BJ401

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

RECEIVED
AUG 0 9 1999
OIL CON. DIV.
DIST. 3

Blow
Risk no bedrock
Sep - Bedrock Risk

PIT REMEDIATION AND CLOSURE REPORT

Non-vulnerable, practical extent

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

Address: 200 Amoco Court, Farmington, NM 87401

Facility or Well Name: JICARILLA APACHE 102 - 8A

Location: Unit or Qtr/Qtr Sec A Sec 3 T26N R4W County RIO ARRIBA

Pit Type: Separator ____ Dehydrator ____ Other BLOW

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 25', width 24', depth 17'

Reference: wellhead X, other ____

Footage from reference: 90'

Direction from reference: 40 Degrees ____ East / X West of North ____ / South X

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

BT401

Date Remediation Started: _____ **Date Completed:** 8/16/96

Remediation Method: (check all appropriate sections) Excavation X Approx. cubic yards 325

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

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

MULTIPLE SAMPLES

Sample depth _____

Sample date _____ Sample time _____

Sample Results

Soil:	Benzene	(ppm)	Water:	Benzene	(ppb)
	Total BTEX	(ppm)		Toluene	(ppb)
	Field Headspace	(ppm)		Ethylbenzene	(ppb)
	TPH	(ppm)		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 8/16/96 **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 X (REASON) Conditional Closure till PoA

SIGNED: Kurt C. Mandl **DATE:** 8-21-96

CLIENT: AMOCO

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

LOCATION NO: BT401
C.O.C. NO: 0556

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICARILLA APACHE 102 WELL #: 8A PIT: BLOW
QUAD/UNIT: A SEC: 3 TWP: 26N RNG: 4W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: NE/4 NE/4 CONTRACTOR: P&S

DATE STARTED: 8/12/96
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 25 FT. x 24 FT. x 17 FT. DEEP. CUBIC YARDAGE: 325
DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARMED
LAND USE: RANGE LEASE: FED. LSE 102 FORMATION:

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 90 FT. S40W 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:

DK. YELL BROWN TO OLIVE GRAY SAND (WEST SIDEWALL AND PIT BOTTOM), NON-COHESIVE, SLIGHTLY MOIST, FIRM, STRONG HC ODOR IN NORTH & WEST SIDEWALLS AND PIT BOTTOM OVM SAMPLES, OLIVE GRAY DISCOLORATION APPEARS TO BE ASSOCIATED W/ HC CONTAMINATION.

CONDITIONAL - JICA. EPO

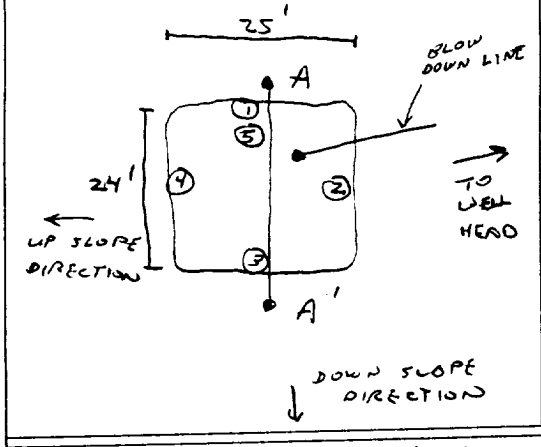
RISK ASSESSED - NMOCD

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
0940	④@11'	TPH-1773	5	20	1:1	583	2,332
0943	⑤@18'	TPH-1774	5	20	1:1	250	1,000

SCALE
0 FT

PIT PERIMETER



OVM RESULTS

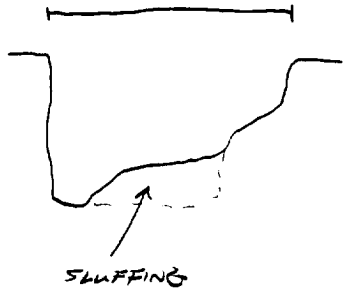
SAMPLE ID	FIELD HEADSPACE PID (ppm)
1@11'	658
2@10'	1.6
3@11'	0.0
4@11'	720
5@18'	356

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
④@11'	BTEX	0940
⑤@18'	BTEX	0943

BOTH FAILED

PIT PROFILE



TRAVEL NOTES: CALLOUT: 8/9/96 AFTER. ONSITE: 8/12/96 MORN.

Well Name:	**Jicarilla Contract 102 #8A**
Well Site location:	Unit A, Sec. 3, T26N, R4W
Pit Type:	Blow Pit
Producing Formation:	Mesa Verde
Pit Category:	Non Vulnerable
Horizonal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe reached practical extent for abandoned pit (17 ft. below grade) and for safety concerns (underground piping and surface equipment).

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 a much greater depth below shallow sandstone bedrock (based on formal site observation of on-site separator pit).

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 0.03 miles north of the nearest vulnerable area boundary (Cottonwood Canyon wash).

   (Refer to Pine Lake Quadrangle, New Mexico - Rio Arriba County, 7.5 Minute Series (Topographic), Photorevised 1982, (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 subsurface vertical impact to groundwater is very unlikely. AMOCO requests pit closure approval on this location.

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 @ 11'	Date Analyzed:	08-12-96
Project Location:	Jicarilla Apache 102-8A	Date Reported:	08-12-96
Laboratory Number:	TPH-1773	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	2,300	20

ND = Not Detectable at stated detection limits.

QA/QC:

QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
3292	3536	7.15

*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 - BJ401

Analyst

Review

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:	5 @ 18'	Date Analyzed:	08-12-96
Project Location:	Jicarilla Apache 102-8A	Date Reported:	08-12-96
Laboratory Number:	TPH-1774	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	1,000	20

ND = Not Detectable at stated detection limits.

QA/QC:

QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
3292	3536	7.15

*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 - BJ401

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

VOLATILE AROMATIC HYDROCARBONS

Blagg Engineering, Inc.

Project ID:	Jicarilla Apache 102-8A	Report Date:	08/15/96
Sample ID:	4 @ 11'	Date Sampled:	08/12/96
Lab ID:	4708	Date Received:	08/13/96
Sample Matrix:	Soil	Date Extracted:	08/14/96
Preservative:	Cool	Date Analyzed:	08/14/96
Condition:	Intact		

Target Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Benzene	ND	0.06
Toluene	9.69	1.26
Ethylbenzene	0.98	0.06
m,p-Xylenes	113	2.53
o-Xylene	33.2	1.26

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	106	81 -117%
Bromofluorobenzen	106	74 -121%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Final Update I, July, 1992.

Comments:

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

VOLATILE AROMATIC HYDROCARBONS

Blagg Engineering, Inc.

Project ID:	Jicarilla Apache 102-8A	Report Date:	08/15/96
Sample ID:	5 @ 18'	Date Sampled:	08/12/96
Lab ID:	4709	Date Received:	08/13/96
Sample Matrix:	Soil	Date Extracted:	08/14/96
Preservative:	Cool	Date Analyzed:	08/14/96
Condition:	Intact		

Target Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Benzene	2.05	0.06
Toluene	129	5.00
Ethylbenzene	31.0	5.00
m,p-Xylenes	273	10.0
o-Xylene	70.8	5.00

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	96	81 -117%
Bromofluorobenzen	98	74 -121%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Final Update I, July, 1992.

Comments:

Analyst

Review

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

Field TPH-Worksheet

Max Characters:	**********		
Client:	AMOCO	Project #:	
Sample ID:	4 @ 11'	Date Analyzed:	08-12-96
Project Location:	Jicarilla Apache 102-8A	Date Reported:	08-12-96
Laboratory Number:	TPH-1773	Sample Matrix:	Soil

Sample Weight:	5.00	grams
Volume Freon:	20.00	mL
Dilution Factor:	1	(unitless)
TPH Reading:	583	mg/kg

TPH Result:	2332.0	mg/kg
Reported TPH Result:	2300	mg/kg
Actual Detection Limit:	20.0	mg/kg
Reported Detection Limit:	20	mg/kg

QA/QC:	Original TPH mg/kg	Duplicate TPH mg/kg	% Diff.
	3292	3536	7.15

Comments: **********Max Characters**********

Comments: Blow Pit - BJ401

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

Field TPH-Worksheet

Max Characters:	**********		
Client:	AMOCO	Project #:	
Sample ID:	5 @ 18'	Date Analyzed:	08-12-96
Project Location:	Jicarilla Apache 102-8A	Date Reported:	08-12-96
Laboratory Number:	TPH-1774	Sample Matrix:	Soil

Sample Weight:	5.00	grams
Volume Freon:	20.00	mL
Dilution Factor:	1	(unitless)
TPH Reading:	250	mg/kg

TPH Result:	1000.0	mg/kg
Reported TPH Result:	1000	mg/kg
Actual Detection Limit:	20.0	mg/kg
Reported Detection Limit:	20	mg/kg

QA/QC:

Original TPH mg/kg	Duplicate TPH mg/kg	% Diff.
3292	3536	7.15

Comments: **********Max Characters**********

Comments: Blow Pit - BJ401

ANALYTICA
ENVIRONMENTAL LABORATORY

0556

CHAIN OF CUSTODY

17 S. CARLTON • FARMINGTON, NM 87401 • (505) 326-2395

ROJECT MANAGER:
nalytica Lab I.D.:

ompany: BLAGG
ddress:

hone:
ax:

ill To: SAME AS ABOVE
ompany:
ddress:

Sample ID	Date	Time	Matrix	Lab ID	Petroleum Hydrocarbons (418.1)	Gasoline / Diesel (mod. 8015)	Gasoline (GRO)	Aromatic HCs BTEX/MTBE (602/8020)	Chlorinated Hydrocarbons (8010)	SDWA Volatiles (502.1/503.1)	Chlorinated Pesticides / PCBs (608 / 8080)	Herbicides (615 / 8150)	Volatiles GC/MS (624 / 8240 / 8260)	Base / Neutral / Acid GC/MS (625 / 8270)	Polynuclear Aromatic Hydrocarbons (8100)	TCLP Extraction	Other (specify):	Cation / Anion	Specific Cations (specify):	Specific Anions (specify):	BOD / Fecal / Total Coliform	Solids : TDS / TSS / SS	Nutrients: NH4+ / NO2- / NO3- / TKN	Oil and Grease	Other (specify):	Priority Pollutants	RCRA Metals (Total)	RCRA Metals TCLP (1311)	Other (specify):
4@ 11'	8/12/96	0940	SOIL					✓																				
5@ 18'	8/12/96	0943	SOIL					✓																				

Project Information	Sample Receipt
roj. #:	No. Containers:
roj Name: JICARILLA APACHE	Custody Seals: Y / N / NA
.O. No. 102 - 8A BLOW PIT	Received Intact:
hipped Via:	Received Cold
equired Turnaround Time (Prior Authorization Required for Rush)	

Sampled by:	Relinquished by:	Relinquished by:
Signature: [signature] Date: 8/12/96	Signature: [signature] Date: 8/12/96	Signature: J.C. Blagg Date: 8.13.9
Company: BLAGG Time: 0940/0943	Company: BLAGG Time: 1700	Company: BEI Time: 073
Received By:	Received By:	Received By:
Signature Date:	Signature: J.C. Blagg Date: 8-12-96	Signature: [signature] Date: 8.13.9
Company: Time:	Company: BEI Time: 1700	Company: Time:

BT401

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

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

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 APACHE 102 - 8A

Location: **Unit or Qtr/Qtr Sec** A **Sec** 3 **T** 26N **R** 4W **County** RIO ARRIBA

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

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 14', width 16', depth 16'

Reference: wellhead X, other ____

Footage from reference: 123'

Direction from reference: 13 Degrees X East of ____ West North X 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

BJ401

Date Remediation Started: _____ **Date Completed:** 8/20/96

Remediation Method: (check all appropriate sections) Excavation X Approx. cubic yards 125

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. 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 11'

Sample date 8/12/96 Sample time 1020

Sample Results

Soil: Benzene	(ppm)		Water: Benzene	(ppb)	
Total BTEX	(ppm)		Toluene	(ppb)	
Field Headspace	(ppm)	406	Ethylbenzene	(ppb)	
TPH	(ppm)	8,750	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 8/20/96 **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 X (REASON) Conditional closure till P+A

SIGNED: Kurt C. Mansell **DATE:** _____

CLIENT: AMOCO

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

LOCATION NO: BJ407
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICARILLA APACHE 102 WELL #: 8A PIT: SEP
QUAD/UNIT: A SEC: 3 TWP: 26N RNG: 4W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: NE 1/4 NE 1/4 CONTRACTOR: P&S

DATE STARTED: 8/12/96
DATE FINISHED: _____
ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 14 FT. x 16 FT. x 16 FT. DEEP. CUBIC YARDAGE: 125
DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARMED
LAND USE: RANGE LEASE: FED. LSE. 102 FORMATION: _____

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 123 FT. N13E 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:

LAYERING COLOR W/IN EXCAVATION RANGING FROM MOD. YELL. ORANGE TO LT. MED. GRAY SAND TO CLAY, BEDROCK EXPOSED ON NORTH SIDEWALL, CLAY APPARENT ON EAST SIDEWALL, SLIGHTLY PLASTIC, STIFF TO VERY STIFF, STRONG HC ODOR IN SOUTH SIDEWALL OVM SAMPLE.

BOTTOM - BEDROCK (SHALE + SANDSTONE), HARD, LT. MED. GRAY IN COLOR, STRONG HC ODOR IN OVM SAMPLE.

CONDITIONAL
RISK ASSESSED

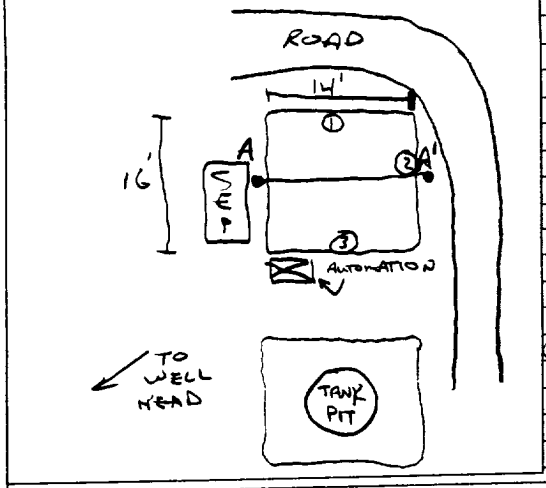
SCALE 0 FT

BEDROCK BOTTOM

FIELD 418.1 CALCULATIONS

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

PIT PERIMETER



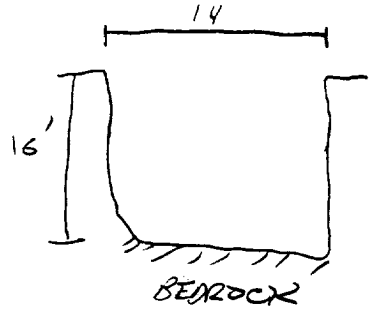
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 11'	0.0
2 @ 11'	9.8
3 @ 11'	406
4 @ 11'	138.4
5 @ 17'	351

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
3 @ 11'	TPH/BTEX 8015	1020
	FAILED	

PIT PROFILE



TRAVEL NOTES: CALLOUT: 8/9/96 AFTER. ONSITE: 8/12/96 MORN.

Well Name:	**Jicarilla Apache 102 #8A**
Well Site location:	Unit A, Sec. 3, T26N, R4W
Pit Type:	Separator Pit
Producing Formation:	Mesa Verde
Pit Category:	Non Vulnerable
Horizonal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered shale/sandstone bedrock at 16 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 shale/sandstone bedrock located 16 feet below grade. Groundwater levels located on or close to the well pad are estimated to be at a much greater depth below shale/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 0.03 miles north of the nearest vulnerable area boundary (Cottonwood Canyon wash).

   (Refer to Pine Lake Quadrangle, New Mexico - Rio Arriba County, 7.5 Minute Series (Topographic), photorevised 1982, (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 subsurface lateral impact from the earthen pit is very limited and that the shale/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.

ANAITAS ENVIRONMENTAL LABS

TOTAL VOLATILE PETROLEUM HYDROCARBONS

Gasoline Range Organics

Blagg Engineering, Inc.

Project ID:	Jicarilla Apache 102-8A	Report Date:	08/16/96
Sample Matrix:	Soil	Date Sampled:	08/12/96
Preservative:	Cool	Date Received:	08/13/96
Condition:	Intact	Date Extracted:	08/14/96
		Date Analyzed:	08/15/96

Sample ID	Lab ID	Concentration (mg/kg)	Detection Limit (mg/kg)
3 @ 11'	4710	5,630	135

ND- Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	% Recovery	Acceptance Limits
Trifluorotoluene	102%	50 - 150%

Reference: Method for the Determination of Gasoline Range Organics, State of Tennessee, Department of Environment and Conservation, Division of Underground Storage Tanks.

Comments:

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Diesel Range Organics

Blagg Engineering, Inc.

Project ID:	Jicarilla Apache 102 - 8A	Report Date:	08/16/96
Sample Matrix:	Soil	Date Sampled:	08/12/96
Preservative:	Cool	Date Received:	08/13/96
Condition:	Intact	Date Extracted:	08/14/96
		Date Analyzed:	08/15/96

Sample ID	Lab ID	Concentration (mg/kg)	Detection Limit (mg/kg)
3 @ 11'	4710	3,120	20.5

ND- Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	% Recovery	Acceptance Limits
o - Terphenyl	84%	50 - 150%

Reference: EPA Method 8015A, modified. "Nonhalogenated Volatile Organics by Gas Chromatography." Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, SW-846, 3rd Ed, Final Update I, July, 1992. USEPA.

Comments:

Analyst

Review

ANALYTICA
ENVIRONMENTAL LABORATORY

CHAIN OF CUSTODY

7 S. CARLTON • FARMINGTON, NM 87401 • (505) 326-2395

ROJECT MANAGER:
nalytica Lab I.D.:

ompany: BLAGG
ddress:

hone:
ax:

ill To: SAME AS ABOVE
ompany:
ddress:

Sample ID	Date	Time	Matrix	Lab ID	Petroleum Hydrocarbons (418.1)	Gasoline / Diesel (mod. 8015)	Gasoline (GRO)	Aromatic HCs (BTEX/MTBE (602/8020))	Chlorinated Hydrocarbons (8010)	SDWA Volatiles (502.1/503.1)	Chlorinated Pesticides / PCBs (608 / 8080)	Herbicides (615 / 8150)	Volatiles GC/MS (624 / 8240 / 8260)	Base / Neutral / Acid GC/MS (625 / 8270)	Polynuclear Aromatic Hydrocarbons (8100)	TCLP Extraction	Other (specify):	Cation / Anion	Specific Cations (specify):	Specific Anions (specify):	BOD / Fecal / Total Coliform	Solids : TDS / TSS / SS	Nutrients: NH4+ / NO2- / NO3- / TKN	Oil and Grease	Other (specify):	Priority Pollutants	RCRA Metals (Total)	RCRA Metals TCLP (1311)	Other (specify):
3) @ 11'	8/12/96	1020	SOIL			✓		✓																					

Project Information	Sample Receipt
roj. #:	No. Containers:
roj Name: JICARILLA APACHE	Custody Seals: Y / N / NA
.O. No. 102-8A SEP. PIT	Received Intact:
hipped Via:	Received Cold
equired Turnaround Time (Prior Authorization Required for Rush)	

Sampled by:		Relinquished by:		Relinquished by:	
Signature: Nelson Velez	Date: 8/12/96	Signature: Nelson Velez	Date: 8/12/96	Signature: J.C. Blagg	Date: 8-13-9
Company: BLAGG	Time: 1020	Company: BLAGG	Time: 1700	Company: BEI	Time: 073
Received By:		Received By:		Received By:	
Signature	Date:	Signature: J.C. Blagg	Date: 8-12-96	Signature	Date: 08132
Company:	Time:	Company: BEI	Time: 1700	Company:	Time:

BJ401

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 APACHE # 102 - 8A

Location: Unit or Qtr/Qtr Sec A Sec 3 T 26N R 4W County RIO ARRIBA

Land Type: RANGE

Date Remediation Started: 8/12/96 **Date Completed:** 7/10/98

Remediation Method: Landfarmed X Approx. cubic yards 450

Composted ____

Other ____

Depth 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: 7/6/98 Time: 1200

Sample Results:

Field Headspace (ppm) 0.0

TPH (ppm) 0.2 Method 8015

Other ____

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

DATE 7/10/98 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) Use as Backfill

SIGNED: Kurt C Mann DATE: 7-27-98

CLIENT: AMOCO

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

LOCATION NO: BT401
C.O.C. NO: 6090

FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: JICA. APACHE 102 WELL #: 8A PITS: SEP., BLOW
QUAD/UNIT: A SEC: 3 TWP: 26N RNG: 4W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: NE/4 NE/4 CONTRACTOR: P & S

DATE STARTED: 7/6/98
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: NV

SOIL REMEDIATION:
REMEDIATION SYSTEM: LANDFARM
LAND USE: RANGE
APPROX. CUBIC YARDAGE: 300
LIFT DEPTH (ft): 1'-2'

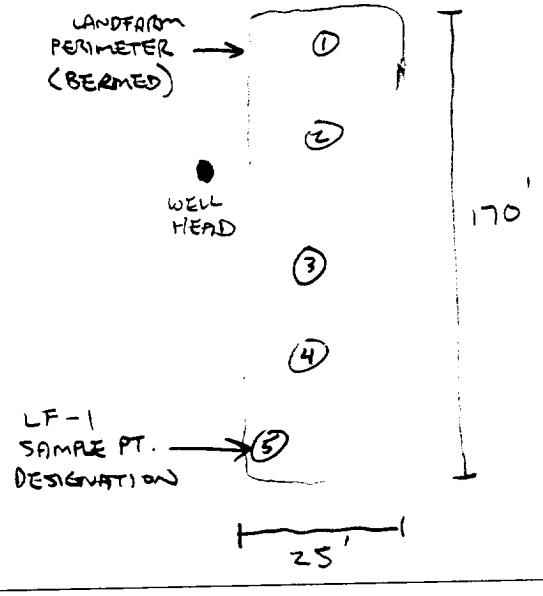
FIELD NOTES & REMARKS:
DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'
NMOCD RANKING SCORE: 0 NMOCD TPH CLOSURE STD: 5000 PPM
SOIL MOSTLY MOD. YELL. BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, SAMPLING DEPTHS RANGE FROM 6" TO 1½', NO DISCOLORATION OR HC ODOR OBSERVED @ ANY OF THE SAMPLE PTS., COLLECTED 5 PT. COMPOSITE FOR LAB ANALYSIS.

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

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME	RESULTS
LF-1	TPH (8015)	1200	0.2

SCALE
0 FT

TRAVEL NOTES: CALLOUT: NA ONSITE: 7/6/98

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:	07-08-98
Laboratory Number:	D593	Date Sampled:	07-06-98
Chain of Custody No:	6090	Date Received:	07-06-98
Sample Matrix:	Soil	Date Extracted:	07-07-98
Preservative:	Cool	Date Analyzed:	07-07-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.2**	**0.1**
Total Petroleum Hydrocarbons	**0.2**	**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 Apache #102 - 8A 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

6090

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / AMOCO	LANDFARM JICARILLA APACHE #102 - 8A	
Sampler: NJV	Client No. 04034-10	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)						Remarks
												PRESERV. - COOL
LF-1	7/6/98	1200	D593	SOIL	1	✓						5 PT. COMPOSITE

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	7/6/98	1400	Dennis L. Ogburn	7.6.98	1400
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Rel COC's 6087 - 6090

ENVIROTECH INC.

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

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-07-TPH QA/QC	Date Reported:	07-08-98
Laboratory Number:	D588	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-07-98
Condition:	N/A	Analysis Requested:	TPH

Calibration	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	04-28-98	2.3634E-02	2.2677E-02	4.05%	0 - 15%
Diesel Range C10 - C28	04-28-98	2.3141E-02	2.2199E-02	4.07%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	1.2	1.2	0.0%	0 - 30%
Diesel Range C10 - C28	13.7	13.4	1.8%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	1.2	250	251	100%	75 - 125%
Diesel Range C10 - C28	13.7	250	263	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

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

Comments: **QA/QC for samples D588 - D593.**

Analyst

Review

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