

**SPILL  
REPORT  
&  
CLOSURE**



ENVIRONMENTAL PLUS, INC.

~~Micro-Plus~~

~~Micro-Plus Out™~~

STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES

May 28, 2002

RECEIVED

JUN 17 2002

Mr. William C. Olson  
Energy, Minerals, and Natural Resources Department  
New Mexico Oil Conservation Division - Environmental Bureau  
2040 S. Pacheco  
Santa Fe, NM 87505

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

Subject: E.O.T.T. "Pearl Queen 6" Gathering" Final C-141 and Closure Documentation  
E.O.T.T. Site Reference: "Pearl Queen"

Dear Mr. Sheeley

Environmental Plus, Inc. (EPI), on behalf of E.O.T.T. Energy Pipeline (EOTT) submits for your consideration and approval the "Final C-141 and Closure Documentation for the "Pearl Queen 6" Gathering" (EOTT) Reference: "Pearl Queen." This report documents the installation and sampling of an approved down-gradient ground water monitoring well at the referenced site. Three down-gradient ground water sampling events occurred during the period September-2000 through June-2001. Water analyses indicate that ground water beneath the site has attenuated to less than NMWQCC standards as demonstrated by the compliant CoC data. EPI, on behalf of EOTT, therefore requests that the NMOCD consider the information provided within this documentation and require "no further action" at this site.

If there are any questions please call Mr. Ben Miller or myself at EPI's offices, or at 505.390.0288 or 505.390.7864 respectively. Mr. Frank Hernandez of E.O.T.T. Energy Pipeline can be contacted at 915.638.3799.

All official correspondence should be addressed to:

Mr. Frank Hernandez  
E.O.T.T. Energy Pipeline  
P.O. Box 1660  
Midland, Texas 79703

Sincerely,

Pat McCasland  
EPI Technical Services Manager

cc: Frank Hernandez, E.O.T.T. w/enclosure  
Cutty Cunningham, Enron Transportation Services (w/enclosure)  
Paul Sheeley, NMOCD-Hobbs (w/enclosure)  
Sherry Miller, EPI President  
Ben Miller, EPI Vice President and General Manager  
File

ENVIRONMENTAL PLUS, INC.

# **EOTT ENERGY PIPELINE, LP**

## **SITE INVESTIGATION, REMEDIATION, AND FINAL C-141 CLOSURE DOCUMENTATION**

**PEARL QUEEN 6" GATHERING  
EOTT REF: "PEARL QUEEN"**

**UL-C NE<sup>1</sup>/<sub>4</sub> OF THE NW<sup>1</sup>/<sub>4</sub> OF SECTION 20 T20S R37E  
~4 MILES SOUTH OF MONUMENT**

**LEA COUNTY, NEW MEXICO**

**LATITUDE: 32°33'51"N**

**LONGITUDE: 103°16'32"W**

**RECEIVED**

**MAY 29, 2002**

**JUN 17 2002**

**PREPARED BY:**

**ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION**

***Environmental Plus, Inc.***

**2100 Avenue O**

**P.O. Box 1558**

**Eunice, NM 88231**

**Phone: (505)394-3481**

**FAX: (505)394-2601**



## Table of Contents

<b>Table of Contents.....</b>	<b>1</b>
<b>Executive Summary.....</b>	<b>2</b>
<b>1.0 Introduction .....</b>	<b>3</b>
<b>2.0 Background.....</b>	<b>3</b>
<b>3.0 Site Description .....</b>	<b>3</b>
3.1 Geological Description.....	3
3.2 Ecological Description.....	3
3.3 Area Ground Water.....	4
3.4 Area Water Wells .....	4
3.5 Area Surface Water Features.....	4
<b>4.0 NMOCD Site Ranking .....</b>	<b>4</b>
<b>5.0 Subsurface Soil Investigation.....</b>	<b>5</b>
<b>6.0 Ground Water Investigation.....</b>	<b>5</b>
<b>7.0 Remediation .....</b>	<b>5</b>
<b>8.0 Closure Justification .....</b>	<b>5</b>
<b>Attachment I: Site and Topographic Maps.....</b>	<b>7</b>
Site Map: with site features (GPS Demarcation) .....	8
Topographic Site Map .....	8
Topographic Site Map .....	9
Nicholson & Clebsch Ground Water Map of Lea County (1961).....	10
<b>Attachment II: Laboratory Analytical Reports and Summaries.....</b>	<b>11</b>
Tabular Summary of Analytical Data (Soil and Water Samples).....	12
Lab Analyses and Chain-of-Custody Forms.....	13
<b>Attachment III: Photographs .....</b>	<b>14</b>
<b>Attachment IV: Regulatory and Summary Forms .....</b>	<b>15</b>
<b>Attachment IV: Regulatory and Summary Forms .....</b>	<b>16</b>
Site Information and Metrics.....	17
09-16-99; 12-10-99; 02-16-00 C-141 Submittals to NMOCD.....	18
<b>Attachment V – Monitor Well Schematic Diagram .....</b>	<b>19</b>

## **Executive Summary**

Environmental Plus, Inc. (EPI) was notified by EOTT Energy Corporation (EOTT) on September 9, 2000 regarding the installation and sampling of a ground water monitoring well at EOTT's "Pearl Queen 6" Gathering" site. EOTT's Pearl Queen 6" Gathering site is located approximately 4 miles south of Monument, Lea County, New Mexico on property owned by the State of New Mexico. EPI was not involved with the site characterization, delineation or remediation of the spill site.

In reviewing EOTT's C-141 submittals and related correspondence by, and between EOTT Environmental Engineering staff and NMOCD, the following project chronology is ascertained:

1. 09-16-99 - The initial C-141 was submitted to NMOCD by Lenna Frost, EOTT Sr. Environmental Engineer. The initial C-141 indicates the spill occurred on 9-8-99. 15-barrels of crude oil were released and approximately 8 barrels were recovered. The affected surface area is described as a 300' X 2' row along the pipeline. It is further indicated that removal of contaminated soil was in progress on that date, and that J&L Land Farm was utilized for contaminated soil disposal.
2. 12-10-99 - A final C-141 was submitted by EOTT to NMOCD. This report indicates 7500 yd<sup>3</sup> of contaminated soil was removed from the site and disposed of at J&L Land Farm. The excavation was backfilled with clean soil. Two bottom-hole water samples and two bottom-hole soil samples were taken on 12-6-99. Samples were submitted to Environmental Lab of Texas, Odessa - TX for analysis. The water samples were analyzed for BTEX and soil samples were analyzed for TPH. Analyses reports were submitted as attachments to the Final C-141. The two bottom-hole soil analyses indicated GRO and DRO levels of <10 ppm. BTEX analyses of the north and south bottom-hole water samples indicated total BTEX levels of 0.061 and 0.057 ppm respectively, however, the two samples indicated Benzene levels of .012 and .011 ppm respectively, which are both above the NMWQCC maximum allowable limit of .01 ppm (10 ppb).
3. 02-04-00 - NMOCD (William Olson) responded to EOTT's 12-10-99 C-141 submittal. Mr. Olson pointed out that OCD personnel had inspected the site and had noted that the ground water had been penetrated during the excavation process, and that the exposed ground water was visibly contaminated with petroleum product. He further stated that EOTT would need to determine the extent of ground water contamination at the site because of the Benzene levels in the ground water samples being above the NMWQCC allowable limit of 10 ppb.
4. 02-16-00 - EOTT submittal of water contamination work plan and corrected C-141. EOTT proposed that the >10 ppb Benzene contaminated ground water be allowed to attenuate naturally. EOTT's environmental engineer states that a clay barrier was placed between the water table and the backfill material, thus preventing further contamination from this spill. EOTT proposed the installation of a ground water monitoring well to be installed immediately down-gradient (south) of the excavation, with a 12-month sampling regimen to determine ground water contamination.
5. 05-24-00 - NMOCD (William Olson) conditionally accepted EOTT's work plan for determination of ground water contamination at the site. Conditions were specific to monitor well design, construction, development, and to reporting requirements.

EPI commenced installation of a down-gradient monitor well on September 20, 2000. The well was completed on the 20<sup>th</sup>, developed on the 21<sup>st</sup>, and initially sampled on the 22<sup>nd</sup>. Ground water depth was measured at 27-feet bgs at the time of well installation. In addition to the initial sampling on 9-22-00, the well was sampled subsequently on 1-24-01 and 6-13-01. Analyses for the 9-22-00 and 1-24-01 sampling events consisted of TPH, BTEX, Cations/Anions, and PAH. The 6-13-01 analyses consisted of only TPH and BTEX.

The analyses of the 9-22-00 and 1-24-01 water samples resulted in undetectable BTEX and PAH levels, ion levels normal for ground water in this area, and minimal TPH levels of 1.0 – 4.0 ppm. Since ion levels were normal and the PAH was undetectable for two successive samples, these protocols were dropped from the final 6-13-01 sampling. The 6-13-01 sampling indicated TPH and BTEX levels below detection limits.

The contamination of the ground water beneath this site caused by the inadvertent encroachment of the water table was minimal, and that sample analyses indicate that the initial contamination has attenuated sufficiently to allow for closure of the site.

## **1.0 Introduction**

This report addresses the site investigation and remediation of the EOTT Energy Pipeline “Pearl Queen 6” Gathering” remediation site. Environmental Plus, Inc. (EPI), Eunice, New Mexico was not involved with site investigation and/or remedial activities at the site. EPI was contracted by EOTT to locate, install and sample an approved ground water monitoring well immediately down-gradient to the excavated and backfilled area of the site. The ground water monitoring well was installed on September 20, 2000. The monitor well was developed on September 21<sup>st</sup>, and the initial sampling event took place on September 22, 2000. Subsequent water sampling took place on January 24, 2001 and June 13, 2001.

## **2.0 Background**

The site is associated with the EOTT Energy Pipeline – Pearl Queen 6” crude oil gathering pipeline. This site is located in Unit Letter C, in the NE¼ of the NW¼ of Section 20 T20S R37E, approximately 4 miles south of Monument, Lea County New Mexico at Latitude 32°33’51”N and Longitude 103°16’32”W. The property is owned by the State of New Mexico. A topographical map of the site and a detailed site map are included in Attachment I.

The crude oil release occurred on September 8, 1999 with an estimated 15 barrels released, and 8 barrels recovered. The leak was the result of pipe corrosion. The pipe was initially clamped and eventually replaced by EOTT.

## **3.0 Site Description**

### ***3.1 Geological Description***

*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 at 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, but which locally drifts. The surface is very irregular and has no drainage features except at the edges of several playas. The sand is generally underlain by recent alluvium but in several places the sand forms topographic highs where it is underlain by a caliche surface. The thickness of the sand cover ranges from a few inches to a probable maximum of 20-feet.*

### ***3.2 Ecological Description***

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Quercus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses and weeds. Mammals represented, include

Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, and the Mule Deer. Reptiles, Amphibians, and Birds are numerous and typical of area. A survey of Listed, Threatened, or Endangered species was not conducted.

### **3.3 Area Ground Water**

The unconfined ground water aquifer was measured at the time of the monitor well installation to be 27' bgs. This depth to GW is consistent with the information contained within "United States Geological Survey (USGS) Ground Water Report 6, 1961. A. Nicholson and A. Clebsch." The ground water flow gradient at this particular site is predicted to be essentially south, rather than the predominant southeasterly gradient present in southern Lea County. An enlarged portion of the Nicholson & Clebsch "Ground Water Map of Southern Lea County" with annotations indicating site location and ground water gradient is included in Attachment I.

### **3.4 Area Water Wells**

All recorded wells are greater than 1000 horizontal feet from the site.

### **3.5 Area Surface Water Features**

No surface water bodies exist within 1000 horizontal feet of the site.

## **4.0 NMOCD Site Ranking**

Documentation provided by EOTT to EPI regarding remedial work done at this site prior to EPI's involvement with the project, and EPI's physical measurement of depth to water at the site, 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<sup>8015m</sup>, 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 20 points with the soil remedial goals highlighted in the Site Ranking Matrix presented on the following page.

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 Area Score= 0	Surface Water Score= 0	
Site Rank (1+2+3) = 20 + 0 + 0 = 20 points (for soil 0-27'bgs)			
Total Site Ranking Score and Acceptable Remedial Goal Concentrations			
Parameter	20-60 (for soil 0 -- 27' bgs)	10	0
Benzene <sup>1</sup>	10 ppm	10 ppm	10 ppm
BTEX <sup>1</sup>	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm
<sup>1</sup> 100 ppm field VOC headspace measurement may be substituted for lab analysis			

## 5.0 Subsurface Soil Investigation

Subsurface soil analysis was accomplished with VOC analysis of bottom-hole samples utilizing Photo-Ionization Detection technology, and with submittal of bottom-hole soil samples for laboratory analysis for TPH.

Laboratory analytical reports and summary table of all analytical results are provided in Attachment II.

## 6.0 Ground Water Investigation

Ground water depth was measured to be 27-feet below ground surface level during the installation of an approved ground water monitoring well at the site on 9-20-00. Ground water analyses during the period 9-22-00 to 6-13-01 indicate that the initial ground water contamination that occurred during excavation of the site was minimal and that petroleum contamination beneath the site has attenuated to below detectable levels for all CoC's. There will be no need for further ground water investigation.

## 7.0 Remediation

Remediation of the site consisted of excavation of the affected area, placement of a 2-ft clay barrier over the shallow water table, and backfilling with clean soil. Approximately 7,500 yd<sup>3</sup> of contaminated soil was excavated from the site and disposed of at J&L Land Farm.

## 8.0 Closure Justification

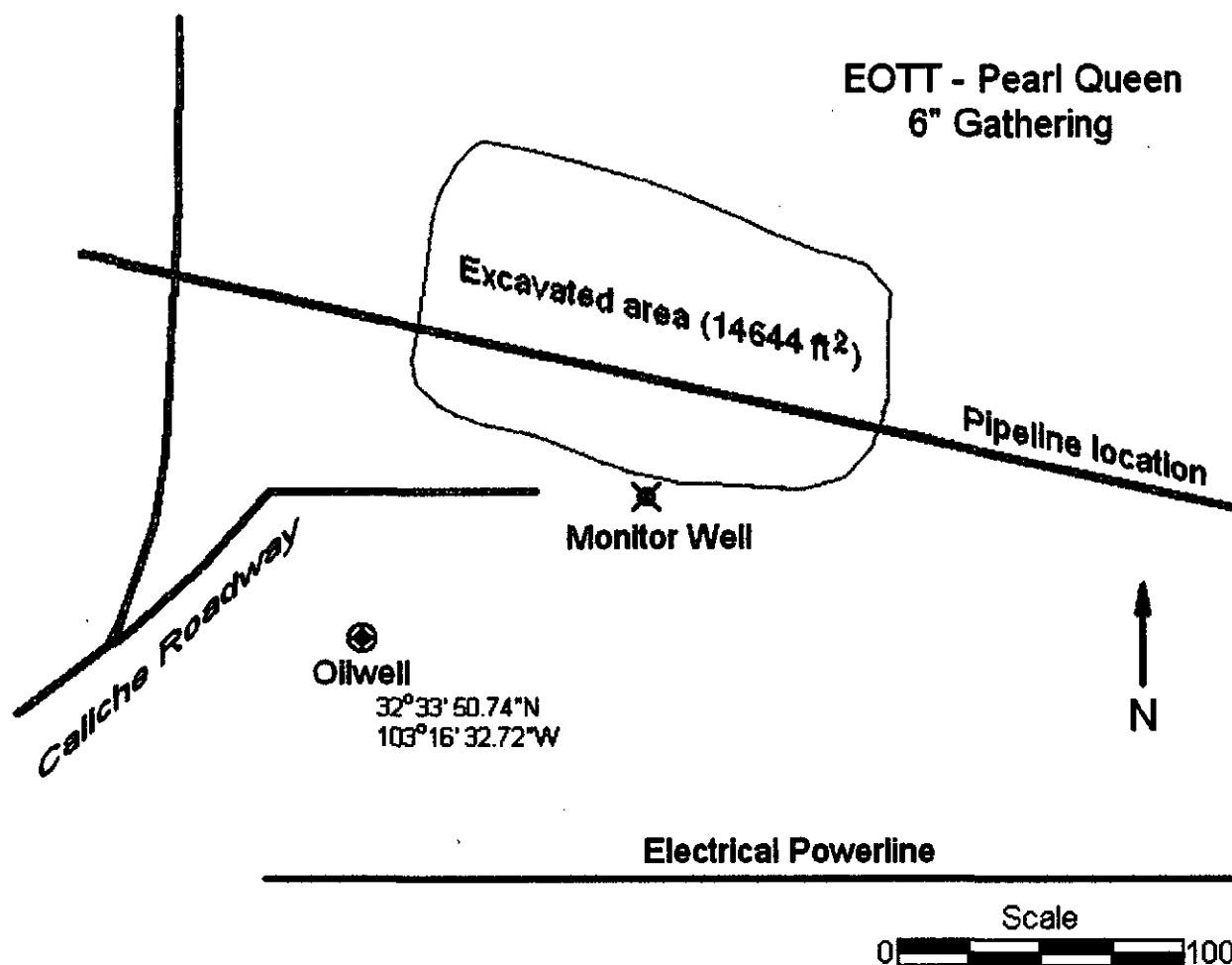
This report documents successful implementation of the Remediation Plan approved by NMOCD and is consistent with the NMOCD approved "E.O.T.T. General Work Plan for Remediation of E.O.T.T. Pipeline Spills, Leaks and Releases in New Mexico, July – 2000". Soil contaminated above the prescribed CoC remedial concentrations was excavated and disposed of at an approved land farm. As per EOTT documentation (Lennah Frost, 02-16-00), a 2-ft clay barrier was placed over the water table to prevent



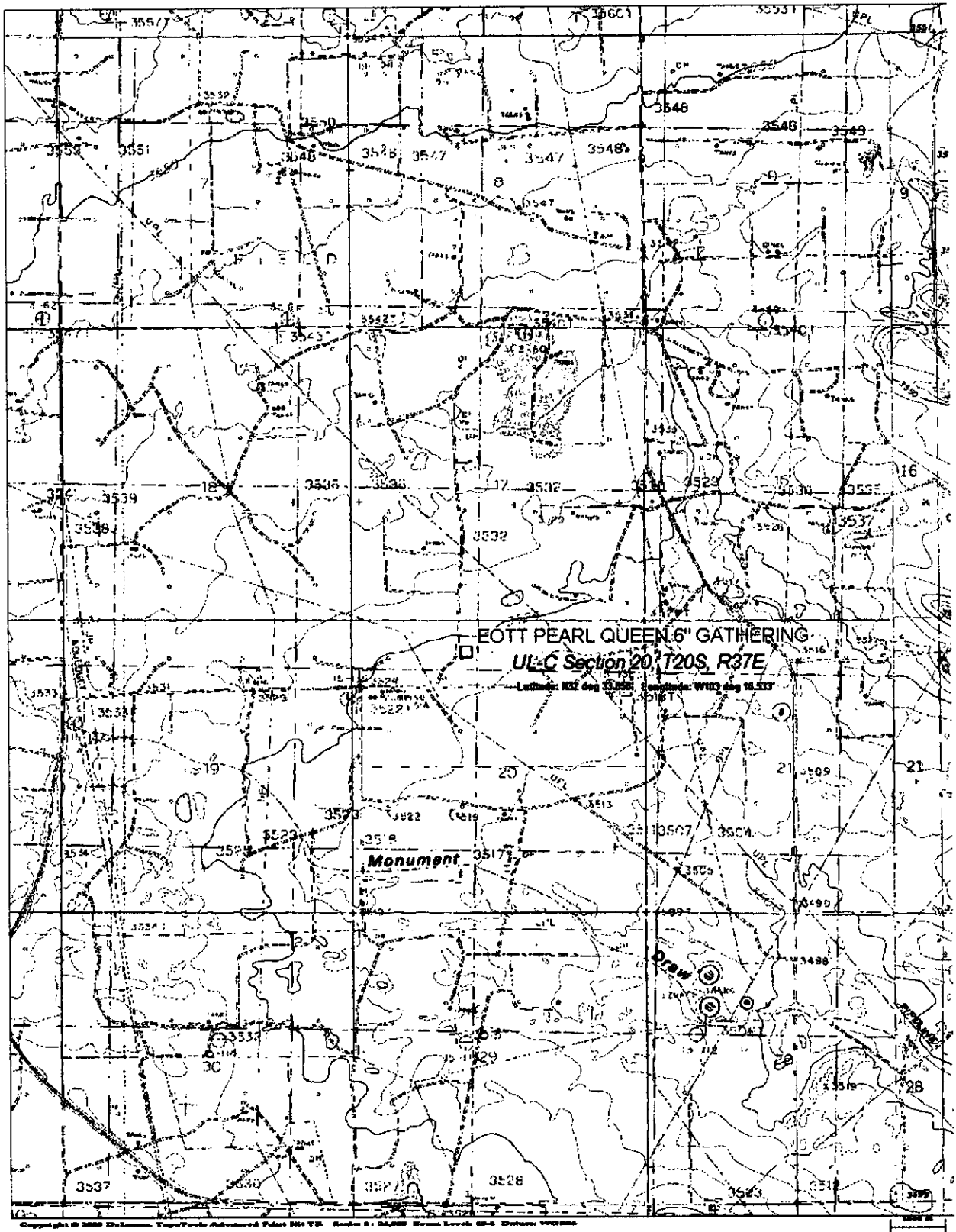
additional contamination of the ground water beneath the site, and the excavation was backfilled with clean soil. The subsequent ground water investigation conducted by EPI indicates that the ground water beneath the site is well within acceptable contamination levels. Based on the data presented in this report, Environmental Plus, Inc., on behalf of E.O.T.T. Energy Pipeline, requests that the NMOCD require "no further action" at this site.

**Attachment I: Site and Topographic Maps**

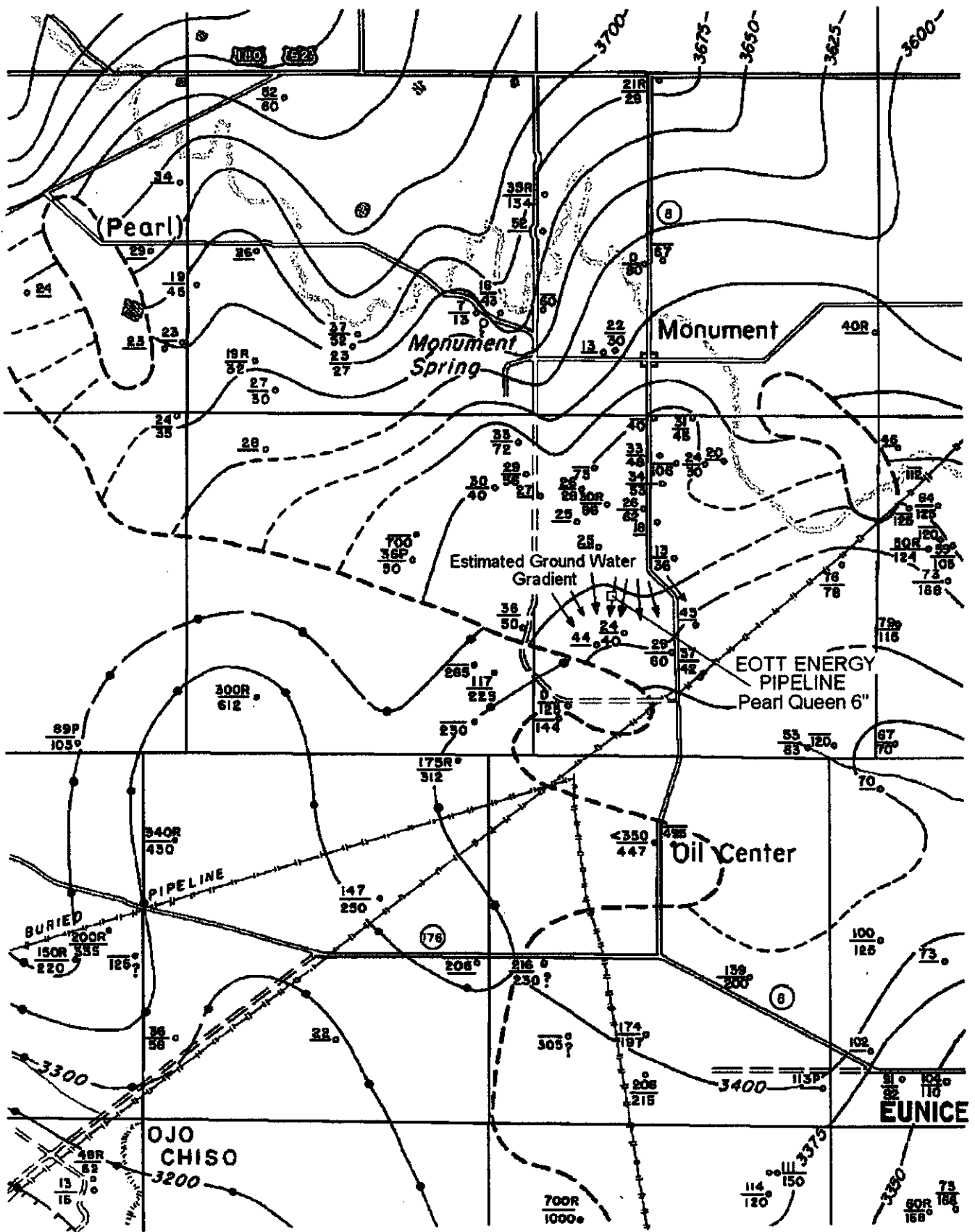
Site Map: with site features (GPS Demarcation)



# Topographic Site Map



# Nicholson & Clebsch Ground Water Map of Lea County (1961)



**Attachment II: Laboratory Analytical Reports and Summaries**

# Tabular Summary of Analytical Data (Soil and Water Samples)

E.O.T.T. Pearl Queen 6" Soil and Monitoring Well Data Table

Parameter	Units	6-Dec-99 SOIL NORTH <100	6-Dec-99 SOIL SOUTH <100	6-Dec-99 H <sub>2</sub> O NORTH	6-Dec-99 H <sub>2</sub> O SOUTH	22-Sep-00 EPQ20GW	24-Jan-01 GW12401EPQMW	13-Jan-01 EPQMW61301GW
VOC <sup>1</sup>	mg/Kg	20	20	NA	NA	NA	NA	NA
TPH <sup>2</sup>	mg/L	NA	NA	NA	NA	1	4	0.375
Benzene	mg/L	NA	NA	0.012	0.011	0.001 <sup>3</sup>	0.001	0.001
Toluene	mg/L	NA <sup>4</sup>	NA	0.012	0.012	0.001	0.001	0.001
Ethylbenzene	mg/L	NA	NA	0.004	0.004	0.001	0.001	0.001
m,p-Xylene	mg/L	NA	NA	0.011	0.009	0.001	0.001	0.001
o-Xylene	mg/L	NA	NA	0.022	0.021	0.001	0.001	0.001
BTEX <sup>5</sup>	mg/L	NA	NA	0.061	0.057	0.005	0.005	0.005
Potassium (K)	mg/L	NA	NA	NA	NA	12.13	9.67	NA
Magnesium (Mg)	mg/L	NA	NA	NA	NA	95.00	92.30	NA
Calcium (Ca)	mg/L	NA	NA	NA	NA	108.90	133.60	NA
Sodium (Na)	mg/L	NA	NA	NA	NA	149.40	129.40	NA
Chloride (Cl)	mg/L	NA	NA	NA	NA	602.00	620.00	NA
Sulfate (SO <sub>4</sub> )	mg/L	NA	NA	NA	NA	194.00	127.00	NA
Bicarbonate (HCO <sub>3</sub> )	mg/L	NA	NA	NA	NA	224.00	234.00	NA
Carbonate (CO <sub>3</sub> )	mg/L	NA	NA	NA	NA	2.00	1.00	NA
TDS	mg/L	NA	NA	NA	NA	1799.00	1857.00	NA
pH	SU	NA	NA	NA	NA	7.39	7.18	NA
<b>Polycyclic Aromatic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L)</b>								
Naphthalene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Acenaphthylene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Acenaphthene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Fluorene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Phenanthrene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Anthracene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Fluoranthene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Pyrene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Benzo [a] Anthracene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Chrysene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Benzo [b] Fluoranthene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Benzo [k] Fluoranthene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Benzo [a] Pyrene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Indeno [1,2,3-CD] Pyrene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Dibenz [a,h] Anthracene	mg/L	NA	NA	NA	NA	0.005	0.005	NA
Benzo [g,h,i] Perylene	mg/L	NA	NA	NA	NA	0.005	0.005	NA

<sup>1</sup>Headspace VOC determined with Photo-Ionization Detector. <sup>2</sup>TPH = GRO + DRO <sup>3</sup>Italicized values are reported as "less than (<) instrument detection limits".

<sup>4</sup>NA - Not Analyzed <sup>5</sup>BTEX - Sum of Benzene, Toluene, Ethyl Benzene, and Total Xylene. Less than values are considered "de minimus" and included in the sum.

**Lab Analyses and Chain-of-Custody Forms  
(Dec-1999, Sept-2000, Jan-2001, June-2001)**



# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY  
ATTN: MRL FRANK HERNANDEZ  
P.O. BOX 1660  
MIDLAND, TEXAS 79703  
FAX: 505-392-2946  
FAX: 815-687-2713 (Lennah Frost)

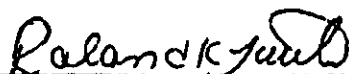
Sample Type: Water  
Sample Condition: Intact/Iced  
Project #: Pearl Queen  
Project Name: None Given  
Project Location: South of Monument

Sampling Date: 12/06/99  
Receiving Date: 12/06/99  
Analysis Date: 12/06/99

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
22015	Water North	0.012	0.012	0.004	0.011	0.022
22018	Water South	0.011	0.012	0.004	0.009	0.021

% IA	104	101	102	104	102
% EA	97	92	95	98	96
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8021B,5030

  
Roland K. Tuttle

12-7-99  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 1660  
MIDLAND, TEXAS 79703  
FAX: 505-392-2946  
FAX: 915-687-2713 (Lennah Frost)


Sample Type: Soil  
Sample Condition: Intact/Iced  
Project #: Pearl Queen  
Project Name: None Given  
Project Location: South of Monument

Sampling Date: 12/06/99  
Receiving Date: 12/06/99  
Analysis Date: 12/06/99

ELT#	FIELD CODE	GRO	DRO
		C6-C10 mg/kg	>C10-C25 mg/kg
22013	East Wall North	<10	<10
22014	East Wall South	<10	<10

% INSTRUMENT ACCURACY	109	92
% EXTRACTION ACCURACY	112	82
BLANK	<10	<10

Methods: EPA SW 846-6015M GRO/DRO

  
Roland K. Tuttle

12-7-99  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2600 (Pat McCasland)

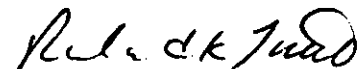
Sample Type: Water  
Sample Condition: Intact/ Iced/ HCl  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec 20  
Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 09/22/00  
Receiving Date: 09/22/00  
Analysis Date: See Below

ELT#	FIELD CODE	pH s.u.	TDS mg/L	Chloride mg/L	Sulfate mg/L	Carbonate mg/L	Bicarbonate mg/L
31191	EPQ20GW	7.39	1799	602	194	<2	224

QUALITY CONTROL	7.22	.	5140	47.6	.	.
TRUE VALUE	7.00	.	5000	50.0	.	.
% INSTRUMENT ACCURACY	103	.	103	95	.	.
BLANK	.	<5	<5	<1.0	<2	<2
ANALYSIS DATE	10/6/00	9/26/00	10/6/00	10/6/00	10/6/00	10/6/00

METHODS: EPA 150.1, 160.1, 325.3, 375.4, 310.1

  
Raland K. Tuttle

10-14-00  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2600 (Pat McCasland)

Sample Type: Water  
Sample Condition: Intact/ Iced/ HCl  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec 20  
Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 09/22/00  
Receiving Date: 09/22/00  
Analysis Date: 10/01/00  
Field Code: EPQ20GW

EPA SW846 8270 (mg/L)	REPORT LIMIT	ELT# 31191	RPD	%EA	%DEV
Naphthalene	0.005	ND			11.1
Acenaphthylene	0.005	ND			16.9
Acenaphthene	0.005	ND	31	38	15.9
Fluorene	0.005	ND			3.0
Phenanthrene	0.005	ND			2.4
Anthracene	0.005	ND			3.0
Fluoranthene	0.005	ND			8.9
Pyrene	0.005	ND	31	48	20.4
Benzo[a]anthracene	0.005	ND			13.7
Chrysene	0.005	ND			11.6
Benzo[b]fluoranthene	0.005	ND			16.4
Benzo[k]fluoranthene	0.005	ND			20.6
Benzo[a]pyrene	0.005	ND			18.9
Indeno[1,2,3-cd]pyrene	0.005	ND			2.7
Dibenz[a,h]anthracene	0.005	ND			6.4
Benzo[g,h,i]perylene	0.005	ND			5.4

#### % RECOVERY

Nitrobenzene-d5 SURR	74
2-Fluorobiphenyl SURR	109
p-Terphenyl-d14 SURR	109

ND= not detected at report limit.  
Method: EPA SW 846 8270C , 3510

  
Randal K. Tuttle

10-14-00  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2600 (Pat McCasland)


Sample Type: Water  
Sample Condition: Intact/ Iced/ HCl  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec 20  
Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 09/22/00  
Receiving Date: 09/22/00  
Analysis Date: BTEX 10/03/00  
Analysis Date: TPH 9/25/00

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L	TPH mg/L
31191	EPQ20GW	<0.001	<0.001	<0.001	<0.001	<0.001	1

%IA	95	101	96	102	101	96
%EA	97	104	102	107	106	.
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<1

METHODS: EPA SW 846-8021B ,5030, EPA 418.1

  
Roland K. Tuttle

10-14-00  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2600 (Pat McCasland)


Sample Type: Water  
Sample Condition: Intact/ Iced/ HCl  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec 20  
Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 09/22/00  
Receiving Date: 09/22/00  
Analysis Date: 10/04/00

ELT#	FIELD CODE	Na mg/L	Ca mg/L	Mg mg/L	K mg/L
31191	EPQ20GW	149.4	108.9	95.0	12.13

% INSTRUMENT ACCURACY	109	101	97	103
% EXTRACTION ACCURACY	110	103	101	100
BLANK	<0.10	<0.10	<0.01	<0.01

METHODS: SM 7000 series

  
Ralnd K. Tuttle

10-14-00  
Date



# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2601 (Pat McCasland)

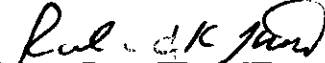
Sample Type: Water  
Sample Condition: Intact/ Iced/-1.0 C  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec. 20  
Project Location: Unit C Sec. 20 T20S R37E

Sampling Date: 01/24/01  
Receiving Date: 01/26/01  
Analysis Date: 01/26/01

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg
36839	GW12401EPQMW-1	<0.001	<0.001	<0.001	<0.001	<0.001
36840	GW12401EPQMW-1	<0.001	<0.001	<0.001	<0.001	<0.001

% IA	88	87	89	89	92
% EA	86	85	86	86	88
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846- 8021B,5030

  
Roland K. Tuttle

2-8-01  
Date



# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT  
ATTN: MR. FRANK HERNANDEZ  
P. O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2600 (Pat Mc Casland)

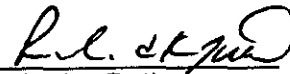
Sample Type: Water  
Sample Condition: Intact/ Iced/ -1.0 deg C  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec. 20  
Project Location: Unit C, Sec. 20 T20S R37E

Sampling Date: 01/24/01  
Receiving Date: 01/26/01  
Analysis Date: 01/30/01

ELT#	FIELD CODE	TPH mg/L
36841	GW12401EPQMW-2	4

% INSTRUMENT ACCURACY	97.3
% EXTRACTION ACCURACY	95.6
BLANK	<1

Methods: EPA 418.1

  
Raland K. Tuttle

2-9-01  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"


EOTT  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2600 (Pat McCasland)

Sample Type: Water  
Sample Condition: Intact/ Iced/ -1.0 deg. C  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec 20  
Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 01/24/01  
Receiving Date: 01/26/01  
Analysis Date: 02/06/01  
Field Code: GW12401EPQMW-3

EPA SW846 8270 (mg/L)	REPORT LIMIT	ELT# 36842	RPD	%EA	%DEV
Naphthalene	0.005	ND			5.3
Acenaphthylene	0.005	ND			-6.6
Acenaphthene	0.005	ND	1	106	0
Fluorene	0.005	ND			-8.3
Phenanthrene	0.005	ND			2.2
Anthracene	0.005	ND			5.1
Fluoranthene	0.005	ND			-1.2
Pyrene	0.005	ND	8	105	-15.6
Benzo[a]anthracene	0.005	ND			-11.6
Chrysene	0.005	ND			0
Benzo[b]fluoranthene	0.005	ND			15.8
Benzo[k]fluoranthene	0.005	ND			-16.1
Benzo[a]pyrene	0.005	ND			-8.1
Indeno[1,2,3-cd]pyrene	0.005	ND			3.4
Dibenz[a,h]anthracene	0.005	ND			10.8
Benzo[g,h,i]perylene	0.005	ND			-7
		% RECOVERY			
Nitrobenzene-d5 SURR		61			
2-Fluorobiphenyl SURR		79			
p-Terphenyl-d14 SURR		120			

ND= not detected at report limit.  
Method: EPA SW 846 8270C , 3510

  
Roland K. Tuttle

2-9-01  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2600 (Pat McCasland)

Sample Type: Water  
Sample Condition: Intact/ Iced/ -1.0 deg C  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec 20  
Project Location: Unit C Sec 20 T20S R37E

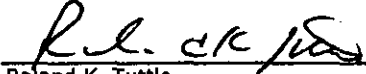
Sampling Date: 01/24/01  
Receiving Date: 01/26/01  
Analysis Date: See Below

ELT#	FIELD CODE	pH s.u.	TDS mg/L	Chloride mg/L	Sulfate mg/L	Carbonate mg/L	Bicarbonate mg/L
36843	GW12401EPQMW-4	7.18	1857	620	127.0	<1	234

QUALITY CONTROL	7.02	*	5140	44.4	*	*
TRUE VALUE	7.00	*	5000	50.0	*	*
% INSTRUMENT ACCURACY	100	*	103	89	*	*
BLANK	*	<10	<10	<1.0	<2	<2

ANALYSIS DATE	01/26/01	01/29/01	02/08/01	01/31/01	01/29/01	01/29/01
---------------	----------	----------	----------	----------	----------	----------

METHODS: EPA 150.1, 160.1, 325.3, 375.4, 310.1

  
Raland K. Tuttle

2-9-01  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 5050  
HOBBS, N.M. 88240  
FAX: 505-392-2946  
FAX: 505-394-2600 (Pat McCasland)

Sample Type: Water  
Sample Condition: Intact/ Iced/ -1.0 deg. C  
Project #: 7397 LF-72  
Project Name: Pearl Queen Sec 20  
Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 01/24/01  
Receiving Date: 01/26/01  
Analysis Date: 02/09/01

ELT#	FIELD CODE	Na mg/L	Ca mg/L	Mg mg/L	K mg/L
36843	GW12401EPQMW-4	129.4	133.6	92.30	9.669

% INSTRUMENT ACCURACY	102	100	98	98
% EXTRACTION ACCURACY	86	98	101	87
BLANK	<0.10	<0.10	<0.10	<0.10

METHODS: SW846-6010

  
Raland K. Tuttle

2-9-01  
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:

FRANK HERNANDEZ

Phone #: 505-390-0912

FAX #: 505-392-2966

Company Name & Address: Fort

Box 5050 Hobbs NM 88240

Project #:

7397 LF-72

Project Name:

PEARL BEEN SEA DO

Project Location:

Unit C Sea DO T203 R37E

Sampler Signature:

*Andy Miller*

LAB # (LAB USE ONLY)	FIELD CODE	# (CONTAINERS)	Volume/Amount	MATRIX				PRESERVATIVE METHOD				SAMPLING				
				WATER	SOIL	AIR	SLUDGE	OTHER	ICL	INOC	ICE	HOHE	OTHER	DATE	TIME	
36839	6W12401EPQMW-1	1		X								X			1-24	
36840	6W12401EPQMW-1	1		X								X			1-24	
36841	6W12401EPQMW-2	1		X								X			1-24	
36842	6W12401EPQMW-3	1		X								X			1-24	
36843	6W12401EPQMW-4	1		X								X			1-24	

ANALYSIS REQUEST

UTEX K02W/S030  
 TPII 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  
 (T)S  
 (H)C  
 PAH  
 Benthos (Cl, SO4, NO3, NH4, K, Mg, Na, PH)

Relinquished by:

*Andy Miller*

Date:

1-26-01

Time:

1350

Received by:

*Jane McNamee*

REMARKS

ORIGINALS to F. Hernandez + Pat  
 McCasland EPT Rec - 1.0°C  
 Fax to F. Hernandez + P. Mc.  
 505-394-2600

Relinquished by:

Date:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Time:

Received by:

REMARKS

Received by:

Time:

Date:

Relinquished by:

Client: Environmental Plus, Inc.

Attn: Pat McCasland

Address: 1324 M.St Po Box  
Eunice, NM 88231

Phone: (505) 394-3481 FAX: (505) 394-2601

Report#/Lab ID#: 114266 Report Date: 06/25/01  
Project ID: LF-72

Sample Name: EPQMW61301GW

Sample Matrix: water

Date Received: 06/15/2001 Time: 14:00

Date Sampled: 06/13/2001 Time: 10:40

## REPORT OF ANALYSIS

## QUALITY ASSURANCE DATA<sup>1</sup>

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date	Method <sup>6</sup>	Data Qual <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Volatiles organics-8260b/BTEX	---		---		06/21/01	8260b	---	---	---	---	---
Benzene	<1	µg/L	1	<1	06/21/01	8260b	---	0.2	76.7	89	79.7
Ethylbenzene	<1	µg/L	1	<1	06/21/01	8260b	J	3.2	95.8	98.6	97.7
m,p-Xylenes	<1	µg/L	1	<1	06/21/01	8260b	---	3	96.4	100.9	97.8
o-Xylene	<1	µg/L	1	<1	06/21/01	8260b	---	2.8	96.6	99	98.7
Toluene	<1	µg/L	1	<1	06/21/01	8260b	---	0.1	83.7	90	84.3

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted,

*Richard Laster*

Richard Laster

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL, B = Analyte detected in associated method blank(s). S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

**Client:** Environmental Plus, Inc.

**Attn:** Pat McCasland

**Address:** 1324 M.St Po Box  
Eunice, NM 88231

**Phone:** (505) 394-3481 **FAX:** (505) 394-2601

**Report#/Lab ID#:** 114267 **Report Date:** 06/27/01

**Project ID:** LF-72

**Sample Name:** EPQMW61301GW

**Sample Matrix:** water

**Date Received:** 06/15/2001 **Time:** 14:00

**Date Sampled:** 06/13/2001 **Time:** 10:42

## REPORT OF ANALYSIS

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date	Method <sup>6</sup>	Data Qual <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Petroleum hydrocarbons	<0.375	mg/L	0.375	<0.375	06/26/01	418.1	---	3.07	72.41	110.08	108.32

## QUALITY ASSURANCE DATA<sup>1</sup>

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted,

*Richard Laster*

Richard Laster

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL) typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than (" $<$ ") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B = Analyte detected in associated method blank(s). S1 = MS and/or MSD recovery exceed advisory limits. S2 = Post digestion spike (PDS) recovery exceeds advisory limit. S3 = MS and/or MSD and PDS recoveries exceed advisory limits. P = Precision higher than advisory limit. M = Matrix interference.

Client: Environmental Plus, Inc.  
Attn: Pat McCasland

Project ID: LF-72  
Sample Name: EPQMW61301GW

Report#/Lab ID#: 114266  
Sample Matrix: water

## REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
1,2-Dichloroethane-d4	8260b	89.6	80-120	---
Toluene-d8	8260b	93.4	88-110	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



**Client:** Environmental Plus, Inc.

**Attn:** Pat McCasland

**Address:** 1324 M.St Po Box  
Eunice,

NM 88231

**Phone:** (505) 394-3481 **FAX:** (505) 394-2601

**Report#/Lab ID#:** 114268 **Report Date:** 06/25/01

**Project ID:** LF-72

**Sample Name:** Trip Blank

**Sample Matrix:** water

**Date Received:** 06/15/2001 **Time:** 14:00

**Date Sampled:** not on C-O-C **Time:** 00:00

## REPORT OF ANALYSIS

## QUALITY ASSURANCE DATA<sup>1</sup>

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date	Method <sup>6</sup>	Data Qual <sup>7</sup>	Prec. <sup>2</sup>	Recov <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Volatile organics-8260b/BTEX	---		---		06/21/01	8260b	---	---	---	---	---
Benzene	<1	µg/L	1	<1	06/21/01	8260b	---	0.2	76.7	89	76.7
Ethylbenzene	<1	µg/L	1	<1	06/21/01	8260b	---	3.2	95.8	98.6	97.7
m,p-Xylenes	<1	µg/L	1	<1	06/21/01	8260b	J	3	96.4	100.9	97.8
o-Xylene	<1	µg/L	1	<1	06/21/01	8260b	---	2.8	96.6	99	98.7
Toluene	<1	µg/L	1	<1	06/21/01	8260b	J	0.1	83.7	90	84.3

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted,

*Richard Laster*

Richard Laster

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than (" $<$ ") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B = Analyte detected in associated method blank(s). S1 = MS and/or MSD recovery exceed advisory limits. S2 = Post digestion spike (PDS) recovery exceeds advisory limit. S3 = MS and/or MSD and PDS recoveries exceed advisory limits. P = Precision higher than advisory limit. M = Matrix interference.

**716/715 INC.**

**Bill to (if different):**

Company Name EOTT Energy

Address 703x 1660

City Midland S: eTX Zip 79702

ATTN: Enik Hernandez

Phone: ~~638-~~ 3799 Fax 915-684-3479

10

**Sampler:** *B. Blevins*

## Analyses Requested (1)

**Please attach explanatory information as required.**

(1) Unless specifically requested otherwise on this Chain-of-custody and/or attached documentation, all analyses will be conducted using ASI's method of choice and all data will be reported to ASI's normal report limits (MDL/PQL). For GC/MS volatiles and extractables, unless specific analytical parameter lists are specified on this chain-of-custody or attached to this chain-of-custody, ASI will default to Priority Pollutants' HSL list at ASI's option. Specific compound lists must be submitted for all GC procedures.

Sample Relinquished By				Sample Received By			
Name	Affiliation	Date	Time	Name	Affiliation	Date	Time
B. Blauis	EnvironmenALPUS Inc.	6-13-01	1130	E. H. T. D.	AST	6-15-01	1430

[Tendering of above described samples to AnalySys, Inc. for analytical testing constitutes agreement by buyer/sampler to AnalySys, Inc.'s standard terms.]

**בנין**

**Bill to (if different):**

Company Name EOT Energy

Address 708x 1660

City Midland State TX Zip 79702

ATTN: Frank Hernandez

Phone: 638-3299 Fax 915-684-3479

**Rush Status (must be confirmed with lab mgr.):** \_\_\_\_\_

**Sampler:** B. Flewels

[illegible]

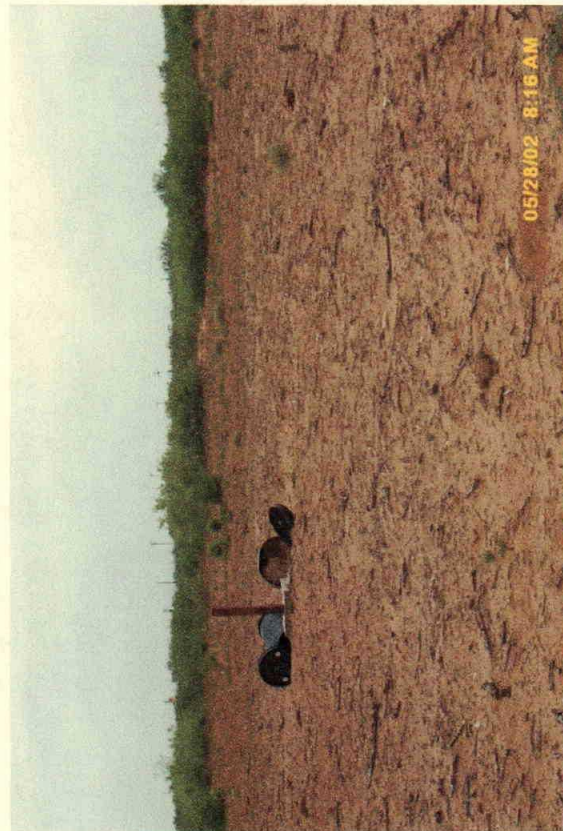
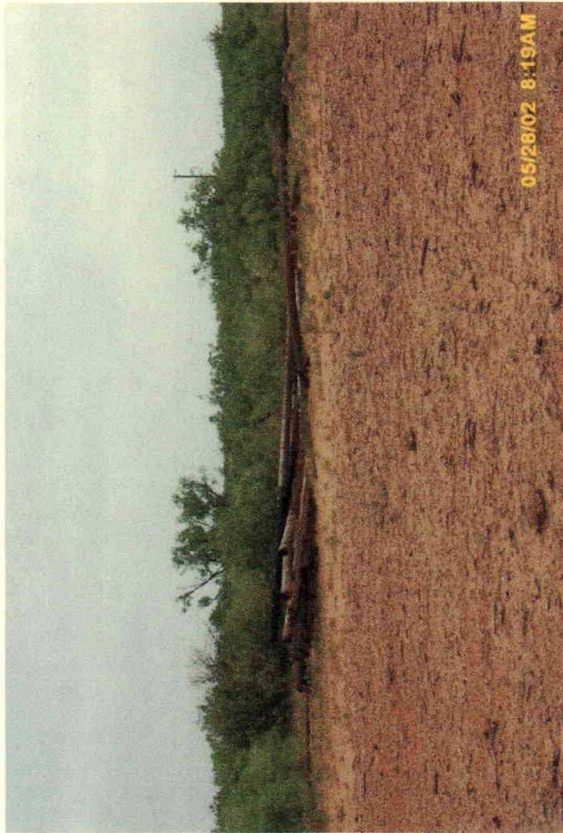
Unless specifically requested otherwise on this Chain-of-custody and/or attached documentation, all analyses will be conducted using ASI's method of choice and all data will be reported to ASI's normal reporting units (MDL/PQL). For GC/MS volatiles and extractables, unless specific analytical parameter lists are specified on this chain-of-custody or attached to this chain-of-custody, ASI will default to Priority Pollutants or SI's HSL list at ASI's option. Specific compound lists must be supplied for all GC procedures.

Sample Relinquished By				Sample Received By			
Name	Affiliation	Date	Time	Name	Affiliation	Date	Time
B. Davis	Environmental Plus Inc.	6-13-01	11:30	E. L. S.	ASI	6-15-01	14:00

**Tendering of above described samples to AnalySys, Inc. for analytical testing constitutes agreement by buyer/sampler to AnalySys, Inc.'s standard terms.**

**Attachment III: Photographs**





---

**Attachment IV: Regulatory and Summary Forms**

### Site Information and Metrics

SITE: Pearl Queen 6" Gathering		Assigned Site Reference #: Pearl Queen 6"	
Company: EOTT			
Company Street Address: 5805 E. Highway 80, Midland, Texas 79701			
Company Mailing Address: P.O. Box 1660			
Company City, State, Zip: Midland, Texas 79702			
Company Representative: Wayne Brunette			
Company Representative Telephone: 915.556.0190			
Company Telephone: 915.684.3451 Fax: 915.687.2713			
Fluid volume released (bbls) = 15 (8 recovered)			
>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: Pearl Queen 6" Gathering			
Source of contamination: Pipe Corrosion			
Land Owner, i.e., BLM, ST, Fee, Other: New Mexico State Land Office			
LSP Dimensions: affected area = ~97' NS x 162' EW (Elliptical shape)			
LSP Area = ~14,644 ft <sup>2</sup>			
Location of Reference Point (RP): Oil well			
Location distance and direction from RP: NE ~100-ft			
Latitude: 32° 33' 51N			
Longitude: 103° 16' 33W			
Elevation above mean sea level: ~ 3445' amsl			
Feet from South Section Line			
Feet from West Section Line			
Location- Unit or ¼¼ = NE¼ of NW¼ (UL-C)			
Location- Section = 20			
Location- Township = T20S			
Location- Range = R37E			
Surface water body within 1000' radius of site: None			
Surface water body within 1000' radius of site			
Domestic water wells within 1000' radius of site: None			
Domestic water wells within 1000' radius of site			
Agricultural water wells within 1000' radius of site: None			
Agricultural water wells within 1000' radius of site			
Public water supply wells within 1000' radius of site: None			
Public water supply wells within 1000' radius of site			
Depth from land surface to ground water (DG): 27-feet			
Depth of contamination (DC): Contaminated soil removed down to water table, 2-ft clay barrier installed.			
Depth to ground water (DG - DC = DtGW)			
<b>1. Ground Water</b>	<b>2. Wellhead Protection Area</b>	<b>3. Distance to Surface Water Body</b>	
If Depth to GW <50 feet: <i>20 points</i>	If <1000' from water source, or; <200' from private domestic water source: <i>20 points</i>	<200 horizontal feet: <i>20 points</i>	
If Depth to GW 50 to 99 feet: <i>10 points</i>		200-100 horizontal feet: <i>10 points</i>	
If Depth to GW >100 feet: <i>0 points</i>	If >1000' from water source, or; >200' from private domestic water source: <i>0 points</i>	>1000 horizontal feet: <i>0 points</i>	
Ground water Score = 20	Wellhead Protection Area Score = 0	Surface Water Score = 0	
Site Rank (1+2+3) = 20+0+0 = 20 points			
<b>Total Site Ranking Score and Acceptable Concentrations</b>			
Parameter	>19	10-19	0-9
Benzene <sup>1</sup>	10 ppm	10 ppm	10 ppm
BTEX <sup>1</sup>	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm
<sup>1</sup> 100 ppm field VOC headspace measurement may be substituted for lab analysis			

**09-16-99; 12-10-99; 02-16-00 C-141 Submittals to NMOCD**



811 South Plaza  
Alameda, NM 88210  
District III - (505) 334-6178  
1000 Rio Brazos Road  
Artes, NM 87410  
District IV - (505) 827-7131

OIL CONSERVATION DIVISION  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

Submit 2 copies to  
Appropriate District  
Office in accordance  
with Rule 116 on  
back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name <b>EO TT Energy Pipeline</b>	Contact <b>Lennah Frost</b>
Address <b>PO Box 1660 Midland Tx 79702</b>	Telephone No. <b>915/16843467</b>
Facility Name <b>Pearl Queen Gathering</b>	Facility Type
Surface Owner <b>State of NM</b>	Mineral Owner
Lease No.	

LOCATION OF RELEASE

Unit Letter	Section <b>20</b>	Township <b>20S</b>	Range <b>37E</b>	Feet from the	North/South Line	Feet from the	East/West Line	County <b>Lea</b>
-------------	----------------------	------------------------	---------------------	---------------	------------------	---------------	----------------	----------------------

NATURE OF RELEASE

Type of Release <b>Crude oil</b>	Volume of Release <b>15 bbls</b>	Volume Recovered <b>8 bbls</b>
Source of Release <b>Pipe Line Leak</b>	Date and Hour of Occurrence <b>9/8/99 12 pm</b>	Date and Hour of Discovery <b>Same</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Sylvia</b>	
By Whom? <b>Lennah Frost</b>	Date and Hour <b>9/8/99 - 2:30</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully. (Attach Additional Sheets If Necessary)

Describe Cause of Problem and Remedial Action Taken. (Attach Additional Sheets If Necessary)

**Corrosion Leak. Pipe was clamped - will be repaired ASAP.**

Describe Area Affected and Cleanup Action Taken. (Attach Additional Sheets If Necessary)

**Oil pooled @ Leak source. Due to heavy Rain, oil ran down Road approx. 300' x 2'. All contaminated Soil is being excavated & disposed of at J&L Landfarm.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCED 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 NMOCED marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and immediately remediate contamination that poses a threat to ground water, surface water, human health or the environment. In addition, NMOCED 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 <b>Lennah Frost</b>	OIL CONSERVATION DIVISION	
Printed Name <b>Lennah Frost</b>	Approved by District Supervisor:	Expiration Date:
Title <b>R. Smith Engineer</b>	Approval Date:	Conditions of Approval:
Date <b>9/16/99</b>	Phone <b>915/16843467</b>	Attached <input type="checkbox"/>

**Sent to Santa Fe on 11-22-99 - They impacted gnd. H<sub>2</sub>O on 9-15-99**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 South First, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
2040 South Pacheco  
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

☐ Initial Report ☒ Final Report

Name of Company <b>EOTT Energy Pipeline Limited Partnership</b>	Contact <b>Lennah Frost</b>
Address <b>P.O. Box 1660, Midland, TX 79702</b>	Telephone No. <b>915/684-3467</b>
Facility Name <b>Pearl Queen 6" gathering</b>	Facility Type <b>6" gathering line</b>

Surface Owner <b>State of New Mexico</b>	Mineral Owner <b>Royalties have been paid</b>	Lease No.
---	--	-----------

LOCATION OF RELEASE

Unit Letter <b>G</b>	Section <b>20</b>	Township <b>20-S</b>	Range <b>37-E</b>	Feet from the	North/South Line	Feet from the	East/West Line	County <b>Lea</b>
-------------------------	----------------------	-------------------------	----------------------	---------------	------------------	---------------	----------------	----------------------

NATURE OF RELEASE

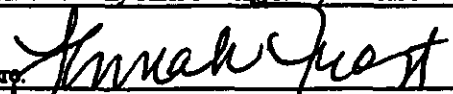
Type of Release <b>Crude oil</b>	Volume of Release <b>15 bbls</b>	Volume Recovered <b>8 bbls</b>
Source of Release <b>Pipeline leak</b>	Date and Hour of Occurrence <b>9/8/99 - 12 pm</b>	Date and Hour of Discovery <b>9/8/99 - same</b>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Sylvia - Hobbs District Office</b>	
By Whom? <b>Lennah Frost</b>	Date and Hour <b>9/8/99 - 2:30 pm</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
**Pipeline corrosion. Pipe was repaired.**

Describe Area Affected and Cleanup Action Taken.\*  
**Approximately 7500 cubic yards of contaminated soil was excavated and disposed of at J&L Landfarm. Clean soil was used for backfill. Analysis of water and soil from bottom hole and soil from the side walls were taken on 12/6/99 1/11/99. Analysis attached**

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.

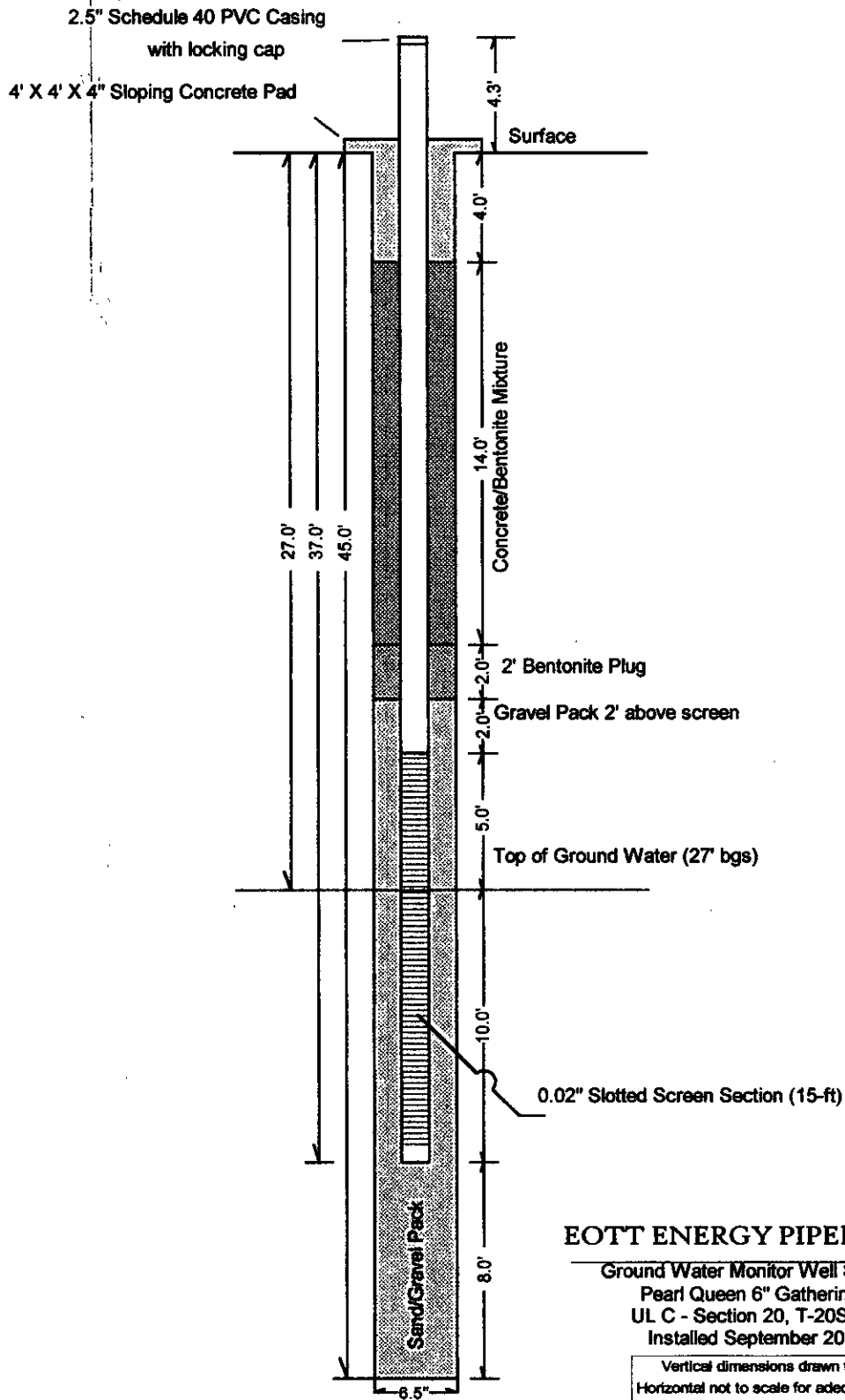
Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Lennah Frost</b>	Approved by District Supervisor:	
Title: <b>Sr. Environmental Engineer</b>	Approval Date:	Expiration Date:
Date: <b>12/10/99</b> Phone: <b>915/684-3467</b>	Conditions of Approval:	Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary

*gpc*



# Attachment V – Monitor Well Schematic Diagram

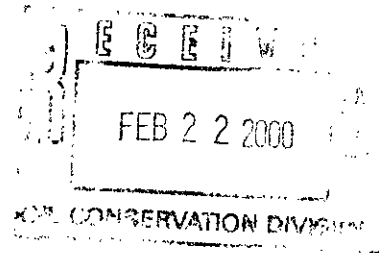


Environmental Plus, Inc.



# **EOTT ENERGY Pipeline Limited Partnership**

P.O. BOX 1660  
5805 E. BUSINESS 20  
MIDLAND, TEXAS 79702  
(915) 682-3761



February 16, 2000

State of New Mexico  
Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, NM 87505  
Attn: William Olson

**RE: PEARL QUEEN 6" GATHERING LINE  
LEA CO., NM**

Dear Mr. Olson:

As per your letter dated February 4, 2000, below are responses to each of your action items:

- Item #1: Attached is a copy of the written notice of groundwater contamination sent to you on September 16, 1999. Verbal notification was given on 9/15/99. Also attached is a corrected C-141 giving written notification of groundwater contamination.
- Item #2: Concerning the water samples that were taken from the bottom of the excavation. The benzene levels in both water samples (north - 0.012 mg/L, south - 0.011 mg/L) are just slightly above the WQCC standard of 0.01mg/L. Toluene, ethylbenzene, and total xylenes are all below WQCC standards. EOTT believes that it has removed the source of any groundwater contamination at this site. We propose natural attenuation for the remaining slight contamination on the groundwater. In the event of another release at or near this site, the excavation was capped with a clay liner to prevent future groundwater contamination. EOTT proposes to install at least one monitor well down gradient, directly adjacent to the edge of the excavation to monitor groundwater until four consecutive quarter of clean water have been achieved.
- Item #3: A soil vapor headspace measurement (PID) was used to determine BTEX levels on soils from the bottom of the excavation. All readings were below 100 ppm. When we install the monitor wells we will also sample on 5' intervals and will take soil samples for analysis of TPH and BTEX. This should verify that the site has been properly remediated to NMOCD guidelines.

I hope all meets with OCD approval but if you have any questions, please don't hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads "Lennah Frost".

Lennah Frost

Sr. Environmental Engineer

cc: Chris Williams - Hobbs

# **EOTT ENERGY Pipeline Limited Partnership**

P.O. BOX 1660  
5805 E. BUSINESS 20  
MIDLAND, TEXAS 79702  
(915) 682-3761

September 16, 1999

State of New Mexico  
Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, NM 87505  
Attn: William Olson

RE: **UL G, Sec. 20, T-20-S, R-37-E**  
**LEA CO., NM**

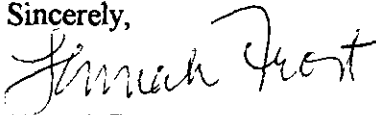
Dear Mr. Olson:

As per our conversation, please be advised that on Wednesday, September 15, 1999, a contractor of EOTT Energy encountered groundwater while excavating a leaksite the above captioned location.

At this time there appears to be no free phase but probably dissolved phase separated hydrocarbons. The site is being excavated to clean up the source of the contamination.

I hope all meets with OCD approval but if you have any questions, please don't hesitate to call me at 914/684-3467.

Sincerely,



Lennah Frost  
Sr. Environmental Engineer

cc: Environmental File

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 South First, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
2040 South Pacheco  
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

☐ Initial Report ☐ Final Report

Name of Company <b>EOTT Energy Pipeline Limited Partnership</b>	Contact <b>Lennah Frost</b>
Address <b>P.O. Box 1660, Midland, TX 79702</b>	Telephone No. <b>915/684-3467</b>
Facility Name <b>Pearl Queen 6" gathering</b>	Facility Type <b>6" gathering line</b>

Surface Owner <b>State of New Mexico</b>	Mineral Owner	Lease No.
---	---------------	-----------

#### LOCATION OF RELEASE

Unit Letter <b>G</b>	Section <b>20</b>	Township <b>20-S</b>	Range <b>37-E</b>	Feet from the	North/South Line	Feet from the	East/West Line	County <b>Lea</b>
-------------------------	----------------------	-------------------------	----------------------	---------------	------------------	---------------	----------------	----------------------

#### CORRECTED NATURE OF RELEASE

Type of Release <b>Crude Oil</b>	Volume of Release <b>15 barrels</b>	Volume Recovered <b>8 bbls</b>
Source of Release <b>Pipeline release</b>	Date and Hour of Occurrence <b>9/8/99 - 12 pm</b>	Date and Hour of Discovery <b>9/8/99 - same</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Sylvia - Hobbs District Office</b>	
By Whom? <b>Lennah Frost</b>	Date and Hour <b>9/8/99 - 2:30 pm</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

~~connection between the two pipelines on 9/8/99 through the use of a pipeline corrosion~~ *pipeline corrosion*

Describe Area Affected and Cleanup Action Taken.\*

Groundwater was encountered on 9/15/99. Free phase hydrocarbons formed on pool after a couple of days. All of the contaminated soil will be excavated to remove source of groundwater contamination.

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: <i>Lennah Frost</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Lennah Frost</b>	Approved by District Supervisor:	
Title: <b>Sr. Environmental Engineer</b>	Approval Date:	Expiration Date:
Date: <b>2/1670</b> Phone: <b>915/684-3467</b>	Conditions of Approval:	Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary





STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

February 4, 2000

**CERTIFIED MAIL**

**RETURN RECEIPT NO: Z-559-572-896**

Ms. Lennah Frost  
EOTT Energy Pipeline Limited Partnership  
P.O. Box 1660  
Midland, Texas 79702

**RE: PEARL QUEEN 6" GATHERING LINE**

Dear Ms. Frost:

The New Mexico Oil Conservation Division (OCD) has reviewed EOTT Energy Pipeline Limited Partnership's (EOTT) December 10, 1999 "UL G - SEC 20, T-20-S, R-37-E, PEARL QUEEN 6" GATHERING LINE". This document contains the results of EOTT's investigation and remediation of soil contamination related to a crude oil pipeline spill at the Pearl Queen 6" Gathering Line site located in Unit G, Section 20, Township 20 South, Range 37 East, Lea County, New Mexico.

The soil remediation actions taken to date are satisfactory. However, the OCD has the following comments and requirements regarding the above referenced document:

1. The OCD observed oil on the ground water during inspections of the site. Neither the cover letter nor the accompanying C-141 spill reports contain any information on the discovery of oil on ground water when excavating contaminated soils at the site. OCD Rule 116 requires verbal and written notification of these types of incidents. While EOTT provided verbal notification of the discovery, the subsequent written notification omits this information. The OCD requires that EOTT submit an amended C-141 form which includes information on the discovery of oil on ground water. The OCD also requires that all future C-141 reports include information on such discoveries as required by OCD Rule 116.
2. Your correspondence states that a ground water sample from the excavation showed that the water quality meets New Mexico Water Quality Control Commission (WQCC) standards. However, the attached analyses show that ground water quality in the excavation is in excess of WQCC standards. Due to the presence of oil in the excavation and the fact that water quality is contaminated in excess of WQCC standards, the OCD requires that EOTT submit a work plan to determine the extent of ground water contamination at the site.

3. Your correspondence states that the soil remediation successfully remediated soils to the OCD's benzene, toluene, ethylbenzene, xylene (BTEX) and total petroleum hydrocarbon (TPH) guidance levels. The information provided only contains the results of the TPH analyses. Please submit the results of the soil BTEX analyses.

The OCD requires that EOTT submit the above information to the OCD Santa Fe Office by March 10, 2000 with a copy provided to the OCD Hobbs District Office.

If you have any questions or comments, please contact me at (505) 827-7154.

Sincerely,



William C. Olson

Hydrologist

Environmental Bureau

xc: Chris Williams, OCD Hobbs District Office

# **EOTT ENERGY Pipeline Limited Partnership**

P.O. BOX 1660  
5805 E. BUSINESS 20  
MIDLAND, TEXAS 79702  
(915) 682-3761

December 10, 1999

State of New Mexico  
Oil Conservation Division - Hobbs District Office  
1625 N. French Dr.  
Hobbs, NM 88240  
Attn: Donna Williams

**RECEIVED**

**DEC 16 1999**

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

RE: UL G - Sec. 20, T-20-S, R-37-E  
Pearl Queen 6" gathering line

Dear Ms. Williams:

Attached please find the final C-141 for the above captioned spill. Approximately 7500 cubic yards of crude oil contaminated soil was removed and disposed of at J&L Landfarm. Using the NMOCD Guidelines for Leaks, Spills and Releases, EOTT has successfully reached TPH, BTEX and Benzene levels of <100 ppm, <50 ppm and < 10 ppm, respectively (analysis attached).

At the time EOTT took the last soil sample, a water sample was also taken from the bottom of the site. This sample meets WCQQ guidelines for BTEX (analysis attached).

Based on the attached laboratory analysis EOTT proposes closure on soil and groundwater at the site. I hope all meets with OCD approval but if you have any questions, please don't hesitate to call.

Sincerely,



Lennah Frost  
Sr. Environmental Engineer

cc: Leon Anderson - State Land Office - Hobbs  
Mike Matush - State Land Office - Santa Fe

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 South First, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
2040 South Pacheco  
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

☐ Initial Report ☒ Final Report

Name of Company <b>EOTT Energy Pipeline Limited Partnership</b>	Contact <b>Lennah Frost</b>
Address <b>P.O. Box 1660, Midland, TX 79702</b>	Telephone No. <b>915/684-3467</b>
Facility Name <b>Pearl Queen 6" gathering</b>	Facility Type <b>6" gathering line</b>

Surface Owner <b>State of New Mexico</b>	Mineral Owner <b>Royalties have been paid</b>	Lease No.
---	--	-----------

#### LOCATION OF RELEASE

Unit Letter <b>G</b>	Section <b>20</b>	Township <b>20-S</b>	Range <b>37-E</b>	Feet from the	North/South Line	Feet from the	East/West Line	County <b>Lea</b>
-------------------------	----------------------	-------------------------	----------------------	---------------	------------------	---------------	----------------	----------------------

#### NATURE OF RELEASE

Type of Release <b>Crude oil</b>	Volume of Release <b>15 bbls</b>	Volume Recovered <b>8 bbls</b>
Source of Release <b>Pipeline leak</b>	Date and Hour of Occurrence <b>9/8/99 - 12 pm</b>	Date and Hour of Discovery <b>9/8/99- same</b>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Sylvia - Hobbs District Office</b>	
By Whom? <b>Lennah Frost</b>	Date and Hour <b>9/8/99 - 2:30 pm</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* <b>Pipeline corrosion. Pipe was repaired.</b>		
Describe Area Affected and Cleanup Action Taken.* <b>Approximately 7500 cubic yards of contaminated soil was excavated and disposed of at J&amp;L Landfarm. Clean soil was used for backfill. Analysis of water and soil from bottom hole and soil from the side walls were taken on 12/6/99 1/11/99. Analysis attached</b>		

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: <i>Lennah Frost</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Lennah Frost	Approved by District Supervisor:	
Title: Sr. Environmental Engineer	Approval Date:	Expiration Date:
Date: 12/10/99 Phone: 915/684-3467	Conditions of Approval:	Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary

*gpl*

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 1660  
MIDLAND, TEXAS 79703  
FAX: 505-392-2946  
FAX: 915-687-2713 (Lennah Frost)

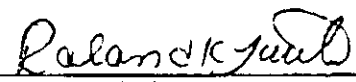
Sample Type: Water  
Sample Condition: Intact/Iced  
Project #: Pearl Queen  
Project Name: None Given  
Project Location: South of Monument

Sampling Date: 12/06/99  
Receiving Date: 12/06/99  
Analysis Date: 12/06/99

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
22015	Water North	0.012	0.012	0.004	0.011	0.022
22016	Water South	0.011	0.012	0.004	0.009	0.021

% IA	104	101	102	104	102
% EA	97	92	95	98	96
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8021B,5030

  
Raland K. Tuttle

12-7-99  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

EOTT ENERGY  
ATTN: MR. FRANK HERNANDEZ  
P.O. BOX 1660  
MIDLAND, TEXAS 79703  
FAX: 505-392-2946  
FAX: 915-687-2713 (Lennah Frost)

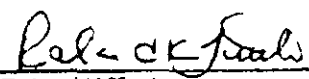
Sample Type: Soil  
Sample Condition: Intact/loosd  
Project #: Pearl Queen  
Project Name: None Given  
Project Location: South of Monument

Sampling Date: 12/06/99  
Receiving Date: 12/06/99  
Analysis Date: 12/06/99

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C25 mg/kg
22013	East Wall North	<10	<10
22014	East Wall South	<10	<10

% INSTRUMENT ACCURACY	109	92
% EXTRACTION ACCURACY	112	82
BLANK	<10	<10

Methods: EPA SW 846-8015M GRO/DRO

  
Raland K. Tuttle

12-7-99  
Date

District II - (505) 744-1243  
811 South First  
Alameda, NM 88210  
District III - (505) 334-6178  
1000 Rio Brazos Road  
Artes, NM 87410  
District IV - (505) 827-7131

**Oil Conservation Division**  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

Submit 2 copies to  
Appropriate District  
Office in accordance  
with Rule 116 on  
back side of form

**Release Notification and Corrective Action**

**OPERATOR**



Initial Report



Final Report

Name <b>EO TT Energy Pipeline</b>	Contact <b>Lennah Frost</b>
Address <b>PO Box 1660 Midland TX 79702</b>	Telephone No. <b>915/6843467</b>
Facility Name <b>Pearl Queen Gathering</b>	Facility Type
Surface Owner <b>State of NM</b>	Mineral Owner
	Lease No.

**LOCATION OF RELEASE**

Unit Letter	Section <b>20</b>	Township <b>20S</b>	Range <b>37E</b>	Feet from the	North/South Line	Feet from the	East/West Line	County <b>Lea</b>
-------------	----------------------	------------------------	---------------------	---------------	------------------	---------------	----------------	----------------------

**NATURE OF RELEASE**

Type of Release <b>Crude oil</b>	Volume of Release <b>15 bbls</b>	Volume Recovered <b>8 bbls</b>
Source of Release <b>Pipe Line Leak</b>	Date and Hour of Occurrence <b>9/8/99 12 pm</b>	Date and Hour of Discovery <b>Same</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Sylvia</b>	
By Whom? <b>Lennah Frost</b>	Date and Hour <b>9/8/99 - 2:30</b>	
Was a Watersource Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watersource	

If a Watersource was impacted, Describe Fully (Attach Additional Sheets If Necessary)

Describe Cause of Problem and Remedial Action Taken (Attach Additional Sheets If Necessary)

**Corrosion Leak. Pipe was clamped - will be repaired ASAP.**

Describe Area Affected and Cleanup Action Taken (Attach Additional Sheets If Necessary)

**Oil pooled @ Leak source. Due to heavy Rain, oil ran down Road approx. 300' x 2'. All contaminated soil is being excavated & disposed of at J&L Landfarm.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCED 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 NMOCED 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, NMOCED 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 <b>Lennah Frost</b>	<b>OIL CONSERVATION DIVISION</b>		
Printed Name <b>Lennah Frost</b>	Approved by District Supervisor:	Expiration Date:	
Title <b>GR. ENV. Engineer</b>	Approval Date:	Condition of Approval:	
Date <b>9/16/99</b>	Phone <b>915/6843467</b>	Attached <input type="checkbox"/>	

Sent to Santa Fe  
on 11-22-99 - They impacted gnd. H<sub>2</sub>O on 9-15-99  
(11)

MEMORANDUM OF MEETING OR CONVERSATION



Telephone



Personal

Time

1320

Date

9/19/00

Originating Party

Other Parties

Pet McCasland - Environmental Plus

Bill Olson - Envir. Bureau

Subject

FOTT - Pearl Queen Monitor Well

Discussion

Reviewed 9/15/00 fax

Monitor well located too far from source area

Conclusions or Agreements

They will place monitor well on right outside of excavated area on middle of south side

Distribution

Signed

Bill Olson



P.O. Box 1558  
1324 North Main  
Eunice New Mexico 88231  
Telephone 505.394.3481  
FAX 505.394.2601

Mobile Telephone #  
Ben Miller 505.390.0288  
Pat McCasland 505.390.7864  
Roger Boone 505.390.2725

**ENVIRONMENTAL PLUS, INC.****Micro-Blaze****fax**

To: Mr. Bill Olson From: Pat McCasland  
Fax: 505-827-8177 Pages: 4  
Phone: \_\_\_\_\_ Date: 9.15.00  
Re: \_\_\_\_\_ CC: \_\_\_\_\_

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

## • Comments:

*Bill,*  
Here is the propose MW placement at the  
EDTT Pearl Queen 6" site. With your consensus  
we will proceed to install.

*Pat McCasland*



ENVIRONMENTAL PLUS, INC.

Micro-Blaze

Micro-Blaze On™

STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES

September 15, 2000

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

Subject: E.O.T.T. Pearl Queen 6" Gathering Line Monitor Well Placement

Dear Mr. Olson,

Environmental Plus, Inc. has been engaged by E.O.T.T. Energy Pipeline to install a monitor well at the above referenced location in Lea County approximately 9 miles south of Monument, New Mexico. In your letter dated May 24, 2000, E.O.T.T. is directed to install a monitor well "outside of and directly downgradient of the excavated area to demonstrate that contaminated ground water has not migrated from the spill site."

Attached for reference is a portion of the Ground Water Map of Lea County from the USGS Report #6, Nicholson & Clebsch 1961 indicating the ground water gradient and a detailed site map of the E.O.T.T. Pearl Queen 6" Gathering Line Remediation Site showing the proposed placement of the monitor well. It is proposed to install the well approximately 150' southwest and directly downgradient of the excavation. Please convey your concurrence or alternative location as soon as possible.

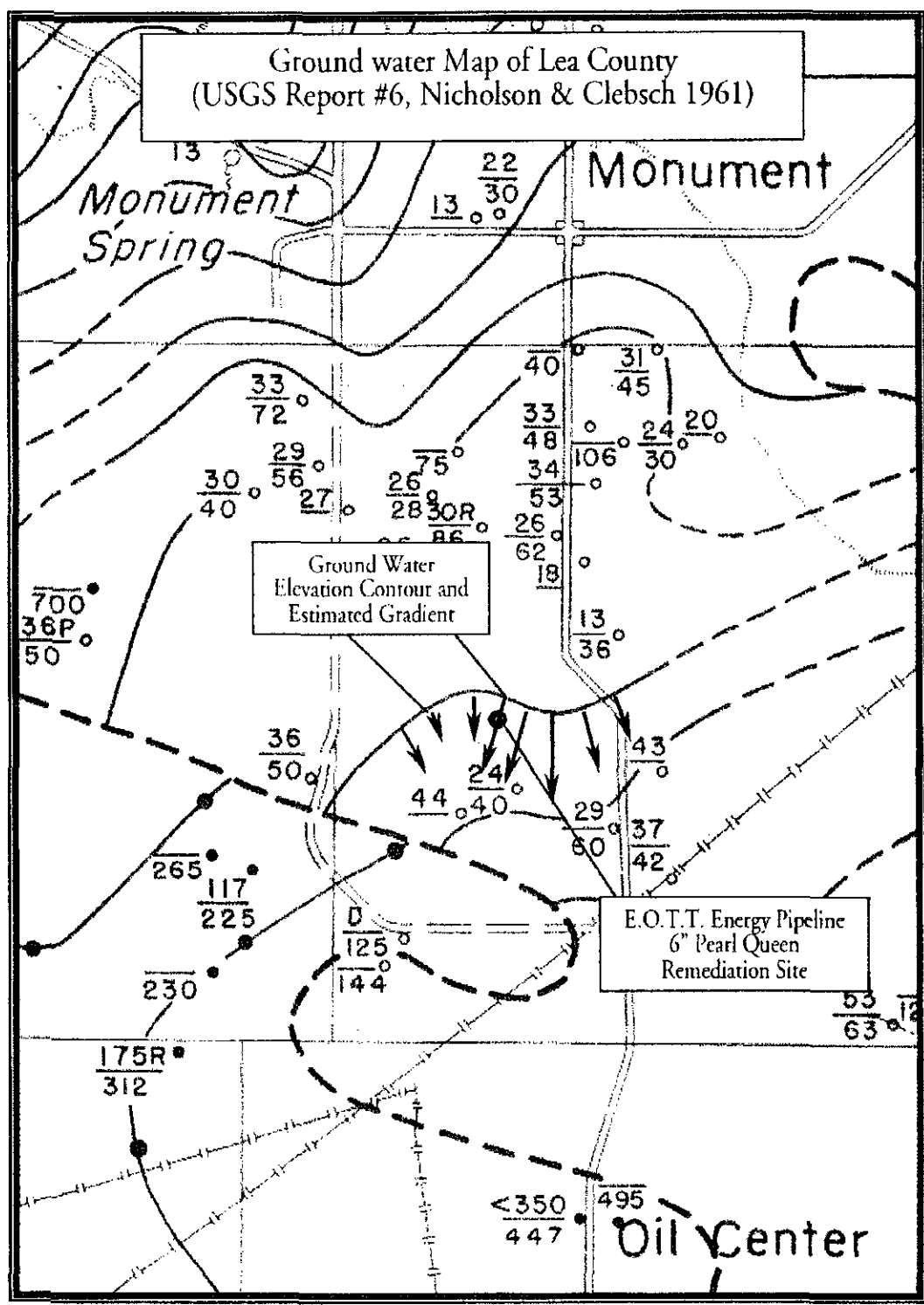
If you have any questions please call me at the office or at 505.390.7864.

Sincerely,

Pat McCasland  
EPI Technical Manager

Cc: Glenn Waldrop, EOTT  
Frank Hernandez, EOTT  
Sherry Miller, EPI

ENVIRONMENTAL PLUS, INC.



ENVIRONMENTAL PLUS, INC.





# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**

Governor

**Jennifer A. Salisbury**

Cabinet Secretary

May 24, 2000

**Lori Wrotenbery**

Director

**Oil Conservation Division**

**CERTIFIED MAIL**

**RETURN RECEIPT NO: 5051-3204**

Mr. Glen Waldrop  
EOTT Energy Pipeline Limited Partnership  
P.O. Box 1660  
Midland, Texas 79702

**RE: PEARL QUEEN 6" GATHERING LINE**

Dear Mr. Waldrop:

The New Mexico Oil Conservation Division (OCD) has reviewed EOTT Energy Pipeline Limited Partnership's (EOTT) February 16, 2000 "PEARL QUEEN 6" GATHERING LINE, LEA COUNTY, NEW MEXICO". This document contains additional information regarding EOTT's investigation and remediation of soil contamination related to a crude oil pipeline spill at the Pearl Queen 6" Gathering Line site located in Unit G, Section 20, Township 20 South, Range 37 East, Lea County, New Mexico. The document also contains a proposal to install a monitor well to determine any impacts on ground water.

The above referenced proposal is **approved with the following conditions:**

1. EOTT shall install the monitor well outside of and directly downgradient of the excavated area to demonstrate that contaminated ground water has not migrated from the spill site.
2. EOTT shall complete the monitor well as follows:
  - a. At least 15 feet of well screen shall be placed across the water table interface with 5 feet of the well screen above the water table and 10 feet of the well screen below the water table.
  - b. An appropriately sized gravel pack shall be set in the annulus around the well screen from the bottom of the hole to 2-3 feet above the top of the well screen.
  - c. A 2-3 foot bentonite plug shall be placed above the gravel pack.
  - d. The remainder of the hole shall be grouted to the surface with cement containing 3-5% bentonite.

- e. A concrete pad and locking well cover shall be placed around the well at the surface.
  - f. The well shall be developed after construction using EPA approved procedures.
3. No less than 24 hours after the well is developed, ground water from the monitor well shall be purged, sampled and analyzed for concentrations of benzene, toluene, ethylbenzene, xylene and polycyclic aromatic hydrocarbons (PAH) using EPA approved methods and quality assurance/quality control (QA/QC) procedures.
4. All wastes generated shall be disposed of at an OCD approved facility.
5. EOTT shall submit a comprehensive report on all investigation and remediation actions which have occurred at the site. The report shall be submitted to the OCD Santa Fe Office by July 31, 2000 with a copy provided to the OCD Hobbs District Office and shall include:
- a. A description of all investigation, remediation and monitoring activities which have occurred including conclusions and recommendations.
  - b. A geologic/lithologic log and well completion diagram for each monitor well.
  - c. Maps showing the location of the spills, excavated areas, monitor wells and any other pertinent site features as well as the direction and magnitude of the hydraulic gradient.
  - c. Summary tables of all soil ground water quality sampling results and copies of all laboratory analytical data sheets and associated QA/QC.
  - d. The disposition of all wastes generated.

Please be advised that OCD approval does not limit EOTT to the proposed work plan should the investigation actions fail to adequately define the extent of contamination related to EOTT's activities, or if contamination exists which is outside the scope of the work plan. In addition, OCD approval does not relieve EOTT of responsibility for compliance with any other federal, state or local laws and regulations. If you have any questions, please contact me at (505) 827-7154.

Sincerely,



William C. Olson  
Hydrologist  
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Office

**EOTT/PEARL QUEEN: ULC-SEC 20-Ts20S-R37E**  
**taken by Donna Williams 09-15-1999**





**EOTT/PEARL QUEEN: ULC-SEC 20-Ts20S-R37E**  
**taken by Donna Williams 09-15-1999**





**EOTT/PEARL QUEEN: ULC-SEC 20-Ts20S-R37E**

**taken by Donna Williams 09-15-1999**



**EOTT/PEARL QUEEN: SEC 20-T20S-R37E**

**(NEXT TO BURGUNDY'S WELL NO 6.)**

**taken by DONNA WILLIAMS ON 10-25-99**





**EOTT/PEARL QUEEN: SEC 20-T20S-R37E**  
**(NEXT TO BURGUNDY'S WELL NO 6.)**  
**taken by DONNA WILLIAMS ON 10-25-99**





**EOTT/PEARL QUEEN: SEC 20-T20S-R37E**  
**(NEXT TO BURGUNDY'S WELL NO 6.)**  
**taken by DONNA WILLIAMS ON 10-25-99**





**EOTT/PEARL QUEEN: SEC 20-T20S-R37E**  
**(NEXT TO BURGUNDY'S WELL NO 6.)**  
**taken by DONNA WILLIAMS ON 10-25-99**

