District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
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

Denny G. Foust
DEPUTY OIL & GAS INSPECTOR

SEP 26 1995

No C-134

PIT REMEDIATION AND CLOSURE REPORT

Approved A0116

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

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name L.C. KELLY 6A

Location: Unit or Qtr/Qtr Sec D Sec 11 T 30N R 12W County SAN JUAN

Pit Type: Separator X Dehydrator ___ Other ___

Land Type: BLM X, State ___, Fee ___, Other ___

Pit Location: (Attach diagram)
Pit dimensions: length 33', width 30', depth 12
Reference: wellhead X, other ___
Footage from reference: 350
Direction from reference: 0 Degrees ___ 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

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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

A0116

Date Remediation Started: _____ **Date Completed:** 4-28-95

Remediation Method: (Check all appropriate sections)
Excavation X Approx. cubic yards 440
Landfarmed X Insitu Bioremediation ___
Other _____

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

General Description Of Remedial Action: Excavation

Ground Water Encountered: No X Yes ___ Depth _____

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)
Sample location see Attached Documents
Sample depth 10'
Sample date 4-28-95 Sample time _____

Sample Results
Benzene(ppm) _____
Total BTEX(ppm) 3,756
Field headspace(ppm) 833
TPH 1900 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 8-8-95
SIGNATURE B J Shaw
PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

CLIENT: AMOCO

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

LOCATION NO: AO116
C.O.C. NO: 4176

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 2

LOCATION: NAME: LCKELLY WELL #: 6A PIT: Sep.
QUAD/UNIT: SEC: 11 TWP: 30N RNG: 12W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: CONTRACTOR: Envirotech

DATE STARTED: 4-28-95
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: CJC

EXCAVATION APPROX. 30 FT. x 33 FT. x 12 FT. DEEP. CUBIC YARDAGE: 440 Cmpla.
DISPOSAL FACILITY: AMOCO REMEDIATION METHOD: Landfarm
LAND USE: LEASE: Federal FORMATION: MV

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 350 FT. W FROM WELLHEAD.
DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'
NMOCD RANKING SCORE: 0 NMOCD TPH CLOSURE STD: 5000 PPM

CHECK ONE:
___ PIT ABANDONED
✓ STEEL TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:

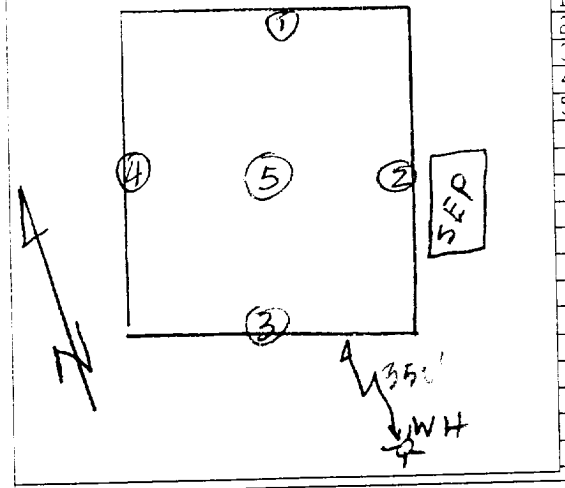
Sand with clay blue gray, black, soft, fn-med; Orange-brn near btm; strong odor, dry.
Shale @ 10' on N. side green, tan, olive, hard, fractured.

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1400	5@12'	GAC1016	10.57	20.0	1	17	32
1455	3@11'	1017	10.72	20.0	1	35	71
1712	2@10'	1018	10.41	20.0	10	98	1,883

SCALE
0 20 FT

PIT PERIMETER



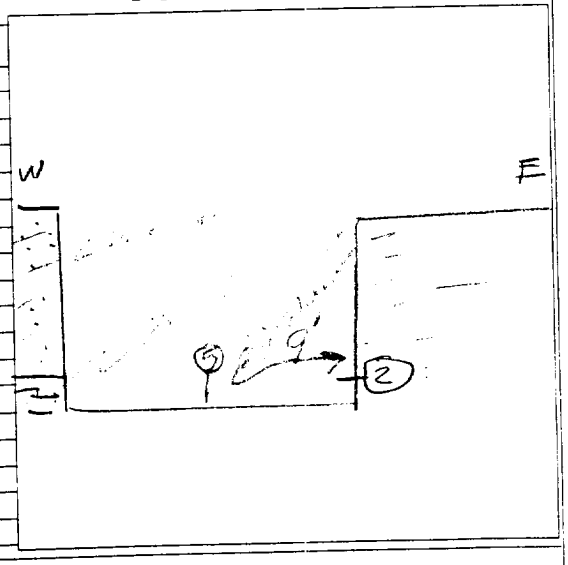
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 10'	19.0
2 @ 10'	833
3 @ 11'	98.0
4 @ 10'	6.0
5 @ 12'	16.0

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
2 @ 10'	BTEX	1704
5 @ 12'	BTEX	1400

PIT PROFILE



TRAVEL NOTES: CALLOUT: 1100 ONSITE: 1130

COND.

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:	AMOCO	Project #:	A0116
Sample ID:	2 @ 10'	Date Analyzed:	04/28/95
Project Location:	LC KELLY #6A SEP	Date Reported:	05/01/95
Laboratory Number:	GAC1018	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	**1,900**	**100**

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	10	13	26

*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 # A0116

C.J. Collins
Analyst

Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	2 @ 10'	Date Reported:	05-02-95
Laboratory Number:	8432	Date Sampled:	04-28-95
Chain of Custody:	4176	Date Received:	04-28-95
Sample Matrix:	Soil	Date Analyzed:	05-01-95
Preservative:	Cool	Date Extracted:	05-01-95
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	32.9	13.3
Toluene	188	20.0
Ethylbenzene	28.2	26.6
p,m-Xylene	1,690	33.3
o-Xylene	918	13.3
	3,756	

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND = Parameter not detected at the stated detection limit.

Comments: A0116 - L. C. Kelly #6A Separator Pit

Analyst

Review

5796 U.S. Highway 64-3014 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

FIELD MODIFIED EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	AMOCO	Project #:	A0116
Sample ID:	3 @ 11'	Date Analyzed:	04/28/95
Project Location:	LC KELLY #6A SEP	Date Reported:	05/01/95
Laboratory Number:	GAC1017	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	**71**	**10**

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	10	13	26

*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 # A0116

C. J. Collins
Analyst

Review

ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

FIELD MODIFIED EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	AMOCO	Project #:	A0116
Sample ID:	5 @ 12'	Date Analyzed:	04/28/95
Project Location:	LC KELLY #6A SEP	Date Reported:	05/01/95
Laboratory Number:	GAC1016	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	**32**	**10**

ND = Not Detectable at stated detection limits.

QA/QC:

QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
10	13	26

*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 # A0116

C. J. Collins
Analyst

Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	5 @ 12'	Date Reported:	05-02-95
Laboratory Number:	8433	Date Sampled:	04-28-95
Chain of Custody:	4176	Date Received:	04-28-95
Sample Matrix:	Soil	Date Analyzed:	05-01-95
Preservative:	Cool	Date Extracted:	05-01-95
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	13.2
Toluene	27.4	19.8
Ethylbenzene	ND	26.4
p,m-Xylene	41.6	32.9
o-Xylene	49.2	13.2

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	98 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND = Parameter not detected at the stated detection limit.

Comments: A0116 - L. C. Kelly #6A Separator Pit

Analyst

Review

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A0116

District I
P.O. Box 1980, Hobbs, NM
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P.O. Drawer DD, Artesia, NM 88211
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

PIT REMEDIATION AND CLOSURE REPORT

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

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name L.C. KELLY 6A

Location: Unit or Qtr/Qtr Sec D Sec 11 T 30 N R 12 W County SAN JUAN

Pit Type: Separator ___ Dehydrator ___ Other BLOW

Land Type: BLM X, State ___, Fee ___, Other ___

Pit Location: (Attach diagram)

Pit dimensions: length 24', width 24', depth 10'

Reference: wellhead X, other ___

Footage from reference: 124

Direction from reference: 90 Degrees ___ East North X of X 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

A0116

Date Remediation Started: _____ **Date Completed:** 5-24-95

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 214

Landfarmed X Insitu Bioremediation ___

Other _____

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

General Description Of Remedial Action: Excavation

Ground Water Encountered: No X Yes ___ Depth _____

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

Sample location see Attached Documents

Sample depth 6'

Sample date 5-24-95 Sample time _____

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

Field headspace(ppm) >2000

TPH _____

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 8-8-95

SIGNATURE B J Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

CLIENT: AMOCO

ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

LOCATION NO: A0116
C.O.C. NO: None

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 2 of 2

LOCATION: NAME: L C Kelly WELL #: 6A PIT: Blowdown
QUAD/UNIT: E SEC: 11 TWP: 30N RNG: 12W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: Range CONTRACTOR: ENVIROTECH

DATE STARTED: 5-24-95
DATE FINISHED: 5-24-95
ENVIRONMENTAL SPECIALIST: HM B

EXCAVATION APPROX. 24' FT. x 24' FT. x 10 FT. DEEP. CUBIC YARDAGE: 214
DISPOSAL FACILITY: Onsite (L.C. Kelly #6A) REMEDIATION METHOD: LANDFARM
LAND USE: Range LEASE: Federal FORMATION: Surface Nacimiento

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 124 FT. West FROM WELLHEAD.
DEPTH TO GROUNDWATER: >100 NEAREST WATER SOURCE: >1000 NEAREST SURFACE WATER: >1000
NMOCD RANKING SCORE: 0 NMOCD TPH CLOSURE STD: 5000 PPM

CHECK ONE:
___ PIT ABANDONED
✓ STEEL TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:

Tan silty Sand interbedded Sand and gravel layers, Sandstone Bedrock (Petroleum Odor)

Remove EARTHEN Pit
Replace w/ 21 bbl Steel TANK
(NOT A pit Closure)

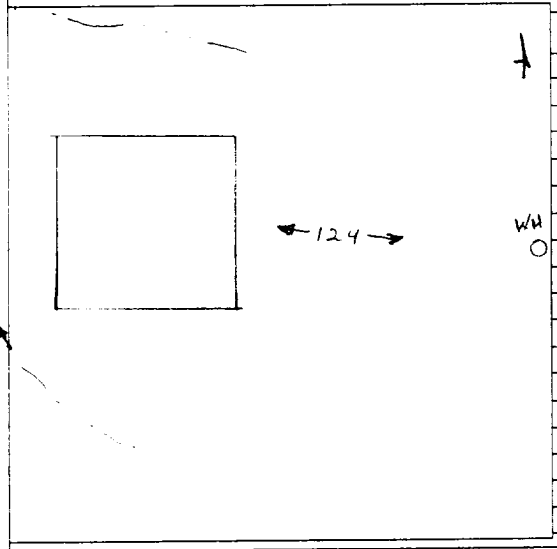
NOTE: OVM READINGS Over Range ∴ No TPH Collected.

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SCALE
0 FT

PIT PERIMETER



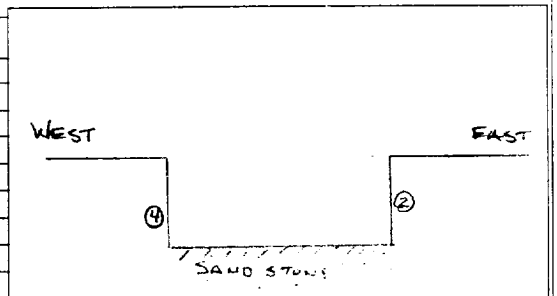
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 6'	OVERRANGE
2 @ 6'	58 ppm
3 @ 6'	501 ppm
4 @ 6'	OVERRANGE
5	Bedrock, SS

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: ONSITE:

COND.

Well Name:	**L.C. Kelly #6A**
Well Site location:	Unit D, Sec. 11, T30N, R12W
Pit Type:	Blow Pit
Producing Formation:	Mesaverde
Pit Category:	Area III
Horizonal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

RISK ASSESSMENT

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 10 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 10 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 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 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.