1

Results for sample: MW-6 @ 12'

Date collected: 10/4/94	Date received: 10/6/94
Date extracted: 10/10/94	Date analyzed: 10/11/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-9
Project Manager: Bob Marley	Sampled by: BM/CP
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 84 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 94 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 76 %

Dilution Factor = 1

Results for sample: Trip Blank

Date collected: NA	Date received: 10/6/94
Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-10
Project Manager: Bob Marley	Sampled by: NA
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	nd	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1,3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1,4-Dichlorobenzene	nd	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethane	nd	0.2	PPB (UG/L)
1,2-Dichloroethane	nd	0.2	PPB (UG/L)
1,1-Dichloroethene	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1,2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1,2-Dichloropropane	nd	0.2	PPB (UG/L)
cis-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1,3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	nd	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1,1,2,2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1,1,1-Trichloroethane	nd	0.2	PPB (UG/L)
1,1,2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	nd	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 90 %
BCM (Surrogate) Recovery = 89 %
Dilution Factor = 1

Results for sample: Trip Blank

Date collected: NA	Date received: 10/6/94
Date extracted: NA	Date analyzed: 10/16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-10
Project Manager: Bob Marley	Sampled by: NA
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 98 %

Dilution Factor = 1

Results for QC: Reagent Blank

Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: RB 10/13
Project Manager: Bob Marley	
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Results	Detection Limit	Units
Benzene	nd	0.5	PPB (UG/L)
Bromodichloromethane	nd	0.2	PPB (UG/L)
Bromoform	nd	1.0	PPB (UG/L)
Bromomethane	nd	1.0	PPB (UG/L)
Carbon Tetrachloride	nd	0.2	PPB (UG/L)
Chlorobenzene	nd	0.2	PPB (UG/L)
Chloroethane	nd	0.2	PPB (UG/L)
Chloroform	nd	0.2	PPB (UG/L)
Chloromethane	nd	0.2	PPB (UG/L)
2-Chloroethylvinyl Ether	nd	1.0	PPB (UG/L)
Dibromochloromethane	nd	0.2	PPB (UG/L)
1.3-Dichlorobenzene	nd	0.2	PPB (UG/L)
1.2-Dichlorobenzene	nd	0.2	PPB (UG/L)
1.4-Dichlorobenzene	nd	0.2	PPB (UG/L)
Dichlorodifluoromethane	nd	0.2	PPB (UG/L)
1.1-Dichloroethane	nd	0.2	PPB (UG/L)
1.2-Dichloroethane	nd	0.2	PPB (UG/L)
1.1-Dichloroethene	nd	0.2	PPB (UG/L)
1.2-Dichloroethene (Cis)	nd	0.2	PPB (UG/L)
1.2-Dichloroethene (Trans)	nd	0.2	PPB (UG/L)
1.2-Dichloropropane	nd	0.2	PPB (UG/L)
cis-1.3-Dichloropropene	nd	0.2	PPB (UG/L)
trans-1.3-Dichloropropene	nd	0.2	PPB (UG/L)
Ethylbenzene	nd	0.5	PPB (UG/L)
Dichloromethane	nd	2.0	PPB (UG/L)
1.1.2.2-Tetrachloroethane	nd	0.2	PPB (UG/L)
Tetrachloroethene (PCE)	nd	0.2	PPB (UG/L)
Toluene	nd	0.5	PPB (UG/L)
1.1.1-Trichloroethane	nd	0.2	PPB (UG/L)
1.1.2-Trichloroethane	nd	0.2	PPB (UG/L)
Trichloroethene (TCE)	nd	0.2	PPB (UG/L)
Vinyl Chloride	nd	0.2	PPB (UG/L)
Xylenes (Total)	nd	0.5	PPB (UG/L)
Trichlorofluoromethane	nd	0.2	PPB (UG/L)
MTBE	nd	2.5	PPB (UG/L)

BFB (Surrogate) Recovery = 97 %
BCM (Surrogate) Recovery = 80 %
Dilution Factor = 1

Results for QC: Reagent Blank

Date extracted: 10/10/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: RB 10/10
Project Manager: Bob Marley	
Matrix: Aqueous	

Test: EPA 8100

Compound	Result	Detection limit	Units
Naphthalene	nd	0.5	PPB (UG/L)
2-Methyl Naphthalene	nd	0.5	PPB (UG/L)
1-Methyl Naphthalene	nd	0.5	PPB (UG/L)
Acenaphthalene	nd	0.5	PPB (UG/L)
Acenaphthene	nd	0.5	PPB (UG/L)
Fluorene	nd	0.5	PPB (UG/L)
Phenanthrene	nd	0.5	PPB (UG/L)
Anthracene	nd	0.5	PPB (UG/L)
Fluoranthrene	nd	0.5	PPB (UG/L)
Pyrene	nd	0.5	PPB (UG/L)
Benzo (a) anthracene	nd	0.5	PPB (UG/L)
Chrysene	nd	0.5	PPB (UG/L)
Benzo (b) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (k) fluoranthene	nd	0.5	PPB (UG/L)
Benzo (a) pyrene	nd	0.5	PPB (UG/L)
Indeno (1,2,3-cd) pyrene	nd	1.0	PPB (UG/L)
Dibenzo (a,h) anthracene	nd	1.0	PPB (UG/L)
Benzo (g,h,i) perylene	nd	1.0	PPB (UG/L)

Hexadecane (Surrogate) Recovery = 98 %

Dilution Factor = 1

Results for QC: Reagent Blank

Date extracted: 10/11/94	Date analyzed: 10/11,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: RB 10/11,16
Project Manager: Bob Marley	
Matrix: Aqueous	

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	0.05	PPM (MG/L)

BFB (Surrogate) Recovery = 93 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	1.0	PPM (MG/L)

DNOP (Surrogate) Recovery = 94 %

Dilution Factor = 1

Results for QC: Reagent Blank

Date extracted: 10/11/94	Date analyzed: 10/11,16/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	Heal #: RB 10/11,16
Project Manager: Bob Marley	
Matrix: Non-Aqueous	

Test: EPA 8020

Compound	Result	Detection Limit	Units
Benzene	nd	0.05	PPM (MG/KG)
Toluene	nd	0.05	PPM (MG/KG)
Ethylbenzene	nd	0.05	PPM (MG/KG)
Total Xylenes	nd	0.05	PPM (MG/KG)

BFB (Surrogate) Recovery = 85 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Gasoline	nd	10	PPM (MG/KG)

BFB (Surrogate) Recovery = 100 %

Dilution Factor = 1

Test: EPA 8015 Modified

Compound	Result	Detection Limit	Units
Diesel	nd	10	PPM (MG/KG)

DNOP (Surrogate) Recovery = 72 %

Dilution Factor = 1

Results for QC: Matrix Spike / Matrix Spike Dup

Date extracted: NA	Date analyzed: 10/13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410022-1 MS/MSD
Project Manager: Bob Marley	
Matrix: Aqueous	Units: PPB (UG/L)

Test: EPA 8010/8020

Compound	Sample Result	Amount Added	Matrix Recov.	MS %	MSD Recov.	MSD %	RPD
Chlorobenzene	<0.2	20.0	18.1	91	18.0	90	1
Ethylbenzene	<0.5	20.0	17.6	88	17.7	89	1
1,1-DCE	<0.2	20.0	16.6	83	16.9	85	2
Trans-1,2-DCE	<0.2	20.0	16.6	83	16.4	82	1
Carbon Tetrachloride	<0.2	20.0	18.7	94	17.9	90	4
1,2-DCA	<0.2	20.0	18.5	93	16.8	84	10
1,2-Dichloro-propane	<0.2	20.0	18.4	92	17.6	88	4
1,1,2-TCA	<0.2	20.0	17.9	90	16.3	82	9
PCE	<0.2	20.0	17.8	89	16.6	83	7
1,3-Dichloro-benzene	<0.2	20.0	18.4	92	16.5	83	11
1,3-Dichloro-benzene	<0.2	20.0	19.3	97	17.7	89	9

Results for QC: Blank Spike / Blank Spike Dup

Date extracted: 10/12/94	Date analyzed: 10/15/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: BS/BSD 10/12
Project Manager: Bob Marley	
Matrix: Aqueous	Units: PPB (UG/L)

Test: EPA 8100

Compound	Sample Result	Amount Added	Blank Recov.	BS %	BSD Recov.	BSD %	RPD
Naphthalene	<0.5	10.0	7.5	75	8.5	85	13
Acenaphthylene	<0.5	10.0	7.9	79	8.5	85	7
Acenaphthene	<0.5	10.0	7.9	79	8.5	85	7
Flourene	<0.5	10.0	9.2	92	9.1	91	1
Phenanthrene	<0.5	10.0	10.2	102	9.8	98	4
Anthracene	<0.5	10.0	10.7	107	9.5	95	12
Pyrene	<0.5	10.0	9.6	96	9.7	97	1
Benzo(a)pyrene	<0.5	10.0	9.4	94	11.4	114	19
Benzo(g,h,i)-perylene	<1.0	10.0	10.0	100	11.1	111	11

Results for QC: Blank Spike / Blank Spike Dup

Date extracted: 10/11/94	Date analyzed: 10/11,13/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: BS/BSD 10/11,13
Project Manager: Bob Marley	
Matrix: Aqueous	Units: PPM (MG/L)

Test: EPA 8015 Modified

Compound	Sample Result	Amount Added	Blank Recov.	BS %	BSD Recov.	BSD %	RPD
Gasoline	<0.05	0.50	0.54	108	0.51	102	6

Test: EPA 8015 Modified

Compound	Sample Result	Amount Added	Blank Recov.	BS %	BSD Recov.	BSD %	RPD
Diesel	<1.0	5.4	6.3	117	5.6	104	12

Results for QC: Matrix Spike / Matrix Spike Dup

Date extracted: 10/10/94	Date analyzed: 10/11/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: ENRON - Eunice	HEAL #: 9410019-8 MS/MSD
Project Manager: Bob Marley	9410026-12 MS/MSD
Matrix: Non-Aqueous	Units: PPM (MG/KG)

Test: EPA 8020

Compound	Sample Result	Amount Added	Matrix Recov.	MS %	MSD Recov.	MSD %	RPD
Benzene	<0.05	1.00	0.96	96	0.84	84	13
Toluene	<0.05	1.00	1.05	105	0.93	93	12
Ethylbenzene	<0.05	1.00	0.97	97	0.87	87	11
Total Xylenes	<0.05	3.00	3.09	103	2.79	93	10

Test: EPA 8015 Modified

Compound	Sample Result	Amount Added	Matrix Recov.	MS %	MSD Recov.	MSD %	RPD
Gasoline	<10	50	36	72	38	76	5

Test: EPA 8015 Modified

Compound	Sample Result	Amount Added	Matrix Recov.	MS %	MSD Recov.	MSD %	RPD
Diesel	<10	54	49	91	54	100	10

Inorganic Analyses

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **410353**

November 2, 1994

Daniel B. Stephens & Assoc.
6020 Academy NE, Suite 100
Albuquerque, NM 87109

Project Name/Number: ENRON-EUNICE 4215

Attention: Bob Marley

On **10/10/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Low matrix spike recovery by EPA Method for mercury (sample MW-7) was confirmed by re-digestion and analysis.

Due to matrix interferences, cadmium spike analysis was performed using the Method of Standard Additions (MSA). The spike result given is the correlation coefficient (CC), which is ≥ 0.995.

Due to matrix interferences, mercury analysis of sample MW-7 and cadmium analysis of sample MW-5 were performed at a dilution. The reporting limits have been raised accordingly.

The sample used for cadmium QC analyses was analyzed at a 5X dilution. The relative percent difference (RPD) for quality control duplicate analyses meets ATI acceptance criteria; the results are <5X the reporting limit.

All analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE

DATE RECEIVED : 10/10/94
REPORT DATE : 11/02/94

ATI I.D. : 410353

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	MW-5	AQUEOUS	10/06/94
02	MW-7	AQUEOUS	10/07/94
03	MW-99	AQUEOUS	10/06/94

----- TOTALS -----

MATRIX	# SAMPLES
AQUEOUS	3

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 410353

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE

DATE RECEIVED : 10/10/94
REPORT DATE : 11/01/94

PARAMETER	UNITS	01	02	03
CARBONATE (CACO3)	MG/L	36	<1	-
BICARBONATE (CACO3)	MG/L	767	433	-
HYDROXIDE (CACO3)	MG/L	<1	<1	-
TOTAL ALKALINITY (AS CACO3)	MG/L	803	433	-
CHLORIDE (EPA 325.2)	MG/L	2400	2100	2400
NO2/NO3-N, TOTAL (353.2)	MG/L	0.08	<0.06	0.08
SULFATE (EPA 375.2)	MG/L	9	<5	8
T. DISSOLVED SOLIDS (160.1)	MG/L	4700	4000	4600

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE ATI I.D. : 410353

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CARBONATE	MG/L	41064202	<1	<1	NA	NA	NA	NA
BICARBONATE	MG/L		183	185	1	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		183	185	1	NA	NA	NA
CHLORIDE	MG/L	41034541	4.2	4.3	2	14.5	10.0	103
NITRITE/NITRATE-N (TOT	MG/L	41049910	<0.06	<0.06	NA	2.01	2.00	100
SULFATE	MG/L	41033501	<5	<5	NA	18	20	90
TOTAL DISSOLVED SOLIDS	MG/L	41035303	4600	4700	2	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

METALS RESULTS

ATI I.D. : 410353

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE

DATE RECEIVED : 10/10/94
REPORT DATE : 11/01/94

PARAMETER	UNITS	01	02	03
SILVER (EPA 200.7/6010)	MG/L	<0.010	<0.010	-
ARSENIC (EPA 206.2/7060)	MG/L	0.027	0.012	-
BARIUM (EPA 200.7/6010)	MG/L	0.934	9.72	-
CALCIUM (EPA 200.7/6010)	MG/L	16.1	129	-
CADMIUM (EPA 213.2/7131)	MG/L	<0.0025	<0.0005	-
CHROMIUM (EPA 200.7/6010)	MG/L	<0.010	<0.010	-
COPPER (EPA 200.7/6010)	MG/L	<0.010	<0.010	-
IRON (EPA 200.7/6010)	MG/L	0.047	<0.020	0.048
MERCURY (EPA 245.1/7470)	MG/L	<0.0002	<0.0010	-
POTASSIUM (EPA 200.7/6010)	MG/L	20.1	8.5	-
MAGNESIUM (EPA 200.7/6010)	MG/L	29.7	162	-
MANGANESE (EPA 200.7/6010)	MG/L	0.020	0.100	0.020
SODIUM (EPA 200.7/6010)	MG/L	1840	1130	-
LEAD (EPA 239.2/7421)	MG/L	<0.002	<0.002	-
SELENIUM (EPA 270.2/7740)	MG/L	<0.005	<0.005	-
ZINC (EPA 200.7/6010)	MG/L	<0.020	<0.020	-

Analytical Technologies, Inc.

METALS - QUALITY CONTROL

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE ATI I.D. : 410353

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
SILVER	MG/L	41063402	<0.010	<0.010	NA	0.399	0.500	80
ARSENIC	MG/L	41063402	<0.005	<0.005	NA	0.047	0.050	94
BARIUM	MG/L	41058801	0.157	0.148	6	1.19	1.00	103
CALCIUM	MG/L	41058801	29.0	28.8	0.7	78.5	50.0	99
CADMIUM	MG/L	41063402	0.0069	0.0056	21	MSA	CC =	.9978
CHROMIUM	MG/L	41058801	<0.010	<0.010	NA	1.07	1.00	107
COPPER	MG/L	41058801	<0.010	<0.010	NA	0.534	0.500	107
IRON	MG/L	41035301	0.047	0.038	21	0.913	1.00	87
MERCURY	MG/L	41049905	<0.0002	<0.0002	NA	0.0047	0.0050	94
MERCURY	MG/L	41035302	<0.0010	<0.0010	NA	0.0205	0.0250	82*
POTASSIUM	MG/L	41058801	12.8	12.6	2	58.8	50.0	92
MAGNESIUM	MG/L	41058801	17.0	16.8	1	40.6	25.0	94
MANGANESE	MG/L	41058801	0.021	0.019	10	1.09	1.00	107
SODIUM	MG/L	41058801	64.0	63.3	1	107	50.0	86
LEAD	MG/L	41063402	<0.002	<0.002	NA	0.035	0.050	70
SELENIUM	MG/L	41063402	<0.005	<0.005	NA	0.025	0.050	50
ZINC	MG/L	41063402	1.54	1.64	6	11.3	10.0	98

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

* Result out of limits due to sample matrix interference

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **410335**

October 28, 1994

Daniel B. Stephens & Associates
6020 Academy NE Suite 100
Albuquerque, NM 87109

Project Name/Number: ENRON-EUNICE 4215

Attention: Bob Marley

On **10/06/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Low matrix spike recovery for mercury (sample 410335-03) was confirmed by re-digestion and analysis.

All analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE
ATI I.D. : 410335

DATE RECEIVED : 10/06/94
REPORT DATE : 10/28/94

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	MW-1	AQUEOUS	10/03/94
02	MW-3	AQUEOUS	10/03/94
03	MW-2	AQUEOUS	10/03/94
04	MW-4	AQUEOUS	10/04/94
05	MW-6	AQUEOUS	10/05/94

----- TOTALS -----

MATRIX	# SAMPLES
AQUEOUS	5

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 410335

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE

DATE RECEIVED : 10/06/94
REPORT DATE : 10/28/94

PARAMETER	UNITS	01	02	03	04	05
CARBONATE (CACO3)	MG/L	<1	<1	<1	<1	<1
BICARBONATE (CACO3)	MG/L	582	794	1110	510	576
HYDROXIDE (CACO3)	MG/L	<1	<1	<1	<1	<1
TOTAL ALKALINITY (AS CACO3)	MG/L	582	794	1110	510	576
CHLORIDE (EPA 325.2)	MG/L	750	620	3000	940	2100
NO2/NO3-N, TOTAL (353.2)	MG/L	<0.06	<0.06	<0.06	<0.06	<0.06
SULFATE (EPA 375.2)	MG/L	<5	20	20	<5	<5
T. DISSOLVED SOLIDS (160.1)	MG/L	1700	2800	5900	2000	4000

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE ATI I.D. : 410335

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CARBONATE	MG/L	41053215	<1	<1	NA	NA	NA	NA
BICARBONATE	MG/L		350	350	0	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		350	350	0	NA	NA	NA
CARBONATE	MG/L	41056703	<1	<1	NA	NA	NA	NA
BICARBONATE	MG/L		<1	<1	NA	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		<1	<1	NA	NA	NA	NA
CARBONATE	MG/L	41063907	<1	<1	NA	NA	NA	NA
BICARBONATE	MG/L		585	584	0.2	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		585	584	0.2	NA	NA	NA
CHLORIDE	MG/L	41057701	119	121	2	222	100	103
CHLORIDE	MG/L	41034541	4.2	4.3	2	14.5	10.0	103
NITRITE/NITRATE-N (TOT	MG/L	41033501	<0.06	<0.06	NA	2.00	2.00	100
SULFATE	MG/L	41033501	<5	<5	NA	18	20	90
SULFATE	MG/L	41063903	10	9	11	29	20	95
TOTAL DISSOLVED SOLIDS	MG/L	41049905	10000	10000	0	NA	NA	NA
TOTAL DISSOLVED SOLIDS	MG/L	41074501	5600	5500	2	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

METALS RESULTS

ATI I.D. : 410335

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE

DATE RECEIVED : 10/06/94
REPORT DATE : 10/28/94

PARAMETER	UNITS	01	02	03	04	05
SILVER (EPA 200.7/6010)	MG/L	<0.010	<0.010	<0.010	<0.010	<0.010
ARSENIC (EPA 206.2/7060)	MG/L	0.039	0.027	0.029	0.015	0.017
BARIUM (EPA 200.7/6010)	MG/L	1.52	5.01	1.33	0.445	0.997
CALCIUM (EPA 200.7/6010)	MG/L	133	77.2	96.2	89.9	54.6
CADMIUM (EPA 213.2/7131)	MG/L	<0.0005	<0.0005	0.0011	<0.0005	0.0012
CHROMIUM (EPA 200.7/6010)	MG/L	<0.010	<0.010	<0.010	<0.010	<0.010
COPPER (EPA 200.7/6010)	MG/L	<0.010	<0.010	<0.010	<0.010	<0.010
IRON (EPA 200.7/6010)	MG/L	2.26	16.9	0.345	<0.020	<0.020
MERCURY (EPA 245.1/7470)	MG/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
POTASSIUM (EPA 200.7/6010)	MG/L	3.1	4.8	5.8	6.5	12.2
MAGNESIUM (EPA 200.7/6010)	MG/L	119	42.1	98.2	68.8	59.8
MANGANESE (EPA 200.7/6010)	MG/L	0.058	1.48	0.262	0.206	0.065
SODIUM (EPA 200.7/6010)	MG/L	346	100	2120	626	1560
LEAD (EPA 239.2/7421)	MG/L	<0.002	0.003	<0.002	<0.002	<0.002
SELENIUM (EPA 270.2/7740)	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
ZINC (EPA 200.7/6010)	MG/L	<0.020	<0.020	<0.020	<0.020	<0.020

Analytical Technologies, Inc.

METALS - QUALITY CONTROL

CLIENT : D.B. STEPHENS & ASSOCIATES
PROJECT # : 4215
PROJECT NAME : ENRON-EUNICE ATI I.D. : 410335

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
SILVER	MG/L	41033504	<0.010	<0.010	NA	0.433	0.500	87
ARSENIC	MG/L	41057701	0.006	0.007	15	0.056	0.050	100
BARIUM	MG/L	41033504	0.445	0.445	0	1.34	1.00	90
CALCIUM	MG/L	41057701	70.3	68.7	2	117	50.0	93
CADMIUM	MG/L	41057701	<0.0005	<0.0005	NA	0.0048	0.0050	96
CHROMIUM	MG/L	41033504	<0.010	<0.010	NA	0.905	1.00	90
COPPER	MG/L	41033504	<0.010	<0.010	NA	0.463	0.500	93
IRON	MG/L	41033504	<0.020	<0.020	NA	0.980	1.00	98
MERCURY	MG/L	41049901	<0.0002	<0.0002	NA	0.0049	0.0050	98
MERCURY	MG/L	41033503	<0.0002	<0.0002	NA	0.0032	0.0050	64*
POTASSIUM	MG/L	41057701	4.6	4.6	0	50.7	50.0	92
MAGNESIUM	MG/L	41057701	9.2	8.9	3	32.6	25.0	94
MANGANESE	MG/L	41033504	0.206	0.206	0	1.13	1.00	92
SODIUM	MG/L	41057701	108	104	4	156	50.0	96
LEAD	MG/L	41057701	0.007	0.008	13	0.059	0.050	104
SELENIUM	MG/L	41057601	<0.005	<0.005	NA	0.030	0.050	60
ZINC	MG/L	41033504	<0.020	<0.020	NA	0.476	0.500	95

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

* Result out of limits due to sample matrix interference

Analytical Technologies, Inc., Albuquerque, NM

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CHAIN OF CUSTODY

DATE: 10/6/94 PAGE 1 OF 1

ATI LAB I.D. 410335

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: Bob Marley

COMPANY: Daniel B. Stephens & Assoc.
ADDRESS: 6020 Academy NE Suite 100
Albuq, NM 87109
PHONE: 822 9400
FAX: 822 8877

BILL TO: George Robinson, ENRON Corp.
COMPANY: 1400 Smith st
ADDRESS: Houston, TX

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
MW-1	10/3/94	1100	H_2O	01
MW-3	10/3/94	1400	H_2O	02
MW-2	10/3/94	1550	H_2O	03
MW-4	10/4/94	1615	H_2O	04
MW-6	10/5/94	1535	H_2O	05

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)			Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.			Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)			SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	Ca, K, Mg, Na, Cu, Fe, Mn, Zn	T-Alk, Cl, SO4, TDS	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NO_2 - NO_3	NUMBER OF CONTAINERS
																						X	X		X		X	5
																						X	X		X		X	5
																						X	X		X		X	5
																						X	X		X		X	5
																						X	X		X		X	5

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.:	4215	NO. CONTAINERS	5
PROJ. NAME:	ENRON - Eunice	CUSTODY SEALS	Y (N) NA
P.O. NO.:		RECEIVED INTACT	Y
SHIPPED VIA:		RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☐ 2 WEEK

Comments:
- Metals filtered and preserved w/Nitric Acid
- NO_2/NO_3 filtered and preserved w/sulfuric Acid
- Remaining analytes unfilted unpreserved

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Bob Marley Time: 0700	Signature: Time:	Signature: Time:
Printed Name: Bob Marley Date: 10/5/94	Printed Name: Date:	Printed Name: Date:
Company: DBS&A Phone: 822-9400	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: Time: 450
Printed Name: Date:	Printed Name: Date:	Printed Name: Date: 10/6/94
Company:	Company:	Analytical Technologies, Inc.

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

Analytical**Technologies,**Inc. Albuquerque, NM

Chain of Custody

DATE 10/7/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	Ca, K, Mg, Mn, Na, Fe, Zn	Alk, Cl, SO4, TDS	8240 TCLP 1311 ZHE	RCRA metals by Tot. Digestion	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NO2/NO3	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
410335-01	10-3	1100	AQ	1									X	X	X	X	X	X	X										3
-02	10-3	1400		2									X	X	X	X	X	X	X										3
-03	10-3	1550		3									X	X	X	X	X	X	X										3
-04	10-4	1615		4									X	X	X	X	X	X	X										3
-05	10-5	1535	↓	5									X	X	X	X	X	X	X										3

ANALYSIS REQUEST

PROJECT INFORMATION

PROJECT NUMBER: 410335
PROJECT NAME: SDB
QC LEVEL: (STD) IV
QC REQUIRED: MS MSD BLANK
TAT: (STANDARD) RUSH

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	15
CHAIN OF CUSTODY SEALS	NA
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	410335

DUE DATE: 10/20
RUSH SURCHARGE: 0
CLIENT DISCOUNT: 10 %

WO# LK1032

SAMPLES SENT TO:

SAN DIEGO	
FT. COLLINS	
RENTON	
PENSACOLA	
PORTLAND	
PHOENIX	X
FIBERQUANT	

RELINQUISHED BY: 1.
Signature: Time: 1730
Printed Name: Dianne Cutler Date: 10/7/94
Analytical Technologies, Inc.
Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company:

RECEIVED BY: (LAB) 2.
Signature: Time: 946A
Printed Name: Linda Estelman Date: 10/8/94
Company: ATI

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777

DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

2.4L-37

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 10/10/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	Fe, Mn, Cl, SO4, TDS	Ca, K, Mg, Na, Fe, Mn, Zn, Cu	8240 TCLP 1311 ZHE	HK, Cl, SO4, TDS	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	RCRA metals by MT Digestion	NACE	ASBESTOS	NO2/NO3	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
410353-01	10/6	1615	AQ	1										X		X			X		X									3
-02	10/7	1050	↓	2										X		X			X		X									3
-03	—	—	↓	3									X								X									3

PROJECT INFORMATION	
PROJECT NUMBER:	410353
PROJECT NAME:	SDB
QC LEVEL:	(STD) IV
QC REQUIRED:	MS MSD BLANK
TAT:	(STANDARD) RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	9
CHAIN OF CUSTODY SEALS	NA
INTACT?	✓
RECEIVED GOOD COND./COLD	✓
LAB NUMBER	410353

DUE DATE: 10/24
RUSH SURCHARGE: 0
CLIENT DISCOUNT: 10 %

WO#: LK1042

SAMPLES SENT TO:	
SAN DIEGO	
FT. COLLINS	
RENTON	
PENSACOLA	
PORTLAND	
PHOENIX	X
FIBERQUANT	

RELINQUISHED BY: 1.
Signature: Dlutter Time: 1730
Printed Name: Dianne Lutter Date: 10/10/94
Analytical Technologies, Inc. Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company:

RECEIVED BY: (LAB) 2.
Signature: Roselle Vidal Time: 1003
Printed Name: Roselle Vidal Date: 10/11/94
Company: ATI

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Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 10/10/94 PAGE 1 OF 1

ATI LAB I.D.: 410253

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: Bob Marley

COMPANY: Daniel B. Stephens & Assoc.
ADDRESS: 6020 Academy NE Suite 100
Alb., NM 87109
PHONE: 822-9400
FAX: 822-8877

BILL TO: George Robinson, ENRON Corp
COMPANY: 1400 Smith st
ADDRESS: Houston, TX

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
MW-5	10/6/94	1615	H_2O	01
MW-7	10/7/94	1050	H_2O	02
MW-99	—	—	H_2O	03

ANALYSIS REQUEST

SAMPLE ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)			Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.			Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	Fe, Mn	Cl, SO_4, TDS	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	Ca, K, Mg, Na, Fe, Mn, Zn, Cu	T-Alk, Cl, SO_4, TDS	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NO_2 / NO_3	NUMBER OF CONTAINERS
MW-5																							X	X		X		X	3
MW-7																							X	X		X		X	3
MW-99																	X	X										X	3

PROJECT INFORMATION

PROJ. NO.: 4215
PROJ. NAME: ENRON - Eunice
P.O. NO.:
SHIPPED VIA: hand delivered

SAMPLE RECEIPT

NO. CONTAINERS	9
CUSTODY SEALS	Y (N) / NA
RECEIVED INTACT	Y
RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☐ 2 WEEK

Comments:
- Metals filtered and preserv w/ Nitric Acid
- Na / NO_3 filtered and preserv w/ sulfuric Acid
- Remaining analytes - unfiltered & preserved

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Bob Marley Time: 1145	Signature: Time:	Signature: Time:
Printed Name: Bob Marley Date: 10/10/94	Printed Name: Date:	Printed Name: Date:
Company: DBS&A Phone: 822-9400	Company:	Company:

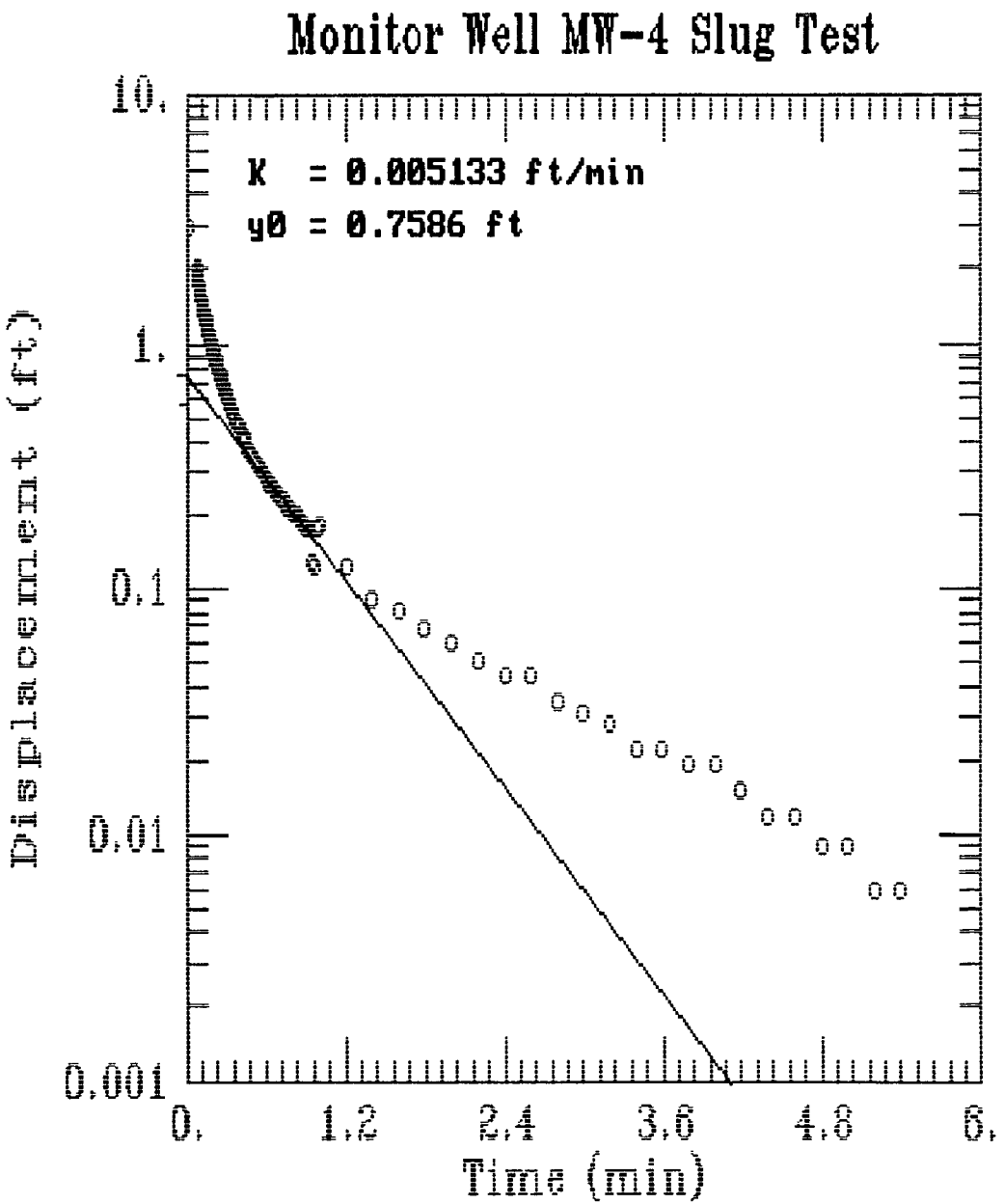
RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: Time: 1145
Printed Name: Date:	Printed Name: Date:	Printed Name: Date: 10/10/94
Company:	Company:	Analytical Technologies, Inc.

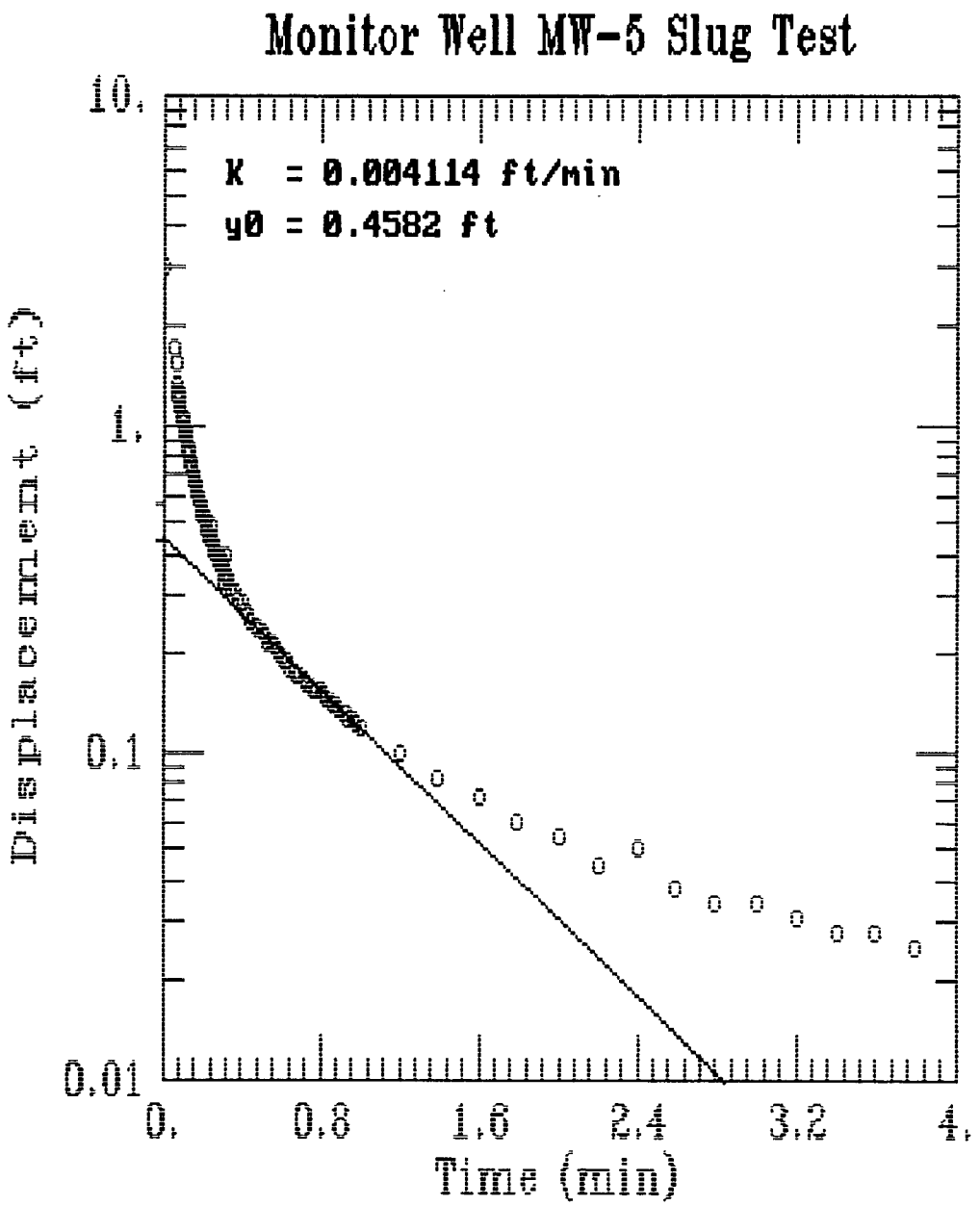
ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777

DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

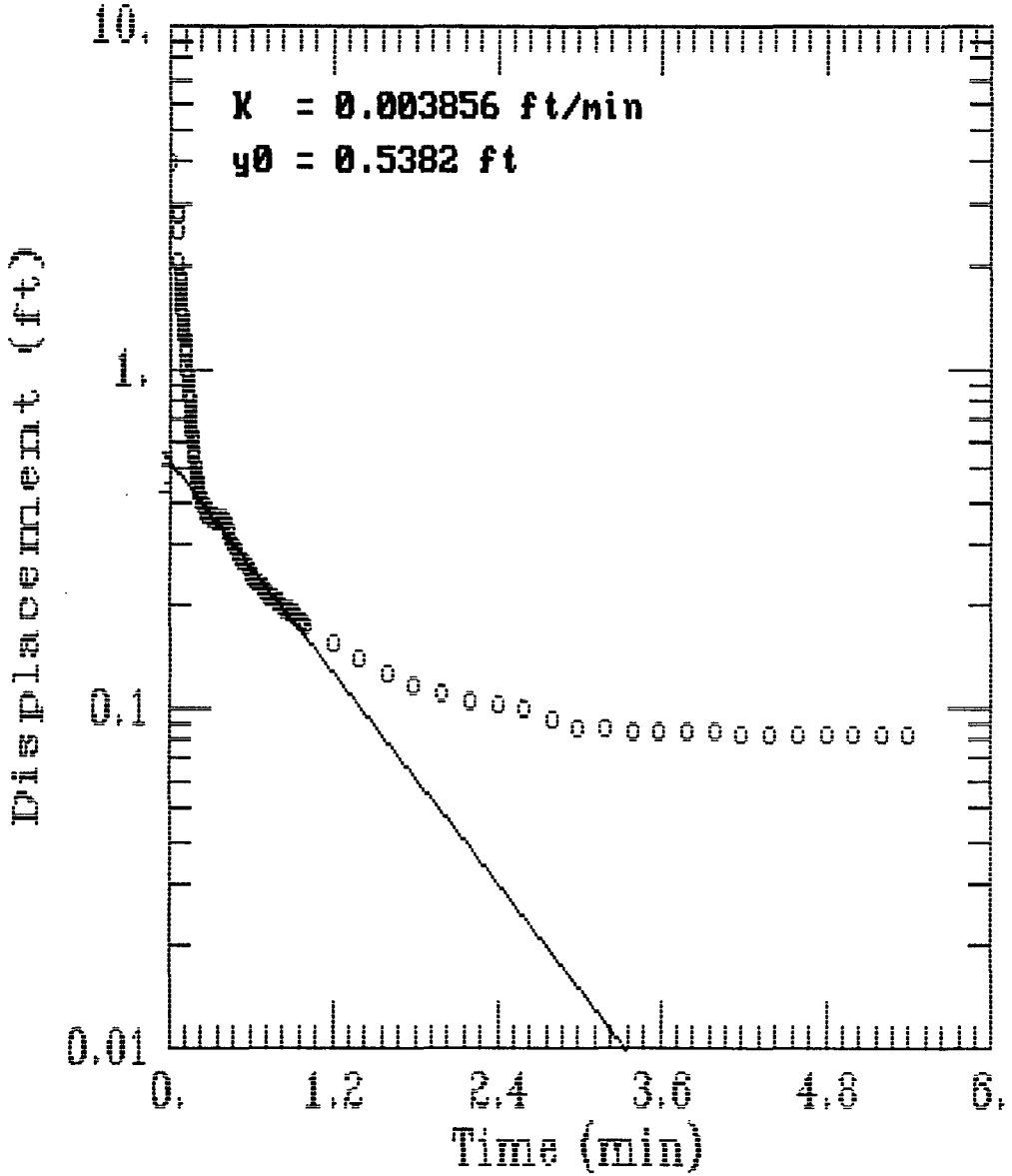
APPENDIX C

RESULTS OF SLUG TESTS


Monitor Well MW-4 Slug Test
K = 0.005133 ft/min
y0 = 0.7586 ft
Displacement (ft)
10.
1.
0.1
0.01
0.001
0.
1.2
2.4
3.6
4.8
6.
Time (min)


Monitor Well MW-5 Slug Test
K = 0.004114 ft/min
y0 = 0.4582 ft
10.
1.
0.1
0.01
Displacement (ft)
0.
0.8
1.6
2.4
3.2
4.
Time (min)

Monitor Well MW-7 Slug Test



Monitor Well MW-4 Slug Test

Hermit Environmental Logger SE1000C
Date: 10/05/94
Start Time: 10:05:00

Elapsed Time (minutes)	Displacement (feet)	Elapsed Time (minutes)	Displacement (feet)	Elapsed Time (minutes)	Displacement (feet)
0.0766	2.023	0.2333	0.834	0.6166	0.279
0.0800	1.979	0.2366	0.821	0.6333	0.269
0.0833	1.842	0.2400	0.805	0.6500	0.263
0.0866	1.757	0.2433	0.793	0.6666	0.257
0.0900	1.795	0.2466	0.777	0.6833	0.247
0.0933	1.785	0.2500	0.767	0.7000	0.241
0.0966	1.700	0.2533	0.761	0.7166	0.234
0.1000	1.627	0.2566	0.742	0.7333	0.231
0.1033	1.636	0.2600	0.758	0.7500	0.225
0.1066	1.614	0.2633	0.742	0.7666	0.218
0.1100	1.557	0.2666	0.723	0.7833	0.212
0.1133	1.490	0.2700	0.710	0.8000	0.209
0.1166	1.503	0.2733	0.701	0.8166	0.203
0.1200	1.500	0.2766	0.694	0.8333	0.199
0.1233	1.443	0.2800	0.685	0.8500	0.193
0.1266	1.395	0.2833	0.678	0.8666	0.190
0.1300	1.360	0.2866	0.666	0.8833	0.184
0.1333	1.364	0.2900	0.653	0.9000	0.180
0.1366	1.332	0.2933	0.647	0.9166	0.177
0.1400	1.316	0.2966	0.644	0.9333	0.174
0.1433	1.278	0.3000	0.634	0.9500	0.126
0.1466	1.249	0.3033	0.624	0.9666	0.123
0.1500	1.240	0.3066	0.618	0.9833	0.174
0.1533	1.205	0.3100	0.609	1.0000	0.180
0.1566	1.202	0.3133	0.602	1.2000	0.123
0.1600	1.176	0.3166	0.596	1.4000	0.092
0.1633	1.164	0.3200	0.593	1.6000	0.082
0.1666	1.138	0.3233	0.586	1.8000	0.069
0.1700	1.107	0.3266	0.577	2.0000	0.060
0.1733	1.091	0.3300	0.574	2.2000	0.050
0.1766	1.075	0.3333	0.564	2.4000	0.044
0.1800	1.062	0.3500	0.526	2.6000	0.044
0.1833	1.053	0.3666	0.501	2.8000	0.034
0.1866	1.034	0.3833	0.479	3.0000	0.031
0.1900	1.008	0.4000	0.453	3.2000	0.028
0.1933	0.989	0.4166	0.431	3.4000	0.022
0.1966	0.973	0.4333	0.412	3.6000	0.022
0.2000	0.958	0.4500	0.396	3.8000	0.019
0.2033	0.945	0.4666	0.377	4.0000	0.019
0.2066	0.935	0.4833	0.364	4.2000	0.015
0.2100	0.926	0.5000	0.349	4.4000	0.012
0.2133	0.907	0.5166	0.336	4.6000	0.012
0.2166	0.891	0.5333	0.323	4.8000	0.009
0.2200	0.872	0.5500	0.314	5.0000	0.009
0.2233	0.862	0.5666	0.304	5.2000	0.006
0.2266	0.850	0.5833	0.295	5.4000	0.006
0.2300	0.834	0.6000	0.285		

Monitor Well MW-5 Slug Test

Hermit Environmental Logger SE1000C
Date: 10/06/94
Start Time: 17:22:00

Elapsed Time (minutes)	Displacement (feet)	Elapsed Time (minutes)	Displacement (feet)	Elapsed Time (minutes)	Displacement (feet)
0.0600	1.690	0.2133	0.517	0.5000	0.231
0.0633	1.528	0.2166	0.510	0.5166	0.225
0.0666	1.332	0.2200	0.494	0.5333	0.218
0.0700	1.249	0.2233	0.482	0.5500	0.215
0.0733	1.237	0.2266	0.469	0.5666	0.209
0.0766	1.237	0.2300	0.466	0.5833	0.203
0.0800	1.243	0.2333	0.453	0.6000	0.196
0.0833	1.199	0.2366	0.460	0.6166	0.190
0.0866	1.138	0.2400	0.456	0.6333	0.187
0.0900	1.062	0.2433	0.453	0.6500	0.180
0.0933	1.040	0.2466	0.491	0.6666	0.177
0.0966	1.059	0.2500	0.434	0.6833	0.171
0.1000	1.043	0.2533	0.428	0.7000	0.171
0.1033	1.011	0.2566	0.415	0.7166	0.165
0.1066	0.961	0.2600	0.412	0.7333	0.161
0.1100	0.945	0.2633	0.399	0.7500	0.158
0.1133	0.938	0.2666	0.412	0.7666	0.155
0.1166	0.900	0.2700	0.406	0.7833	0.155
0.1200	0.847	0.2733	0.412	0.8000	0.152
0.1233	0.843	0.2766	0.402	0.8166	0.149
0.1266	0.853	0.2800	0.390	0.8333	0.145
0.1300	0.834	0.2833	0.387	0.8500	0.142
0.1333	0.802	0.2866	0.377	0.8666	0.139
0.1366	0.767	0.2900	0.377	0.8833	0.139
0.1400	0.767	0.2933	0.374	0.9000	0.136
0.1433	0.751	0.2966	0.377	0.9166	0.133
0.1466	0.732	0.3000	0.380	0.9333	0.130
0.1500	0.707	0.3033	0.371	0.9500	0.126
0.1533	0.682	0.3066	0.355	0.9666	0.126
0.1566	0.675	0.3100	0.336	0.9833	0.123
0.1600	0.669	0.3133	0.399	1.0000	0.120
0.1633	0.659	0.3166	0.339	1.2000	0.098
0.1666	0.650	0.3200	0.352	1.4000	0.082
0.1700	0.637	0.3233	0.345	1.6000	0.073
0.1733	0.618	0.3266	0.339	1.8000	0.060
0.1766	0.602	0.3300	0.336	2.0000	0.054
0.1800	0.590	0.3333	0.333	2.2000	0.044
0.1833	0.586	0.3500	0.320	2.4000	0.050
0.1866	0.586	0.3666	0.307	2.6000	0.038
0.1900	0.580	0.3833	0.295	2.8000	0.034
0.1933	0.561	0.4000	0.285	3.0000	0.034
0.1966	0.539	0.4166	0.272	3.2000	0.031
0.2000	0.529	0.4333	0.263	3.4000	0.028
0.2033	0.517	0.4500	0.253	3.6000	0.028
0.2066	0.513	0.4666	0.244	3.8000	0.025
0.2100	0.517	0.4833	0.237		

Monitor Well MW-7 Slug Test

Hermit Environmental Logger SE1000C
Date: 10/07/94
Start Time: 12:55:00

Elapsed Time (minutes)	Displacement (feet)	Elapsed Time (minutes)	Displacement (feet)	Elapsed Time (minutes)	Displacement (feet)
0.0533	4.245	0.2166	0.440	0.5666	0.263
0.0566	2.879	0.2200	0.431	0.5833	0.256
0.0600	2.565	0.2233	0.425	0.6000	0.250
0.0633	2.879	0.2266	0.418	0.6166	0.244
0.0666	2.793	0.2300	0.412	0.6333	0.237
0.0700	2.543	0.2333	0.409	0.6500	0.234
0.0733	2.054	0.2366	0.406	0.6666	0.231
0.0766	1.855	0.2400	0.402	0.6833	0.225
0.0800	1.788	0.2433	0.402	0.7000	0.225
0.0833	1.712	0.2466	0.399	0.7166	0.218
0.0866	1.636	0.2500	0.402	0.7333	0.215
0.0900	1.569	0.2533	0.396	0.7500	0.212
0.0933	1.496	0.2566	0.393	0.7666	0.209
0.0966	1.427	0.2600	0.393	0.7833	0.209
0.1000	1.370	0.2633	0.386	0.8000	0.206
0.1033	1.319	0.2666	0.390	0.8166	0.202
0.1066	1.278	0.2700	0.393	0.8333	0.199
0.1100	1.240	0.2733	0.386	0.8500	0.196
0.1133	1.233	0.2766	0.371	0.8666	0.193
0.1166	1.208	0.2800	0.380	0.8833	0.193
0.1200	1.170	0.2833	0.380	0.9000	0.190
0.1233	1.119	0.2866	0.377	0.9166	0.187
0.1266	1.037	0.2900	0.380	0.9333	0.190
0.1300	0.989	0.2933	0.380	0.9500	0.183
0.1333	0.970	0.2966	0.380	0.9666	0.180
0.1366	0.932	0.3000	0.374	0.9833	0.180
0.1400	0.891	0.3033	0.374	1.0000	0.177
0.1433	0.853	0.3066	0.371	1.2000	0.152
0.1466	0.824	0.3100	0.364	1.4000	0.139
0.1500	0.802	0.3133	0.374	1.6000	0.126
0.1533	0.770	0.3166	0.374	1.8000	0.117
0.1566	0.745	0.3200	0.371	2.0000	0.111
0.1600	0.716	0.3233	0.367	2.2000	0.104
0.1633	0.691	0.3266	0.364	2.4000	0.101
0.1666	0.659	0.3300	0.361	2.6000	0.098
0.1700	0.643	0.3333	0.361	2.8000	0.091
0.1733	0.624	0.3500	0.352	3.0000	0.088
0.1766	0.608	0.3666	0.358	3.2000	0.088
0.1800	0.580	0.3833	0.355	3.4000	0.085
0.1833	0.564	0.4000	0.358	3.6000	0.085
0.1866	0.545	0.4166	0.348	3.8000	0.085
0.1900	0.520	0.4333	0.336	4.0000	0.085
0.1933	0.507	0.4500	0.323	4.2000	0.082
0.1966	0.501	0.4666	0.310	4.4000	0.082
0.2000	0.482	0.4833	0.298	4.6000	0.082
0.2033	0.472	0.5000	0.291	4.8000	0.082
0.2066	0.463	0.5166	0.282	5.0000	0.082
0.2100	0.456	0.5333	0.275	5.2000	0.082
0.2133	0.447	0.5500	0.269	5.4000	0.082

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

April 17, 1995

0437-4215-95

Mr. William C. Olson
Environmental Bureau
New Mexico Oil Conservation Division
2040 S. Pacheco St.
Santa Fe, New Mexico 87505

Dear Bill:

Enclosed please find copies of the aerial photographs described in the report entitled *Supplemental Environmental Investigation, Northern Natural Gas Company, Eunice Compressor Station*. Please feel free to contact me with any questions or comments at (505) 822-9400.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

Bob Marley

Bob Marley
Project Manager

Enclosure


5-12-92 1:3000 T.west Eunice Plant 4020 511 S/S
P-1-2
KOOGLE & POULS ENGINEERING


Bob Marley