SUBMIT 1 COPY TO

District I P.O. Box 1989, Hobbs, NM District II P.C: Drawer DD, Artesia, NM 88211 District III 1000 Rio Brazos Rd, Aztec, NM \$7410

#### State of New Mexico Energy, Minerals and Natural Resources Department

APPROPRIATE DISTRICT OFFICE: SANTA FE OFFICE

OIL CONSERVATION DIVISION P.O. Box 2088

**DEPUTY OIL IL GAS INSPECTOR** Santa Fe, New Mexico 87504-20\$8

**EJAN 11 6 1996** 

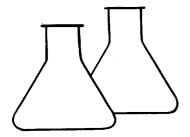
## PIT REMEDIATION AND CLOSURE REPORT

		the state of the s
Operator:	Amoco Production Company	Telephone: (505) - 326-9200
Address:	200 Amoco Court, Farmington	, New Mexico 87401
	L.C. HELLY #6	
Mell Mgme		
Location: Unit	or Qtr/Qtr Sec S	ec   T30 P R 12 W County SAN JUAN
Pit Type: Sepa	rator X Dehydrator C	other Deif
		, Other
Dance 1/per		
Dit Iocetion:	Pit dimensions: length	1 30', width 30', depth 47'
(Attach diagram)		, other
	Footage from reference:	
	Direction from reference	ce: 60 Degrees X East North of
		West South $\underline{\hspace{0.1cm} \hspace{0.1cm} $
		Less than 50 feet (20 points)
Depth To Ground (Vertical distant	d water: ce from	50 feet to 99 feet (10 points)
contaminants to high water eleva	seasonal	Greater than 100 feet (0 Points)
ground water)		
Wellhead Prote	action Area:	Yes (20 points)
(Less than 200 fe	eet from a private	No (0 points) <u>C</u>
domestic water so	ource, or; less than ll other water sources)	
Distance To St	<pre>irface Water: ance to perennial</pre>	Less than 200 feet (20 points) 200 feet to 1000 feet (10 points)
lakes, ponds, ri	vers, streams, creeks,	Greater than 1000 feet (0 points) 6
irrigation canal	s and dicenes;	RANKING SCORE (TOTAL POINTS):
		AMERICAN CONTRACTOR ( CONTRACTOR )

Date Remediation Sta	arted:	Date Completed:	6-13-45	
Remediation Method:	Excavation $X$	Approx. cubic yards	1567	
(Check all appropriate sections)	Landfarmed $X$	Insitu Bioremediation		
	Other			
Remediation Location (ie. landfarmed onsite, name and location of offsite facility)		site	-	
General Description	Of Remedial Action	:		
Excavatio	on			
Ground Water Encoun	tered: No $\underline{X}$	Yes Depth		
Final Pit: Closure Sampling: (if multiple samples,	Sample location	see Attached Documents		
attach sample results and diagram of sample	Sample depth	10		
locations and depths)		Sample time		
	Sample Results			
	Benzene(ppm)			
	Total BTEX(pr			
		ace(ppm)713		
	TPH 20,000			
Ground Water Sample: Yes No $\underline{X}$ (If yes, attach sample results)				
I HEREBY CERTIFY THOOF MY KNOWLEDGE AND	NAT THE INFORMATION DELIEF	ABOVE IS TRUE AND COMPLI	ETE TO THE BEST	
DATE 8-8-95	PRINTED AND TITE	NAME Buddy D.S.	Coordinator	

CLIENT: AMOCO	ENVIRONMEN 5796 FARMIN	TAL SCIENTISTS (U.S. HIGHWAY 6 GTON, NEW MEXIONE: (505) 632-6	≥ ENGINEERS 4-3014 CO 87401			TION NE	# 4227
FIELD REPORT	T: CLOSU	RE VE	ERIFIC	ATION	PAGE	No: <u>-</u>	L of 2
LOCATION: <u>NAME: L.C. K.J.</u> (B) QUAD/UNIT: NOY NGA SEC: 1 QTR/FOOTAGE:	TWP: 30H RNG:	#:#6 12W PM: RACTOR: E		Y: SI ST: HH	DATE F	INISHED: _	5-19-95 6-13-95 Hub/CIC
excavation approx. 30  disposal facility: 01  land use: Range		<b>&gt;</b> R	EMEDIATIO	ON METHO	DD:		1567 RICACE Daposi
FIELD NOTES & REMARK  DEPTH TO GROUNDWATER: 2100	NEAREST WATER SI	JURCE: >10	000 N		E WATE	R: 7104	00
NMOCD RANKING SCORE:  SOIL AND EXCAVATION		ACTIVE		<b>*</b>	PIT A	CK ON ABANDON L TANK	<del></del>
SANOY Cobble  (D@ 10'-166 pm (D@ 35, 23,000 ppm 485 ppm @VM  (D@ 11'-40 ppm (D@ 20,000 ppm 713 ppm @VM  (D@ 10'-50 ppm. (De 11)  (D@ 7'-85 ppm (De 11)  (D@ 14'-76 pm.							
(3) @ 22' - 308 ppm 5-24-15	TIME SAMPLE I.D.			ML. FREON D	ILUTION	READING	CALC. ppm
SCALE	1030 De40'	1073	10.80	<del> </del>	00	/57	20,003
SCALE	130 0036	1074	10.58	20.0	1	70	76
O FT	1200 30.40'	1025	10,34	20.0	0	100	2050
PIT PERIME	HAP BEYO'	10 <b>79</b> M	10.05	PIT	PRO	OFILE	50
PIT PERIMETER Be 40' 1000M 10.05  RESULTS  SAMPLE PIED HEADSPACE DO 36' 8.0  DO 40' 98.0  16 7 CHUS COS SONDS  SAMPLE SAMPLES  LAB SAMP							
TRAVEL NOTES: CALLOUT:		0.0	ISITE:	· ·			

CLIENT: AMOCO	ENVIF	ROTECH Inc.		PIT NO: A0119
	5796 US H <b>W</b> Y. 6 (505	84, FARMINGTON, NM ) 632-0615	_	J.C. ND:
FIELD REPO	ORT: CLOSURE	VERIFICATION		No: E No: Z of _ Z
QUAD/UNIT: SEC:		BM: CNTY:	ST: DATE FIN	MENTAL ST: HAB/CJC
		FT. xC	FT. x UBIC YARDAGE:	FT. DEEP.
FIELD NOTES & REMARDEPTH TO GROUNDWATER:	NEAREST WATER SOUR	CE: NEA		1
SAMPLE BTM@3 Su@2	1.D. LAB No: WEIGHT (g) 2' 1070 10.24	<del></del>	READING CALC. ppm 195 38,000 80 160	
SCALE O FEET PIT PERIM	<del></del>		PIT PRO	OFILE
TRAVEL NOTES: CALLOU	17:	ONSITE:	<u> </u>	_ 



5796 US Highway 64-3014 • Farmington, New Mexico 87401 PHONE: (505) 632-0615 • FAX: (505) 632-1865

### FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: **AMOCO** E. Wall @ 40' Sample ID: L. C. KELLY # 6 Project Location:

GAC1079 Laboratory Number:

Project #:

91412

Date Analyzed:

05/30/95

Date Reported:

05/31/95

Sample Matrix:

Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	50	10

ND = Not Detectable at stated detection limits.

QA/QC:

Original TPH mg/kg

Duplicate TPH mg/kg

57

Diff.\*

29

%

\*Administrative Acceptance limits set at 30%.

Method:

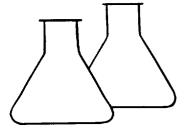
Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste,

US EPA Storet No.4551, 1978

Comments:

Separator Pit # A0119

Stay W. Sendler Review



5796 US Highway 64-3014 • Farmington, New Mexico 87401 PHONE: (505) 632-0615 • FAX: (505) 632-1865

### FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: Sample ID:

**AMOCO** S. Wall @ 27'

Laboratory Number:

Project Location:

L. C. KELLY # 6

GAC1071

Project #:

91412

Date Analyzed: Date Reported: 05/25/95 05/31/95

Sample Matrix:

Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable	<del></del>	<del></del> -
Petroleum Hydrocarbons	160	10

ND = Not Detectable at stated detection limits.

QA/QC:

Original TPH mg/kg

76

Duplicate TPH mg/kg

57

% Diff.\*

29

\*Administrative Acceptance limits set at 30%.

Method:

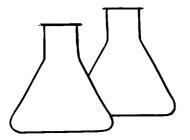
Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste,

US EPA Storet No.4551, 1978

Comments:

Separator Pit # A0119

May W Jandlen
Review



5796 US Highway 64-3014 • Farmington, New Mexico 87401 PHONE: (505) 632-0615 • FAX: (505) 632-1865

### FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:

**AMOCO** 

- GAC1075

Sample ID:

S. Wall @ 40'

Project Location:

L. C. KELLY # 6

Laboratory Number:

Project #:

91412

Date Analyzed:

05/30/95

Date Reported:

05/31/95

Sample Matrix:

Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable	<del></del>	
Petroleum Hydrocarbons	2,100	100

ND = Not Detectable at stated detection limits.

QA/QC:

Original TPH mg/kg Duplicate TPH mg/kg

% Diff.\*

76

57

29

\*Administrative Acceptance limits set at 30%.

Method:

Modified Method 418.1, Petroleum Hydrocarbons, Total

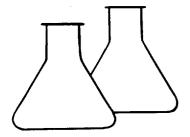
Recoverable, Chemical Analysis of Water and Waste,

US EPA Storet No.4551, 1978

Comments:

Separator Pit # A0119

Sticy W. Sender
Review



5796 US Highway 64-3014 • FARMINGTON, New Mexico 87401 PHONE: (505) 632-0615 • FAX: (505) 632-1865

## FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:

Sample ID:

Project Location:

**AMOCO** 

W. Wall @ 36'

L. C. KELLY # 6

Laboratory Number: GAC1074

Project #:

Date Analyzed:

Date Reported:

Sample Matrix:

91412

05/30/95

05/31/95

Soil

Parameter

Result, mg/kg

Detection Limit, mg/kg

Total Recoverable

Petroleum Hydrocarbons

76

10

ND = Not Detectable at stated detection limits.

QA/QC:

Original TPH mg/kg

Duplicate TPH mg/kg % Diff.\*

57

29

\*Administrative Acceptance limits set at 30%.

Method:

Modified Method 418.1, Petroleum Hydrocarbons, Total

Recoverable, Chemical Analysis of Water and Waste,

76

US EPA Storet No.4551, 1978

Comments:

Separator Pit # A0119

Analyst

Review / W. Sandler



## EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	5 @ 22'	Date Reported:	05-24-95
Laboratory Number:	8537	Date Sampled:	05-24-95
Chain of Custody No:	4227	Date Received:	05-24-95
Sample Matrix:	Soil	Date Extracted:	05-24-95
Preservative:	Cool	Date Analyzed:	05-24-95
Condition:	Cool and Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	13900	10.0

ND = Parameter not detected at the stated detection limit.

Method: Method 418.1, Petroleum Hydrocarbons, Total

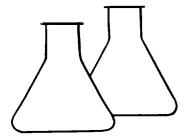
Recoverable, Chemical Analysis of Water and

Waste, USEPA Storet No.4551, 1978.

Hurs

Comments: A-0119 - L.C. Kelly #6%.

vst Revi



# Envirotech Labs

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615 • FAX: (505) 632-1865

## FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: Sample ID: AMOCO Bottom @ 28' L. C. KELLY # 6

Project Location: Laboratory Number:

GAC1070

Project #:

91412

Date Analyzed:
Date Reported:

05/25/95 05/31/95

Sample Matrix:

Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
	<del></del>	
Total Recoverable Petroleum Hydrocarbons	38,000	1,000

ND = Not Detectable at stated detection limits.

QA/QC:

Original TPH mg/kg Duplicate TPH mg/kg % Diff.\*

76

57

29

\*Administrative Acceptance limits set at 30%.

Method:

Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste,

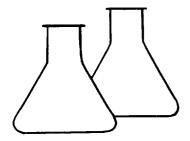
US EPA Storet No.4551, 1978

Comments:

Separator Pit # A0119

Analyst

Macy W. Signellan Review



5796 US Highway 64-3014 • Farmington, New Mexico 87401 PHONE: (505) 632-0615 • FAX: (505) 632-1865

### FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: Sample ID:

Project Location:

**AMOCO** Bottom @ 35' L. C. KELLY # 6

Laboratory Number:

GAC1072

Project #:

91412

Date Analyzed: Date Reported:

05/30/95 05/31/95

Sample Matrix:

Soil

		Detection
Parameter	Result, mg/kg	Limit, mg/kg
Total Recoverable	-	
Petroleum Hydrocarbons	23,000	1,000

ND = Not Detectable at stated detection limits.

QA/QC:

Original TPH mg/kg Duplicate TPH mg/kg

57

% Diff.\*

29

Method:

Modified Method 418.1, Petroleum Hydrocarbons, Total

Recoverable, Chemical Analysis of Water and Waste,

76

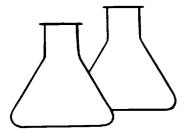
US EPA Storet No.4551, 1978

Comments:

Separator Pit # A0119

Stary W. Sendler Review

<sup>\*</sup>Administrative Acceptance limits set at 30%.



5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615 • FAX: (505) 632-1865

## FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:

AMOCO

Project #:

91412 05/30/95

05/31/95

Sample ID:

Bottom @ 40' L. C. KELLY # 6 Date Analyzed:
Date Reported:

Project Location: Laboratory Number:

GAC1073

Sample Matrix:

Soil

Parameter

Result, mg/kg

Detection Limit, mg/kg

Total Recoverable

Petroleum Hydrocarbons

20,000

1,000

ND = Not Detectable at stated detection limits.

QA/QC:

Original TPH mg/kg Duplicate TPH mg/kg % Diff.\*

76

57

----

29

\*Administrative Acceptance limits set at 30%.

Method:

Modified Method 418.1, Petroleum Hydrocarbons, Total

Recoverable, Chemical Analysis of Water and Waste,

US EPA Storet No.4551, 1978

Comments:

Separator Pit # A0119

Analyst

Stay W. Judler
Review

Well Name:

Well Site location:

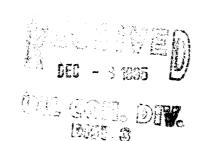
Pit Type:

**Producing Formation:** 

Pit Category:

Horizonal Distance to Surface Water:

Vicinity Groundwater Depth:



L.C. Kelly #6
Unit B, Sec. 11, T30N, R12W
Drip Pit
Mesaverde
Area III
> 1000 ft.
> 100 ft.

### RISK ASSESSMENT

Pit remediation activities were terminated when practical vertical extent was reached with a trackhoe. It is conceived that sandstone bedrock underlies the bottom of the excavated area at a close proximity.

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

- 1. Groundwater levels located on or close to the well pad are estimated to be at least 60 feet below the vertical extent of the excavation. Topographical information suggest that sandstone bedrock (Nacimiento Formation) below the terrace gravels (pit location) is highly likely, therefore further reducing the risk of groundwater impact.
- 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 Mesaverde type locations do not reflect direct correlation to total BTEX per USEPA Method 8020 concentrations. Listed below are a few typical AMOCO Mesaverde pit soil analyses comparing headspace to Benzene and total BTEX results.

LOCATION	HEADSPACE (ppm)	BENZENE (ppm)	TOTAL BTEX (ppm)
L.C. Kelly #6A	833	0.033	2.857
Johnston LS 7	998	0.017	24.985
Neil LS 7A	819	0.282	0.440

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

Based upon the information given, we conclude that the subsurface lateral impact from the earthen pit is very limited. Vertical impact poses no threat to present or foreseeable beneficial use of fresh water based upon the extensive vertical depth to groundwater from the total depth reached within the pit. AMOCO requests pit closure approval on this location.

Well Name:

Well Site location:

Pit Type:

Producing Formation:

Pit Category:

Horizonal Distance to Surface Water:

Vicinity Groundwater Depth:

L.C. Kelly #6

Drip Pit

Mesaverde

Area III

> 1000 ft.

> 100 ft.

## **RISK ASSESSMENT**

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CLIENT: AMOCO	Envirotech Inc.	LOCATION NO: AD119		
	ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	C.O.C. NO: 4227		
FIELD REPOR	RT: CLOSURE VERIFICATION	PAGE No: 4 of 2		
LOCATION: NAME: L.C. 化	WELL #: #6 PIT: Drip / Set	DATE STARTED: 5-19-95  DATE FINISHED: 6-13-95		
QUAD/UNIT: Not Men SEC:	CONTRACTOR: EXUIROTECH	ENVIRONMENTAL HUB/CIC		
EXCAVATION APPROX. 30 FT. x 47 FT. DEEP. CUBIC YARDAGE: 1567				
DISPOSAL FACILITY: 0	site Land tarm. REMEDIATION METHO	"Dut fore-		
LAND USE: Range	LEASE: Federal FOR	MATION: TERRACE Doponit		
FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 150 FT. ESE FROM WELLHEAD.  DEPTH TO GROUNDWATER: 7100 NEAREST WATER SOURCE: 71000 NEAREST SURFACE WATER: 71000				
NMOCD RANKING SCORE:	<b>5</b> 200	CHECK ONE		
	IN DESCRIPTION DA COMME	PIT ABANDONED		
SANDY COPPLE		STEEL TANK INSTALLED		
D@10'-166ppm	5@35, 23,000ppm 485ppm OVM 5@40 20,000 ppm 713ppm OVM			
(2)@11'-40ppm (1)	(5) @40 20,000 ppm 713 ppm 0 V W			
\	oil resible.	,		
(De 7'- 88ppm (upull)' (50 14' - 76/pm.				
50 22'- 308 pm 5-24.	FIELD 418.1 CALCULATIONS			
@@ 8' - 7.1 pm . 5 21 -7.	TIME SAMPLE I.D. LAB No: WEIGHT (g) mL. FREON DI	LUTION READING CALC. ppm		
SCALE	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1 70 76		
	1200 0036 1074 10.58 20.0	1 10 76 0 106 2050		
0 FT	THAT B BE 40' 1079M 10.05 20.0 DIT	PROFILE 50		
PIT PERIM	RESULTS  SAMPLE FIELD HEADSPACE PID (ppm)	60'		
1	Da 34/ 9.1) _2 Py			
#	00 40' 2.D 3'	made a pebblox		
	DC40' 713 23' Sand	cholded peoble 4 Dillouser, tan dry Distorined sands		
	10 1"-2	I some famos		
0	o sand	is fine-med.		
	2			
LAB SAMPLES  EAMPLE ANALYSIS TIME				
ANALYSIS TIME				
18' 6				
	, o	. 9 . 9		
TRAVEL NOTES: ONSITE:				
		COND,		

CLIENT: AMOCO	ENVIROTECH Inc.	FIT NO: <u>A0119</u>		
5796 US HWY. 64, FARMINGTON, NM 87401 · C.E.C. ND:				
FIELD REPORT: CLC	SURE VERIFICATION	JOB No: PAGE No: Z of		
QUAD/UNIT: SEC: TWP:	WELL #: 6 PIT: 500 /ORIP  RNG: BM: CNTY: ST:	DATE STARTED: 5/25/93  DATE FINISHED:		
QTR/FDDTAGE:	CONTRACTOR:	SPECIALIST: HAB/CJC.		
SOIL REMEDIATION: EXCAVATION APPROX FT. x FT. DEEP.  DISPOSAL FACILITY: CUBIC YARDAGE:				
LAND USE:	LEASE:			
FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY FEET FROM WELLHEAD.  DEPTH TO GROUNDWATER: NEAREST WATER SOURCE: NEAREST SURFACE WATER:				
NMOCD RANKING SCORE: NMOCD TP	H CLOSURE STD:PPM			
SOIL AND EXCAVATION DESCRIPTION:				
SAMPLE 1.D. LAB No:  BIME30' 1070  SHEZS' 1071  SCALE		LC. ppm 18, vou 60		
O FEET PIT PERIMETER	OVM RESULTS  SAMPLE FIELD HEADSPACE PID (ppm)  1BM 70 578  254028 23.0  3  4  5  LAB SAMPLES	PROFILE		
TRAVEL NOTES: CALLOUT: ONSITE:				
UNLLUUI.				