

*Denny E. Frost*  
**DEPUTY OIL & GAS INSPECTOR**

**DEC 22 1997**

*Approved*

**Meter Number: 93530**  
**Location Name: Apache #28**  
**Location: TN-24 RG-04**  
**SC-24 UL-K**  
**6 - Jicarilla**  
**NMOCD Zone: OUTSIDE**  
**Hazard Ranking Score: 00**

**RECEIVED**  
APR 14 1997  
**OIL CON. DIV.**  
**DEPT. 9**

**RATIONALE FOR RISK-BASED CLOSURE OF PRODUCTION PITS  
LOCATED OUTSIDE OF THE VULNERABLE ZONE  
IN THE SAN JUAN BASIN**

This production pit location was ranked according to the criteria in the New Mexico Oil Conservation Division's Unlined Surface Impoundment Closure Guidelines and received a ranking score of zero. The estimated depth to groundwater is greater than 100-feet beneath ground surface (bgs), the pit is not in a well head protection area, and there are no surface water bodies within 1,000 horizontal feet of the pit location.

The primary source, discharge to the pit has been removed. There has been no discharge to the pits for at least 4 years and the pits have been closed for at least one year.

Each pit was backfilled with clean soil and graded in a manner to divert precipitation away from the excavated area. Minimal infiltration of rainfall is expected. Any rainfall that does infiltrate the ground surface must migrate through clean backfill before reaching the residual hydrocarbons.

There is no source material at the ground surface, so direct contact of hydrocarbons with livestock and the populous is not likely.

In general, outside of the vulnerable area and alluvial valleys, bedrock material is generally encountered within 20 feet of the ground surface. Bedrock material in the San Juan Basin consists of interbedded sandstones, shales and clays. According to Freeze and Cherry, 1979, the hydraulic conductivity of the bedrock material are as follows:

Sandstone	$10^{-9}$ to $10^{-13}$ cm/sec
Shale	$10^{-12}$ to $10^{-16}$ cm/sec
Clay	$10^{-12}$ to $10^{-15}$ cm/sec

Based on this information, the residual hydrocarbons should not migrate to groundwater.

Natural process (bioremediation) are degrading the residual hydrocarbon to carbon dioxide and water and will continue until the source is gone, therefore minimizing any impact to the environment.

Based on the above information, it is highly unlikely that any source material will impact groundwater or ever find an exposure pathway to affect human health and therefore El Paso Field Services Company (EPFS) requests closure of this pit location.

# FIELD PIT SITE ASSESSMENT FORM



GENERAL

Meter: 93530 Location: APACHE #28  
 Operator #: 750 Operator Name: APACHE P/L District: OSITO  
 Coordinates: Letter: K Section 24 Township: 24 Range: 4  
 Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Pit Type: Dehydrator \_\_\_\_\_ Location Drip: X Line Drip: \_\_\_\_\_ Other: \_\_\_\_\_  
 Site Assessment Date: 11-21-95 Area: 08 Run: 73

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps) Inside ☐ (1) Outside ☒ (2)  
 Land Type: BLM ☐ (1) State ☐ (2) Fee ☐ (3) Indian APACHE

Depth to Groundwater  
 Less Than 50 Feet (20 points) ☐ (1)  
 50 Ft to 99 Ft (10 points) ☐ (2)  
 Greater Than 100 Ft (0 points) ☒ (3)

Wellhead Protection Area :  
 Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ (1) YES (20 points) ☒ (2) NO (0 points)

Horizontal Distance to Surface Water Body  
 Less Than 200 Ft (20 points) ☐ (1)  
 200 Ft to 1000 Ft (10 points) ☐ (2)  
 Greater Than 1000 Ft (0 points) ☒ (3)

Name of Surface Water Body MEDIO CANYON  
 (Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)  
 Distance to Nearest Ephemeral Stream ☐ (1) < 100' (Navajo Pits Only)  
☐ (2) > 100'

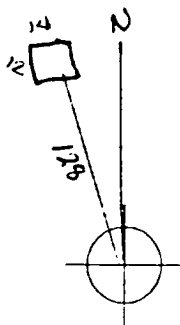
TOTAL HAZARD RANKING SCORE: 0 POINTS

REMARKS

Remarks : Pit is LISTED OUTSIDE W.V. ZONE (TOPO : REDLINE)  
Pit is Dry

ORIGINAL PIT LOCATION

## ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 140° Footage from Wellhead 125b) Length : 14 Width : 12 Depth : 3

REMARKS

Remarks :

Pk. # 14, 15 IN ROLL

Completed By:

D. H. Schmitt

Signature

11-21-95

Date

# FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL	<p>Meter: <u>93530</u> Location: <u>APPACHE #28</u></p> <p>Coordinates: Letter: <u>K</u> Section <u>24</u> Township: <u>24</u> Range: <u>4</u></p> <p>Or Latitude _____ Longitude _____</p> <p>Date Started : <u>11/30/95</u> Run: <u>08</u> <u>73</u></p>
FIELD OBSERVATIONS	<p>Sample Number(s): <u>24151</u></p> <p>Sample Depth: <u>20'</u> Feet</p> <p>Final PID Reading : <u>28.9</u> PID Reading Depth <u>20</u> Feet</p> <p>Yes No</p> <p>Groundwater Encountered <input type="checkbox"/> <input checked="" type="checkbox"/> Approximate Depth _____ Feet</p>
CLOSURE	<p>Remediation Method :</p> <p>Excavation <input checked="" type="checkbox"/> Approx. Cubic Yards <u>468</u> LT <u>12/5/95</u></p> <p>Onsite Bioremediation <input type="checkbox"/></p> <p>Backfill Pit Without Excavation <input type="checkbox"/></p> <p>Soil Disposition:</p> <p>Envirotech <input checked="" type="checkbox"/> <input type="checkbox"/> Tierra</p> <p>Other Facility <input type="checkbox"/> Name: _____</p> <p>Pit Closure Date: <u>12/1/95</u> Pit Closed By: <u>Philip</u></p>
REMARKS	<p>Remarks : <u>Pit PID Readings (N-80.0)(S-25.5)(E-28)(W-76.9)</u></p> <p><u>Pit size 28x20x20</u> <u>EPDL Alton James on site</u></p> <p><u>Fence size 17x15</u> <u>No Net</u></p> <p><u>More Than 100' From Ephemeral Stream</u></p> <p>Signature of Specialist: <u>James K. Kirk</u></p>



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	5K151	947818
MTR CODE   SITE NAME:	93530	Apache #28
SAMPLE DATE   TIME (Hrs):	11-30-95	1500
PROJECT:	Phase I Navajo	
DATE OF TPH EXT.   ANAL.:	12/1/95	
DATE OF BTEX EXT.   ANAL.:	12/1/95	12/1/95
TYPE   DESCRIPTION:	V6	fine brown sand clay

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	< 0.5	MG/KG				
TOLUENE	< 0.5	MG/KG				
ETHYL BENZENE	< 0.5	MG/KG				
TOTAL XYLENES	< 1.5	MG/KG				
TOTAL BTEX	< 3	MG/KG				
TPH (418.1)	< 10	MG/KG			1.98	28
HEADSPACE PID	28.9	PPM				
PERCENT SOLIDS	90.2	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at  
Narrative:

94%

for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Approved By:

Date:

12/4/95

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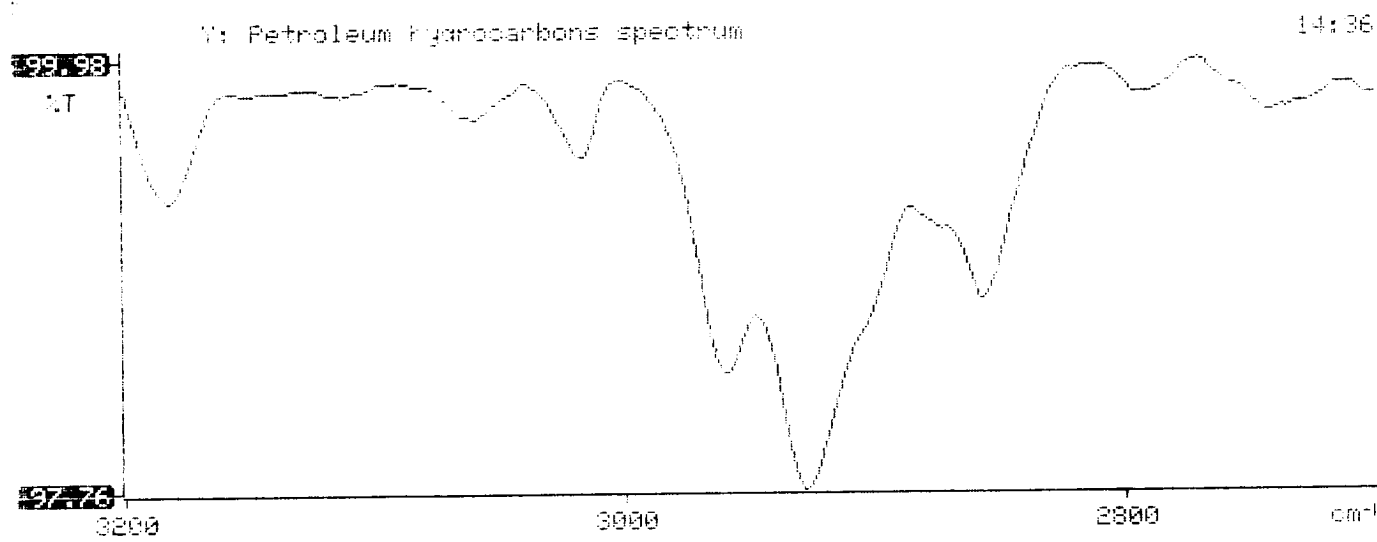
*****
*                               *
*      Test Method for         *
*      Oil and Grease and Petroleum Hydrocarbons      *
*      in Water and Soil      *
*                               *
*      Perkin-Elmer Model 1600 FT-IR                  *
*      Analysis Report                                *
*****

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95/12/01  14:36
Sample identification
947818
Initial mass of sample, g
1.980
Volume of sample after extraction, ml
28.000
Petroleum hydrocarbons, ppm
-10.923
Net absorbance of hydrocarbons (2930 cm-1)
0.009

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## BTEX SOIL SAMPLE WORKSHEET

<b>File</b>	<b>:</b>	<b>947818</b>	<b>Date Printed</b>	<b>:</b>	<b>12/2/95</b>
<b>Soil Mass (g)</b>	<b>:</b>	<b>5.06</b>	<b>Multiplier (L/g)</b>	<b>:</b>	<b>0.00099</b>
<b>Extraction vol. (mL)</b>	<b>:</b>	<b>10</b>	<b>CAL FACTOR (Analytical)</b>	<b>:</b>	<b>200</b>
<b>Shot Volume (uL)</b>	<b>:</b>	<b>50</b>	<b>CAL FACTOR (Report)</b>	<b>:</b>	<b>0.19763</b>

			<b>DILUTION FACTOR:</b>	<b>1</b>	<b>Det. Limit</b>
<b>Benzene (ug/L)</b>	<b>:</b>	<b>0.00</b>	<b>Benzene (mg/Kg):</b>	<b>0.000</b>	<b>0.494</b>
<b>Toluene (ug/L)</b>	<b>:</b>	<b>0.20</b>	<b>Toluene (mg/Kg):</b>	<b>0.040</b>	<b>0.494</b>
<b>Ethylbenzene (ug/L)</b>	<b>:</b>	<b>0.00</b>	<b>Ethylbenzene (mg/Kg):</b>	<b>0.000</b>	<b>0.494</b>
<b>p &amp; m-xylene (ug/L)</b>	<b>:</b>	<b>0.00</b>	<b>p &amp; m-xylene (mg/Kg):</b>	<b>0.000</b>	<b>0.988</b>
<b>o-xylene (ug/L)</b>	<b>:</b>	<b>0.00</b>	<b>o-xylene (mg/Kg):</b>	<b>0.000</b>	<b>0.494</b>
			<b>Total xylenes (mg/Kg):</b>	<b>0.000</b>	<b>1.482</b>
			<b>Total BTEX (mg/Kg):</b>	<b>0.040</b>	

**EL PASO NATURAL GAS**  
**EPA METHOD 8020 - BTEX SOILS**

File : C:\LABQUEST\CHROM001\120195-1.009  
Method : C:\LABQUEST\METHODS\1-112095.MET  
Sample ID : 947818,5.06G,50U  
Acquired : Dec 01, 1995 21:01:36  
Printed : Dec 01, 1995 21:27:55  
User : MARLON

## Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	5.590	0	0.0000
TOLUENE	9.693	52178	0.1962
ETHYLBENZENE	13.827	0	0.0000
M & P XYLENE	14.183	0	0.0000
O XYLENE	15.340	0	0.0000
BFB	16.940	61892728	94.0183

