Dennis L. Foust
DEPUTY OIL & GAS INSPECTOR
AUG 13 1999

BJ 457

SUBMIT 1 COPY TO
NATURAL RESOURCE DEPT
AND OIL & GAS ADMINISTRATION

JICARILLA APACHE TRIBE
ENVIRONMENTAL PROTECTION OFFICE
P.O. BOX 507
DULCE, NEW MEXICO 87528

Approved

PIT REMEDIATION AND CLOSURE REPORT

Operator: AMOCO PRODUCTION COMPANY **Telephone:** (505)326-9200

Address: 200 Amoco Court, Farmington, NM 87401

Facility or Well Name: JICARILLA B #4

Location: Unit or Qtr/Qtr Sec H Sec 21 T 26N R 5W County RIO ARRIBA

Pit Type: Separator ____ Dehydrator ____ Other BLOW

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 42', width 26', depth 18'

Reference: wellhead X, other ____

Footage from reference: 138'

Direction from reference: 65 Degrees X East North X of ____ West South ____

Depth To Groundwater: (Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points)	0
Distance to an Ephemeral Stream (Downgradient dry wash greater than ten feet in width)	Less than 100 feet Greater than 100 feet	(10 points) (0 points)	0
Distance to Nearest Lake, Playa, or Watering Pond (Downgradient lakes, playas and livestock or wildlife watering ponds)	Less than 100 feet Greater than 100 feet	(10 points) (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 No	(20 points) (0 points)	0
Distance To SurfaceWater: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 100 feet 100 feet to 1000 feet Greater than 1000 feet	(20 points) (10 points) (0 points)	0
		RANKING SCORE (TOTAL POINTS):	0

BJ457 / BLOW PIT

Date Remediation Started: _____ **Date Completed:** 10/10/96

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 600

Landfarmed X Insitu Bioremediation _____

Other _____

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

General Description of Remedial Action: Excavation, BEDROCK BOTTOM.

Groundwater 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 12'

Sample date 10/10/96 Sample time 1205

Sample Results

Soil:	Benzene	(ppm) ____	Water:	Benzene	(ppb) ____
	Total BTEX	(ppm) ____		Toluene	(ppb) ____
	Field Headspace	(ppm) 10.5		Ethylbenzene	(ppb) ____
	TPH	(ppm) 48		Total Xylenes	(ppb) ____

Groundwater 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 KNOWLEGE AND BELIEF

DATE 10/10/96 **PRINTED NAME** Buddy D. Shaw

SIGNATURE Buddy D. Shaw **AND TITLE** Environmental Coordinator

AFTER REVIEW OF THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES ✓ NO ____ (REASON) ~~Signature~~

SIGNED: Gabriel Julian **DATE:** 10/22/96

CLIENT: AMOCO

BLAGG ENGINEERING, INC.
P.O. BOX 87, BLOOMFIELD, NM 87413
(505) 632-1199

LOCATION NO: BJ457
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICARILLA B WELL #: 4 PIT: BLOW
QUAD/UNIT: H SEC: 21 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: SE/4 NE/4 CONTRACTOR: P & S

DATE STARTED: 10/10/96
DATE FINISHED: _____
ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 42 FT. x 26 FT. x 18 FT. DEEP. CUBIC YARDAGE: 600
DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARMED
LAND USE: RANGE LEASE: JICA. CONTRACT #109 FORMATION: TEP/DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 138 FT. N65E 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:

SIDEWALLS: OR. YELL. BROWN SILTY SAND TO SILTY CLAY, COHESIVE, SLIGHTLY MOIST, FIRM TO STIFF, NO APPARENT HC ODOR IN ANY OF THE OVM SAMPLES, NO APPARENT HC STAINING OR ODOR OBSERVED W/IN EXCAVATION.

BOTTOM - BEDROCK (SANDSTONE), OLIVE GRAY, HARD, NO APPARENT HC ODOR IN OVM SAMPLE.

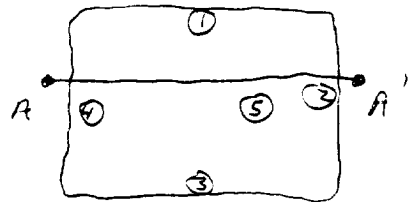
FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1205	④@12'	TPH-1846	5	20	1:1	12	48

BEDROCK

SCALE
0 FT

PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 12'	0.0
2 @ 13'	0.0
3 @ 13'	0.0
4 @ 12'	10.5
5 @ 18'	5.4

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE

TRAVEL NOTES: CALLOUT: 10/9/96 AFTER. ONSITE: 10/10/96 MORN.

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	Project #:	
Sample ID:	4 @ 12'	Date Analyzed:	10-10-96
Project Location:	Jicarilla B # 4	Date Reported:	10-10-96
Laboratory Number:	TPH-1846	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	48	20

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	4640	4400	5.31

*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: Blow Pit - BJ457

Analyst

Review

BJ457

JICARILLA APACHE TRIBE
ENVIRONMENTAL PROTECTION OFFICE
P.O. BOX 507
DULCE, NEW MEXICO 87528

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NATURAL RESOURCE DEP
AND OIL & GAS ADMINISTRATIO

PIT REMEDIATION AND CLOSURE REPORT

Operator: AMOCO PRODUCTION COMPANY **Telephone:** (505)326-9200

Address: 200 Amoco Court, Farmington, NM 87401

Facility or Well Name: JICARILLA B #4

Location: **Unit or Qtr/Qtr Sec** H **Sec** 21 **T** 26N **R** 5W **County** RIO ARRIBA

Pit Type: **Separator** X **Dehydrator** ____ **Other** ____

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 70', width 15', depth 5'

Reference: wellhead X, other ____

Footage from reference: 108'

Direction from reference: 2 Degrees X East North X of ____ West South ____

Depth To Groundwater: (Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points)	0
Distance to an Ephemeral Stream (Downgradient dry wash greater than ten feet in width)	Less than 100 feet Greater than 100 feet	(10 points) (0 points)	0
Distance to Nearest Lake, Playa, or Watering Pond (Downgradient lakes, playas and livestock or wildlife watering ponds)	Less than 100 feet Greater than 100 feet	(10 points) (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 No	(20 points) (0 points)	0
Distance To SurfaceWater: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 100 feet 100 feet to 1000 feet Greater than 1000 feet	(20 points) (10 points) (0 points)	0

RANKING SCORE (TOTAL POINTS): 0

BT 457 / SEP. PIT

Date Remediation Started: _____ **Date Completed:** 10/10/96

Remediation Method: (Check all appropriate sections)
Excavation X — Approx. cubic yards 180
Landfarmed X — Insitu Bioremediation _____
Other _____

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

General Description of Remedial Action: Excavation. ENTIRE EXCAVATION CONSIST MOSTLY OF BEDROCK, THEREFORE NO TPH ANALYSIS WAS CONDUCTED. RISK ASSESSED.

Groundwater 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 5'

Sample date 10/10/96 Sample time 1255

Sample Results

Soil: Benzene (ppm) _____
Total BTEX (ppm) _____
Field Headspace (ppm) 807
TPH (ppm) NA

Water: Benzene (ppb) _____
Toluene (ppb) _____
Ethylbenzene (ppb) _____
Total Xylenes (ppb) _____

Groundwater 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 KNOWLEGE AND BELIEF

DATE 10/10/96 PRINTED NAME Buddy D. Shaw

SIGNATURE Buddy D. Shaw AND TITLE Environmental Coordinator

AFTER REVIEW OF THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES ✓ NO ____ (REASON) Spray

SIGNED: _____ DATE: 10/22/96

CLIENT: AMOCO

BLAGG ENGINEERING, INC.
P.O. BOX 87, BLOOMFIELD, NM 87413
(505) 632-1199

LOCATION NO: BJ457
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICARILLA B WELL #: 4 PIT: SEP

QUAD/UNIT: H SEC: 21 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM

QTR/FOOTAGE: 1650' FNL / 990' FEL CONTRACTOR: P & S

DATE STARTED: 10/10/96
DATE FINISHED: _____

ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 70 FT. x 15 FT. x 5 FT. DEEP. CUBIC YARDAGE: 180

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARMED

LAND USE: RANGE LEASE: JICA CONTR. #109 FORMATION: TPG/DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 108 FT. NZE 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:

ENTIRE EXCAVATION CONSIST MOSTLY OF BEDROCK (SANDSTONE), LT. OLIVE TO DK. GRAY IN COLOR, HARD, STRONG HC ODOR IN ALL OVM SAMPLES. DUE TO EXCAVATION BEING MOSTLY BEDROCK, NO TPH ANALYSIS WAS CONDUCTED.

ENTIRE EXCAVATION IN BEDROCK

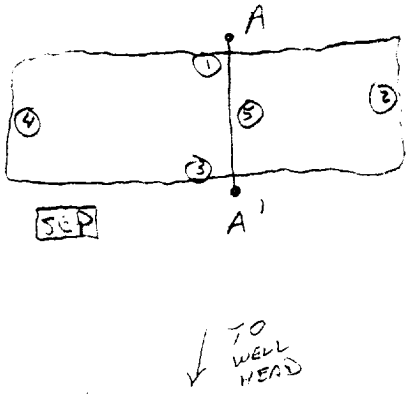
RISK ASSESSED

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1255							

SCALE
0 FT

PIT PERIMETER



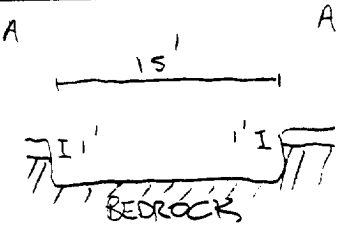
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 3'	434
2 @ 4'	669
3 @ 3'	780
4 @ 4'	345
5 @ 5'	807

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: 10/9/96 AFTER. ONSITE: 10/10/96 MORN.

Well Name:	**Jicarilla B #4**
Well Site location:	Unit H. Sec. 21. T26N. R5W
Pit Type:	Separator Pit
Producing Formation:	Tapacito Gallup/Basin Dakota
Pit Category:	Non Vulnerable
Horizontal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 5 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 5 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 (pit abandoned). Prior discharge into the pit is believed to be under 5 barrels per day.

4. Well site located within the **non-vulnerable area** and is approximately 0.13 miles north of the nearest vulnerable area boundary (Tapacito Creek).

   (Refer to Lapis Point Quadrangle, New Mexico - Rio Arriba County, 7.5 Minute Series (Topographic), 1963, (vulnerable area boundary developed by Mr. William C. Olson, Hydrogeologist, Environmental Bureau, New Mexico Oil Conservation Division).

Based upon the information given. we conclude that the lateral impact of the excavation is limited and that the sandstone bottom creates enough of an impermeable 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.

BT 457

SUBMIT 1 COPY TO
NATURAL RESOURCE DEPT
AND OIL & GAS ADMINISTRATION

JICARILLA APACHE TRIBE
ENVIRONMENTAL PROTECTION OFFICE
P.O. BOX 507
DULCE, NEW MEXICO 87528

ON-SITE SOIL REMEDIATION REPORT

Operator: AMOCO PRODUCTION COMPANY **Telephone:** (505) 326-9200

Address: 200 Amoco Court, Farmington, NM 87401

Facility or Well Name: JICARILLA B #4

Location: Unit or Qtr/Qtr Sec K Sec 21 T 25N R 5W County RIO ARRIBA

Land Type: RANGE

Date Remediation Started: 10/10/96 **Date Completed:** 4/29/98

Remediation Method: Landfarmed X Approx. cubic yards 1,200

Composted ____

Other ____

pth To Groundwater:	(pts.)	0
Distance to an Ephemeral Stream	(pts.)	0
Distance to Nearest Lake, Playa, or Watering Pond	(pts.)	0
Wellhead Protection Area:	(pts.)	0
Distance To SurfaceWater:	(pts.)	0
RANKING SCORE (TOTAL POINTS):		0

Final Closure Sampling:

Sampling Date: 4/28/98 Time: 0815

Sample Results:

Field Headspace (ppm) 0.0

TPH (ppm) 127 Method 8015

Other 2ND SAMPLE DUM 0.0 PPM

TPH 126 PPM

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

DATE 4/29/98 PRINTED NAME Buddy D. Shaw

SIGNATURE Buddy D. Shaw AND TITLE Environmental Coordinator

AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION, ON-SITE REMEDIATION IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES X NO ____ (REASON) NOT for use as Backfill

SIGNED: Kurt C. Mansell DATE: 5-7-98

CLIENT: AMOCO

BLAGG ENGINEERING, INC.
P.O. BOX 87, BLOOMFIELD, NM 87413
(505) 632-1199

LOCATION NO: ST457
C.O.C. NO: 5877

FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: JICARILLA B WELL #: 4 PITS: BLOW, SEP.
QUAD/UNIT: K SEC: 21 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: NE/4 SW/4 CONTRACTOR: P&S

DATE STARTED: 4/28/98
DATE FINISHED: 4/29/98
ENVIRONMENTAL SPECIALIST: NV

SOIL REMEDIATION:

REMEDIATION SYSTEM: LANDFARMED
APPROX. CUBIC YARDAGE: 1,200
LAND USE: RANGE
LIFT DEPTH (ft): 1'-2'

FIELD NOTES & REMARKS:

DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'
NMOCD RANKING SCORE: 0 NMOCD TPH CLOSURE STD: 5000 PPM

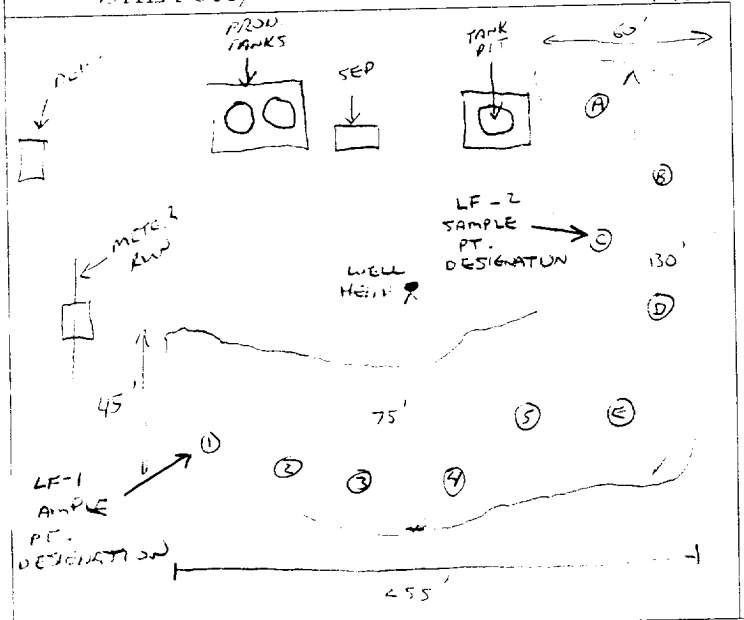
SOIL MOSTLY DK. YELL. BROWN SAND W/ SOME RUSTY BROWN SHALE FRAGMENTS, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HC ODOR OBSERVED IN ANY OF THE SAMPLE PTS. OR OVM SAMPLES.

CLOSED

FIELD 418.1 CALCULATIONS

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

SKETCH/SAMPLE LOCATIONS



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
LF-1	0.0
LF-2	0.0

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME	RESULTS
LF-1	TPH (8015)	0815	127
LF-2	TPH (8015)	0915	126

SCALE
0 FT

TRAVEL NOTES: CALLOUT: NA ONSITE: 4/28/98

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	LF - 1	Date Reported:	05-01-98
Laboratory Number:	D1S2	Date Sampled:	04-28-98
Chain of Custody No:	5877	Date Received:	04-28-98
Sample Matrix:	Soil	Date Extracted:	04-29-98
Preservative:	Cool	Date Analyzed:	04-29-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**58.0**	**0.2**
Diesel Range (C10 - C28)	**69.2**	**0.1**
Total Petroleum Hydrocarbons	**127**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Jicarilla B #4 Landfarm 5 Pt. Composite.**

Analyst

Review

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

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	LF - 2	Date Reported:	05-01-98
Laboratory Number:	D193	Date Sampled:	04-28-98
Chain of Custody No:	5877	Date Received:	04-28-98
Sample Matrix:	Soil	Date Extracted:	04-29-98
Preservative:	Cool	Date Analyzed:	04-29-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**77.0**	**0.2**
Diesel Range (C10 - C28)	**49.0**	**0.1**
Total Petroleum Hydrocarbons	**126**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Jicarilla B #4 Landfarm 5 Pt. Composite.**

Analyst

Review

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

CHAIN OF CUSTODY RECORD

Client/Project Name: BLAGG / AMOCO

Project Location: LANDFARM JICARILLA B #4

Sampler: (Signature) [signature]

Chain of Custody Tape No.: 04034-20

ANALYSIS/PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)						Remarks
												PRESERV. - COOL
LF-1	4/28/98	0815	D192	SOIL	1	✓						5 PT. COMPOSITE
LF-2	4/28/98	0915	D193	SOIL	1	✓						5 PT. COMPOSITE

SAMPLES RECEIVED COOL & INTACT [initials]

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	4/28/98	1450	[signature]	4/28/98	1450
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Ref COC's 5877 → 5880

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615