

*Denny E. Foust*  
DEPUTY OIL & GAS INSPECTOR

DEC 30 1997

*Approved*

Meter Number: 70223  
Location Name: DAY B#3  
Location: TN-29 RG-08  
SC-08 UL-B  
2 - Federal  
NMOCD Zone: OUTSIDE  
Hazard Ranking Score: 00

RECEIVED  
APR 14 1997  
OIL CON. DIV.  
DIST. 3

**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**

<b>GENERAL</b>	<p>Meter: <u>70223</u> Location: <u>DAY B #3</u></p> <p>Operator #: <u>0203</u> Operator Name: <u>Amoco</u> P/L District: <u>BLOOMFIELD</u></p> <p>Coordinates: Letter: <u>B</u> Section <u>8</u> Township: <u>29</u> Range: <u>8</u></p> <p>Or Latitude _____ Longitude _____</p> <p>Pit Type: Dehydrator <input checked="" type="checkbox"/> Location Drip: _____ Line Drip: _____ Other: _____</p> <p>Site Assessment Date: <u>5.8.94</u> Area: <u>10</u> Run: <u>31</u></p>																
<b>SITE ASSESSMENT</b>	<p><b>NMOCD Zone:</b> (From NMOCD Maps)</p> <table style="width: 100%;"> <tr> <td style="width: 40%;">Inside</td><td style="width: 10%;"><input type="checkbox"/> (1)</td><td style="width: 40%;">Land Type:</td><td style="width: 10%;">BLM <input checked="" type="checkbox"/> (1)</td></tr> <tr> <td>Outside</td><td><input checked="" type="checkbox"/> (2)</td><td></td><td>State <input type="checkbox"/> (2)</td></tr> <tr> <td></td><td></td><td></td><td>Fee <input type="checkbox"/> (3)</td></tr> <tr> <td></td><td></td><td></td><td>Indian _____</td></tr> </table> <p><b>Depth to Groundwater</b></p> <p>Less Than 50 Feet (20 points) <input type="checkbox"/> (1)</p> <p>50 Ft to 99 Ft (10 points) <input type="checkbox"/> (2)</p> <p>Greater Than 100 Ft (0 points) <input checked="" type="checkbox"/> (3)</p> <p><b>Wellhead Protection Area :</b></p> <p>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? <input type="checkbox"/> (1) YES (20 points) <input checked="" type="checkbox"/> (2) NO (0 points)</p> <p><b>Horizontal Distance to Surface Water Body</b></p> <p>Less Than 200 Ft (20 points) <input type="checkbox"/> (1)</p> <p>200 Ft to 1000 Ft (10 points) <input type="checkbox"/> (2)</p> <p>Greater Than 1000 Ft (0 points) <input checked="" type="checkbox"/> (3)</p> <p>Name of Surface Water Body _____</p> <p>(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)</p> <p>Distance to Nearest Ephemeral Stream <input type="checkbox"/> (1) &lt; 100' (Navajo Pits Only)</p> <p style="padding-left: 150px;"><input type="checkbox"/> (2) &gt; 100'</p> <p><b>TOTAL HAZARD RANKING SCORE:</b> _____ POINTS</p>	Inside	<input type="checkbox"/> (1)	Land Type:	BLM <input checked="" type="checkbox"/> (1)	Outside	<input checked="" type="checkbox"/> (2)		State <input type="checkbox"/> (2)				Fee <input type="checkbox"/> (3)				Indian _____
Inside	<input type="checkbox"/> (1)	Land Type:	BLM <input checked="" type="checkbox"/> (1)														
Outside	<input checked="" type="checkbox"/> (2)		State <input type="checkbox"/> (2)														
			Fee <input type="checkbox"/> (3)														
			Indian _____														
<b>REMARKS</b>	<p>Remarks : <u>ONLY PIT ON LOCATION. PIT IS DRY. LOCATION IS UP ON TOP OF MANZANARES MESA. REDLINE SHOWS LOCATION IS INSIDE THE V.Z. BUT TOPO SHOWS THAT IT IS OUTSIDE THE V.Z.</u></p> <p style="text-align: right;">DISK IN</p>																

# FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL	<p>Meter: <u>70223</u> Location: <u>DAY B #3</u></p> <p>Coordinates: Letter: <u>B</u> Section <u>8</u> Township: <u>29</u> Range: <u>3</u></p> <p>Or Latitude _____ Longitude _____</p> <p>Date Started : <u>6-28-94</u> Area: <u>10</u> Run: <u>31</u></p>
FIELD OBSERVATIONS	<p>Sample Number(s): <u>mk 60</u></p> <p>Sample Depth: <u>5'</u> Feet</p> <p>Final PID Reading <u>267</u> PID Reading Depth <u>5'</u> Feet</p> <p>Yes No</p> <p>Groundwater Encountered <input type="checkbox"/> (1) <input checked="" type="checkbox"/> (2) Approximate Depth _____ Feet</p>
CLOSURE	<p>Remediation Method :</p> <p>Excavation <input type="checkbox"/> (1) Approx. Cubic Yards _____</p> <p>Onsite Bioremediation <input type="checkbox"/> (2)</p> <p>Backfill Pit Without Excavation <input checked="" type="checkbox"/> (3)</p> <p>Soil Disposition:</p> <p>Envirotech <input type="checkbox"/> (1) <input type="checkbox"/> (3) Tierra</p> <p>Other Facility <input type="checkbox"/> (2) Name: _____</p> <p>Pit Closure Date: <u>6-28-94</u> Pit Closed By: <u>BEI</u></p>
REMARKS	<p>Remarks : <u>EPNGLINES marked soil gray strong HYDROCARBON</u></p> <p><u>ODOR Hit Sandstone at 5'</u></p>
	<p>Signature of Specialist: <u>Morgan Killian</u></p>



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT  
PIT CLOSURE PROJECT - Soil

SAMPLE IDENTIFICATION

SAMPLE NUMBER:

Field ID

Lab ID

mk60	945551
70223	N/A
6-28-94	1710
N/A	
6-30-94	6/30/94
N/A	N/A
VG	fine clay sand stone

MTR CODE | SITE NAME:

SAMPLE DATE | TIME (Hrs):

SAMPLED BY:

N/A

DATE OF TPH EXT. | ANAL.:

DATE OF BTEX EXT. | ANAL.:

TYPE | DESCRIPTION:

REMARKS:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE		MG/KG				
TOLUENE		MG/KG				
ETHYL BENZENE		MG/KG				
TOTAL XYLENES		MG/KG				
TOTAL BTEX		MG/KG				
TPH (418.1)	232	MG/KG			1.97	28
HEADSPACE PID	267	PPM				
PERCENT SOLIDS	92.3	%				

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

Surrogate Recovery was at N/A % for this sample All QA/QC was acceptable.  
Narrative:

= Dilution Factor Used

Approved By: John Leubke

Date: 7/14/94

Perkin-Elmer Model 1600 FT-IR  
Analysis Report

$\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4}$

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group and the experimental group. The control group received a standard diet, while the experimental group received a diet supplemented with 0.5% of the active ingredient. The subjects were then subjected to a 12-week period of physical training. The results of the study are presented in the table below.

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

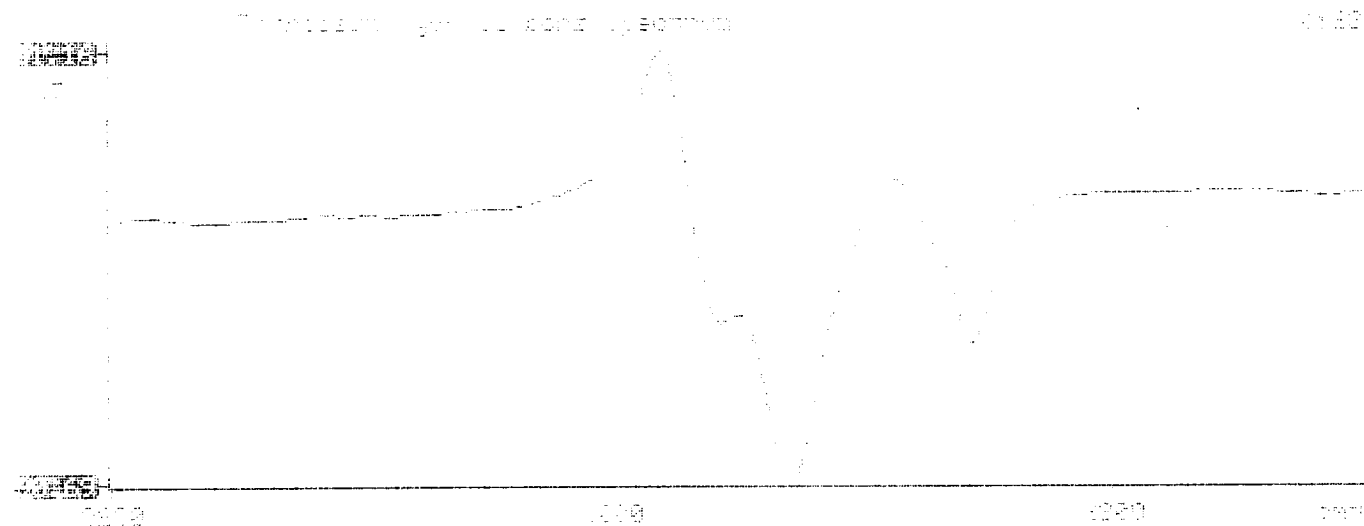
24/06/30 14:23

Sample identification  
 745551

Initial mass of sample, g  
 0.570

Volume of sample after extraction, ml  
 15.000

Petroleum hydrocarbons, ppm  
 111.518  
 1st absorption at 2930 cm<sup>-1</sup>  
 1001



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

74/06/30 14:23

Sample identification  
 745551

Initial mass of sample, g  
 1.570

Volume of sample after extraction, ml  
 15.000

Petroleum hydrocarbons, ppm  
 112.349  
 Net absorbance at 2930 cm<sup>-1</sup>  
 0.001

