AP - 007

STAGE 1 & 2 WORKPLANS

DATE:

Feb. 1999

DARR ANGELL RANCH

STAGE 1 ABATEMENT PLAN

LOVINGTON, NEW MEXICO

RECEIVED

FEB 25 1999

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

February 1999

Prepared For

Eott Energy Pipeline Limited Partnership
Midland, Texas

TABLE OF CONTENTS

1.0 INTRODUCTION

On May 1, 1997, EOTT Energy Pipeline Limited Partnership (EOTT) personnel discovered that a release of crude oil had occurred from its pipeline. The spill was immediately reported to the New Mexico Oil Conservation District (NMOCD) and to the property owner, Darr Angell. The spill location is 12.5 miles east of Lovington, New Mexico off Highway 82 (**Figure 1**). This property can best be described as open range. In addition to the EOTT pipeline, several other pipelines are present as evidenced by right-of-way markings. Nearby is an oil production tank battery unit.

EOTT personnel determined that approximately twenty-five (25) barrels of crude oil were released. During cleanup operations approximately fifteen (15) barrels of product was recovered. The release appeared to be the result of corrosion. As directed by the NMOCD, cleanup activities and assessment work continued at the release site from May 1997 to October 1998.

2.0 SITE HISTORY

A release of 25 barrels of light crude oil occurred from the pipeline on May 1, 1997. Of the 25 barrels released approximately 15 were recovered at the time of the release. During excavation and replacement of the pipeline, hydrocarbon impacted soils were noted in the vicinity of the pipeline release. The soils were excavated to a depth of approximately seventeen feet below ground surface (bgs) and backfilled with non-hydrocarbon impacted soils. From May 7, 1997 to May 28, 1997, approximately 1650 cubic yards of hydrocarbon impacted soils were excavated and transported to Rhino Environmental Services Landfill near Lovington, New Mexico.

Soil samples were collected during excavation activities and submitted to Cardinal Laboratory for analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method SWA-846-8020 and total petroleum hydrocarbons (TPH) using EPA Method 418.1. The samples were collected from a depth of 4 to 6 feet, 10 to 14 feet, and 14 to 17 feet bgs, and along the north, south, east and west walls of the excavation. TPH analysis ranged from 44.93 parts per million (ppm) at a depth of 4 to 6 feet to 9,210 ppm at 17 feet (**Table 1**). Total BTEX analysis ranged from 590 ppm at 4 feet to 1,234 ppm at 17 feet (**Appendix A** - Laboratory Analysis). The TPH analysis for the four walls ranged from 13.0 ppm on the eastwall to 9,830 ppm on the southwall. Total BTEX for the four walls ranged from <0.006 ppm on the east wall to 24.14 ppm on the west wall.

At the request of the NMOCD, EOTT installed one boring adjacent to the pipeline release in order to determine the vertical extent of the hydrocarbon impacts to the soil (**Appendix B** - Boring Logs). Soil samples were collected at 5 foot intervals to a total depth of 45 feet and analyzed for Total BTEX and TPH (**Table II**). The boring was later redrilled at the request of the NMOCD and converted to a monitor well (MW-1) on May 18, 1998 (**Appendix C** - Monitor Well Completion Diagrams). No soil samples were collected

EOTT Energy Corporation USGS 7.5"Quad Prairieview, New Mexico 1970 Edition	Figure 1 Scale 1: 24,000

TABLE I
SOIL ANALYSIS FROM INITIAL EXCAVATION

SAMPLE ID	DATE	TPH (in ppm)	Benzene (in ppm)	Toluene (in ppm)	Ethylbenzene (in ppm)	Xylenes (in ppm)
Bottom Hole (4-6')	05/08/97	44,929	82.15	128.35	71.43	308.61
Denton G.S. (10 to 14')	05/21/97	8,694	75.45	127.98	72.02	369.08
Denton G.S. (14 to 17')	05/58/97	9,210	249.00	421.00	103.00	461.00
North side (wall)	05/16/97	25.60	0.002	<0.002	<0.002	0.007
East side (wall)	05/16/97	13.00	<0.002	<0.002	<0.002	<0.006
West side (wall)	05/16/97	8,830	0.472	1.240	4.130	18.300
South side (wall)	05/16/97	9,830	0.620	0.009	0.164	6.380

TABLE II
SOIL ANALYSIS FROM SOIL BORING LOCATED ADJACENT TO RELEASE

SAMPLE ID	DATE	TPH (DRO) (in ppm)	Benzene (in ppm)	Toluene (in ppm)	Ethylbenzene (in ppm)	Xylenes (in ppm)
S.S.-1(33-35')	02/10/98	2,129	2.29	25.98	15.33	62.47
S.S.-1(38-40')	02/10/98	1,713	<0.100	2.065	2.179	10.960
S.S.-1(43-45')	02/10/98	1,682	1.722	20.960	12.130	48.870

during drilling of MW-1, since soil samples were collected initially from the boring. After development of the monitor well on May 19, 1998, approximately 6 feet of Light Non-aqueous Phase Liquids (LNAPL) were measured on the groundwater.

In order to further characterize the vertical and horizontal extent of hydrocarbon impacts to the soil and groundwater, an additional eight monitor wells were installed between July 9, 1998 and October 5, 1998 (**Figure 2**). Two soil samples from each monitor well (except MW-2 {No sample collected at the request of EOTT}) were collected and analyzed for BTEX and TPH. TPH analysis ranged from <10 ppm in MW-3 (13 to 15 feet) to 10,475 ppm in MW-5 (53 to 55 feet) (**Table III**). Groundwater was impacted with LNAPL in five of the additional eight monitor wells installed at the site (MW-2, MW-5, MW-6, MW-8, and MW-9) for a total of seven total impacted monitor wells. Thickness of the LNAPL range from a sheen in monitor well MW-6 to 10.02 feet in MW-1 (**Figure 3**). No LNAPL was measured in monitor wells MW-3, MW-4, and MW-7.

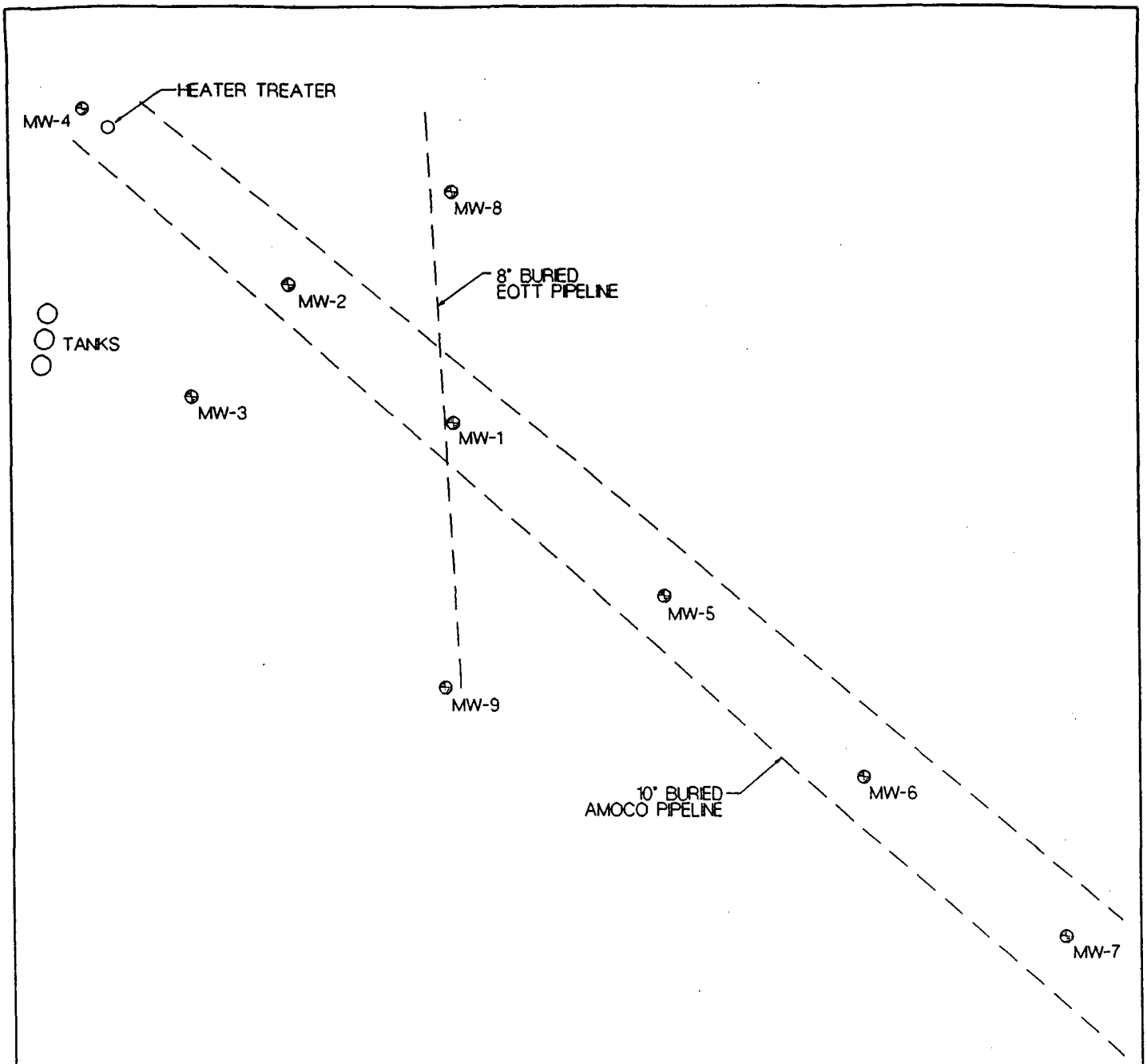
Groundwater occurs at a depth of approximately 55 feet bgs in each of the nine monitor wells. The groundwater gradient direction is to the southeast (**Figure 4**).

Groundwater samples were collected from monitor well MW-3 and submitted for analysis of BTEX and TPH. MW-3 had a TPH of 2 ppm and a total BTEX of 0.025 ppm. (**Table IV**). No samples were collected from upgradient monitor well MW-4 or downgradient monitor well MW-7.

3.0 GEOLOGY AND HYDROGEOLOGY

The geology of the Southern High Plains of Texas and Eastern New Mexico consists of the Tertiary Ogallala Formation which is overlain by Quaternary eolian, fluvial, and lacustrine sediments. The Quaternary deposits, ranging in age from 1.4 million years ago until recent, extends to a maximum depth of 80 feet bgs in the region. The Tertiary Ogallala Formation contains coarse fluvial conglomerates, sandstone, and fine-grain eolian siltstone and clay. The depositional environment of the Ogallala Formation and overlying Quaternary deposits produce overlapping, humid type alluvial fans. Exposed along dry riverbeds in the region, the Quaternary alluvium deposits consist of sands, silts, and gravels. Locally, a resistant calcitic layer known as the caprock overlies the Ogallala Formation. The caprock is exposed along the northwestern portion of Lea County.

The Ogallala aquifer is the primary drinking water/irrigation source for the Southern High Plains of Texas and Eastern New Mexico. The Ogallala aquifer occurs within the Tertiary Ogallala Formation which is composed of terrigenous sediments such as sands, gravels, and finer sediments. The aquifer is covered by Quaternary deposits and unconformably overlies Cretaceous, Triassic, and Permian rocks. Water table elevations approximately parallel regional land surface (Dips to the southeast). Generally, the hydraulic conductivity (K) for the aquifer is < or = to 200 gal/day/ft2 with a porosity of 43% and a specific yield of 23% for fine-grain sands. However, as of this abatement plan, the local hydraulic conductivity, storativity, and transmissivity have not been determined at the site.



LEGEND

MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER

0 120
FEET

N

BY:
DESIGN SERVICES
1202 CO RD. 114 W
MIDLAND, TEXAS 79706
OFFICE: (915)570-7733
PAGER: (915)567-3429

TITLE:
MONITORING WELL
LOCATION MAP
LOVINGTON, NEW MEXICO

DWN:	DES.:
CHKD:	APPD:
DATE: 2-9-99	REV.:

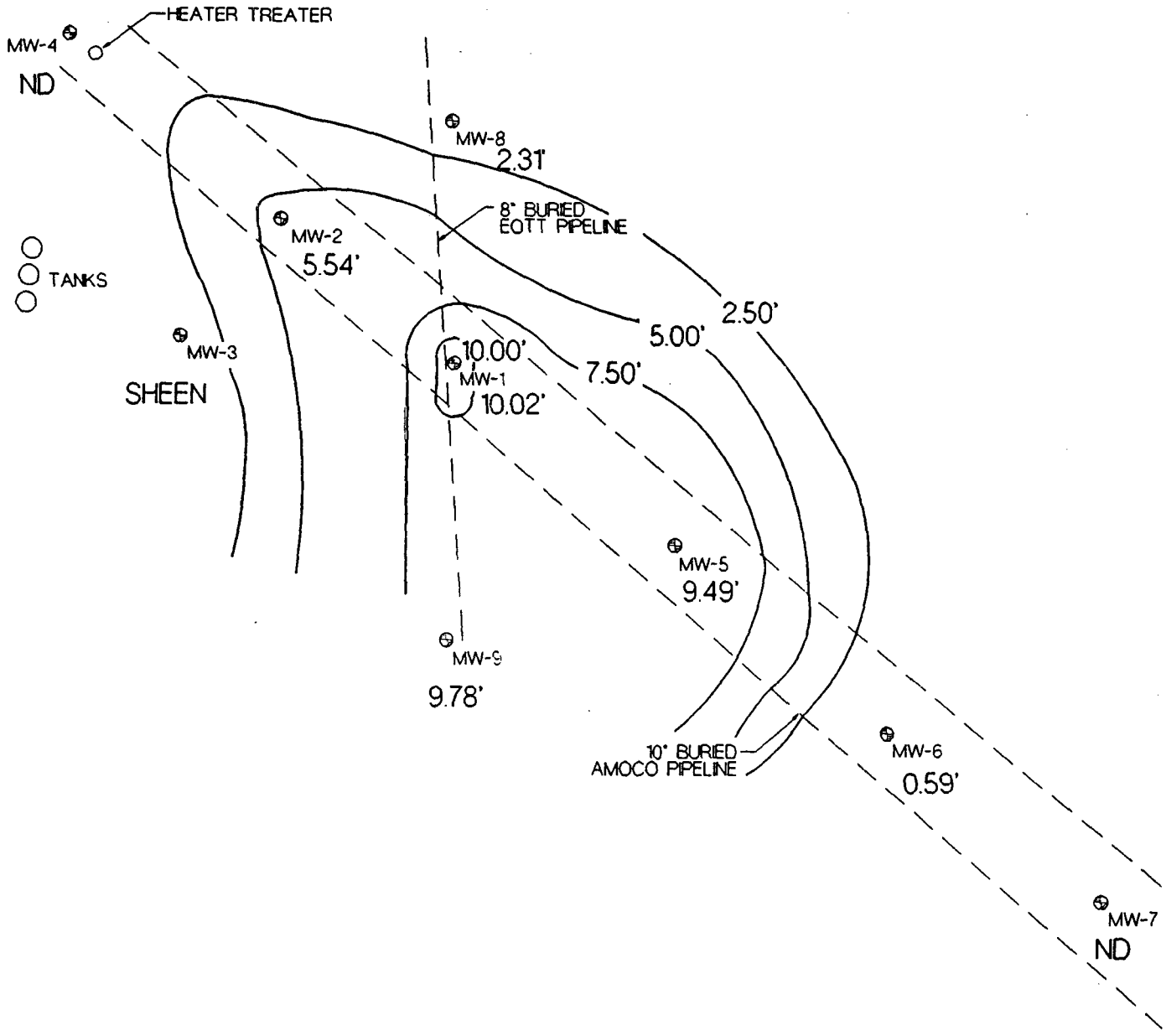
PROJECT NO: 18861
EOTT ENERGY CORP.
LOVINGTON, NM.

FIGURE 2

TABLE III
SOIL ANALYSIS FOR MONITOR WELLS

SAMPLE ID	DATE	TPH (DRO) (in ppm)	Benzene (in ppm)	Toluene (in ppm)	Ethylbenzene (in ppm)	Xylenes (in ppm)	Chlorides
MW-3 (13-15')	07/09/98	<10	<0.100	<0.100	<0.100	0.331	<10.6
MW-3 (48-50')	07/09/98	2,560	<0.100	0.192	0.234	1.366	<10.6
MW-3 (53-55')	07/09/98	3,000	<0.100	0.266	0.237	1.304	32.0
MW-4 (18-20')	09/21/98	<10	0.163	0.182	<0.100	<0.100	NA
MW-4 (53-55')	09/21/98	<10	<0.100	<0.100	<0.100	<0.100	NA
MW-5 (48-50')	09/21/98	3,600	<0.100	0.473	0.792	5.220	NA
MW-5 (53-55')	09/21/98	10,475	0.222	5.700	4.480	20.630	NA
MW-6 (18-20')	09/21/98	<10	0.170	0.190	<0.100	0.108	NA
MW-6 (53-55')	09/21/98	1,510	0.189	1.756	0.805	4.240	NA
MW-7 (28-30')	10/05/99	<10	<.100	<0.100	<0.100	<0.100	NA
MW-7 (53-55')	10/05/98	<10	<.100	<.100	<.100	<.100	NA
MW-8 (48-50')	10/05/98	2,190	<0.100	0.301	0.407	2.290	NA
MW-8 (53-55')	10/05/98	4,950	<0.100	1.540	1.220	5.330	NA
MW-9 (48-50')	10/05/98	10,675	<0.100	3.370	3.620	17.110	NA
MW-9 (53-55')	10/05/98	9,200	<0.100	<0.100	<0.100	<0.100	NA

No soil samples were collected from monitor well MW-2 at the request of EOTT



LEGEND

MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
ND	NON DETECTED

0 — 120
FEET

N

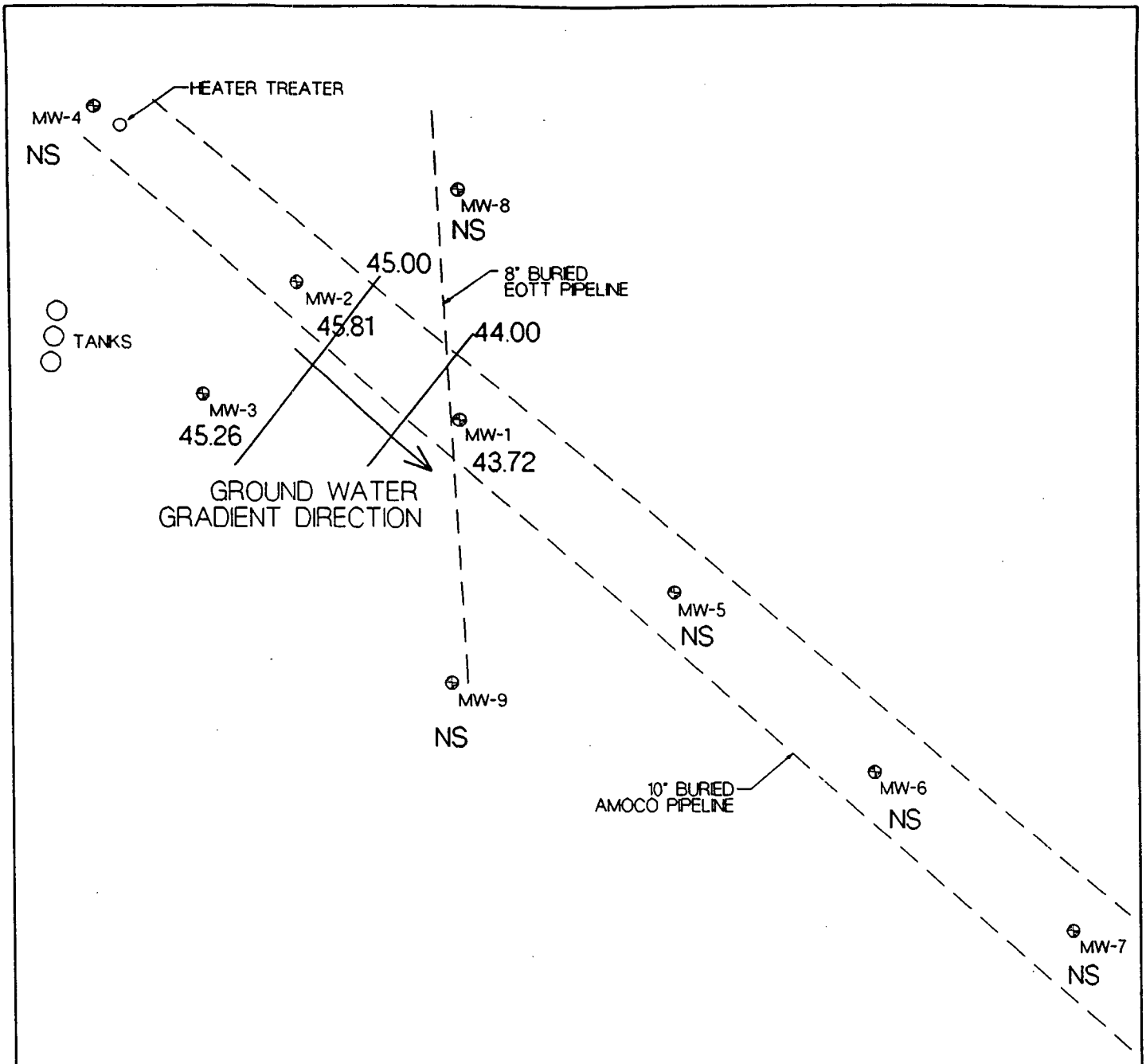
BY:
DESIGN SERVICES
1202 CO RD. 114 W
MIDLAND, TEXAS 79706
OFFICE: (915)570-7733
PAGER: (915)567-3429

TITLE:
LNAPL THICKNESS MAP
AS OF OCTOBER 28, 1998
LOVINGTON, NEW MEXICO

DWN:	DES.:
CHKD:	APPD:
DATE: 2-9-99	REV.:

PROJECT NO: 18861
EOTT ENERGY CORP.
LOVINGTON, NM.

FIGURE 3



LEGEND

⊕ MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
NS	NOT SURVEYED

0 120
FEET

N

BY:
DESIGN SERVICES
1202 CO RD. 114 W
MIDLAND, TEXAS 79706
OFFICE: (915)570-7733
PAGER: (915)567-3429

TITLE:
GOUND WATER GRADIENT MAP
AS OF JULY 10, 1998
LOVINGTON, NEW MEXICO

DWN:	DES.:	PROJECT NO: 18861
CHKD:	APPD:	EOTT ENERGY CORP. LOVINGTON, NM.
DATE: 2-9-99	REV.:	FIGURE 4

TABLE IV
GROUNDWATER ANALYSIS

SAMPLE ID	DATE	TPH (in ppm)	Benzene (in ppm)	Toluene (In ppm)	Ethylbenzene (in ppm)	Xylenes (in ppm)	MTBE (in ppm)
MW-3	07/13/98	2.0	0.001	0.006	0.004	0.014	<0.001

3.1 Water Well Inventory

A water well search for the site yielded 4 water wells located within a one-mile radius of the property (**Appendix D** - Water Well Search). None of the wells are downgradient or within a half-mile radius of the site. Groundwater depths to these wells (as of 1976) was approximately 40 to 46 feet bgs.

3.2 Surface Water and Streams

No surface water bodies or streams are located within a 1-mile radius of the release source.

4.0 STAGE I ABATEMENT WORKPLAN

The following Stage I Abatement Workplan is based on the results of the assessment activities performed to date and addresses additional work required in order to progress to a Stage 2 Abatement Plan.

EOTT proposes installation of two additional monitor wells (PMW-10 and PMW-11) at the site in order to further characterize the extent of the LNAPL Plume. Proposed monitor well PMW-10 will be placed approximately 200 feet northeast of MW-8, while proposed monitor well PMW-11 will be placed approximately 200 feet south of MW-9. Proposed monitor well locations are shown in **Figure 5**.

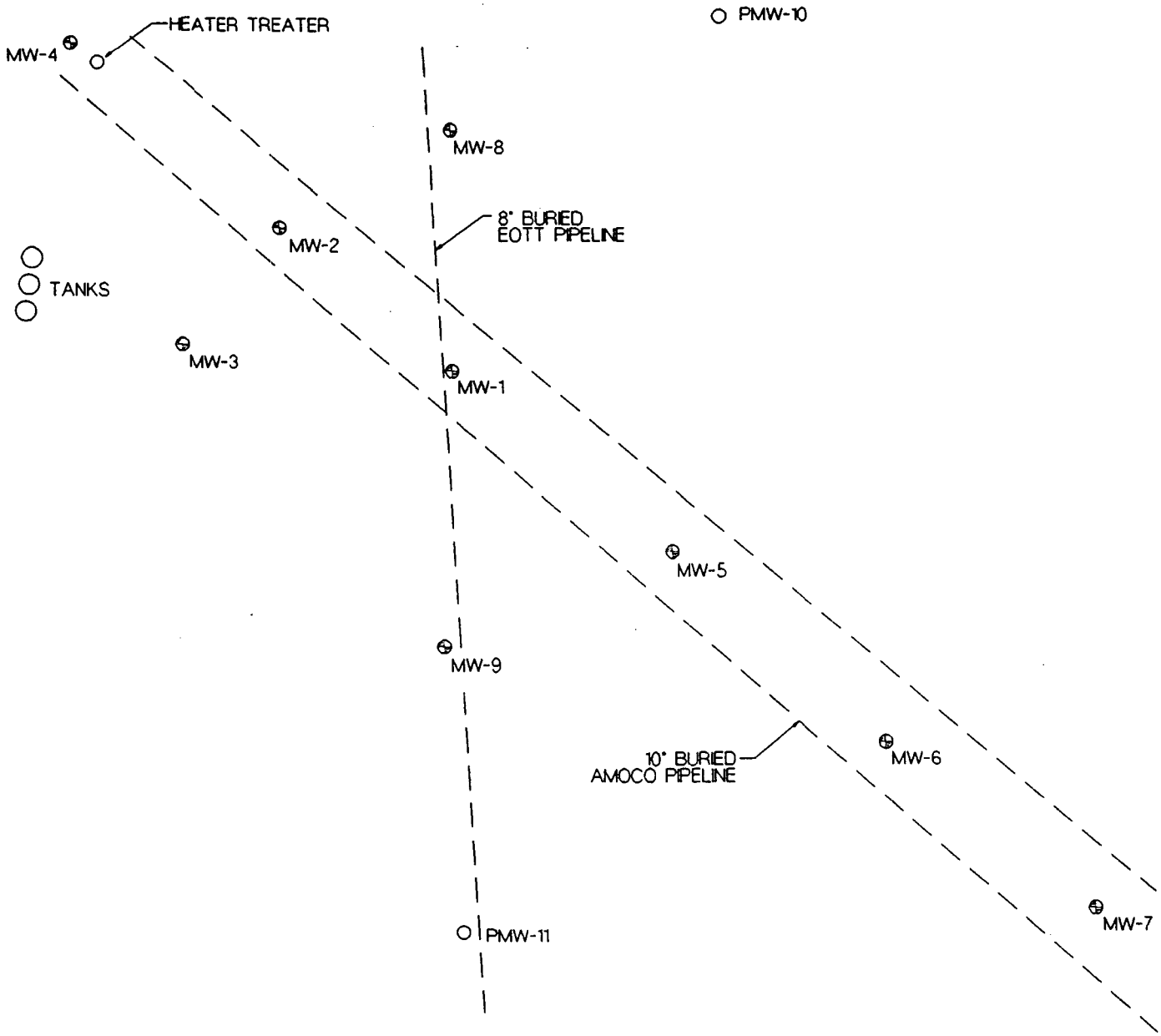
Soil samples will be collected with a split spoon sampler at five-foot intervals and screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID) and will be inspected for the presence of staining or odor. The sample exhibiting the highest PID reading and the sample collected from the interval directly above where groundwater is encountered will be submitted for laboratory analysis of TPH and total BTEX.

A groundwater sample will be collected from each monitor well not impacted with LNAPL and submitted for laboratory analysis of TPH and total BTEX. In addition, one water sample will be collected from upgradient monitor well MW-4 and submitted for analysis of Total Dissolved Solids (TDS) using USEPA method 160.1.

Upon completion of the two proposed monitor wells, all existing monitor wells will be surveyed in order to update the groundwater gradient map for the site.

In order to determine if the LNAPL plume has stabilized or is on the move, quarterly monitoring and sampling of the site should be implemented.

EOTT proposes to perform a slug test on several of the monitor wells (MW-4 and MW-7) in order to determine the hydraulic conductivity, transmissivity, storativity, and permeability of the aquifer. The slug test will be instrumental in the design for a Stage 2 Abatement Recovery System.



LEGEND

⊕ MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
O PMW	PROPOSED MONITOR WELL LOCATIONS

0 120
FEET

N

BY:
DESIGN SERVICES
1202 CO RD. 114 W
MIDLAND, TEXAS 79706
OFFICE: (915)570-7733
PAGER: (915)567-3429

TITLE:
PROPOSED MONITORING WELL LOCATION MAP
LOVINGTON, NEW MEXICO

DWN:	DES.:	PROJECT NO: 18861
CHKD:	APPD:	EOTT ENERGY CORP. LOVINGTON, NM.
DATE: 2-9-99	REV.:	FIGURE 5

At the permission of the NMOCD, EOTT would like to begin emergency abatement and recovery of the LNAPL from the monitor wells. The proposed test recovery system will consist of one product only Genie® skimmer unit (to be expanded to a total of 6 units at a later date), a compressor, 2,500 gallon above ground storage tank, and associated hosing. The tank will be equipped with a shut-off valve to prevent overfill of the tank. The recovered LNAPL will be transported by EOTT to the their Denton Station located approximately 1-mile southeast of the site.

5.0 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

5.1 Decontamination of Drilling Equipment

Decontamination of the drilling rig will be the responsibility of the drilling company. In general, the cleaning procedures will consist of using a high pressure steam to wash the drilling and sampling equipment prior to starting each monitor well. Prior to use, the sampling equipment will be cleaned using Alconox ® detergent and rinsed with distilled water.

5.2 Soil Sampling

Samples of the subsurface soils will be collected using split-spoon samples at 5 foot intervals. Representative soil samples will be divided into two separate portions using clean disposable gloves and sampling tools. One portion of the soil sample will be placed in a disposable sample bag. The bag will be labeled and sealed for head space analysis using a photo-ionization detector (PID) calibrated to a 100 ppm isobutylene standard. Each sample will be allowed to volatilize prior to conducting the analysis. The other portion of the soil sample will be placed in a sterile 4 ounce glass container equipped with a Teflon-lined lid furnished by the laboratory. The container will be filled to capacity, labeled, and placed on ice at 4° C in a cooler. Upon selection of samples for analysis, the cooler will be sealed for shipment to the laboratory. Proper chain-of-custody documentation will be maintained throughout the sampling process.

5.3 Groundwater Sampling

Monitor wells will be developed and purged with a clean 2-inch grundfos pump. The pump will be cleaned prior to each use using Alconox ® detergent and rinsed with distilled water. A minimum of three well volumes will be removed and placed in DOT approved 55-gallon drums and stored onsite.

Groundwater samples for BTEX analysis will be placed in sterile, 40 ml glass VOA vials equipped with Teflon-lined caps, while groundwater samples for TPH analysis will be placed in 1-liter amber glass containers. The containers will be pre-preserved with HCL as provided by the laboratory. The 40 ml vials will be filled to a positive meniscus, sealed, visually checked to ensure absence of air bubbles, then placed on ice at 4° C in a cooler prior to shipment to the laboratory.

6.0 SCHEDULE

Field activities will be scheduled following written approval of the Stage 1 Abatement Workplan by the NMOCD. Field activities will be initiated immediately, subject to the availability of a qualified and experienced driller. It is anticipated that field activities will require a minimum of 3 days to complete. The results of the Stage 1 Abatement Workplan and recommendations for remediation of the site will be submitted within 45 days of completion of field activities. This will allow sufficient time for laboratory analysis, evaluation of data, and remedial design.

7.0 REFERENCES

Groundwater Handbook; United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992.

Hydrology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico; Report Number 177; Bureau of Economic Geology; 1988.

Hydrochemistry and Water Resources of the Lower Dockum Group in the Texas Panhandle and Eastern New Mexico; Report Number 161: Bureau of Economic Geology; 1986.

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart 1.

State of New Mexico Standards for Interstate and Intrastate Streams, New Mexico Water Quality Control Commission, Harold Runnels Building, Santa Fe, New Mexico, December 1994.

APPENDIX A

LABORATORY ANALYSIS

CARDINAL LABORATORIES
PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ___ of ___

H2958

Company Name:	EOTT ENERGY PIPELINE
Project Manager:	LENNAH FROST
Address:	P.O. BOX 1660
City:	MIDLAND State: TX Zip: 79702
Phone #:	915-687-2060 x34
Fax #:	915-687-2713
Project #:	DENTON GATHERING - 8"
Project Name:	
Project Location:	DARK ANGEL

BILL TO	PO #:
Company:	EOTT ENERGY PIPELINE
Attn:	BOBBY GARRUÑO
Address:	PO BOX 5050
City:	HOBBS
State:	NM Zip: 88241
Phone #:	505 392-1882
Fax #:	505 392-2946

LAB I.D. #	Sample I.D.	COMP(C) OR GRAB(G)	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERVATION: ACID:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX	TCLP
H2958-1	NORTH SIDE	G				✓					✓		5/15/97	11:15	✓	✓
H2958-2	EAST SIDE	G				✓					✓		5/15/97	11:15	✓	✓
H2958-3	WEST SIDE	G				✓					✓		5/15/97	11:15	✓	✓
H2958-4	SOUTH SIDE	G				✓					✓		5/15/97	11:15	✓	✓

Sampler Relinquished: Roger Espinoza	Date: 5-15-97 Time: 1230	Received By:	Phone Result: ☐ Yes ☐ No Additional Fax #:
Relinquished By:	Date: Time:	Received By: (Lab Staff)	Fax Results: ☐ Yes ☐ No REMARKS:
Delivered By: (Circle One) UPS - Fed Ex - Bus - Other:		Sample Condition: Cool ☒ Yes ☐ No; Intact ☐ Yes ☐ No	CHECKED BY: (Initials)

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
EOTT ENERGY PIPELINE
ATTN: LENNAH FROST
P.O. BOX 1660
MIDLAND, TX 79702
FAX TO: 915-687-2713

Receiving Date: 05/15/97
Reporting Date: 05/19/97
Project Number: NOT GIVEN
Project Name: DENTON GATHERING-8"
Project Location: DARK ANGEL

Sampling Date: 05/15/97
Sample Type: SOIL
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: JA

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		05/16/97	05/16/97	05/16/97	05/16/97	05/16/97
H2958-1	NORTH SIDE	25.6	0.002	<0.002	<0.002	0.007
H2958-2	EAST SIDE	13.0	<0.002	<0.002	<0.002	<0.006
H2958-3	WEST SIDE	8830	0.472	1.240	4.130	18.300
H2958-4	SOUTH SIDE	9830	0.620	0.009	0.164	6.380
Quality Control		206	0.122	0.099	0.113	0.340
True Value QC		203	0.109	0.103	0.105	0.310
% Recovery		101	112	96	108	108
Relative Percent Difference		11	<1	<1	<1	<1

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW-846-8020

Chemist

5/16/97
Date

H2958.XLS

TraceAnalysis, Inc.

6701 Aberdeen Avenue Lubbock, Texas 79424
Tel (806) 794 1296 Fax (806) 794 1298
1 (800) 378 1296

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Jeffrey Kindley

Phone #: (915) 563-0118
FAX #: (915) 563-9256

Company Name & Address: Phillips Services Corporation
7904 IH20 West, Midland, Tx 79706

Project #: 18861

Project Name: Eott Lovington

Project Location:

Sampler Signature:

ANALYSIS REQUEST

SPECIAL HANDLING

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	BTEX, MTBE	TPH	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	8240 / 8260	8270	Total Chlorides
14755	MW-3 (13-15')	1			✓					✓		07/09/98	1217	✓	✓								✓
14756	MW-3 (48-50')	1			✓					✓		07/09/98	1255	✓	✓								✓
14757	MW-3 (53-55')	1			✓					✓		07/09/98	1258	✓	✓								✓

Turn around # of days
Fax ASAP
Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Jeffrey Kindley	07/10/98	1325	Rebecca Jacob	7/10/98	1325
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:

REMARKS

Normal Turnaround.

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

PHILIP ENVIRONMENTAL
ATTN: MR. JEFFERY KINDLEY
7904 I-20 WEST
MIDLAND, TEXAS 79706
FAX: 915-563-9526

Receiving Date: 07/10/98
Sample Type: Soil
Project #: 18861
Project Name: EOTT Lovington
Project Location: None Given

Analysis Date: 07/10/98
Sampling Date: 07/09/98
Sample Condition: Intact/Iced

ELT#	FIELD CODE	Chlorides mg/kg	TPH mg/kg
14755	MW-3 (13-15')	<10.6	<10
14756	MW-3 (48-50')	<10.6	2,560
14757	MW-3 (53-55')	32	3,000
	BLANK		<10
	% INSTRUMENT ACCURACY		99
	% EXTRACTION ACCURACY		103

Methods: SW 846-9252, EPA 418.1

Michael R. Fowler

7-13-98
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

PHILIP ENVIRONMENTAL
ATTN: MR. JEFFREY KINDLEY
7904 I-20 WEST
MIDLAND, TEXAS 79706
FAX: 915-563-9526

Receiving Date: 07/10/98
Sample Type: Soil
Project #: 18861
Project Name: EOTT Lovington
Project Location: None Given

Analysis Date: 07/10/98
Sampling Date: 07/09/98
Sample Condition: Intact/Iced

ELT#	FIELD CODE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	m,p-XYLENE (mg/kg)	o-XYLENE (mg/kg)
14755	MW-3 (13-15')	<0.100	<0.100	<0.100	0.225	0.106
14756	MW-3 (48-50')	<0.100	0.192	0.234	0.915	0.451
14757	MW-3 (53-55')	<0.100	0.266	0.237	0.861	0.443
	% IA	102	101	98	97	100
	% EA	93	91	88	87	90
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8020,5030

Michael R. Fowler

7-13-98
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Jeffrey Kindley
Phone #: 1-915-563-0118
FAX #: 1-915-563-9526

Company Name & Address: Philip Services Corporation
7904 IH 20 west
Midland, Tx 79706

Project #: 18861

Project Name: Eott Dar Angel Ranch

Project Location: Lovington, New Mexico

Sampler Signature: Jeffrey Kindley

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI
15557	MW-4 (18-20')	1	40ml Vial	✓							✓			09/21/98	0903	✓	✓						
15558	MW-4 (53-55')	1	40ml Vial	✓							✓			09/21/98	0940	✓	✓						
15559	MW-5 (48-50')	1	40ml Vial	✓							✓			09/21/98	1123	✓	✓						
15560	MW-5 (53-55')	1	40ml Vial	✓							✓			09/21/98	1130	✓	✓						
15561	MW-6 (18-20')	1	40ml Vial	✓							✓			09/21/98	1316	✓	✓						
15562	MW-6 (53-55')	1	40ml Vial	✓							✓			09/21/98	1345	✓	✓						

Relinquished by:	Date:	Time:	Received by:
Jeffrey Kindley	09/25/98	1200	g mcmurrey
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by Laboratory:

REMARKS

Normal Turnaround.

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

PHILIP SERVICES CORPORATION
ATTN: MR. JEFF KINDLEY
7904 I-20 WEST
MIDLAND, TEXAS 79706
FAX: 915-563-9526

Receiving Date: 09/25/98
Sample Type: Soil
Project #: 18861
Project Name: EOTT Dar Angel Ranch
Project Location: Lovington, New Mexico

Analysis Date: 09/28/98
Sampling Date: 09/21/98
Sample Condition:Intact/Iced

ELT#	FIELD CODE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	m,p-XYLENE (mg/kg)	o-XYLENE (mg/kg)	TPH (mg/kg)
15557	MW-4 (18-20)	0.163	0.182	<0.100	<0.100	<0.100	<10
15558	MW-4 (53-55)	<0.100	<0.100	<0.100	<0.100	<0.100	<10
15559	MW-5 (48-50)	<0.100	0.473	0.792	3.333	1.888	3,600
15560	MW-5 (53-55)	0.222	5.702	4.478	13.876	6.756	10,475
15561	MW-6 (18-20)	0.170	0.190	<0.100	0.108	<0.100	<10
15562	MW-6 (53-55)	0.189	1.756	0.805	2.905	1.335	1,510
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<10
	% IA	101	98	95	93	95	101
	% EA	100	96	93	92	97	106

METHODS: EPA SW 846-8020,5030,EPA 418.1

Raland K. Tuttle

9-28-98
Date

PHILIP ENVIRONMENTAL

Chain of Custody Record — Nonchemical Samples

210 West Sand Bank Road
P.O. Box 230
Columbia, IL 62236-0230

(618) 281-7173 Phone
(618) 281-5120 FAX

COC Serial No. G 2975

Project Name: East Lovington
Project Number: 18861 Phase . Task: 3001 . 77
Samplers: JWK

Lab Name: Env. Labs of Tx
Lab Location: Odessa, Tx

	Sample Number	Date	Time	Matrix	Analysis Type: BTEX	Analysis Type: TPH 418.1	Comments
15693	MW-7 (28-30)	10/05/98	830	Soil	✓	✓	
15694	MW-7 (53-55)	10/05/98	845	Soil	✓	✓	
15695	MW-8 (48-50)	10/05/98	930	Soil	✓	✓	
15696	MW-8 (53-55)	10/05/98	935	Soil	✓	✓	
15697	MW-9 (48-50)	10/05/98	1210	Soil	✓	✓	
15698	MW-9 (53-55)	10/05/98	1230	Soil	✓	✓	

Relinquished by:

Signature	Date	Time
Jeffrey Kelly	10/12/98	0830

Received By:

Signature	Date	Time
Jeanne McMurrey	10-12-98	1410

Carrier: Airbill No.

Shipping and Lab Notes: Normal Turnaround

PE-211 (4/95)

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

PHILIP SERVICES CORPORATION
ATTN: MR. JEFF KINDLEY
7904 I-20 WEST
MIDLAND, TEXAS 79706
FAX: 915-563-9526

Receiving Date: 10/12/98
Sample Type: Soil
Project #: 18861
Project Name: EOTT Lovington
Project Location: None Given

Analysis Date: 10/12/98
Sampling Date: 10/05/98
Sample Condition: Intact

ELT#	FIELD CODE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	m,p-XYLENE (mg/kg)	o-XYLENE (mg/kg)	TPH (mg/kg)
15693	MW - 7 (28-30)	<0.100	<0.100	<0.100	<0.100	<0.100	<10
15694	MW - 7 (53-55)	<0.100	<0.100	<0.100	<0.100	<0.100	<10
15695	MW - 8 (48-50)	<0.100	0.301	0.407	1.50	0.789	2,190
15696	MW - 8 (53-55)	<0.100	1.54	1.22	3.52	1.81	4,950
15697	MW - 9 (48-50)	<0.100	3.37	3.62	11.2	5.91	10,675
15698	MW - 9 (53-55)	<0.100	<0.100	<0.100	<0.100	<0.100	9,200
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<10
	% IA	99	99	95	95	96	100
	% EA	101	97	95	95	96	110

METHODS: EPA SW 846-8020,5030,EPA 418.1

Raland K. Tuttle

10-13-98
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Jennah Frost
Phone #:
FAX #: 6872713

Company Name & Address: EOTT Energy

Project #:
Project Name :

Project Location: Denton G.S.
Sampler Signature:

ANALYSIS REQUEST

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	TPH 8015
11137	bottom hole													5/8/97	11:30am	X								X

Relinquished by:	Date:	Time:	Received by:
Jennah Frost	5-8-97	3:30pm	Roland K Tuttle
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by Laboratory:

REMARKS

ENVIRONMENTAL LAB OF TEXAS, INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY
ATTN: MRS. LENNAH FROST
P.O. BOX 1660
MIDLAND, TEXAS 79703
FAX: 915-687-2713

Receiving Date: 05/08/97
Sample Type: SOIL
Project #: NONE GIVEN
Project Name: NONE GIVEN
Project Location: DENTON G.S.

Analysis Date: 05/09/97
Sampling Date: 05/08/97
Sample Condition: Intact

ELT#	FIELD CODE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	m,p-XYLENE (mg/kg)	o-XYLENE (mg/kg)	TPH DRO(C10-C28) (mg/kg)
11137	BOTTOM HOLE 4'-6'	82.146	128.354	71.429	225.773	82.844	44,929
	% IA	109	107	108	108	110	123
	% EA	94	110	111	108	115	98
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<25

METHODS: SW 846-8020,5030,8015M

Michael R. Fowler

Michael R. Fowler

5-12-97
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Lennah FROST
Phone #:
FAX #: 687-2713

Company Name & Address: EOTT

Project #:
Project Name :

Project Location: Denton G.S.
Sampler Signature:

ANALYSIS REQUEST

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	TPH 8015M
1216		1												5/21/97	10:15 ~~4:30~~	X								X

Relinquished by:	Date:	Times:	Received by:	REMARKS
Lennah West	5-21-97	3:15 PM	Kala Clark	
Relinquished by:	Date:	Times:	Received by:	
Relinquished by:	Date:	Times:	Received by Laboratory:	

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY
ATTN: MRS. LENNAH FROST
P.O. BOX 1660
MIDLAND, TEXAS 79703
FAX: 915-687-2713

Receiving Date: 05/21/97
Sample Type: SOIL
Project : NONE GIVEN
Project Location: DENTON G.S.

Analysis Date: BTEX 05/22/97
Analysis Date: DRO 05/23/97
Sampling Date: 05/21/97
Sample Condition: Intact

ELT#	FIELD CODE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	m,p-XYLENE (mg/kg)	o-XYLENE (mg/kg)	TPH (DRO) C10-C28 (mg/kg)
11216	DENTON G.S. 10'-14'	75.451	127.977	72.024	272.402	96.683	8,694
	% IA	109	111	112	112	110	88
	% EA	128	95	89	89	90	-
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	10

METHODS: SW 846-8020,5030, 8015M DRO

Raland K. Tuttle

Raland K. Tuttle

5-27-97
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Lennah Frost
Phone #:
FAX #:
Company Name & Address: ECTT
Project #:
Project Name :
Project Location: Denton C-5
Sampler Signature:

ANALYSIS REQUEST

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX					PRESERVATIVE METHOD					SAMPLING		BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	8015M TPH
				WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HNO3	ICE	NONE	OTHER	DATE	TIME									
11272		1										1		5/28/97	12:30	X								X

Relinquished by:	Date:	Times:	Received by:	REMARKS
Lennah Frost	5-28-97	3:45PM		
Relinquished by:	Date:	Times:	Received by:	
Relinquished by:	Date:	Times:	Received by Laboratory:	

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY
ATTN: MRS. LENNAH FROST
P.O. BOX 1660
MIDLAND, TEXAS 79703
FAX: 915-687-2713

Receiving Date: 05/28/97
Sample Type: SOIL
Project : NONE GIVEN
Project Location: DENTON G.S.

Analysis Date: 05/28/97
Sampling Date: 05/28/97
Sample Condition: Intact

ELT#	FIELD CODE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	m,p-XYLENE (mg/kg)	o-XYLENE (mg/kg)	TPH (DRO) C10-C28 (mg/kg)
11216	DENTON G.S. 14'-17'	249	421	103	349	112	9,210
	% IA	90	95	100	100	96	101
	% EA	92	106	108	108	105	-
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	10

METHODS: SW 846-8020,5030, 8015M DRO

Michael R. Fowler

Michael R. Fowler

5-29-97
Date

PHILIP ENVIRONMENTAL

Chain of Custody Record — Nonchemical Samples

210 West Sand Bank Road
P.O. Box 230
Columbia, IL 62236-0230

(618) 281-7173 Phone
(618) 281-5120 FAX

COC Serial No. G 2978

Project Name: Eott Lovington
Project Number: Phase . Task:
Samplers: Jeffrey Kindley

Lab Name: Environmental Labs of Texas
Lab Location: Midland, Tx

	Sample Number	Date	Time	Matrix	Analysis Type: 8015	Comments
13653	S.S.-1 (33-35')	02/10/98	1310	Soil	✓	Normal
13654	S.S.-1 (38-40')	02/10/98	1330	Soil	✓	Turn around
13655	S.S.-1 (43-45')	02/10/98	1345	Soil	✓	

Relinquished by:

Signature	Date	Time
Jeffrey Kindley	02/11/98	910

Received By:

Signature	Date	Time
Jeanne McMurrey	02-11-98	910

Carrier: Airbill No.

Shipping and Lab Notes:

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY
ATTN: MRS. LENNAH FROST
P.O. BOX 1660
MIDLAND, TEXAS 79703
FAX: 915-687-2713

Receiving Date: 02/11/98
Sample Type: SOIL
Project : NONE GIVEN
Project Location: EOTT LOVINGTON

Analysis Date:TPH 2/16/98
Analysis Date: BTEX 2/13/98
Sampling Date: 02/10/98
Sample Condition: Intact

ELT#	FIELD CODE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	m,p-XYLENE (mg/kg)	o-XYLENE (mg/kg)	TPH (DRO) C10-C28 (mg/kg)
13653	S.S.-1 (33-35')	2.287	25.98	15.33	45.19	17.28	2,129
13654	S.S.-1 (38-40')	<0.100	2.065	2.179	7.109	3.848	1,713
13655	S.S.-1 (43-45')	1.722	20.96	12.13	34.87	14.00	1,682
	% IA	105	107	110	109	110	99
	% EA	98	93	96	95	95	95
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<10

METHODS: SW 846-8020,5030, 8015M DRO

Michael R. Fowler

2-17-98
Date

TraceAnalysis, Inc.

6701 Aberdeen Avenue Lubbock, Texas 79424
Tel (806) 794 1296 Fax (806) 794 1298
1 (800) 378 1296

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Jeff Kindley

Phone #: (915) 563-0118

FAX #: (915) 563-2593

Company Name & Address: Phillips Services Corporation, 7904 IH 20 West, Midland, Tx 79706

Project #: 18861

Project Name: EoH Lovington

Project Location: Lovington, New Mexico

Sampler Signature: Jeffy Kindley

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX, MTBE	TPH (418.1)	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	8240 / 8260	8270
14804	MW-3	3	1 Liter 40ml	✓				✓		✓		07/10/98	1605	✓	✓							

SPECIAL HANDLING: Turn around # of days; Fax ASAP; Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Jeffy Kindley	July 13, 1998	1440	D McMurrey	7-13-98	1440
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:

REMARKS

Normal Turnaround.

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

PHILIP ENVIRONMENTAL
ATTN: MR. JEFF KINDLEY
7904 I-20 WEST
MIDLAND, TEXAS 79706
FAX: 915-563-2593

Receiving Date: 07/13/98
Sample Type: Water
Project #: 18861
Project Name: EOTT Lovington
Project Location: Lovington, New Mexico

Analysis Date: 07/14/98
Sampling Date: 07/10/98
Sample Condition:Intact/Iced/HCl

ELT#	FIELD CODE	MTBE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYLBENZENE (mg/L)	m,p-XYLENE (mg/L)	o-XYLENE (mg/L)	TPH (mg/L)
14804	MW-3	<0.001	0.001	0.006	0.004	0.010	0.004	2
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<1
	% IA	89	89	110	111	111	109	101
	% EA	100	103	115	108	111	106	*

METHODS: EPA SW 846-8020,5030,EPA 418.1

Michael R. Fowler

7-14-98
Date

APPENDIX B

BORING LOGS

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-2
Well No MW-2

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 07/09/98 @ 0949
Date/Time Completion(s): 07/09/98 @ 1100
Air Monitoring Type: Not Applicable
GWL Depth: 53 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
0-							
5			SS	Buff tan limestone	0	Lm	No hydrocarbon odor or staining
--10			SS		0		
--15			SS	with sandstone layer	0	Ss	
--20			SS	Tan fine-grain well sorted sand	0	Sm	No hydrocarbon odor or staining
--25			SS		0		
--30			SS		0		
--35			SS		0		
--40			SS		0		

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Project Name: EOTT Energy Pipeline Limited Partnership — Project No. 18861
Borehole Location: Lea Co., New Mexico — Logged By: Jeffrey Kindley
Drilled By: Eades Drilling — Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 07/09/98 @ 0949 — Date/Time Completion(s): 07/09/98 @ 1100
Air Monitoring Type: Not Applicable — GWL Depth: 53 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
40							
45			SS	Tan fine-grain well sorted sand	10	Sm	Slight hydrocarbon odor with no staining
--50			SS		80		Strong hydrocarbon odor with no staining
--55			SS		8		Water on rods at 53 feet
--60							
--65							
--70				Boring terminated at 70 feet			
--75							
--80							

Comments: At the request of EOTT, no samples were collected or submitted for analysis for monitor well MW-2

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-3
Well No MW-3

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 07/09/98 @ 1300
Date/Time Completion(s): 07/09/98 @ 1410
Air Monitoring Type: Not Applicable
GWL Depth: 55 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
0-							
5			SS	Buff tan limestone with fine-grain sand	0	Lm/Sm	No hydrocarbon odor or staining
--10			SS		0		
--15	MW-3	13-15	SS		0		
--20			SS	Tan fine-grain well sorted sand	0	Sm	No hydrocarbon odor or staining
--25			SS		0		
--30			SS		0		
--35			SS		3		Slight moisture
--40			SS		180		Strong hydrocarbon odor with no staining

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-3
Well No MW-3

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 07/09/98 @ 0949
Date/Time Completion(s): 07/09/98 @ 1100
Air Monitoring Type: Not Applicable
GWL Depth: 53 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
40							
45			SS	Tan fine-grain well sorted sand	260	Sm	Slight hydrocarbon odor with no staining
--50	MW-3	48-50	SS		380		Strong hydrocarbon odor with no staining
--55	MW-3	53-55	SS		110		Water on rods at 55 feet
--60							
--65							
--70				Boring terminated at 70 feet			
--75							
--80							

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-4
Well No MW-4

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 09/21/98 @ 0845
Date/Time Completion(s): 09/21/98 @ 1000
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
0-							
5			SS	Buff tan limestone with fine-grain sand	0	Lm/Sm	No hydrocarbon odor or staining
--10			SS		0		
--15			SS	with calcareous nodules	0		
--20	MW-4	18-20	SS	Tan fine-grain well sorted sand	0	Sm	No hydrocarbon odor or staining
--25			SS		0		
--30			SS		0		
--35			SS		0		Slight moisture
--40			SS		0		

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-4
Well No MW-4

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 09/21/98 @ 0845
Date/Time Completion(s): 09/21/98 @ 1000
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
40							
45			SS	Tan fine-grain well sorted sand	0	Sm	
--50			SS		0		
--55	MW-4	53-55	SS		0		Water on rods at 54 feet
--60							
--65							
--70				Boring terminated at 70 feet			
--75							
--80							

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-5
Well No MW-5

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 09/21/98 @ 1040
Date/Time Completion(s): 09/21/98 @ 1143
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
0-							
5			SS	Buff tan limestone with fine-grain sand	0	Lm/Sm	No hydrocarbon odor or staining
--10			SS		0		
--15			SS	with calcareous nodules	1		
--20			SS	Tan fine-grain well sorted sand	0	Sm	No hydrocarbon odor or staining
--25			SS		0		
--30			SS		1		
--35			SS		4		
--40			SS		102		Strong hydrocarbon odor with no staining

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-5
Well No MW-5

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 09/21/98 @ 1040
Date/Time Completion(s): 09/21/98 @ 1143
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
40							
45			SS	Tan fine-grain well sorted sand	160	Sm	Strong hydrocarbon odor with no staining
--50	MW-5	48-50	SS		196		
--55	MW-5	53-55	SS		196		Water on rods at 54 feet Hydrocarbon odor with no staining
--60							
--65							
--70				Boring terminated at 70 feet			
--75							
--80							

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-6
Well No MW-6

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 09/21/98 @ 1310
Date/Time Completion(s): 09/21/98 @ 1430
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
0-							
5			SS	Buff tan limestone with fine-grain sand	0	Lm/Sm	No hydrocarbon odor or staining
--10			SS	Tan fine-grain calcareous sand	0	Sm	No hydrocarbon odor or staining
--15			SS		0		
--20	MW-6	18-20	SS	Tan fine-grain well sorted sand	0	Sm	No hydrocarbon odor or staining
--25			SS		0		
--30			SS		0		
--35			SS		0		
--40			SS		0		

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 09/21/98 @ 1310
Date/Time Completion(s): 09/21/98 @ 1430
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
40							
45			SS	Tan fine-grain sand well sorted	0	Sm	
--50			SS		0		
--55	MW-6	53-55	SS		136		Water on rods at 54 feet Hydrocarbon odor with no staining
--60							
--65							
--70				Boring terminated at 70 feet			
--75							
--80							

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-7
Well No MW-7

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 10/05/98 @ 0908
Date/Time Completion(s): 10/05/98 @ 1000
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
0-							
5			SS	Buff tan limestone	0	Lm	No hydrocarbon odor or staining
–10			SS	with sand	0	Lm/Sm	No hydrocarbon odor or staining
–15			SS		0		
				Hard red sandstone		SS	
–20			SS	Tan fine-grain well sorted sand	0	Sm	No hydrocarbon odor or staining
–25			SS		0		
–30	MW-7	28-30	SS		0		
–35			SS		0		
–40			SS		0		

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-7
Well No MW-7

Project Name: EOTT Energy Corporation
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 10/05/98 @ 0908
Date/Time Completion(s): 10/05/98 @ 1000
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
40							
45			SS	Tan fine-grain well sorted sand	0	Sm	
--50			SS		0		
--55	MW-7	53-55	SS		0		Water on rods at 54 feet
--60							
--65							
--70				Boring terminated at 70 feet			
--75							
--80							

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-8
Well No MW-8

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 10/05/98 @ 1220
Date/Time Completion(s): 10/05/98 @ 1300
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
0-							
5			SS	Buff tan sandy limestone	0	Lm/Sm	No hydrocarbon odor or staining
--10			SS		0		
--15			SS		0		
--20			SS	Tan fine-grain well sorted sand	0	Sm	No hydrocarbon odor or staining
--25			SS		0		
--30			SS		0		
--35			SS		0		
--40			SS		3		Slight hydrocarbon odor with no staining

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-8
Well No MW-8

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 10/05/98 @ 1220
Date/Time Completion(s): 10/05/98 @ 1300
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
40							
45			SS	Tan fine-grain well sorted sand	59	Sm	Strong hydrocarbon odor with no staining
--50	MW-8	48-50	SS		125		
--55	MW-8	53-55	SS		166		Water on rods at 54 feet
--60							
--65							
--70				Boring terminated at 70 feet			
--75							
--80							

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Borehole No MW-9
Well No MW-9

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 10/05/98 @ 1423
Date/Time Completion(s): 10/05/98 @ 1600
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
0-							
5			SS	Buff /tan sandy limestone	0	Lm/Sm	No hydrocarbon odor or staining
--10			SS	with sandstone fragments	0	Ss	
--15			SS	Tan fine-grain well sorted sand	0	Sm	No hydrocarbon odor or staining
--20			SS		0		
--25			SS		0		
--30			SS		0		
--35			SS		0		
--40			SS		32		Slight hydrocarbon odor with no staining

Comments:

Geologist Signature Jeffrey Kindley

PHILIP ENVIRONMENTAL

RECORD OF SUBSURFACE EXPLORATION

Project Name: EOTT Energy Pipeline Limited Partnership
Project No. 18861
Borehole Location: Lea Co., New Mexico
Logged By: Jeffrey Kindley
Drilled By: Eades Drilling
Drilling/Rig Methods: Air Rotary 8 1/4"
Date/Time Started: 10/05/98 @ 1423
Date/Time Completion(s): 10/05/98 @ 1600
Air Monitoring Type: Not Applicable
GWL Depth: 54 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	Depth Change (feet)	USCS Symbol	Comments
40							
45			SS	Tan fine-grain well sorted sand	36	Sm	Hydrocarbon odor with no staining
--50	MW-9	48-50	SS		168		
--55	MW-9	53-55	SS		194		Water on rods at 54 feet
--60							
--65							
--70				Boring terminated at 70 feet			
--75							
--80							

Comments:

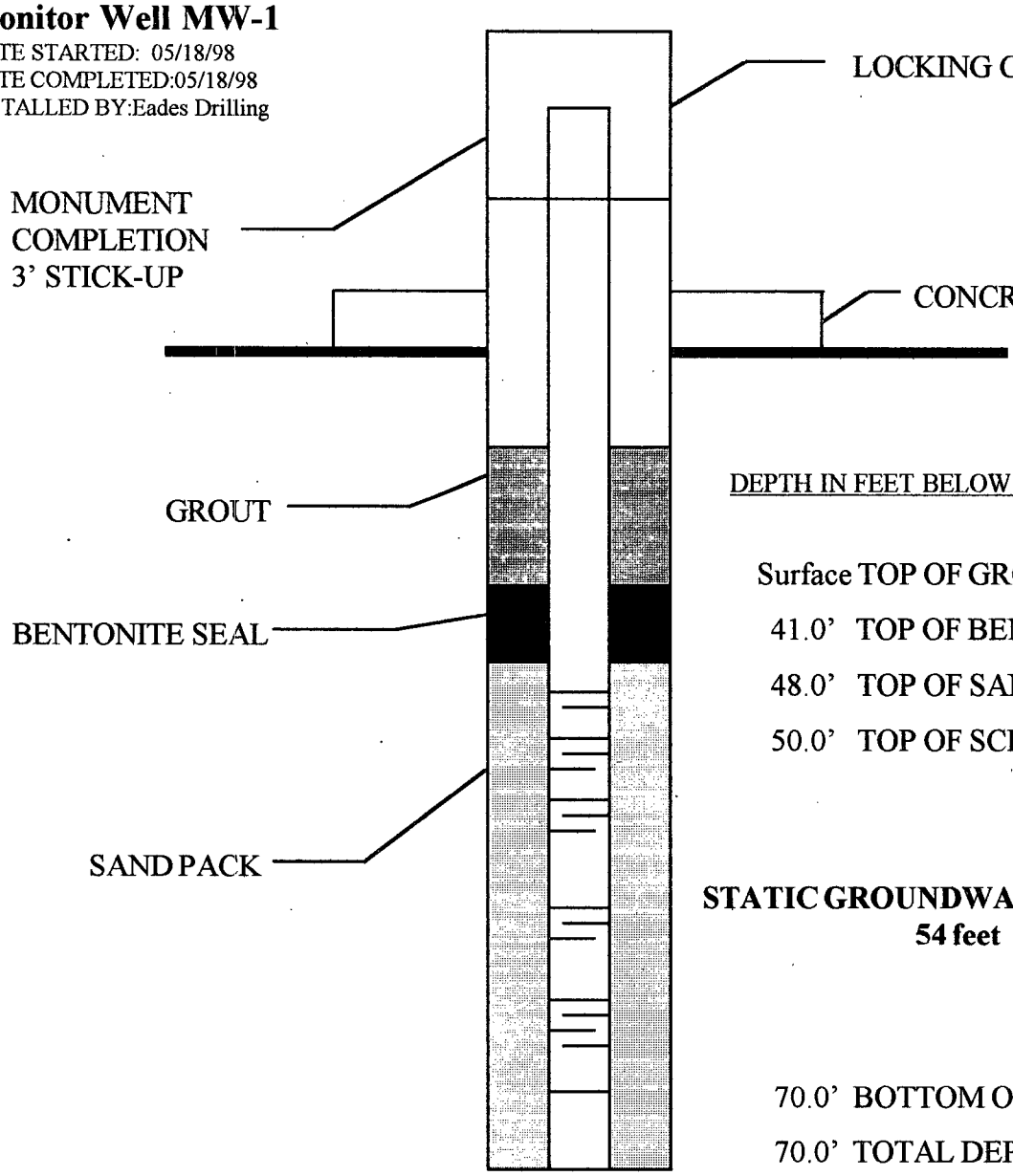
Geologist Signature Jeffrey Kindley

APPENDIX C

MONITOR WELL COMPLETION DIAGRAMS

Monitor Well MW-1

DATE STARTED: 05/18/98
DATE COMPLETED:05/18/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT

41.0' TOP OF BENTONITE SEAL

48.0' TOP OF SAND PACK

50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH:
54 feet

70.0' BOTTOM OF SCREEN

70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

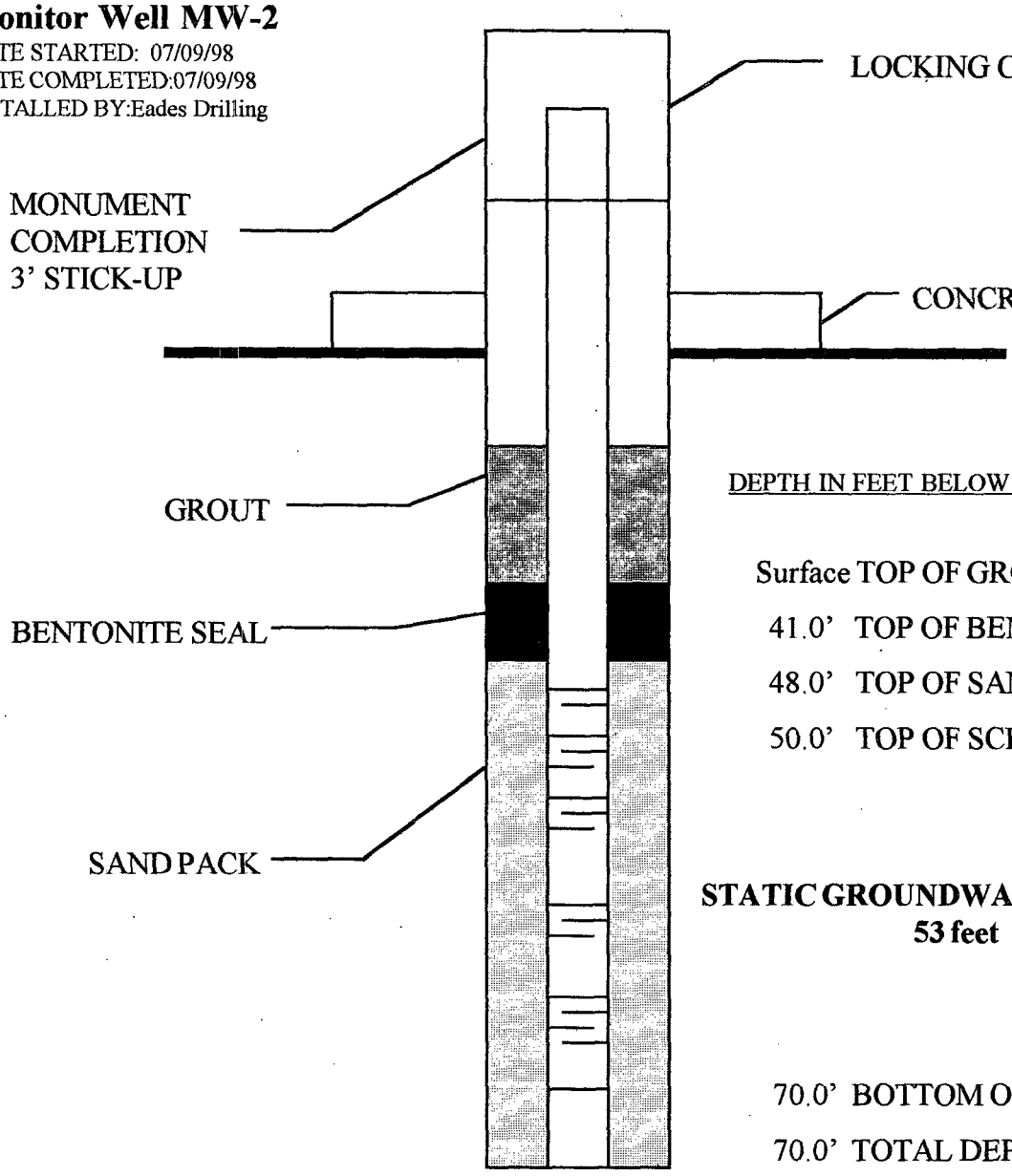
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

Monitor Well MW-2

DATE STARTED: 07/09/98
DATE COMPLETED:07/09/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT
41.0' TOP OF BENTONITE SEAL
48.0' TOP OF SAND PACK
50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH:
53 feet

70.0' BOTTOM OF SCREEN
70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

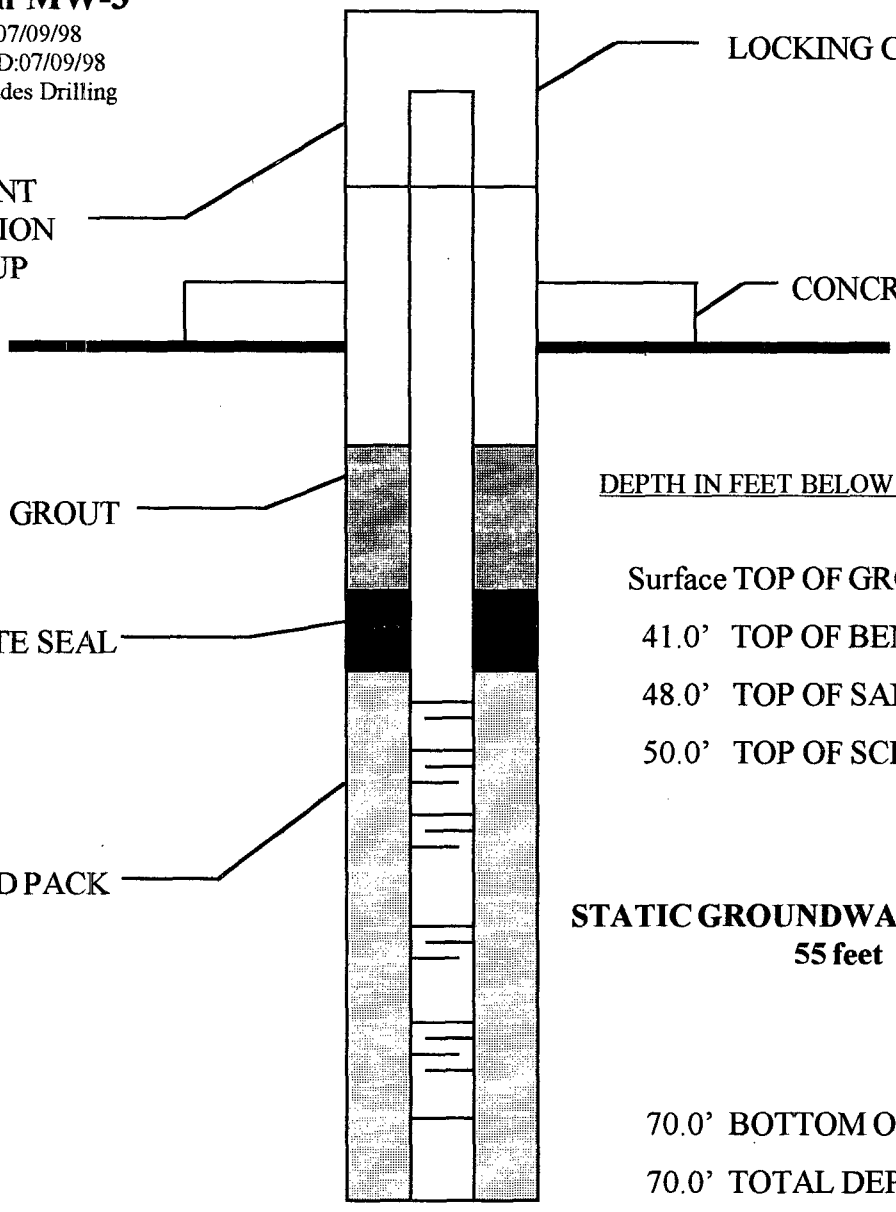
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

Monitor Well MW-3

DATE STARTED: 07/09/98
DATE COMPLETED:07/09/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT
41.0' TOP OF BENTONITE SEAL
48.0' TOP OF SAND PACK
50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH:
55 feet

70.0' BOTTOM OF SCREEN
70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

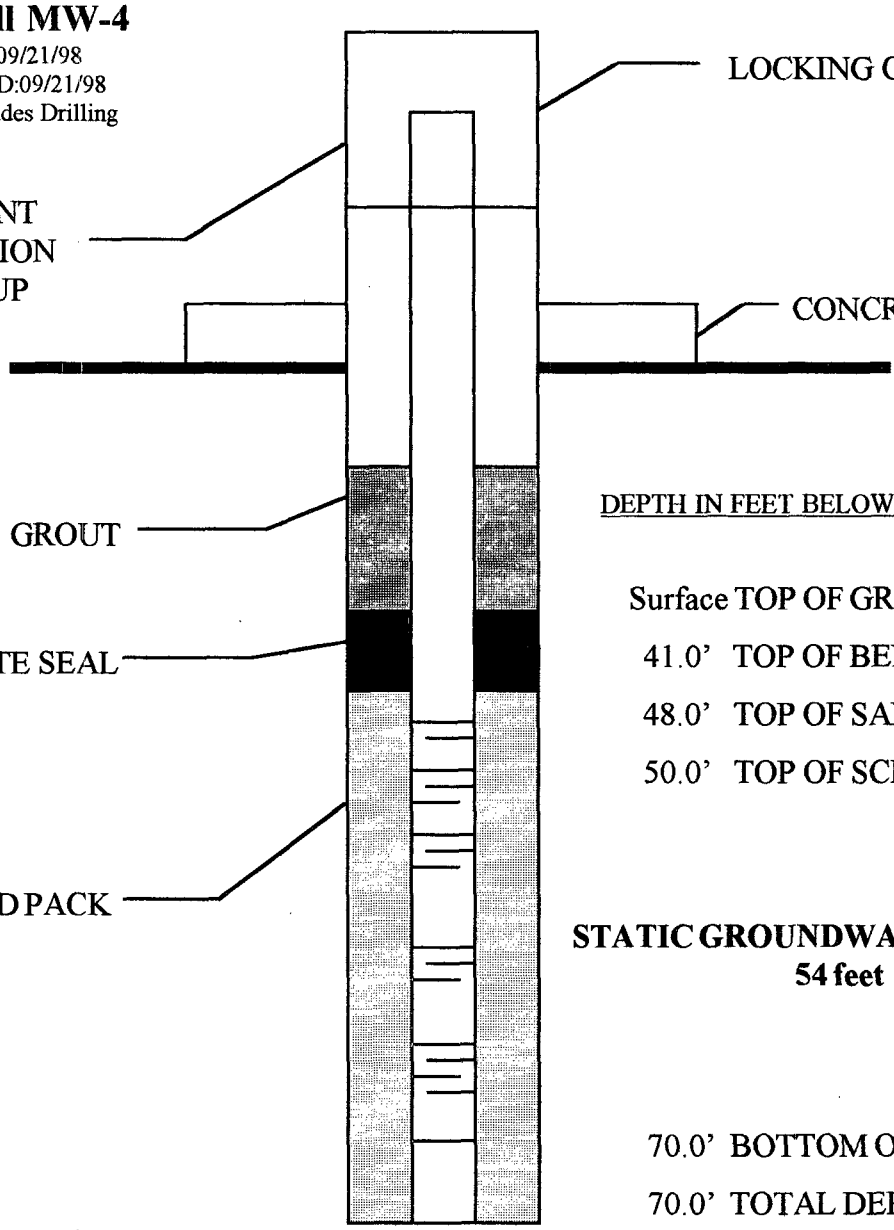
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

Monitor Well MW-4

DATE STARTED: 09/21/98
DATE COMPLETED:09/21/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT
41.0' TOP OF BENTONITE SEAL
48.0' TOP OF SAND PACK
50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH:
54 feet

70.0' BOTTOM OF SCREEN
70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

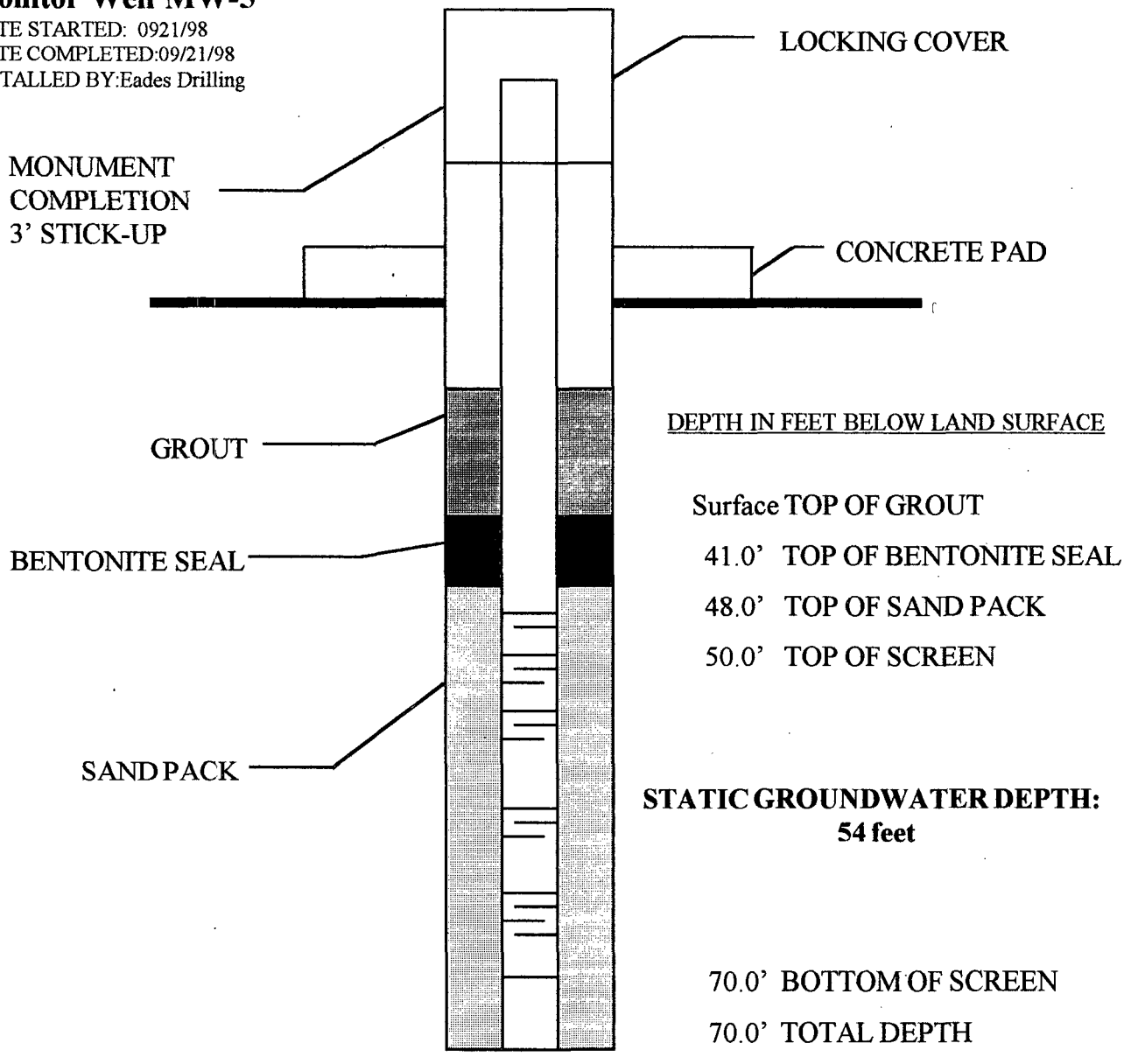
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

Monitor Well MW-5

DATE STARTED: 0921/98
DATE COMPLETED:09/21/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT
41.0' TOP OF BENTONITE SEAL
48.0' TOP OF SAND PACK
50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH:
54 feet

70.0' BOTTOM OF SCREEN
70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

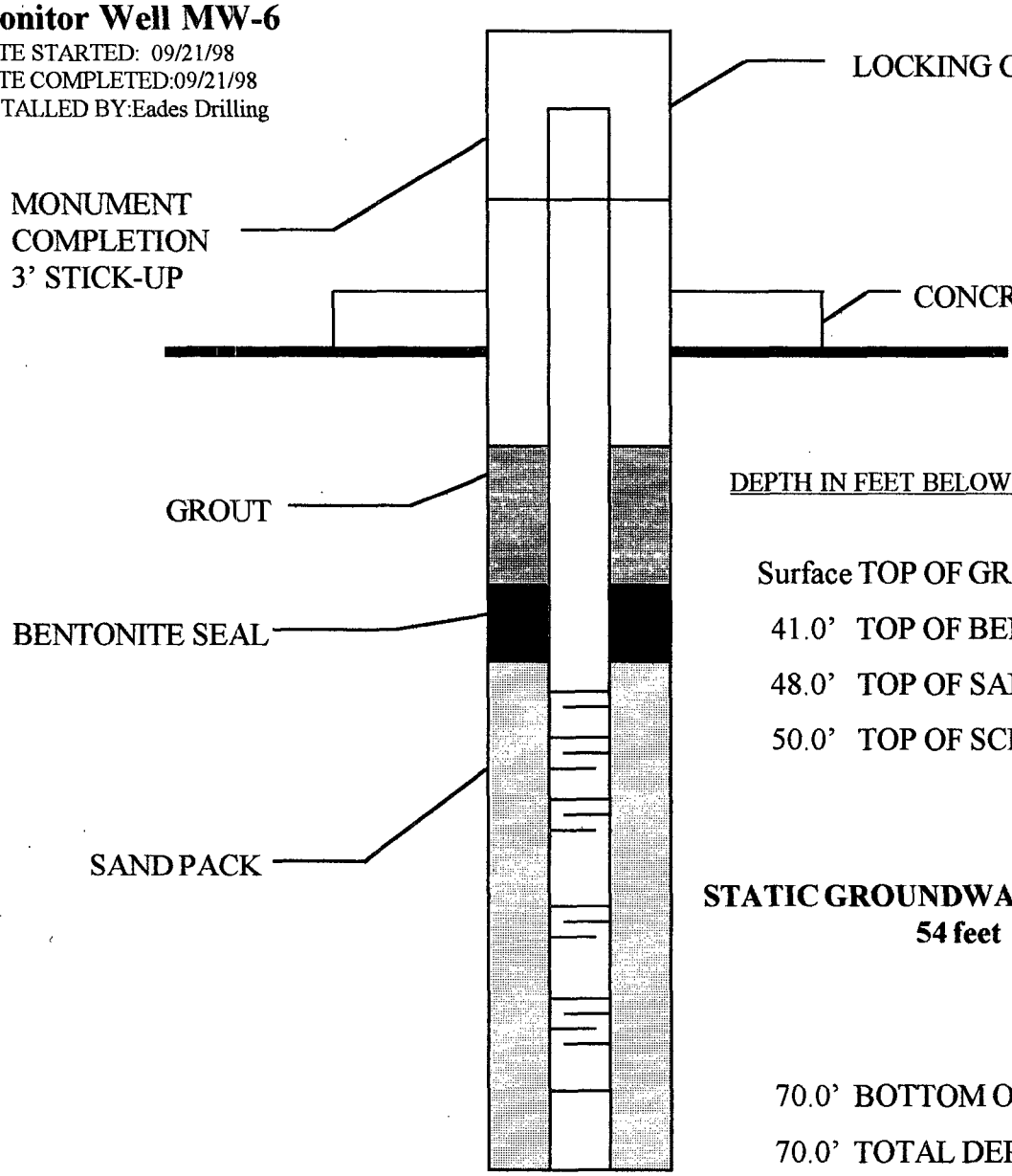
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

Monitor Well MW-6

DATE STARTED: 09/21/98
DATE COMPLETED:09/21/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT
41.0' TOP OF BENTONITE SEAL
48.0' TOP OF SAND PACK
50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH:
54 feet

70.0' BOTTOM OF SCREEN
70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

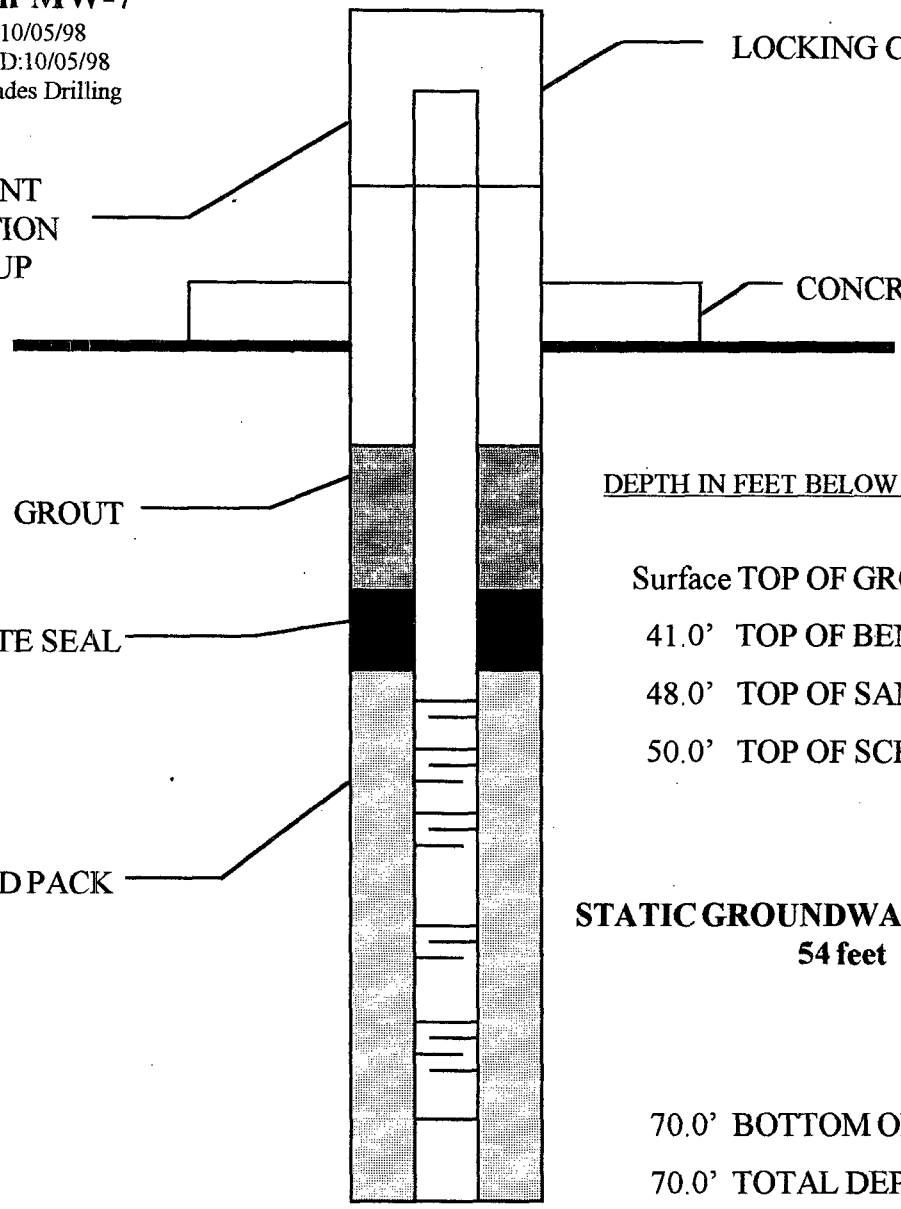
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

Monitor Well MW-7

DATE STARTED: 10/05/98
DATE COMPLETED:10/05/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT
41.0' TOP OF BENTONITE SEAL
48.0' TOP OF SAND PACK
50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH:
54 feet

70.0' BOTTOM OF SCREEN
70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

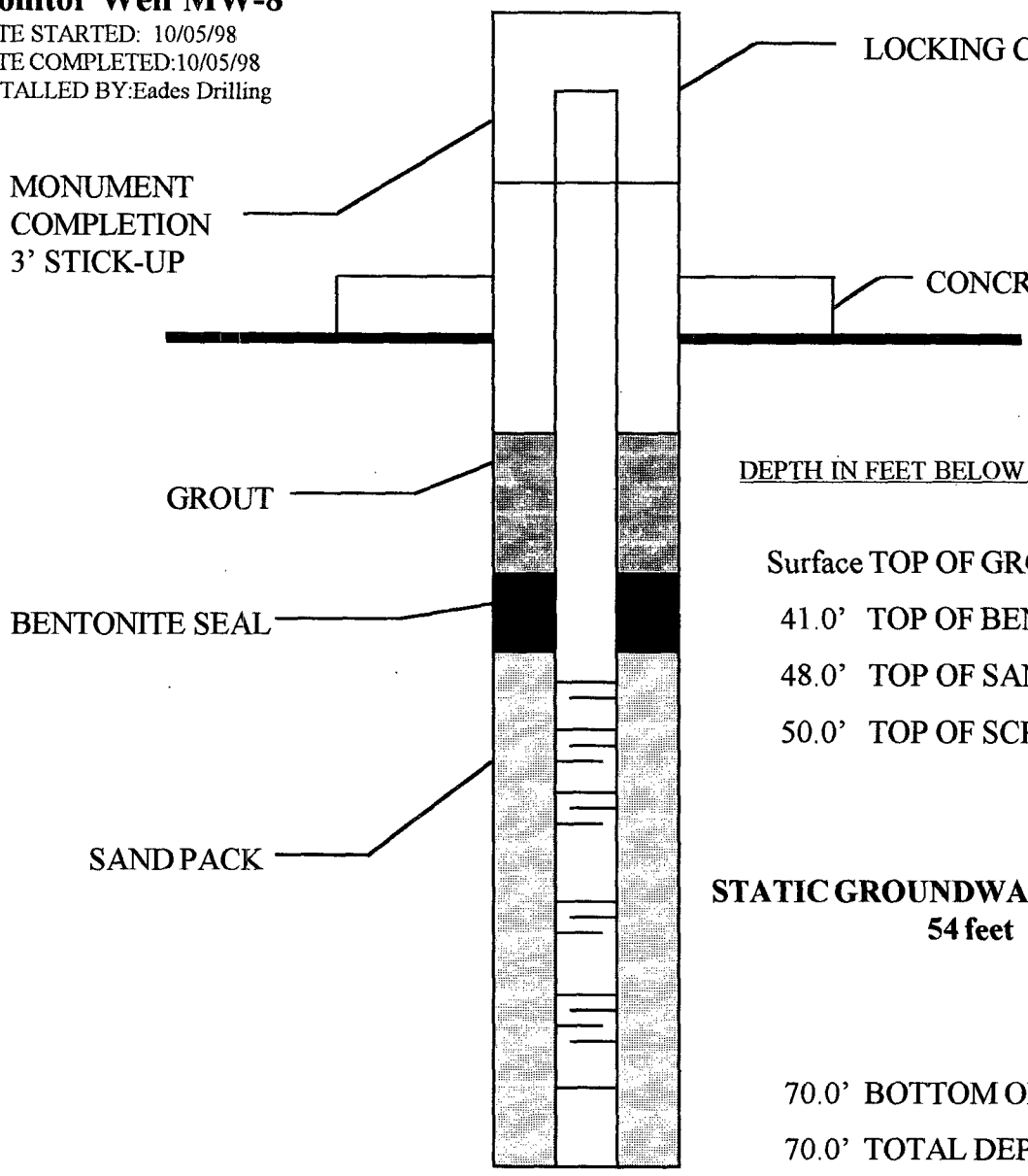
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

Monitor Well MW-8

DATE STARTED: 10/05/98
DATE COMPLETED:10/05/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT
41.0' TOP OF BENTONITE SEAL
48.0' TOP OF SAND PACK
50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH:
54 feet

70.0' BOTTOM OF SCREEN
70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

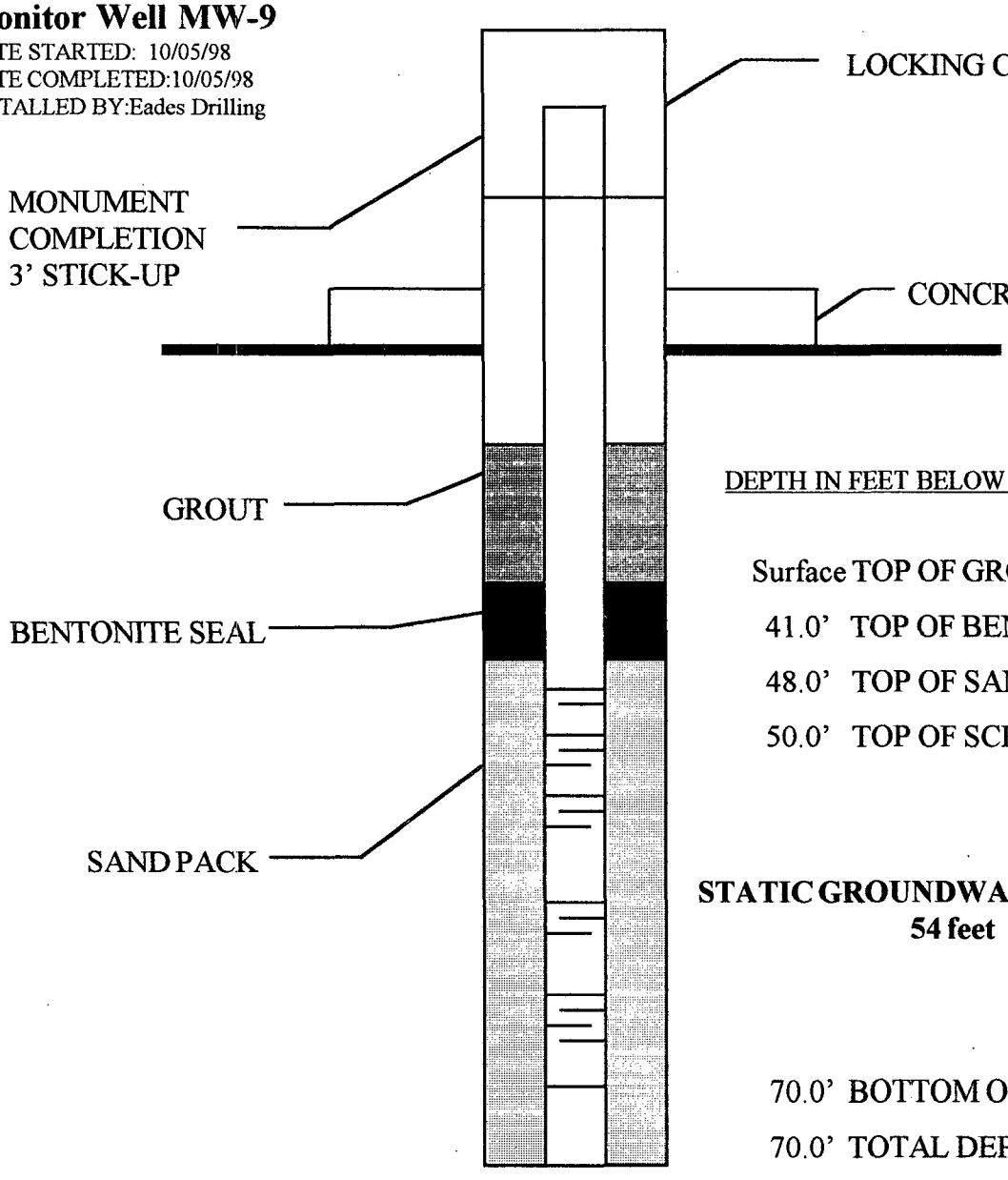
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

Monitor Well MW-9

DATE STARTED: 10/05/98
DATE COMPLETED:10/05/98
INSTALLED BY:Eades Drilling



DEPTH IN FEET BELOW LAND SURFACE

Surface TOP OF GROUT
41.0' TOP OF BENTONITE SEAL
48.0' TOP OF SAND PACK
50.0' TOP OF SCREEN

STATIC GROUNDWATER DEPTH: 54 feet

70.0' BOTTOM OF SCREEN
70.0' TOTAL DEPTH

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

PHILIP ENVIRONMENTAL SERVICES CORPORATION

Monitor Well Installation Diagram

EOTT Energy Pipeline Limited Partnership
LEA CO., NEW MEXICO
18861

APPENDIX D

WATER WELL SEARCH

The EDR-GeoCheck® Report

Eott Lovington Pipeline
Eott Lovington Pipeline
Lovington, NM 88260

Inquiry Number: 335448.1s

February 08, 1999

Environmental Data Resources, Inc.
an edr company

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

THE EDR GEOCHECK™ REPORT

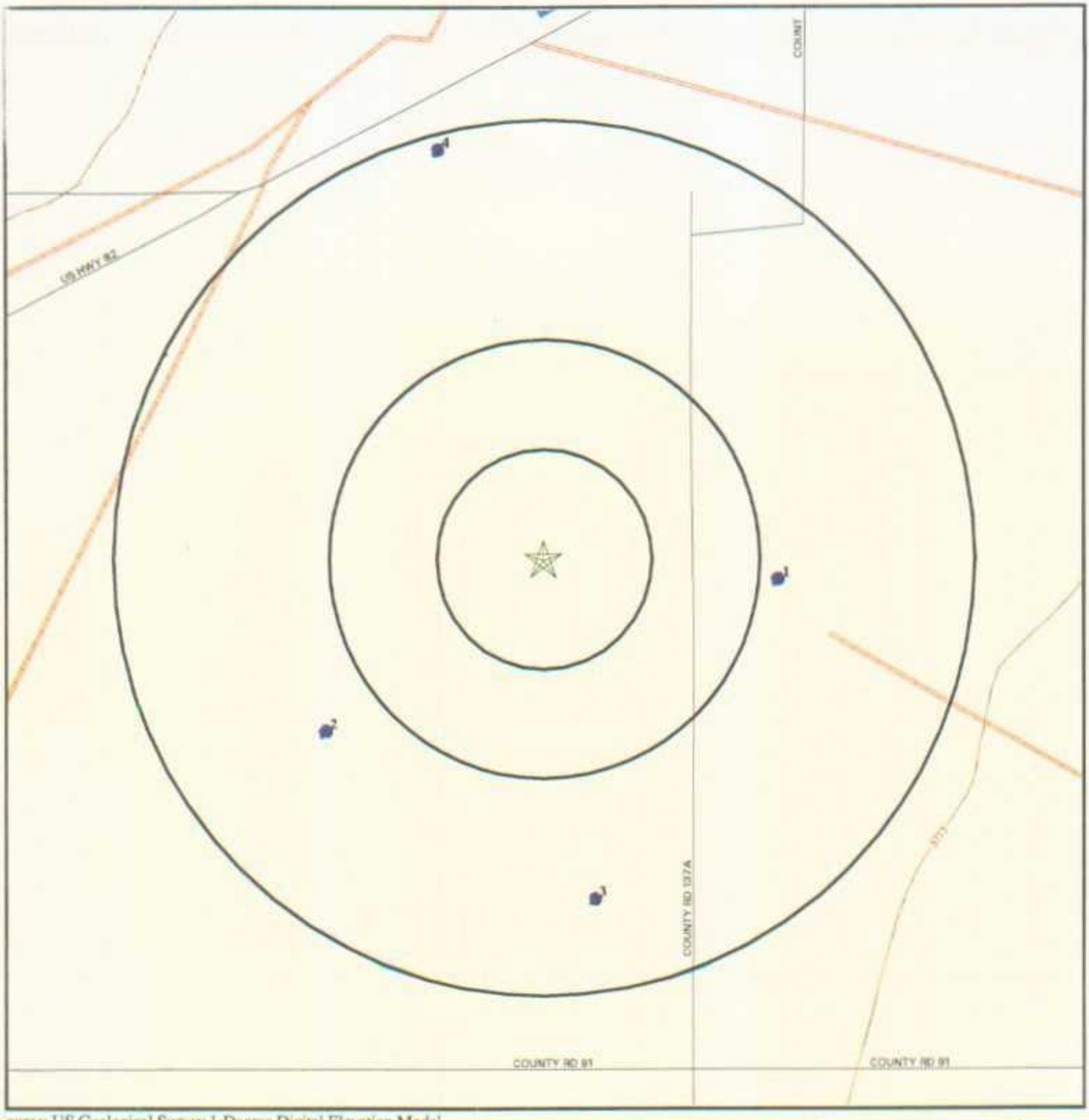
The EDR GeoCheck™ Report is a screening tool designed to assist in the hydrogeological assessment of a particular geographic area based upon publicly available information.

The EDR GeoCheck™ Report consists of the following information within a customer specified radius of the target property.

- topography (25 foot intervals unless otherwise shown)
- major roads
- surface water bodies
- railroad tracks
- flood plains (available in selected counties)
- wetlands (available in selected counties)
- wells including depth to water table and water level variability (in federal and selected state databases)
- public water supply wells (including violations information)
- geologic data
- radon data.

The EDR GeoCheck™ Report is a general area study. It may or may not be accurate at any specific location.

TOPOGRAPHIC MAP -335448.1s -



ource: US Geological Survey 1-Degree Digital Elevation Model
Compiled 09/15/92

0 1/4 1/2 1

scale in miles

- -Major Roads
- -Contour lines (25 foot interval unless otherwise shown)
- -Waterways
- -Wells within search distance to Target Property
- -Earthquake Epicenters (Richter 5 or greater)
- -Power lines
- -Pipe lines
- -Fault lines
- -Water

N

TARGET PROPERTY:	Eott Lovington Pipeline	CUSTOMER:	-
ADDRESS:	Eott Lovington Pipeline	CONTACT:	Mr. Jeff Kindley
CITY/STATE/ZIP:	Lovington NM 88260	INQUIRY #:	335448.1s
LAT/LONG:	33.0271 / 103.1677	DATE:	February 08, 1999

WELL SEARCH SUMMARY

GEOLOGIC AGE IDENTIFICATION†

Geologic Code:	Tpc
Era:	Cenozoic
System:	Tertiary
Series:	Pliocene

ROCK STRATIGRAPHIC UNIT†

Category:	Continental Deposits

SEARCH DISTANCE RADIUS INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal Database	1.000
State Database	1.000
PWS Database	1.000

FEDERAL DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	330135103093001	1/2 - 1 Mile East
2	330117103103501	1/2 - 1 Mile SW
3	330057103095601	1/2 - 1 Mile South
4	330226103101901	1/2 - 1 Mile NNW

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

NO WELLS FOUND

PUBLIC WATER SUPPLY SYSTEM INFORMATION

NO WELLS FOUND

AREA RADON INFORMATION

Zip Code: 88260

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.658 pCi/L	92%	8%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.400 pCi/L	100%	0%	0%

† Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

WELL SEARCH FINDINGS

Map ID
Direction
Distance

1
East
1/2 - 1 Mile

Site ID:	330135103093001	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Lea
Altitude:	3786.00 ft.	State:	New Mexico
Well Depth:	Not Reported	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported
Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Water Level:	33.09 ft.	Water Level:	35.53 ft.	Water Level:	37.68 ft.	Water Level:	39.77 ft.
Date Measured:	03/01/61	Date Measured:	02/18/66	Date Measured:	02/25/71	Date Measured:	03/23/76

2
SW
1/2 - 1 Mile

Site ID:	330117103103501	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Lea
Altitude:	3797.00 ft.	State:	New Mexico
Well Depth:	Not Reported	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported
Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Water Level:	37.51 ft.	Water Level:	39.86 ft.	Water Level:	43.10 ft.	Water Level:	46.33 ft.
Date Measured:	03/01/61	Date Measured:	02/18/66	Date Measured:	02/25/71	Date Measured:	03/23/76

3
South
1/2 - 1 Mile

Site ID:	330057103095601	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Lea
Altitude:	3784.60 ft.	State:	New Mexico
Well Depth:	Not Reported	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported
Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Water Level:	34.12 ft.	Water Level:	35.99 ft.	Water Level:	38.73 ft.	Water Level:	40.82 ft.
Date Measured:	03/01/61	Date Measured:	02/18/66	Date Measured:	02/25/71	Date Measured:	03/23/76

WELL SEARCH FINDINGS

Map ID
Direction
Distance

4
NNW
1/2 - 1 Mile

Site ID:	330226103101901	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Lea
Altitude:	3802.50 ft.	State:	New Mexico
Well Depth:	Not Reported	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported
Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Water Level:	36.33 ft.	Water Level:	42.09 ft.
Date Measured:	03/03/61	Date Measured:	02/18/66

NEW MEXICO GOVERNMENT WELL RECORDS SEARCHED

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SWDIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones: Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Water Dams: National Inventory of Dams
Source: Federal Emergency Management Agency
Telephone: 202-646-2801
National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.