

District I  
P.O. Box 1980, Hobbs, NM  
District II  
P.O. Drawer DD, Artesia, NM 81211  
District III  
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION  
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO  
APPROPRIATE  
DISTRICT OFFICE  
AND 1 COPY TO  
SANTA FE OFFICE

SEP 11 9 1996

## PIT REMEDIATION AND CLOSURE REPORT

Operator: Amoco Production Company Telephone: (505) - 326-9200

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: V.W. McMANUS #1  
Well Name

Location: Unit: or Qtr/Qtr Sec M sec 22 T 28N R 12W County SAN JUAN

Pit Type: Separator    Dehydrator    Other ABANDONED

Land Type: BLM X, State   , Fee   , Other   

Pit Location: Pit dimensions: length 35', width 24', depth 25'  
(Attach diagram)

Reference: wellhead X, other   

Footage from reference: 1600

Direction from reference: 90 Degrees X East North X  
of  
   West South   

### Depth To Ground Water:

(Vertical distance from  
contaminants to seasonal  
high water elevation of  
ground water)

Less than 50 feet (20 points)  
50 feet to 99 feet (10 points)  
Greater than 100 feet (0 Points) 0

### Wellhead Protection Area:

(Less than 200 feet from a private  
domestic water source, or; less than  
1000 feet from all other water sources)

Yes (20 points)  
No (0 points) 0

### Distance To Surface Water:

(Horizontal distance to perennial  
lakes, ponds, rivers, streams, creeks,  
irrigation canals and ditches)

Less than 200 feet (20 points)  
200 feet to 1000 feet (10 points)  
Greater than 1000 feet (0 points) 0

RANKING SCORE (TOTAL POINTS): 0

Date Remediation Started: 4-20-95 Date Completed: 4-25-95

Remediation Method: Excavation X Approx. cubic yards 800  
 (Check all appropriate sections) Landfarmed X Insitu Bioremediation       
 Other Compost

Remediation Location: Onsite X Offsite       
 (ie. landfarmed onsite, name and location of offsite facility)

General Description Of Remedial Action:     

Excavation - TO BEDROCK BOTTOM

Ground Water Encountered: No X Yes      Depth     

Final Pit: Sample location see Attached Documents

Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample depth 20'

Sample date 4-25-95 Sample time     

Sample Results

Benzene(ppm)     

Total BTEX(ppm)     

Field headspace(ppm) 32

TPH 40 ppm

Ground Water Sample: Yes      No X (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 5-3-95

SIGNATURE

B. Shaw

PRINTED NAME  
AND TITLE

Buddy D. Shaw  
Environmental Coordinator

0732

**BLAGG ENGINEERING, INC.**

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

**FIELD MODIFIED EPA METHOD 418.1  
TOTAL PETROLEUM HYDROCARBONS**

Client: Amoco  
Sample ID: East Side @ 20'  
Project Location: V.W. McManus #1  
Laboratory Number: TPH-1466

Project #:  
Date Analyzed: 4-20-95  
Date Reported: 4-20-95  
Sample Matrix: Soil

Parameter -----	Result, mg/kg -----	Detection Limit, mg/kg -----
Total Recoverable Petroleum Hydrocarbons	<b>9,000</b>	<b>100</b>

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg -----	Duplicate TPH mg/kg -----	% *Diff -----
	14,000	13,000	7

\*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total  
Recoverable, Chemical Analysis of Water and Waste,  
USEPA Storet No.4551, 1978

Comments: Abandoned Pit - B0259

R. E. O'Neill  
Analyst

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Review

**BLAGG ENGINEERING, INC.**

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Phone: (505)632-1199 Fax: (505)632-3903

**FIELD MODIFIED EPA METHOD 418.1  
TOTAL PETROLEUM HYDROCARBONS**

Client:	Amoco	Project #:	
Sample ID:	WS @ 20'	Date Analyzed:	4-25-95
Project Location:	V.W McManus #1	Date Reported:	4-25-95
Laboratory Number:	TPH-1473	Sample Matrix:	Soil

Parameter -----	Result, mg/kg -----	Detection Limit, mg/kg -----
Total Recoverable Petroleum Hydrocarbons	<b>40</b>	<b>10</b>

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg -----	Duplicate TPH mg/kg -----	% *Diff. -----
	3,000	3,182	6

\*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, JSEPA Storet No.4551, 1978

Comments: Abandoned Pit - B0259

R. E. O'Neil  
Analyst

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Review

Well Name:  
Well Site location:  
Pit Type:  
Producing Formation:  
Pit Category:  
Horizontal Distance to Surface Water:  
Vicinity Groundwater Depth:

V.W. McManus #1  
Unit M, Sec. 22, T28N, R12W  
Abandoned Pit  
Gallup  
Area III  
> 1000 ft.  
> 100 ft.

## **RISK ASSESSMENT**

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 25 feet below grade.

No past or future threat to surface water or groundwater is likely based on the following considerations:

1. Past production fluids were contained locally by a relatively shallow sandstone bedrock located 25 feet below grade. Groundwater levels located on or close to the well pad are estimated to be at a much greater depth below sandstone bedrock.
2. Topographic information does not indicate off site lateral fluid migration near the earthen pit.
3. Daily discharge into the earthen pit has been terminated (double sidewall steel tank installed). Prior discharge into the pit is believed to be under 5 barrels per day.
4. Field headspace readings (OVM/PID) on Gallup type locations do not reflect direct correlation to total BTEX per USEPA Method 8020 concentrations. Listed below are several typical AMOCO Gallup pit soil analyses comparing headspace to Benzene and total BTEX results.

LOCATION	HEADSPACE (ppm)	BENZENE (ppm)	TOTAL BTEX (ppm)
Chapson, Harold B. #1	376	2.040	30.360
Roy Sullivan A1	246	0.222	8.517
State GC BZ #1	1304	0.060	33.520

The comparisons listed above demonstrates that headspace testing is not an accurate measurement to Benzene or total BTEX concentrations when above standards for Gallup type pits.

Based upon the information given, we conclude that the subsurface lateral impact from the earthen pit is very limited and that the sandstone bottom creates enough of a permeable barrier as to subdue impact to groundwater below it (please refer to AMOCO's report "Post Excavation Pit Closure Investigation Summary, July, 1995", with cover letter dated November 30, 1995). AMOCO requests pit closure approval on this location.