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REPORTS

DATE:

9/9/2002

ENVIRONMENTAL PLUS, INC. Micro-Blaze Micro-Blaze Out™
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES

September 9, 2002

IR-399

Mr. Randy Bayliss
NM Energy, Minerals, and Natural Resources Department
New Mexico Oil Conservation Division – Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, NM 87505

RECEIVED
SEP 13 2002
Environmental Bureau
Oil Conservation Division

Subject: EOTT "Monument 6" 72202" (2002-10197)
Preliminary Ground Water Investigation Plan

Dear Mr. Bayliss:

Environmental Plus, Inc. (EPI), on behalf of EOTT Energy Pipeline, LP (EOTT) submits for your consideration and approval the "*Preliminary Ground Water Contamination Investigation and Delineation Plan*" for the EOTT "Monument 6-Inch 72202" release site; EOTT Reference #2001-10197. This report documents the initial site delineation, characterization, subsurface soil sampling and analysis, and the confirmation of hydrocarbon contamination on or within the ground water aquifer present beneath the release area.

All activities conducted thus far at the "Monument 6" site and all investigations proposed in the accompanying "Preliminary Ground Water Contamination Investigation and Delineation Plan" are consistent with the "*EOTT General Work Plan for Remediation of EOTT Pipeline Spills, Leaks and Releases in New Mexico, July 2000.*"

If there are any questions or comments please call Mr. Pat McCasland or myself at EPI's offices, or at 505-390-7864 or 505-390-9804 respectively. Mr. Frank Hernandez, EOTT Energy Pipeline, may be contacted at 915-638-3799.

All official correspondence should be addressed to:

Mr. Frank Hernandez
EOTT Energy Pipeline, LP
P.O. Box 1660
Midland, Texas 79703

Sincerely,

John Good
EPI Environmental Consultant

cc: Larry W. Johnson, NMOCD – Hobbs District Office (w/enclosure)
Frank Hernandez, EOTT Energy Pipeline, LP (w/enclosure)
Bill Kendrick, Enron Transportation Services (w/enclosure)
Sherry Miller, EPI President
Ben Miller, EPI Vice President and General Manager
file

ENVIRONMENTAL PLUS, INC.

P.O. BOX 1558 ◦◦◦ 2100 AVENUE O ◦◦◦ EUNICE, NEW MEXICO 88231
TELEPHONE 505◦394◦3481 ◦◦◦ FAX 505◦394◦2601

EOTT ENERGY PIPELINE, LP

PRELIMINARY GROUND WATER CONTAMINATION INVESTIGATION AND DELINEATION PLAN

RECEIVED
SEP 13 2002
Environmental Bureau
Oil Conservation Division

MONUMENT 6" 72202 GATHERING
EOTT REF: #2002-10197
UL-A NE¼ OF THE NE¼ OF SECTION 5 T20S R37E
1 MILE SOUTH OF MONUMENT
LEA COUNTY, NEW MEXICO
LATITUDE: 32°36'33"N LONGITUDE: 103°15'56"W

SEPTEMBER 9, 2002

PREPARED BY: JCG

Environmental Plus, Inc.
2100 Avenue O
P.O. Box 1558
Eunice, NM 88231
Phone: (505)394-3481
FAX: (505)394-2601

Table of Contents

1.0 Introduction

This report addresses the results of the initial site characterization and the resultant requirement of a Ground Water Investigation for the EOTT Energy Pipeline "Monument 6-Inch 72202" (EOTT Reference 2002-10197) pipeline release site. Environmental Plus, Inc. (EPI), Eunice, New Mexico commenced the initial characterization process at this site on 23-July-02. To date, the following investigatory activities have taken place:

- GPS demarcation of the release site and relevant surface features.
- Drilling and sampling of 20 boreholes down to 20-ft bgs within and at the extents of the visibly affected area(s).
- Extension of Borehole #6 (BH6) down to 33-ft bgs. Due to the presence of water and hydrocarbon contamination at this level, the decision to install a ground water monitoring well at this location was made. A sample of the bore cuttings from 33-ft bgs was collected and submitted for lab analysis.
- Installation, development and sampling of a Ground Water Monitoring Well (MW1) immediately adjacent to BH6.

2.0 Background

Environmental Plus, Inc. (EPI) was notified by EOTT Energy Pipeline, LP (EOTT) on 22-July-02 regarding a remediation project located at a release site along EOTT's "Monument 6-inch" gathering pipeline. The release is historical in nature (prior to 1982) and of unknown origin. EOTT became aware of a potential release at this site when the property owner called and asked for an investigation of the site due to a continued lack of vegetative growth in the suspect area(s). EPI commenced the initial phases of a site investigation and characterization on 23-July-02. The visibly affected surface area(s) were delineated utilizing GPS. A 14,000-ft^2 area (A) is located north of the horse arena and a 4,000-ft^2 area (B) is located within the horse arena. The initial C141 Form was submitted to NMOCD on 24-July-02.

3.0 Site Description

3.1 Site Location

The "Monument 6-inch 72202" site is located in UL-A (NE¼ of NE¼); Section 5; T20S; R37E. The Latitude and Longitude coordinates are: 32°36'33"N; 103°15'56"W. Specifically, the site is located along the eastern extents of the front yard of the residential property owned by Delores and Leroy Davis. This property is located on the southwest corner of the intersection of SR8 and CR45, 1-mile south of Monument, NM. *(see attachments, Plates 1 and 2)*

3.1 Geohydrology

The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and Ground-Water Conditions in Southern Lea County, New Mexico," A. Nicholson and A. Clebsch, 1961, describes the near surface geology of southern Lea County as an intergrade of the Quaternary Alluvium (QA) sediments, i.e., fine to medium sand, with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick interbed of caliche and generally overlain by sandy soil. The release site is located in the eastern extent of the Laguna Valley physiographic subdivision, described by Nicholson & Clebsch as an area "covered almost entirely by dune sand which is stable or semi-stable over most of the area." The thickness of the sand cover ranges from a few inches to as much as 20-feet in drift areas.

The subsurface at the site is composed of sandy clay material down to the 20-ft bgs interval. This material is dark brown towards the surface and becomes a lighter brown as the depth increases. Based on the extended boring of BH6, there appears to be a fairly hard rock layer overlying the aquifer at the 20-ft to 30-ft interval. Ground water occurs at 30-ft bgs and extends to 43-ft bgs where the "Red Bed"

formation is encountered. The "Red Bed" formation consists of dark red clay that corresponds to the Triassic Dockum Formation that serves as the lower confining strata for the Ogallala Aquifer north of the site and for the "Quaternary Fill" alluvial deposits that serve as an aquifer in this area.

3.2 Ecology

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (Querqus harvardi) interspersed with Honey Mesquite (Prosopis glandulosa) along with typical desert grasses, flowering annuals and flowering perennials. Mammals represented, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, Amphibians, and Birds are numerous and typical of area. A survey of Listed, Threatened, or Endangered species was not conducted.

3.3 Area Water Wells and/or Surface Water Features

There are three water wells on the Davis property located southwest of the point of deepest contamination (BH6/MW1) detected within the release area. Water Well #1 serves as a domestic supply well for the Davis residence and is 200-ft (bearing 228°) from MW1. Water well #2 is utilized for stock watering and landscape irrigation. Water well #2 is located 261-ft (bearing 237°) from MW1. Water well #3 is utilized for stock watering and landscape irrigation. Water well #3 is located 271-ft (bearing 253°) from MW1. A water well (windmill) is located 492-ft (bearing 114°) from MW1 on property owned by Jimmy Cooper. This windmill well is utilized to provide water for a stock watering tank. *(See Plates 3 and 5 attached.)*

A survey of the water well database records maintained by the NM State Engineers Office for Sections 4, 5, 8 and 9 is displayed in the table below. One of the Davis wells and the Cooper well are highlighted. Note that the Davis well is shown to have a depth to water of 40-ft bgs and the actual measured depth to water at MW1 is 30-ft bgs. This discrepancy cannot be due to seasonal fluctuation since this area has been experiencing drought conditions for several years.

There are no surface water bodies within 1000-ft of the site.

NM State Engineer's Office - Water Column Report 8/29/02

Well #	TWS	RNG	SEC	Q	Q	Q	Well Depth	Water Depth	Water Column
A2139	20S	37E	8	2	2	2	80	38	42
L10069	20S	37E	4	1	1		39	22	17
L9779	20S	37E	5	2	2	2	50	40	10
L2488	20S	37E	5	2	3		63	32	31
L2102	20S	37E	5	3	4		70	46	24
L2278	20S	37E	5	4	3		65	37	28
L2274	20S	37E	8	1	3		70	38	32
L2483	20S	37E	8	1	4	4	84	34	50
L2139	20S	37E	8	2	2	2	80	38	42
L2463	20S	37E	8	3	2	1	86	30	56
L9590	20S	37E	8	4			70	35	35

Quarters are 1=NW; 2=NE; 3=SW; 4=SE (larger to smaller)

4.0 NMOCD Site Ranking

Contaminant delineation and site characterization done at this site thus far indicate that the chemical parameters of the soil and ground water were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the New Mexico Oil Conservation Division (NMOCD) approved "***General Work Plan for Remediation of E.O.T.T. Pipeline Spills, Leaks and Releases in New Mexico, July 2000***" and the NMOCD guidelines published in the following documents:

- ***Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)***
- ***Unlined Surface Impoundment Closure Guidelines (February 1993)***

Acceptable thresholds for **contaminants/constituents of concern** (CoCs), i.e., TPH^{8015m}, Benzene, and the mass sum of Benzene, Toluene, Ethyl Benzene, and total Xylene (BTEX), was determined based on the NMOCD Ranking Criteria as follows:

- Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.
- Wellhead Protection Area, i.e., distance from fresh water supply wells.
- Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.

Based on the proximity of the site to protectable area water wells, surface water bodies, and depth to ground water from the lower most contamination, the NMOCD ranking score for the site is 40 points with the soil remedial goals highlighted in the Site Ranking Matrix presented below.

1. Ground Water	2. Wellhead Protection Area	3. Distance to Surface Water
Depth to GW <50 feet: *20 points*	**If <1000' from water source, or; <200' from private domestic water source: *20 points***	**<200 horizontal feet: *20 points***
Depth to GW 50 to 99 feet: *10 points*		**200-1000 horizontal feet: *10 points***
Depth to GW >100 feet: 0 points	**If >1000' from water source, or; >200' from private domestic water source: *0 points***	**>1000 horizontal feet: *0 points***
Ground Water Score = 20	Wellhead Protection Score = 20	Surface Water Score= 0
Site Rank (1+2+3) = 20 + 20 + 0 = 40 points (for soil 0-30'bgs)		

Total Site Ranking Score and Acceptable Remedial Goal Concentrations			
Parameter	**20+ (soil 0 – 30' bgs)**	10	0
Benzene[1]	**10 ppm**	10 ppm	10 ppm
BTEX[1]	**50 ppm**	50 ppm	50 ppm
TPH	**100 ppm**	1000 ppm	5000 ppm

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis

5.0 Subsurface Soil Investigation

The initial subsurface soil analyses were accomplished on 29-July-02 by the drilling and sampling of twenty boreholes (BH1 – BH20) within and beyond the extents of the two visibly affected release sites (A and B). Samples from all boreholes were taken at 2-ft, 5-ft, 10-ft, 15-ft and 20-ft intervals. Boring was stopped at the 20-ft interval for all boreholes because of significantly low VOC levels (0.4 – 2.3 ppm). Upon receipt of the analytical results (TPH^{8015M} and BTEX^{8021B}) for all of the soil samples, it was noted that one area within the site,

delineated by boreholes 9, 6 and 2, would need further consideration due to TPH levels above the 100 mg/kg remedial goal. The BH6 location was of immediate concern because the TPH concentration at the 20-ft interval was ~1400 mg/kg. An assumption was made that the water level at this site was approximately 40-ft bgs, as per the records obtained from the NM State Engineers Office. A new borehole was drilled adjacent (~3-ft) to BH6. It was intended to bore down to 35-ft bgs to see if non-contaminated soil could be obtained from the 20-ft to 35-ft interval. A hard, rocky layer was encountered just beyond the 20-ft interval extending to nearly 30-ft bgs. Immediately upon exiting the rock layer, the boring auger quickly penetrated to 33-ft producing mud with an obvious hydrocarbon odor and visual staining. A sample of the mud tailings was collected and submitted for lab analysis. Analysis indicates TPH of 134 mg/kg (primarily DRO) and trace BTEX levels above a .025 mg/kg detection limit (ethylbenzene - 0.026; p/m xylene - 0.110).

A summary table of all analytical results and graphical representations of the analytical data are provided in the attachments.

6.0 Ground Water Investigation

The results of the additional boring at BH6 confirmed that the hydrocarbon contamination at this site had penetrated deep enough to involve ground water and that the project would now entail ground water remediation, as well as soil remediation. The borehole was extended further to 43-ft bgs where the red bed was encountered, and a 2-inch PVC monitor well (MW1) was installed and developed (08-Aug-02). On 03-Sept-02 the depth to water was measured (30-ft bgs), the well was purged (>3 casing volumes) and then sampled. The NMOCD District Office and the NMOCD Environmental Bureau were notified verbally and in writing of the ground water contamination at this site on 03-Sept-02.

EPI proposes to conduct a Ground Water Investigation with the purpose of delineating the lateral extents of the ground water contamination at this site through the use of monitor wells and "SURFER" contour mapping software. The first phase will be the installation of four additional monitoring wells (MW2 – MW5). MW2 and MW3 will be up-gradient from MW1 at a distance of 25-ft. (MW3 will be placed on a line directly between MW1 and Water Well #1, the domestic water well serving the Davis residence). Two down-gradient monitor wells (MW4, MW5) will be placed 50-ft from MW1. *(See Plate 7 in attachments.)* Soil samples from these well installations will be collected at 5-ft intervals down to water level. The placement of MW2 – MW5 is intended to yield measurable water contamination concentrations, thus enabling the use of "SURFER" computer software to calculate the probable extents of the contaminant plume, including side-gradient extents. If MW2 – MW5 do not yield measurable contaminant levels, additional monitoring wells will be installed at a smaller radius from MW1 until measurable contamination is achieved. Once a projected contour (with an acceptable level of confidence) of the plume extents is generated, four (4) transverse gradient monitor wells will be installed for data confirmation and remediation purposes.

7.0 Ground Water Remediation

Once the lateral extents of the ground water contaminant plume at this site have been determined, ground water remediation options will be evaluated and will consist of one or more of the following remediation alternatives:

- Skimming and/or absorption of free-phase product
- Air sparge
- Natural attenuation

Ground water remediation will involve a comprehensive monitoring protocol to ensure remediation progress and confirmation of remedial goal achievement and NMWQCC ground water standards.

Attachments:

1. Soil analyses summary table
2. Soil TPH graph (BH1-BH20)
3. Plate 1 – Release Site Location
4. Plate 2 – Release Site Topography
5. Plate 3 – Release Site GPS Demarcation
6. Plate 4 – Borehole (1-20) GPS Locations
7. Plate 5 – GPS Site Map: Boreholes 1-20; Davis Water Wells; Cooper Water Well
8. Plate 6 – TPH cross-section (BH2 . . . BH6 . . . BH9)
9. Plate 7 – Initial Monitor Well placement (MW1 – MW5)
10. NMOCD Form C-141 (Initial)
11. Site Matrix Form
12. Site Photographs

EOTT Energy Pipeline Monument 6" - #2002-10197 (Boreholes 1-10)

Bold cells indicate values in excess of the NMOCD remedial action guideline thresholds: TPH = 100 mg/Kg; Benzene = 10 mg/Kg; BTEX = 50 mg/Kg

Borehole	Sampling Interval (ft-bgs[1])	LITHOLOGY	SAMPLE ID#	HeadSpace VOC[2] ppm	GRO[3] mg/Kg	DRO[4] mg/Kg	TPH[5] mg/Kg	BTEX[6] mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	m,p-Xylene mg/Kg	o-Xylene mg/Kg
1	2	Dark Brown Sand	SEM672902BH1-2	3.8									
	5	Light Brown Sand	SEM672902BH1-5	4.3									
	10	Brown Sand	SEM672902BH1-10	1.5									
	15	Light Brown Sandy Clay	SEM672902BH1-15	0.8									
	20	Light Brown Sandy Clay	SEM672902BH1-20	1.2									
2	2	Dark Brown Sand	SEM672902BH2-2	1.3									
	5	Brown Sand	SEM672902BH2-5	1.2									
	10	Brown Sand	SEM672902BH2-10	1.3		552	562						
	15	Course Brown Sand	SEM672902BH2-15	1.3		31	41						
	20	Light Brown Sand & Rock	SEM672902BH2-20	0.8									
3	2	Dark Brown Sand	SEM672902BH3-2	2									
	5	Brown Sand	SEM672902BH3-5	1.7									
	10	Light Brown Sand	SEM672902BH3-10	1.4									
	15	Light Brown Sand	SEM672902BH3-15	1									
	20	Light Brown Sand	SEM672902BH3-20	0.8									
4	2	Dark Brown Sand	SEM672902BH4-2	1.3									
	5	Brown Sand & Rock	SEM672902BH4-5	2									
	10	Flint Rock	SEM672902BH4-10	1.6									
	15	Light Brown Sand & Rock	SEM672902BH4-15	2		17	27						
	20	Light Brown Sand & Rock	SEM672902BH4-20	1.7									
5	2	Dark Brown Sand	SEM673002BH5-2	3.4		92	102						
	5	Brown Sand	SEM673002BH5-5	0.7									
	10	Flint Rock	SEM673002BH5-10										
	15	Light Brown Sand & Rock	SEM673002BH5-15	1.7		94	104						
	20	Light Brown Sand & Rock	SEM673002BH5-20	1.5		30	40						
6	2	Dark Brown Sand	SEM673002BH6-2	0.9		606	616						
	5	Brown Sand	SEM673002BH6-5	0.4		94	104						
	10	Brown Sand & Rock	SEM673002BH6-10	0.7		78	88						
	15	Light Brown Sand & Rock	SEM673002BH6-15	34.8	671	1380	2051	0.178				0.071	0.032
	20	Light Brown Sand & Rock	SEM673002BH6-20	4.1	318	1120	1438						
	33	Light Brown Mud	SEM682902BH6-33		31	103	134	0.211			0.026	0.110	
7	2	Dark Brown Sand	SEM673002BH7-2	3.4	14	76	90						
	5	Brown Sand	SEM673002BH7-5	1.8									
	10	Brown Sand & Rock	SEM673002BH7-10	1.5	19	69	88						
	15	Light Brown Sand & Rock	SEM673002BH7-15	0.9									
	20	Brown Sand	SEM673002BH7-20	0.3									
8	2	Dark Brown Sand	SEM673002BH8-2	0.9									
	5	Light Brown Sand	SEM673002BH8-5	0.7									
	10	Brown Sand & Rock	SEM673002BH8-10	0.8									
	15	Light Brown Sand	SEM673002BH8-15	0.6									
	20	Light Brown Sand & Rock	SEM673002BH8-20	0.2									
9	2	Dark Brown Sand	SEM673102BH9-2	0.7	18	568	586						
	5	Brown Sand	SEM673102BH9-5	2.8		134	144						
	10	Light Brown Sand & Rock	SEM673102BH9-10	2.4									
	15	Light Brown Sand	SEM673102BH9-15	2.1									
	20	Light Brown Sand & Rock	SEM673102BH9-20	2.2		11	21						
10	2	Dark Brown Sand	SEM673102BH10-2	3.1									
	5	Brown Sand	SEM673102BH10-5	2.7									
	10	Brown Sand & Rock	SEM673102BH10-10	1.9									
	15	Light Brown Sand & Rock	SEM673102BH10-15	2									
	20	Light Brown Sand & Rock	SEM673102BH10-20	1.8									

[1] bgs = below ground surface [2] VOC = Volatile Organic Constituents; (note: 100 ppm Isobutylene calibration gas = 101 ppm)

[3] GRO - Gasoline Range Organics (Detection Limit = 10 mg/Kg) [4] DRO - Diesel Range Organics (Detection Limit = 10 mg/Kg) [5] TPH - Total Petroleum Hydrocarbon (GRO+DRO)

[6] BTEX = Sum of CoC's (Detection Limit = 0.025 mg/Kg) Note: Reported detection limits are considered "de minimus" values and are not displayed but included in the TPH and BTEX summations.

EOTT Energy Pipeline Monument 6" - #2002-10197 (Boreholes 11-20)

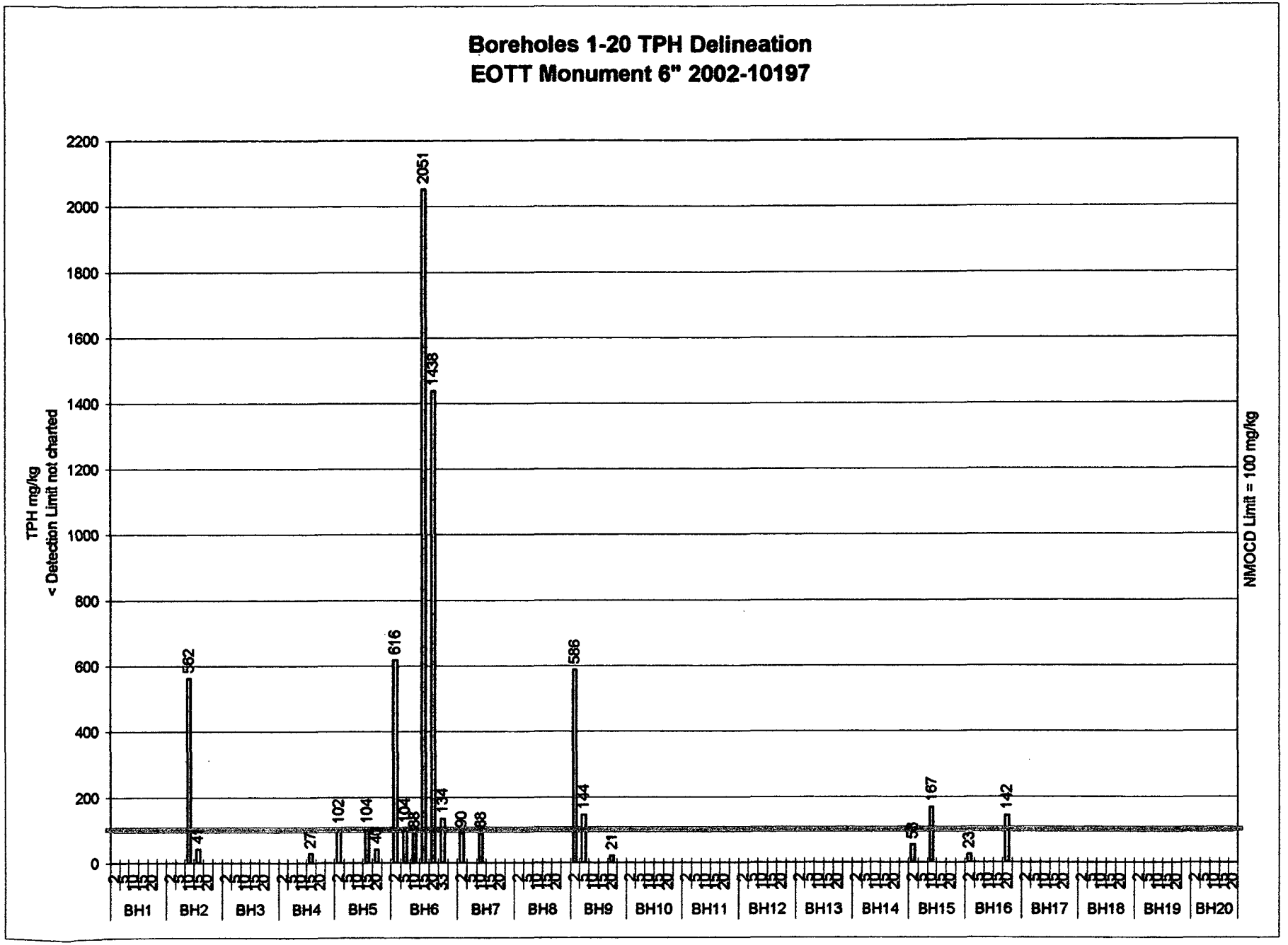
Bold cells indicate values in excess of the NMOCD remedial action guideline thresholds: TPH = 100 mg/Kg; Benzene = 10 mg/Kg; BTEX = 50 mg/Kg

Borehole	Sampling Interval (ft-bgs1)	LITHOLOGY	SAMPLE ID#	HeadSpace VOC[2] ppm	GRO[3] mg/Kg	DRO[4] mg/Kg	TPH[5] mg/Kg	BTEX[6] mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	m,p-Xylene mg/Kg	o-Xylene mg/Kg
11	2	Dark Brown Sand	SEM673102BH11-2	1.7									
	5	Dark Brown Sand	SEM673102BH11-5	2									
	10	Brown Sandy Clay	SEM673102BH11-10	2.1									
	15	Light Brown Sand	SEM673102BH11-15	1.9									
	20	Light Brown Sand	SEM673102BH11-20	1.3									
12	2	Dark Brown Sand	SEM673102BH12-2	1.9									
	5	Light Brown Sand	SEM673102BH12-5	1.7									
	10	Brown Sand & Rock	SEM673102BH12-10	1									
	15	Light Brown Sand	SEM673102BH12-15	1.6									
	20	Light Brown Sand	SEM673102BH12-20	1.7									
13	2	Dark Brown Sand	SEM68102BH13-2	2.4									
	5	Dark Brown Sand	SEM68102BH13-5	2.1									
	10	Dark Brown Sand	SEM68102BH13-10	1.7									
	15	Light Brown Sand & Rock	SEM68102BH13-15	1.4									
	20	Light Brown Sand	SEM68102BH13-20	1									
14	2	Brown Sand	SEM68102BH14-2	1.5									
	5	Brown Sand	SEM68102BH14-5	1.2									
	10	Brown Sand & Rock	SEM68102BH14-10	1.4									
	15	Light Brown Sand	SEM68102BH14-15	0.9									
	20	Light Brown Sand	SEM68102BH14-20	0.4									
15	2	Dark Brown Sand	SEM68102BH15-2	1.4		43	53						
	5	Brown Sand	SEM68102BH15-5	1									
	10	Brown Sand	SEM68102BH15-10	1.1		157	167						
	15	Light Brown Sand & Rock	SEM68102BH15-15	0.8									
	20	Light Brown Sand & Rock	SEM68102BH15-20	0.4									
16	2	Brown Sand	SEM68102BH16-2	2.4		13	23						
	5	Brown Sand	SEM68102BH16-5	1.7									
	10	Brown Sand	SEM68102BH16-10	1.4									
	15	Dark Sandy Clay	SEM68102BH16-15	0.8									
	20	Brown Sand	SEM68102BH16-20	1.1		132	142						
17	2	Dark Brown Sand	SEM68502BH17-2	3.6									
	5	Brown Sand	SEM68502BH17-5	4									
	10	Brown Sand	SEM68502BH17-10	3.9									
	15	Light Brown Sand & Rock	SEM68502BH17-15	2.7									
	20	Light Brown Sand	SEM68502BH17-20	2.3									
18	2	Dark Brown Sand	SEM68502BH18-2	1.9									
	5	Brown Sand	SEM68502BH18-5	1.7									
	10	Brown Sand	SEM68502BH18-10	1.3									
	15	Brown Sand & Rock	SEM68502BH18-15	1									
	20	Light Brown Sand	SEM68502BH18-20	0.4									
19	2	Dark Sand	SEM68502BH19-2	1.4									
	5	Brown Sand	SEM68502BH19-5	1.2									
	10	Brown Sand & Rock	SEM68502BH19-10	1.3									
	15	Brown Sand	SEM68502BH19-15	0.8									
	20	Brown Sand	SEM68502BH19-25	0.4									
20	2	Dark Sand	SEM68502BH20-2	2									
	5	Light Brown Sand	SEM68502BH20-5	1.7									
	10	Brown Sand	SEM68502BH20-10	1.8									
	15	Brown Sand & Rock	SEM68502BH20-15	0.9									
	20	Light Brown Sand	SEM68502BH20-20	0.7									

[1] bgs = below ground surface [2] VOC = Volatile Organic Constituents; (note: 100 ppm isobutylene calibration gas = 101 ppm)

[3] GRO - Gasoline Range Organics (Detection Limit = 10 mg/Kg) [4] DRO - Diesel Range Organics (Detection Limit = 10 mg/Kg) [5] TPH - Total Petroleum Hydrocarbon (GRO+DRO)

[6] BTEX = Sum of CoC's (Detection Limit = 0.025 mg/Kg) Note: Reported detection limits are considered "de minimus" values and are not displayed but included in the TPH and BTEX summations.


Boreholes 1-20 TPH Delineation
EOTT Monument 6" 2002-10197
TPH mg/kg
< Detection Limit not charted
NMOCD Limit = 100 mg/kg
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
562
4
27
102
104
40
616
104
98
2051
1438
134
90
88
586
144
21
58
167
23
142
BH1
BH2
BH3
BH4
BH5
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BH14
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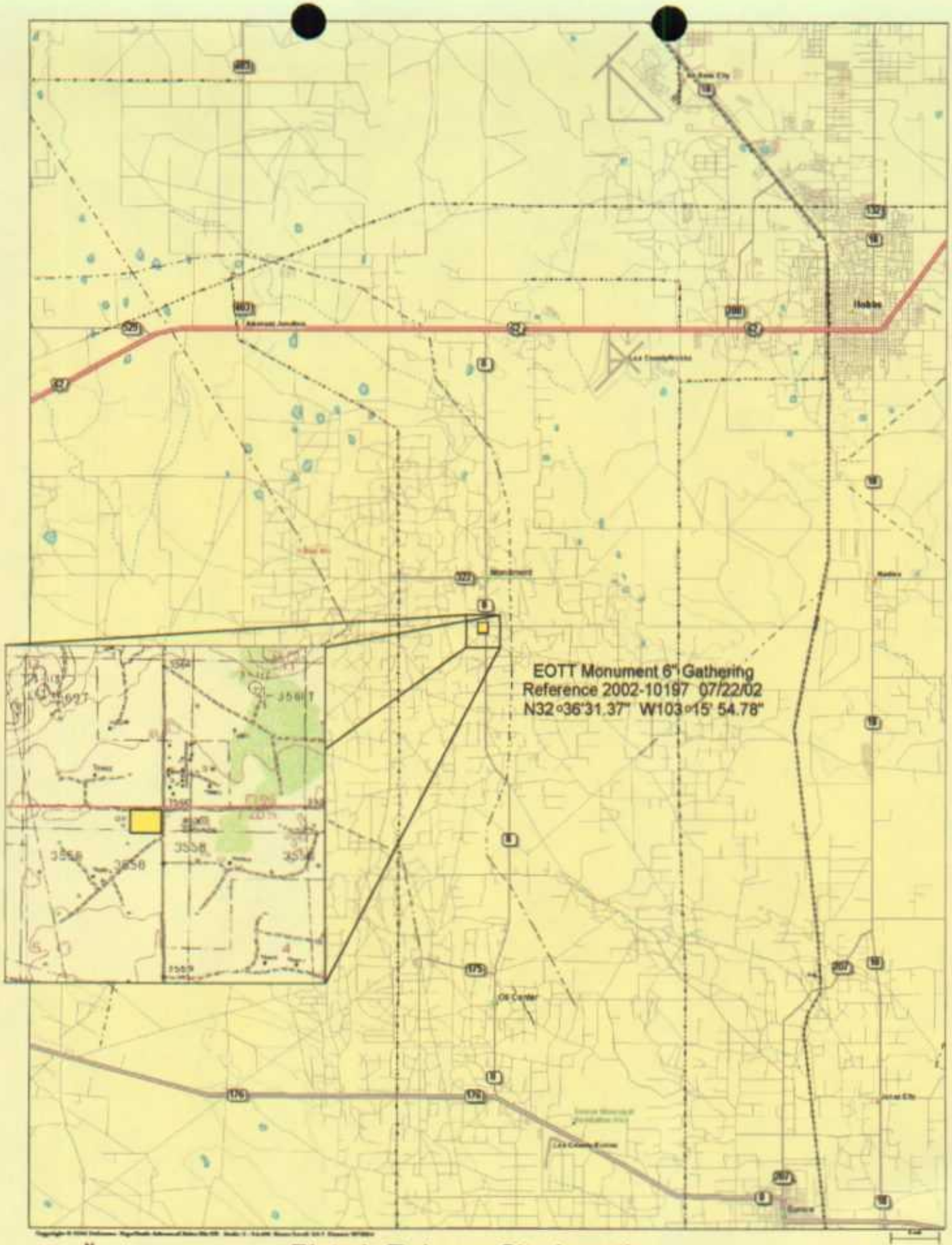
BH17
BH18
BH19
BH20



N

Plate1: Release Site Location

EOTT Energy Pipeline - Monument 6" 72202

Lea County, NM; UL-A Section 05 T20S R37E

Drawn By: JCG

Date: Aug-02

Revised:

N

Plate2: Release Site Topography

EOTT Energy Pipeline - Monument 6" 72202

Lea County, NM; UL-A Section 05 T20S R37E

Drawn By: JCG

Date: Aug-02

Revised:

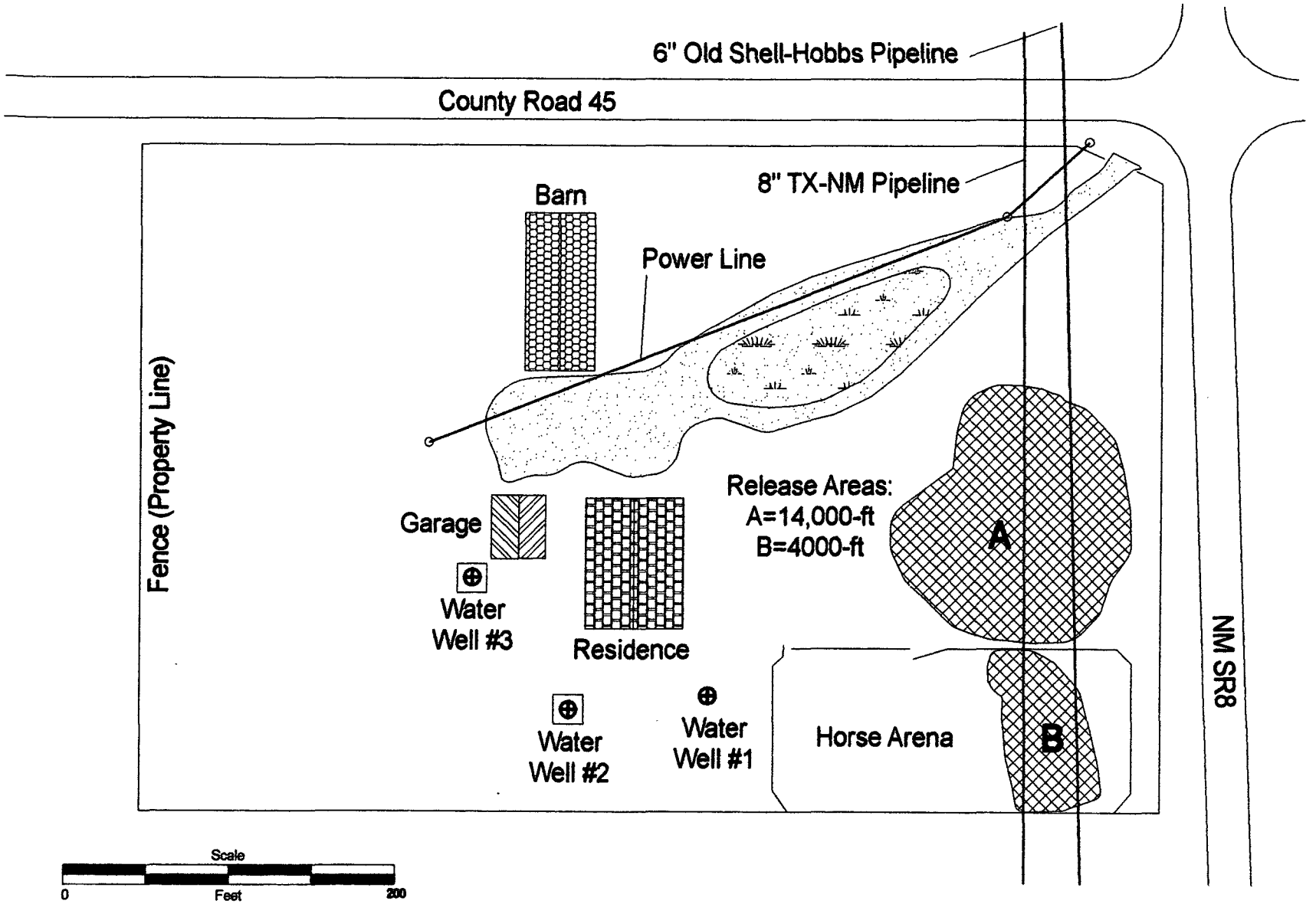


Plate 3: Release Site GPS Demarcation

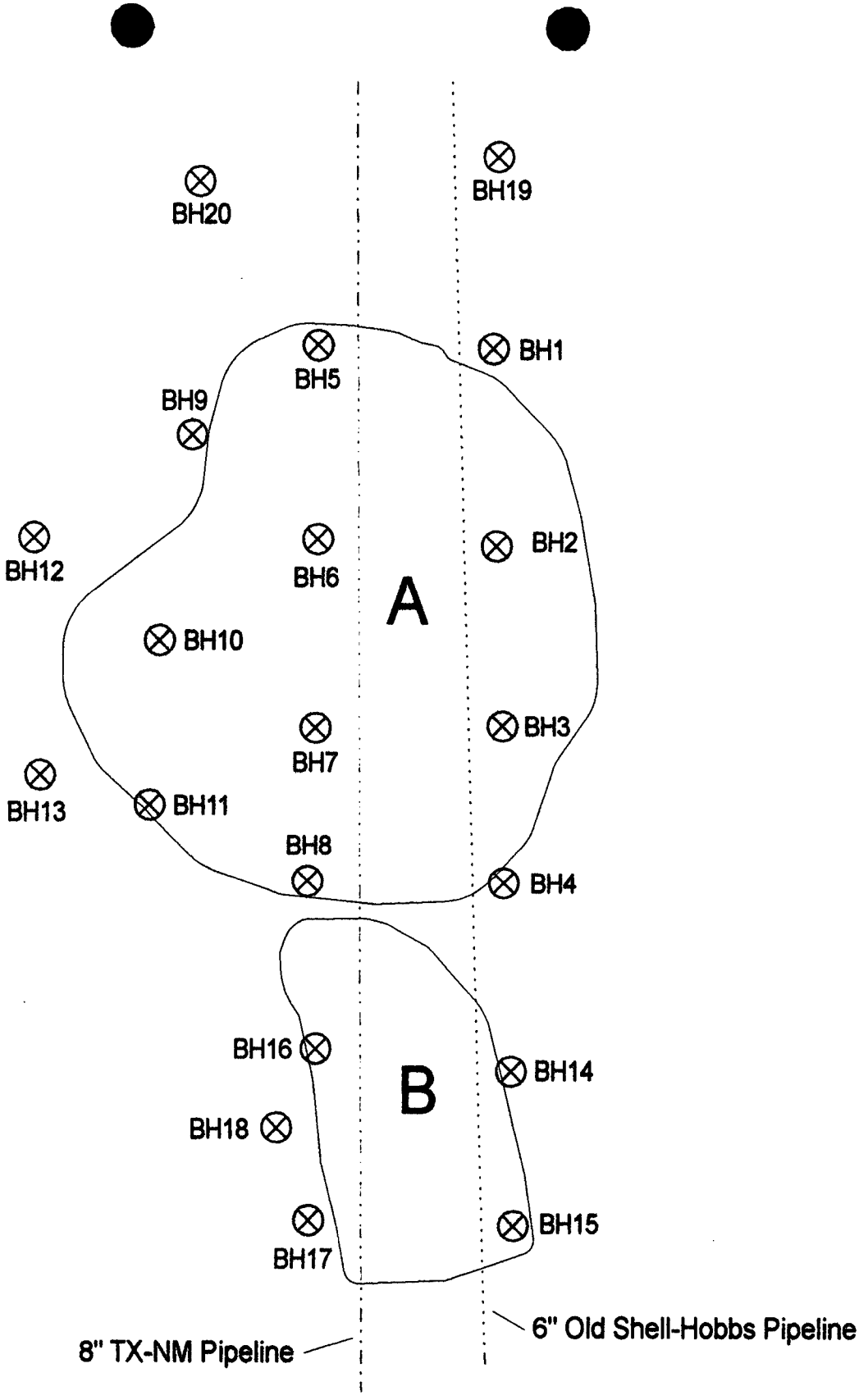
EOTT Energy Pipeline - Monument 6" 72202 (Davis Property)

Lea County, NM; UL-A Section 05 T20S R37E

Drawn By: JCG

Date: Aug-02

Revised:



N

Plate 4: Release Site Borehole GPS Demarcation

EOTT Energy Pipeline - Monument 6" 72202

Lea County, NM; UL-A Section 05 T20S R37E

Drawn By: JCG

Date: Aug-02

Revised: Sept-02

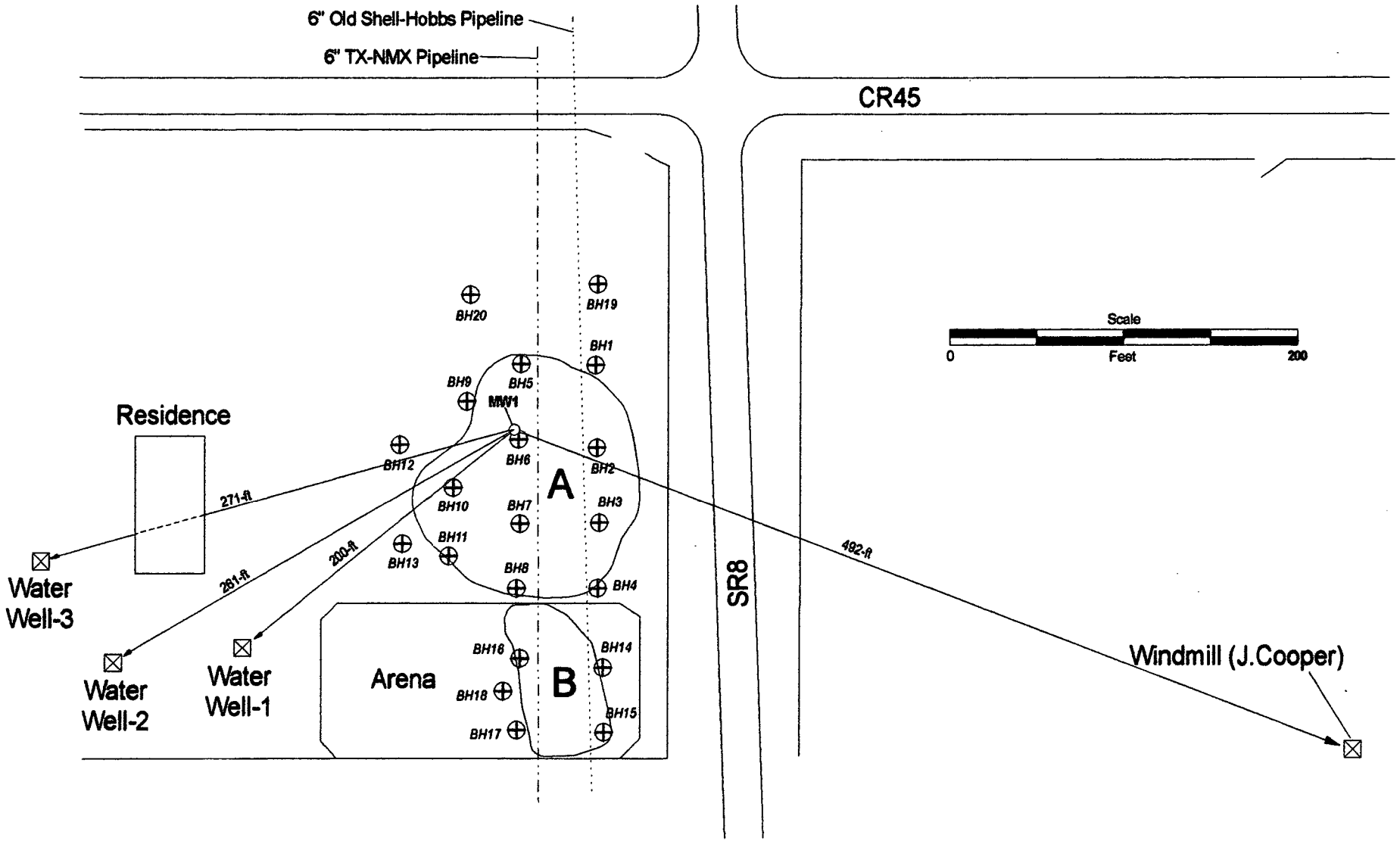


Plate 5: Boreholes; Water Wells; MW1 GPS Demarcation

EOTT Energy Pipeline - Monument 6" 72202

Lea County, NM; UL-A Section 05 T20S R37E

Drawn By: JCG

Date: Aug-02

Revised:

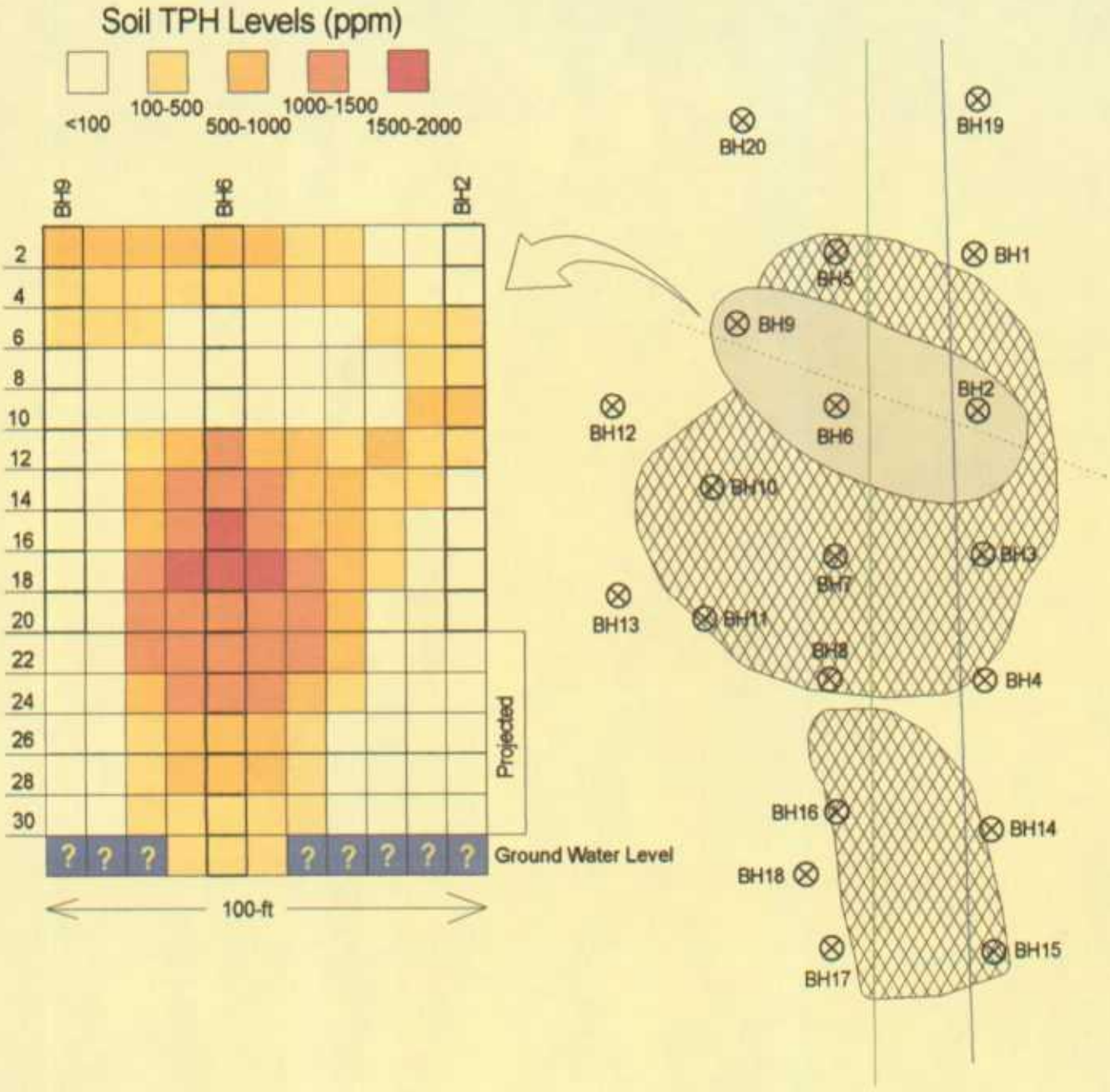


Plate 6: Borehole 9-2 Cross Section

EOTT Energy Pipeline - Monument 6" 72202

Lea County, NM; UL-A Section 05 T20S R37E

Drawn By: JCG

Date: Aug-02

Revised:

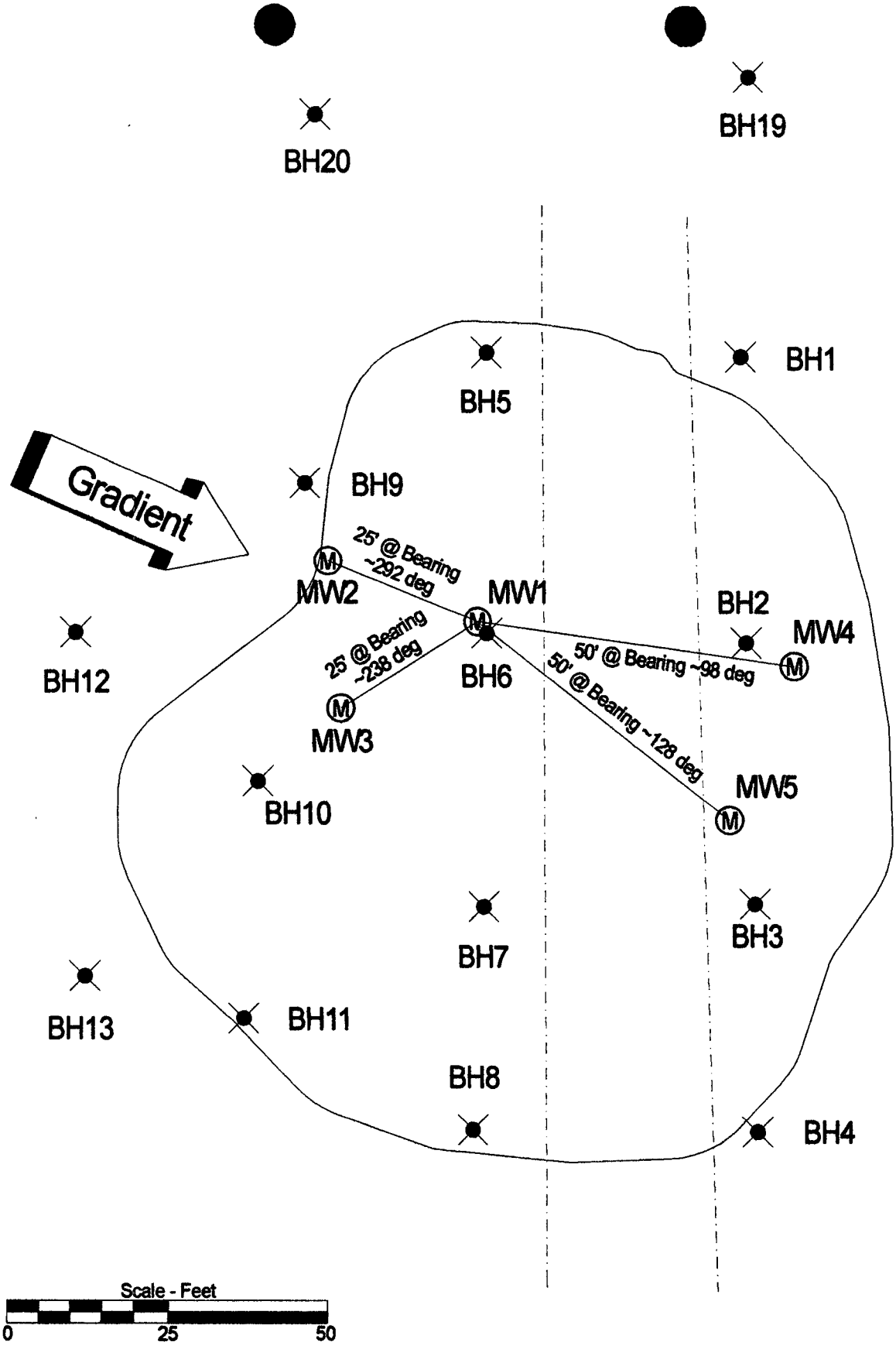


Plate 7: Initial Monitor Well Placement

EOTT Energy Pipeline - Monument 6" 72202

Lea County, NM; UL-A Section 05 T20S R37E

Drawn By: JCG

Date: Sept-02

Revised:

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR "INFORMATION ONLY NON-REPORTABLE" ☒ Initial Report ☐ Final Report

Name of Company	Contact
EOTT Energy Pipeline	Frank Hernandez
Address	**Telephone No.**
5805 East Highway 80 / P.O. Box 1660, Midland, TX 79703	915.638.3799
Facility Name	**Facility Type**
Monument 6" 072202 #2002-10797	6" Crude Oil Pipeline

Surface Owner	Mineral Owner	Lease No.
Delores Davis (Nash)		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County: Lea Lat.: 32°36'33"N Lon:103°15'56"W
A	5	20S	37E					

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Crude Oil	? bbls	? bbls
Source of Release	**Date and Hour of Occurrence**	**Date and Hour of Discovery**
6" Steel Pipeline	Before 1982	?
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	**If YES, To Whom?**	
By Whom?	**Date and Hour** NA	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse.**	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The cause of the release is unknown.

Describe Area Affected and Cleanup Action Taken.*
Area = ~18,108 ft². 260'X120'
Site will be delineated and remediated.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Frank Hernandez	OIL CONSERVATION DIVISION
Printed Name: Frank Hernandez	Approved by District Supervisor:
Title: District Environmental Supervisor	Approval Date: / Expiration Date:
Date: July 24, 2002 Phone: 915.638.3799	Conditions of Approval: / Attached ☐

* Attach Additional Sheets If Necessary

EOTT Energy Pipeline Site Information and Metrics	**Incident Date and NMOCD Notified?:** 7-24-02

SITE: Monument 6" 072202 #2002-10797	Assigned Site Reference #: 2002-10197
Company: EOTT Energy Pipeline	
Street Address: 5805 East Highway 80	
Mailing Address: P.O. Box 1660	
City, State, Zip: Midland, Texas 79703	
Representative: Frank Hernandez, District Environmental Supervisor	
Representative Telephone: 915.638.3799	
Telephone:	
Fluid volume released (bbls): ?	Recovered (bbls): ?
>25 bbls : Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)	
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)	
Leak, Spill, or Pit (LSP) Name: Monument 6" 072202	
Source of contamination: Crude Oil Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other: Delores Davis (Nash)	
LSP Dimensions 260' x 120'	
LSP Area: 18,108 ft^2	
Location of Reference Point (RP)	
Location distance and direction from RP	
Latitude: 32°36'33"N	
Longitude: 103°15'56"W	
Elevation above mean sea level: 3,560 'amsl	
Feet from South Section Line	
Feet from West Section Line	
Location- Unit or ¼¼: NE ¼ of the NE ¼	Unit Letter: A
Location- Section: 5	
Location- Township: 20S	
Location- Range: 37E	
Surface water body within 1000 ' radius of site: None	
Domestic water wells within 1000' radius of site: 1	
Agricultural water wells within 1000' radius of site: 2	
Public water supply wells within 1000' radius of site: None	
Depth from land surface to ground water (DG) Estimated to be ~25.55'below ground surface	
Depth of contamination (DC) –	
Depth to ground water (DG – DC = DtGW) -	

1. Ground Water	2. Wellhead Protection Area	3. Distance to Surface Water Body
If Depth to GW <50 feet: *20 points*	If <1000' from water source, or;<200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200-100 horizontal feet: *10 points*
If Depth to GW >100 feet: *0 points*	If >1000' from water source, or; >200' from private domestic water source: *0 points*	>1000 horizontal feet: *0 points*
Ground water Score = 20	*Wellhead Protection Area Score= 20*	*Surface Water Score= 0*
Site Rank (1+2+3) = 40		

Total Site Ranking Score and Acceptable Concentrations

Parameter	>19		
Benzene[1]	**10 ppm**		
BTEX[1]	**50 ppm**		
TPH	**100 ppm**		

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis

Site Photographs