Denny E. Foust
DEPUTY OIL & GAS INSPECTOR

AUG 1 3 1999

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

BT621
OK
3 Pits
risk

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

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 C #7E

Location: Unit or Qtr/Qtr Sec J Sec 13 T 26N R 5W County RIO ARRIBA

Pit Type: Separator ____ Dehydrator ____ Other BLOW

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 24', width 21', depth 6'

Reference: wellhead X, other ____

Footage from reference: 95'

Direction from reference: 37 Degrees X East ____ West of 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
			0
RANKING SCORE (TOTAL POINTS):			

BJ621 BLOW PIT

Date Remediation Started: _____ Date Completed: 9/9/98

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 75 100 nV

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 3' (South Sidewall)

Sample date 9/3/98 Sample time 1115

Sample Results

Soil:	Benzene	(ppm) 0.101	Water:	Benzene	(ppb) _____
	Total BTEX	(ppm) 2.020		Toluene	(ppb) _____
	Field Headspace	(ppm) 432		Ethylbenzene	(ppb) _____
	TPH	(ppm) 209		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 9/9/98 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 X NO ____ (REASON) R.A. Attached

SIGNED: Kenneth Mansell DATE: 10-1-98

3003922576

CLIENT: AMOCO	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: BJ621 C.O.C. NO: 6194

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICARILLA C WELL #: 7E PIT: BLOW

QUAD/UNIT: J SEC: 13 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM

QTR/FOOTAGE: 1700'FSL / 1670'FEL CONTRACTOR: P&S

DATE STARTED: 9/3/98

DATE FINISHED:

ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 24 FT. x 21 FT. x 6 FT. DEEP. CUBIC YARDAGE: ~~75~~ 100 NV

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM

LAND USE: RANGE LEASE: C FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 95 FT. N37E 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
- ___ FIBERGLASS TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:

SIDEWALLS - VERY PALE ORANGE TO OLIVE GRAY (SOUTH SIDEWALL) SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT STAINING OR HC ODOR OBSERVED/DETECTED W/IN EXCAVATION, STRONG HC ODOR IN SOUTH SIDEWALL OVM SAMPLE ONLY.

BOTTOM - BEDROCK (SANDSTONE) DK. YELL. ORANGE/BLACK IN COLOR, STRONG HC ODOR IN OVM SAMPLE.

BEDROCK BOTTOM

RISK ASSESSED

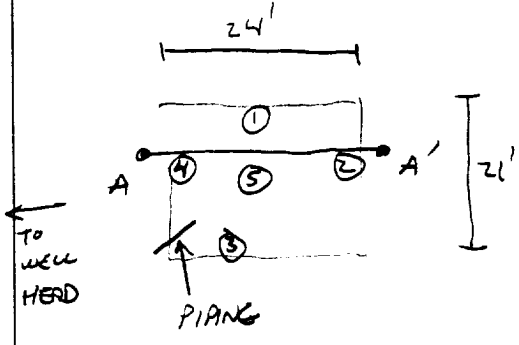
FIELD 418.1 CALCULATIONS

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

SCALE

0 FT

PIT PERIMETER



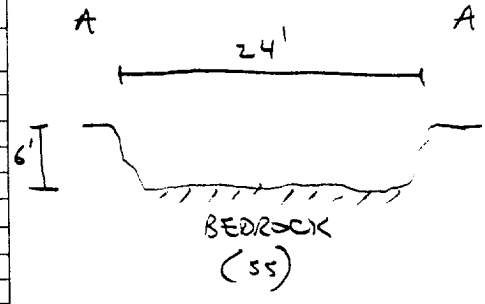
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 3'	0.0
2 @ 3'	0.0
3 @ 3'	432
4 @ 3'	0.0
5 @ 6'	653 BK

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
③ @ 3'	TPH / BTEX	1115
BOTH PASSED		

PIT PROFILE



TRAVEL NOTES: CALLOUT: ___ ONSITE: 9/3/98 - MORN.

Well Name:	**Jicarilla C #7E**
Well Site location:	Unit J, Sec. 13, T26N, R5W
Pit Type:	Blow Pit
Producing Formation:	Basin Dakota
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 sandstone bedrock at 6 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 6 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 0.50 miles northwest 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 subsurface lateral impact from the earthen pit is very 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.

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:	3 @ 3'	Date Reported:	09-09-98
Laboratory Number:	D903	Date Sampled:	09-03-98
Chain of Custody No:	6194	Date Received:	09-04-98
Sample Matrix:	Soil	Date Extracted:	09-09-98
Preservative:	Cool	Date Analyzed:	09-09-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	oncentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**51.1**	**0.2**
Diesel Range (C10 - C28)	**158**	**0.1**
Total Petroleum Hydrocarbons	**209**	**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 C #7E Blow Pit.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	3 @ 3'	Date Reported:	09-09-98
Laboratory Number:	D903	Date Sampled:	09-03-98
Chain of Custody:	6194	Date Received:	09-04-98
Sample Matrix:	Soil	Date Analyzed:	09-09-98
Preservative:	Cool	Date Extracted:	09-09-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**101**	**8.8**
Toluene	**109**	**8.4**
Ethylbenzene	**137**	**7.6**
p,m-Xylene	**897**	**10.8**
o-Xylene	**773**	**5.2**
Total BTEX	**2,020**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**97 %**
	Bromofluorobenzene	**97 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Jicarilla C #7E Blow Pit.**

Analyst

Review

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BJ621

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

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 C #7E

Location: Unit or Qtr/Qtr Sec J Sec 13 T 36N R 5W County RIO ARRIBA

Pit Type: Separator ____ Dehydrator ____ Other PRODUCTION TANK

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 10', width 12', depth 4'

Reference: wellhead X, other ____

Footage from reference: 145'

Direction from reference: 80 Degrees X East ____ North of ____ West 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

RJ621 PROD. TANK PIT

Date Remediation Started: _____ **Date Completed:** 9/9/98

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 10 30 gw

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 2' (SOUTH SIDEWALL)

Sample date 9/3/98 Sample time 1245

Sample Results

Soil: Benzene	(ppm)	0.152	Water: Benzene	(ppb)	_____
Total BTEX	(ppm)	0.256	Toluene	(ppb)	_____
Field Headspace	(ppm)	113.6	Ethylbenzene	(ppb)	_____
TPH	(ppm)	18.5	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 9/9/98 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 X NO ____ (REASON) R.A. Attached

SIGNED: Kenneth C Marcell DATE: 10-1-98

CLIENT: AMOCO

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

LOCATION NO: BJ621
C.O.C. NO: 6194

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICARILLA C WELL #: 7E PIT: PROD. TANK

QUAD/UNIT: J SEC: 13 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM

QTR/FOOTAGE: 1700'FSL | 1670'FEL CONTRACTOR: P & S

DATE STARTED: 9/3/98
DATE FINISHED:

ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 10 FT. x 12 FT. x 4 FT. DEEP. CUBIC YARDAGE: ~~10~~ 30

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM

LAND USE: RANGE LEASE: C FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 145 FT. S80E 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
- ___ FIBERGLASS TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:

SIDEWALLS - DK. YELL. ORANGE TO OLIVE GRAY (SOUTH SIDEWALL) SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT STAINING OBSERVED W/IN EXCAVATION, HC ODOR DETECTED IN SOUTH SIDEWALL OVM SAMPLE ONLY.

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

BEDROCK BOTTOM

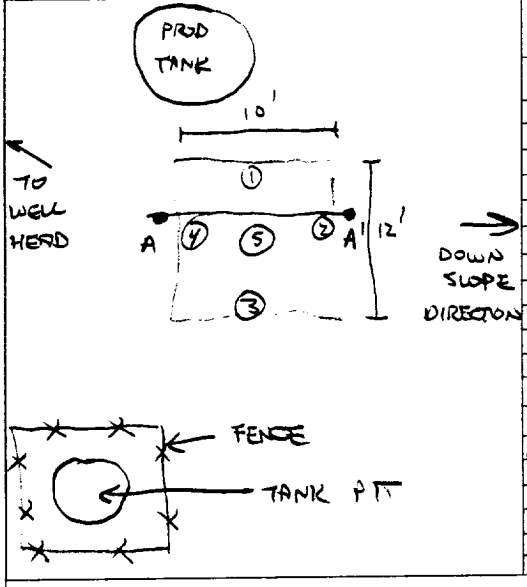
RISK ASSESSED

FIELD 418.1 CALCULATIONS

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

SCALE
0 FT

PIT PERIMETER



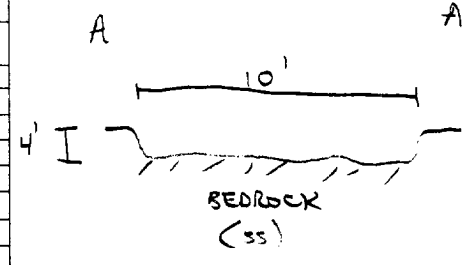
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 2'	0.0
2 @ 2'	0.0
3 @ 2'	113.6
4 @ 2'	0.0
5 @ 4'	214.0 BK

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
③ @ 2'	TPH / BTEX	1245
BOTH PASSED		

PIT PROFILE



TRAVEL NOTES: CALLOUT: ONSITE: 9/3/98 - MORN / AFTER

Well Name:	**Jicarilla C #7E**
Well Site location:	Unit J, Sec. 13, T26N, R5W
Pit Type:	Production Tank Pit
Producing Formation:	Basin Dakota
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 sandstone bedrock at 4 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 4 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 0.50 miles northwest 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 subsurface lateral impact from the earthen pit is very 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.

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:	3 @ 2'	Date Reported:	09-09-98
Laboratory Number:	D904	Date Sampled:	09-03-98
Chain of Custody No:	6194	Date Received:	09-04-98
Sample Matrix:	Soil	Date Extracted:	09-09-98
Preservative:	Cool	Date Analyzed:	09-09-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**1.4**	**0.2**
Diesel Range (C10 - C28)	**17.1**	**0.1**
Total Petroleum Hydrocarbons	**18.5**	**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 C #7E Production Tank Pit.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	3 @ 2'	Date Reported:	09-09-98
Laboratory Number:	D904	Date Sampled:	09-03-98
Chain of Custody:	6194	Date Received:	09-04-98
Sample Matrix:	Soil	Date Analyzed:	09-09-98
Preservative:	Cool	Date Extracted:	09-09-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**152**	**8.8**
Toluene	**12.3**	**8.4**
Ethylbenzene	**ND**	**7.6**
p,m-Xylene	**62.6**	**10.8**
o-Xylene	**29.1**	**5.2**
Total BTEX	**256**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Jicarilla C #7E Production Tank Pit.**

Analyst

Review

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BTG21

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

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 C #7E

Location: Unit or Qtr/Qtr Sec J Sec 13 T 26N R 5W County RIO ARRIBA

Pit Type: Separator X Dehydrator ____ Other ____

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 21', width 25', depth 8'

Reference: wellhead X, other ____

Footage from reference: 100'

Direction from reference: 25 Degrees X East ____ 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

BJ621 SEP. PIT

Date Remediation Started: _____ Date Completed: 9/9/98

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 100

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 4' (North Sidewall)

Sample date 9/3/98 Sample time 1345

Sample Results

Soil: Benzene	(ppm)	0.0945	Water: Benzene	(ppb)	____
Total BTEX	(ppm)	2.610	Toluene	(ppb)	____
Field Headspace	(ppm)	1,069	Ethylbenzene	(ppb)	____
TPH	(ppm)	63.0	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 9/9/98 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 X NO ____ (REASON) R.A. Attached

SIGNED: Ken C Marcel DATE: 10-1-98

CLIENT: AMOCO

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

LOCATION NO: BJ621
C.O.C. NO: 6194

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICARILLA C WELL #: 7E PIT: SEP

QUAD/UNIT: J SEC: 13 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM

QTR/FOOTAGE: 1700' FSL | 1670' FEL CONTRACTOR: P+S

DATE STARTED: 9/3/98
DATE FINISHED:

ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 21 FT. x 25 FT. x 8 FT. DEEP. CUBIC YARDAGE: 100

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM

LAND USE: RANGE LEASE: C FORMATION: OK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 100 FT. S25E 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
___ FIBERGLASS TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:

SIDEWALLS - OK. YELL ORANGE TO MED GRAY SAND TO CLAY, NON COHESIVE TO SLIGHTLY PLASTIC, FIRM TO HARD, BEDROCK EXPOSED @ VARYING INTERVALS (SEE PIT PROFILE), NORTH & EAST SIDEWALL OVM SAMPLES CONSISTED OF LT. GRAY CLAY W/ STRONG HC ODOR, SOUTH SIDEWALL OVM SAMPLE CONSISTED OF LT. GRAY BEDROCK, WEST SIDEWALL CONSISTED OF MED. GRAY BEDROCK W/ STRONG HC ODOR, STAINING EVIDENT IN LT. TO MED. GRAY DISCOLORATION.

BOTTOM - BEDROCK (SANDSTONE) OK. YELL. ORANGE IN COLOR, VERY HARD, STAINING OBSERVED IN ISOLATED PATCHES, NO APPARENT HC ODOR IN OVM SAMPLE.

BEDROCK BOTTOM

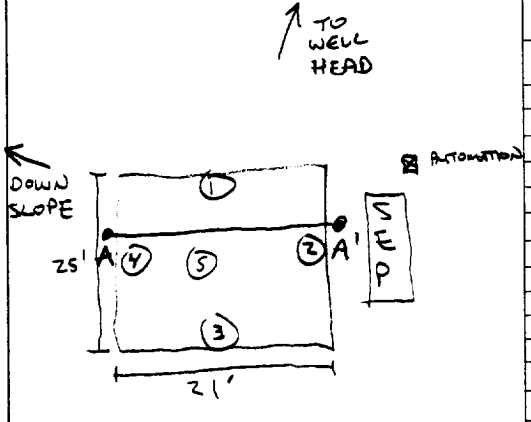
RISK ASSESSED

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

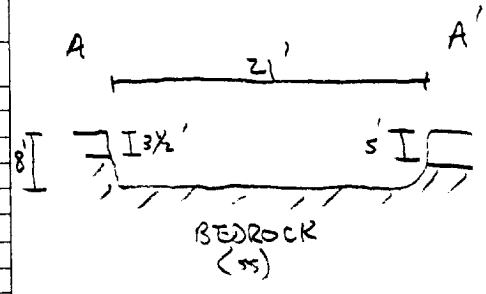
SAMPLE ID	FIELD HEADSPACE PID (ppm)	
1 @ 4'	1069	
2 @ 4'	940	
3 @ 4'	200.4	RK
4 @ 4'	1176	RK
5 @ 8'	2.5	RK

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
① @ 4'	TPH/BTEX	1345

BOTH PASSED

PIT PROFILE



TRAVEL NOTES: CALLOUT: ONSITE: 9/3/98-

Well Name:	**Jicarilla C #7E**
Well Site location:	Unit J, Sec. 13, T26N, R5W
Pit Type:	Separator Pit
Producing Formation:	Basin Dakota
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 sandstone bedrock at 8 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 8 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 0.50 miles northwest 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 subsurface lateral impact from the earthen pit is very 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.

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:	1 @ 4'	Date Reported:	09-09-98
Laboratory Number:	D905	Date Sampled:	09-03-98
Chain of Custody No:	6194	Date Received:	09-04-98
Sample Matrix:	Soil	Date Extracted:	09-09-98
Preservative:	Cool	Date Analyzed:	09-09-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	oncentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**37.6**	**0.2**
Diesel Range (C10 - C28)	**25.4**	**0.1**
Total Petroleum Hydrocarbons	**63.0**	**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 C #7E Separator Pit.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	1 @ 4'	Date Reported:	09-09-98
Laboratory Number:	D905	Date Sampled:	09-03-98
Chain of Custody:	6194	Date Received:	09-04-98
Sample Matrix:	Soil	Date Analyzed:	09-09-98
Preservative:	Cool	Date Extracted:	09-09-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**94.5**	**8.8**
Toluene	**54.5**	**8.4**
Ethylbenzene	**39.8**	**7.6**
p,m-Xylene	**1,820**	**10.8**
o-Xylene	**600**	**5.2**
Total BTEX	**2,610**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**97 %**
	Bromofluorobenzene	**97 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Jicarilla C #7E Separator Pit.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

6194

Client / Project Name	Project Location
Blagg / Amoco	Jicarilla C #7E
Sampler: NJV	Client No. 040340

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)	BTEX (8021)					Remarks
(3) e3'	9/3/98	1115	D903	SOIL	1	✓	✓					Blow PIT
(3) e2'	9/3/98	1245	D904	SOIL	1	✓	✓					Production Tank PIT
(1) e 4'	9/3/98	1345	D905	SOIL	1	✓	✓					Separator PIT
												All Samples
												Preserv. - cool

ANALYSIS / PARAMETERS

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	9/4/98	1435	Glenn L. Spencer	9.4.98	1455
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Rep COC's 6050, 6194, 6195

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	✓		

DJ602

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

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 C 7E

Location: Unit or Qtr/Qtr Sec J Sec 13 T 26N R 5W County RIO ARRIBA

Land Type: RANGE

Date Remediation Started: 9-3-98 **Date Completed:** 2/10/99

Remediation Method: Landfarmed X Approx. cubic yards 230

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: 2-8-99 Time: 1340

Sample Results:

Field Headspace (ppm) 0.0

TPH (ppm) 3.6 Method 8015

Other ____

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

DATE 2/10/99 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) ____

SIGNED: Ken C Mann DATE: 3-31-99

CLIENT: AMOCO

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

LOCATION NO: BJ621
C.O.C. NO: 6570

FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: JICARILLA C WELL #: 7E PITS: SEP, BLOW, PROD.
QUAD/UNIT: J SEC: 13 TWP: 26N RNG: 5W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: NW/4 SE/4 CONTRACTOR: P+S

DATE STARTED: 2.8.99
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: REP

SOIL REMEDIATION:

REMEDIATION SYSTEM: LANDFARM
APPROX. CUBIC YARDAGE: 230
LAND USE: RANGE
LIFT DEPTH (ft): 1-1.5

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

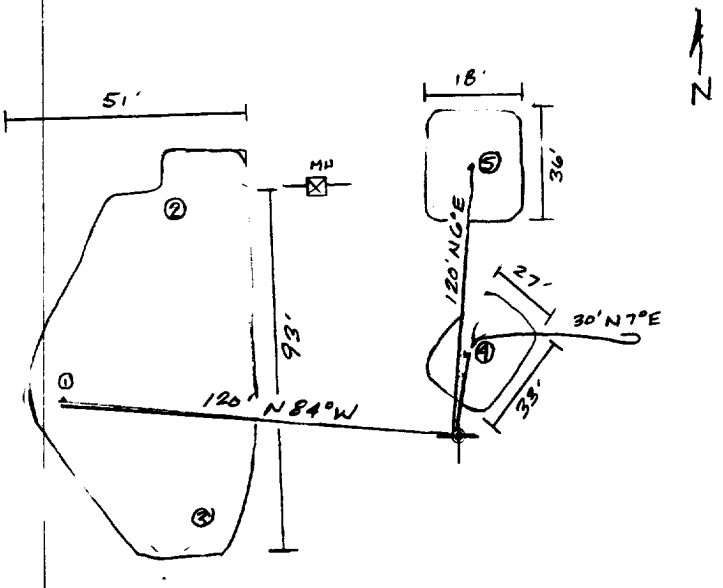
MODERATE YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM. NO STAINING OBSERVED, NO HC ODOR DETECTED. SAMPLING DEPTHS RANGE FROM 6"-12", TOOK A 5PT COMPOSITE SAMPLE FOR LAB ANALYSIS.

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)	1340	3.6

SCALE
0 FT

TRAVEL NOTES: CALLOUT: N/A ONSITE: 2.8.99

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	LF - 1	Date Reported:	02-10-99
Laboratory Number:	E620	Date Sampled:	02-08-99
Chain of Custody No:	6570	Date Received:	02-09-99
Sample Matrix:	Soil	Date Extracted:	02-10-99
Preservative:	Cool	Date Analyzed:	02-10-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**0.9**	**0.2**
Diesel Range (C10 - C28)	**2.7**	**0.1**
Total Petroleum Hydrocarbons	**3.6**	**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 C 7E Landfarm. 5 Pt. Composite.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

6570

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG/AMOCO	LANDFARM JICARILLA C 7E	
Sampler: REP	Client No. 04034-10	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)						Remarks
LF-1	2.8.99	1340	E620	SOIL	1	✓						SPT COMPOSITE
												SAMPLE PRESERVE
												COOL

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	2/9/99	1330 0710		2/9/99	0710
Relinquished by: (Signature)	2/9/99	0710	Received by: (Signature)	2.9.99	1250
Relinquished by: (Signature)			Received by: (Signature)		

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	✓		