

*Denny & Faust*  
DEPUTY OIL & GAS INSPECTOR

DEC 22 1997

*Approved*

Meter Number: 70519  
Location Name: CAIN #1  
Location: TN-31 RG-10  
SC-20 UL-K  
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**

**GENERAL**

Meter: 70-519 Location: Cain No. 1  
 Operator #: 5540 Operator Name: Roch Exploration P/L District: Aztec  
 Coordinates: Letter: K Section 20 Township: 31 Range: 10  
 Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Pit Type: Dehydrator \_\_\_\_\_ Location Drip: X Line Drip: \_\_\_\_\_ Other: \_\_\_\_\_  
 Site Assessment Date: 8/24/94 Area: 04 Run: 52

**SITE ASSESSMENT**

**NMOCD Zone:**

(From NMOCD Maps)

Inside

Outside

**Land Type:**

BLM ☒ (1)

State ☐ (2)

Fee ☐ (3)

Indian \_\_\_\_\_

**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 Animas River

(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**

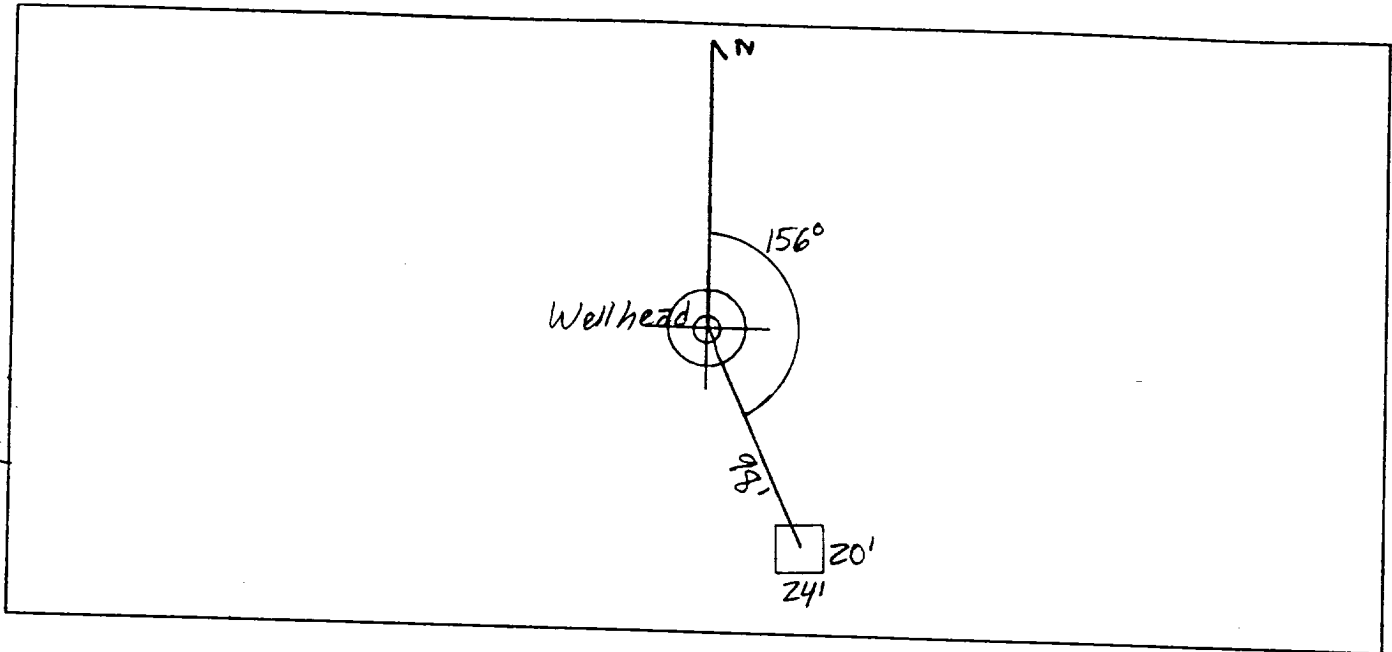
Remarks : Redline Book - Outside Vulnerable Zone Tap - Outside  
Three pits, location drip pit is dry, will close one pit

PUSH IN

### ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 156° Footage from Wellhead 98'  
b) Length : 24' Width : 20' Depth : 4'

ORIGINAL PIT LOCATION



REMARKS

#### Remarks :

Pictures @ 1443 (17-20, Roll 2)

Dump Truck

There is one 55 gal. drum next to the pit.

Completed By:

Paul Kelly  
Signature

8/24/94  
Date

# FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: 70519 Location: Cain No. 1  
 Coordinates: Letter: K Section 20 Township: 31 Range: 10  
 Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Date Started : 9/29/94 Run: 04 52

FIELD OBSERVATIONS

Sample Number(s): KD 295  
 Sample Depth: 7' Feet  
 Final PID Reading 217 ppm PID Reading Depth 7' Feet  
 Yes No  
 Groundwater Encountered ☐ ☒ Approximate Depth \_\_\_\_\_ Feet

CLOSURE

Remediation Method :  
 Excavation ☐ Approx. Cubic Yards \_\_\_\_\_  
 Onsite Bioremediation ☐  
 Backfill Pit Without Excavation ☒  
 Soil Disposition:  
 Envirotech ☐ Tierra ☐  
 Other Facility ☐ Name: \_\_\_\_\_  
 Pit Closure Date: 9/29/94 Pit Closed By: \_\_\_\_\_

REMARKS

Remarks : Excavated test hole to 7', Hit Rocky formation, Took  
PID Sample, Closed pit.

Signature of Specialist: [Signature]



## FIELD SERVICES LABORATORY

### ANALYTICAL REPORT

#### PIT CLOSURE PROJECT - Soil Samples Outside the GWV Zone

#### SAMPLE IDENTIFICATION

SAMPLE NUMBER:

Field ID

Lab ID

MTR CODE | SITE NAME:

SAMPLE DATE | TIME (Hrs):

SAMPLED BY:

DATE OF TPH EXT. | ANAL.:

DATE OF BTEX EXT. | ANAL.:

TYPE | DESCRIPTION:

WSD 295	946260
75 S. 9	N/A
9-29-94	240
N/A	N/A
10-6-2004	
N/A	N/A
VG	Brown, coarse soil

REMARKS:

#### RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
TPH (418.1)	6370	MG/KG			1.73	25
HEADSPACE PID	2.7	PPM				
PERCENT SOLIDS	96.2	%				

-- TPH is by EPA Method 418.1 --

Narrative:

DF = Dilution Factor Used

Approved By:

Date:

10/6/04

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

94/10/03 17:36

Sample identification  
746260

Initial mass of sample, g  
1.730

Volume of sample after extraction, ml  
12.000

Petroleum hydrocarbons, ppm  
1370.138  
Net absorbance of hydrocarbons (2730 cm-1)  
0.682

