Blow (I) – risk – bedrock
BJSSS
Blow (II) – risk – bedrock
SCP – risk – bedrock

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

RECEIVED
AUG 20 1999
OIL CON. DIV.
DIST. 3

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 TRIBAL 151 - 6

Location: Unit or Qtr/Qtr Sec A Sec 9 T ~~25N~~ 26N R 5W County RIO ARRIBA

Pit Type: Separator____ Dehydrator____ Other Blow (I)

Land Type:

Pit Location: (Attach diagram)

Pit dimensions: length 21', width 21', depth 5'

Reference: wellhead X, other

Footage from reference: 96'

Direction from reference: 52 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

BJ 555 BLOW PIT (I)

Date Remediation Started: _____ **Date Completed:** 5/20/98

Remediation Method: (check all appropriate sections) Excavation X Approx. cubic yards 70

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, EXCAVATION CONSIST OF MOSTLY BEDROCK. EAST SIDEWALL & PIT BOTTOM SPRAYED W/ FERTILIZER. 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 5/20/98 Sample time 0915

Sample Results

Soil: Benzene (ppm) _____

Total BTEX (ppm) _____

Field Headspace (ppm) 5234

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 5/20/98 **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) _____

SIGNED: [signature] **DATE:** 6-15-98

CLIENT: AMOCO

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

LOCATION NO: 63555
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: TICARILLA AP TRIB. 151 WELL #: 6 PIT: BLOW I

QUAD/UNIT: A SEC: 9 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM

QTR/FOOTAGE: NE1/4 NE1/4 CONTRACTOR: P&S

DATE STARTED: 5/20/98
DATE FINISHED: _____

ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 21 FT. x 21 FT. x 5 FT. DEEP. CUBIC YARDAGE: 70

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM

LAND USE: RANGE LEASE: JIC 151 FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 96 FT. NSZE 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:

EXCAVATION CONSIST OF MOSTLY PALE ORANGE TO MOD. YELL. BROWN BEDROCK (SANDSTONE), SOFT @ 2' BELOW GRADE TO VERY HARD @ PIT BOTTOM, STRONG HC ODOR IN EAST SIDEWALL & PIT BOTTOM OVM SAMPLES, SOME STAINING EVIDENT ON BOTH EAST SIDEWALL & PIT BOTTOM, NO APPARENT HC ODOR OBSERVED W/IN EXCAVATION, DUE TO EXCAVATION BEING MOSTLY BEDROCK, NO TPH ANALYSIS WAS CONDUCTED.

EXCAVATION MOSTLY BEDROCK

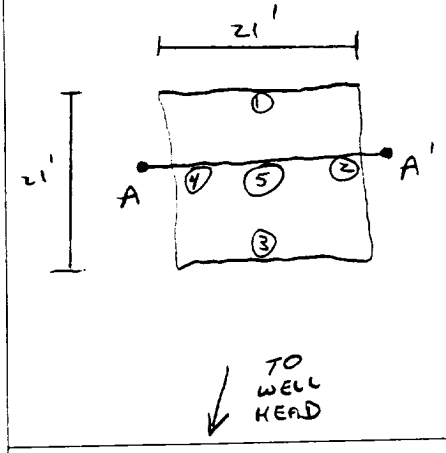
RISK ASSESSED

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
0915							

SCALE
0 FT

PIT PERIMETER



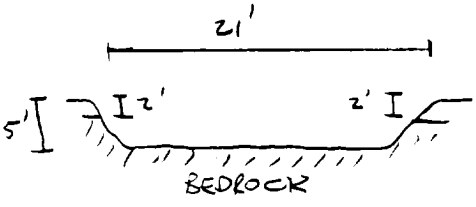
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 3'	0.0
2 @ 3'	3,899
3 @ 3'	0.0
4 @ 2'	0.0
5 @ 5'	5,234

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: 5/19/98 - AFTER. ONSITE: 5/20/98 - MORN.

Well Name:	**Jicarilla Apache Tribal 151 #6**
Well Site location:	Unit A, Sec. 9, T26N, R5W
Pit Type:	Blow Pit (I)
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 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 1.6 miles southeast of the nearest vulnerable area boundary (Cereza Canyon wash).

   (Refer to Vigas Canyon 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 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.

BT555

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 APACHE TRIBAL 151-6

Location: Unit or Qtr/Qtr Sec A Sec 9 T 26N R 5W County RIO ARRIBA

Pit Type: Separator ____ Dehydrator ____ Other BLOW (II)

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 37', width 33', depth 7'

Reference: wellhead X, other ____

Footage from reference: 200'

Direction from reference: 74 Degrees ____ East ____ North of X 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

BJ555 BLOW PIT (II)

Date Remediation Started: _____ **Date Completed:** 5/20/98

Remediation Method: (check all appropriate sections) Excavation X Approx. cubic yards 50

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 OF BEDROCK. PIT BOTTOM SPRAYED W/ FERTILIZER. 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 5/20/98 Sample time 1000

Sample Results

Soil: Benzene (ppm) _____

Total BTEX (ppm) _____

Field Headspace (ppm) 320

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 5/20/98 **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) _____

SIGNED: [signature] **DATE:** 6-15-98

CLIENT: AMOCO

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

LOCATION NO: BJ555
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICA. AP. TRIB. 151 WELL #: 6 PIT: BLOW II

QUAD/UNIT: A SEC: 9 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM

QTR/FOOTAGE: NE/4 NE/4 CONTRACTOR: P & S

DATE STARTED: 5/20/98
DATE FINISHED: _____

ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 37 FT. x 33 FT. x 7 FT. DEEP. CUBIC YARDAGE: 50

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM

LAND USE: RANGE LEASE: JIC 151 FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 200 FT. S74W 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:

ENTIRE EXCAVATION CONSIST OF BEDROCK (SANDSTONE) VERY HARD, OLIVE GRAY IN COLOR, HC ODOR OBSERVED IN BOTH PIT BOTTOM OVM SAMPLES, STAINING EVIDENT OF PIT BOTTOM ONLY, NO APPARENT HC ODOR OBSERVED W/IN EXCAVATION, DUE TO ENTIRE EXCAVATION BEING BEDROCK, NO TPH ANALYSIS WAS CONDUCTED.

EXCAVATED APPROX. 2' BELOW ORIGINAL PIT BOTTOM).

ENTIRE EXCAVATION BEDROCK

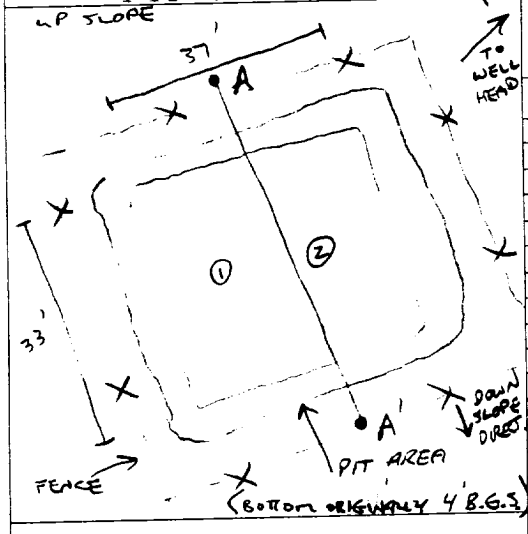
RISK ASSESSED

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1000							

SCALE
0 FT

PIT PERIMETER



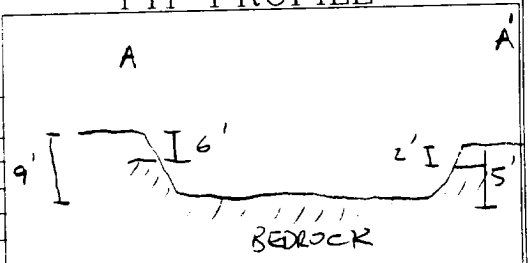
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 5'	320
2 @ 5'	227.9
3	
4	
5	

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: 5/19/98 - AFTER. ONSITE: 5/20/98 - MORN.

Well Name:	**Jicarilla Apache Tribal 151 #6**
Well Site location:	Unit A, Sec. 9, T26N, R5W
Pit Type:	Blow Pit (II)
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 7 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 7 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 1.6 miles southeast of the nearest vulnerable area boundary (Cereza Canyon wash).

   (Refer to Vigas Canyon 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 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.

BJ555

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 APACHE TRIBAL 151-6

Location: Unit or Qtr/Qtr Sec A Sec 9 T 26N R 5W County RIO ARRIBA

Pit Type: Separator X Dehydrator ____ Other ____

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 25', width 20', depth 13'

Reference: wellhead X, other ____

Footage from reference: 170'

Direction from reference: 25 Degrees ____ East North X of X 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

BJ555 SEP. PIT

Date Remediation Started: _____ **Date Completed:** 5/20/98

Remediation Method: (check all appropriate sections) Excavation X Approx. cubic yards 200

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. EXCAVATION CONSIST OF MOSTLY BEDROCK. NORTH SIDEWALL SPRAYED W/ FERTILIZER. 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 8'

Sample date 5/20/98 Sample time 1045

Sample Results

Soil: Benzene (ppm) _____ Water: Benzene (ppb) _____

Total BTEX (ppm) _____ Toluene (ppb) _____

Field Headspace (ppm) 3,265 Ethylbenzene (ppb) _____

TPH (ppm) NA 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 5/20/98 **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) _____

SIGNED: Kurt O'Neill **DATE:** 6-15-98

CLIENT: AMOCO

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

LOCATION NO: BJ555
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICA. AP. TRIB. 151 WELL #: 6 PIT: SEP

QUAD/UNIT: A SEC: 9 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM

QTR/FOOTAGE: NE/4 NE/4 CONTRACTOR: P&S

DATE STARTED: 5/20/98
DATE FINISHED: _____

ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 25 FT. x 20 FT. x 13 FT. DEEP. CUBIC YARDAGE: 200

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM

LAND USE: RANGE LEASE: JIC 151 FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 170 FT. N25W 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:

BOTTOM 2/3 OF EXCAVATION CONSIST OF BEDROCK (SHALE/SANDSTONE) COLOR VARYING FROM PALE ORANGE TO DUSKY RED, SOFT @ 5' BELOW GRADE TO VERY HARD @ PIT BOTTOM, STRONG HC ODOR IN NORTH SIDEWALL OVM SAMPLE ONLY NO APPARENT STAINING OR HC ODOR OBSERVED W/IN EXCAVATION, ONE TO EXCAVATION BEING MOSTLY BEDROCK, NO TPH ANALYSIS WAS CONDUCTED.

2/3 OF EXCAVATION BEDROCK

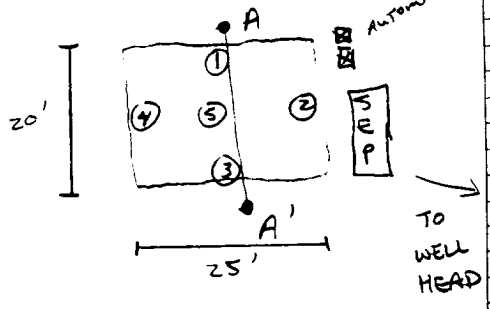
RISK ASSESSED

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1045							

SCALE
0 FT

PIT PERIMETER



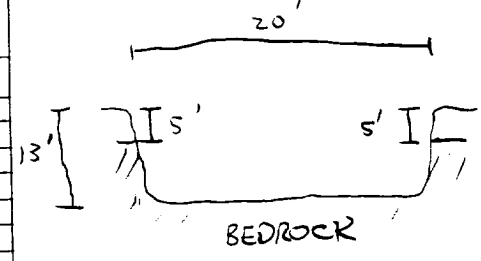
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 8'	3265
2 @ 7'	5.1
3 @ 9'	18.5
4 @ 8'	0.0
5 @ 13'	9.2

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: 5/19/98 - AFTER ONSITE: 5/20/98 - MORN.

Well Name:	**Jicarilla Apache Tribal 151 #6**
Well Site location:	Unit A, Sec. 9, 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 shale/sandstone bedrock at 13 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 13 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 1.6 miles southeast of the nearest vulnerable area boundary (Cereza Canyon wash).

   (Refer to Vigas Canyon 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.

BJ555

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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 TRIBAL 151-6

Location: Unit or Qtr/Qtr Sec A Sec 9 T 26N R 5W County RIO ARRIBA

Land Type: RANGE

Date Remediation Started: 5-20-98 **Date Completed:** 1-22-99

Remediation Method: Landfarmed ✓ Approx. cubic yards 320

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: 1-20-99 Time: 0950

Sample Results:

Field Headspace (ppm) 0.0

TPH (ppm) 6.2 Method 8015

Other ____

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

DATE 1/22/99 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: [signature] DATE: 3-31-99

CLIENT: AMOCO

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

LOCATION NO: BJ555
C.O.C. NO: 6560

FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: JICARILLA APACHE TRIBAL 151 WELL #: 6 PITS: SEP, BLOW 1, BLOW 2
QUAD/UNIT: A SEC: 9 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: NE/4 NE/4 CONTRACTOR: R&S

DATE STARTED: 1.20.99
DATE FINISHED: 1.22.99
ENVIRONMENTAL SPECIALIST: REP

SOIL REMEDIATION:
REMEDIATION SYSTEM: LANDFARM
LAND USE: RANGE
APPROX. CUBIC YARDAGE: 320
LIFT DEPTH (ft): 1-1.5

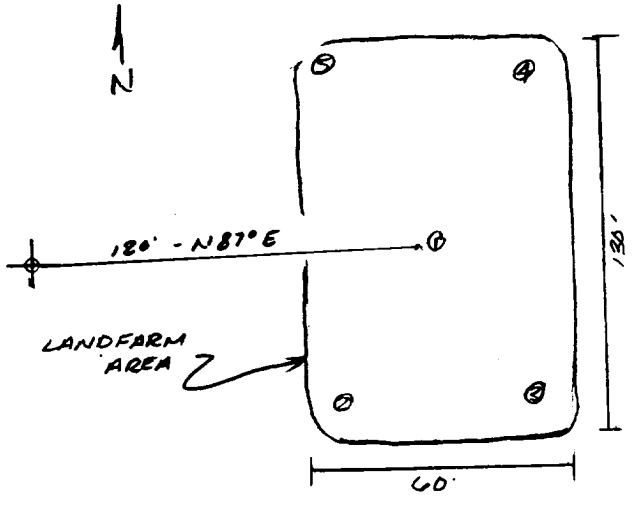
FIELD NOTES & REMARKS:
DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'
NMOCD RANKING SCORE: 0 NMOCD TPH CLOSURE STD: 5000 PPM
MODERATE YELLOWISH BROWN - BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM. NO STAINING OBSERVED, NO HC ODOR DETECTED. SAMPLING DEPTHS RANGE FROM 6"-18". TOOK A SPT COMOSITE 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)	0950	6.2

SCALE
0 FT

TRAVEL NOTES: CALLOUT: N/A ONSITE: 1.20.99

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:	01-22-99
Laboratory Number:	E562	Date Sampled:	01-20-99
Chain of Custody No:	6560	Date Received:	01-21-99
Sample Matrix:	Soil	Date Extracted:	01-22-99
Preservative:	Cool	Date Analyzed:	01-22-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**5.7**	**0.2**
Diesel Range (C10 - C28)	**0.5**	**0.1**
Total Petroleum Hydrocarbons	**6.2**	**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 Tribal 151 - 6 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

6560

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG/AMOCO	LANDFARM JICARILLA APACHE TRIBAL 151-6	
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	1.20.99	0950	E562	SOIL	1	✓					5PT. COMPOSITE
											SAMPLE PRESERVE - COOL

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	1.21.99	0805	[signature]	1.21.99	0805
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Ref COC's 6556-6561

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	✓		