Blow-ok
Tank drain - risk - bedrock
8J567
Sep - risk - bedrock

DEPUTY OIL & GAS INSPECTOR

OCT 0 8 1998

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 CONTRACT 148 - 13

Location: **Unit or Qtr/Qtr Sec** C **Sec** 15 **T** 25N **R** 5W **County** RIO ARRIBA

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

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 44', width 45', depth 7'

Reference: wellhead X, other_____

Footage from reference: 123'

Direction from reference: 49 Degrees X East North ____ of ____ West South X

RECEIVED
AUG 24 1999
OIL CON. DIV.
DIST. 3

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

BT567 BLOW PIT

Date Remediation Started: _____ **Date Completed:** 6/18/98

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 450

Landfarmed X Insitu Bioremediation _____

Other _____

Remediation Location: (i.e. landfarmed onsite, name and location of offsite facility) Onsite ____ Offsite X JICARILLA CONTRACT 148-14 (C-15-25-5)

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 4' (SOUTH SIDEWALL)

Sample date 6/18/98 Sample time 1100

Sample Results

Soil:	Benzene	(ppm)		Water: Benzene	(ppb)
	Total BTEX	(ppm)		Toluene	(ppb)
	Field Headspace	(ppm)	0.0	Ethylbenzene	(ppb)
	TPH	(ppm)	ND	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 6/18/98 **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 C Mansell **DATE:** 7-27-98

3003906042

CLIENT: AMOCO

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

LOCATION NO: BJ567
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICA. CONTR. 148 WELL #: 13 PIT: BLOW
QUAD/UNIT: C SEC: 15 TWP: 25N RNG: 5W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: 1005 FNL / 1750 FWL CONTRACTOR: P&S

DATE STARTED: 6/18/98
DATE FINISHED: _____
ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 44 FT. x 45 FT. x 7 FT. DEEP. CUBIC YARDAGE: 450
DISPOSAL FACILITY: JICA. CONTR. 148-14 REMEDIATION METHOD: LANDFARM
LAND USE: RANGE LEASE: JIC 148 FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 123 FT. S49E 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: MOSTLY DK. YELL. ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM TO DENSE, NO APPARENT STAINING OR HC ODOR OBSERVED w/in EXCAVATION, NO APPARENT HC ODOR IN ANY OF THE OVM SAMPLES.

BOTTOM - BEDROCK (SANDSTONE), PALE YELL. ORANGE, VERY HARD, SOME STAINING / DISCOLORATION OBSERVED IN SMALL ISOLATED PATCHES, NO APPARENT HC ODOR DETECTED IN EXCAVATION OR OVM SAMPLE.

BEDROCK BOTTOM

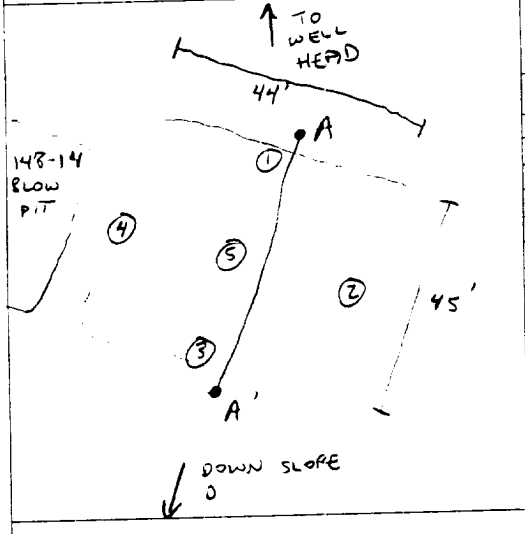
CLOSED

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1100	③ @ 4'	TPH-1991	5	20	1:1	4	ND

SCALE
0 FT

PIT PERIMETER



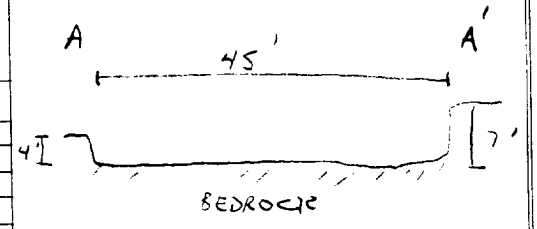
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 5'	0.0
2 @ 4'	0.0
3 @ 4'	0.0
4 @ 5'	0.0
5 @ 7'	13.2

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: 6/16/98 - MORN. ONSITE: 6/18/98 - 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:	3 @ 4'	Date Analyzed:	06-18-98
Project Location:	Jicarilla Contract 148 - 13	Date Reported:	06-18-98
Laboratory Number:	TPH-1991	Sample Matrix:	Soil

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

ND = Not Detectable at stated detection limits.

QA/QC:

QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
1684	1712	1.65

*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 - BJ567

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:	3 @ 4'	Date Analyzed:	06-18-98
Project Location:	Jicarilla Contract 148 - 13	Date Reported:	06-18-98
Laboratory Number:	TPH-1991	Sample Matrix:	Soil

Sample Weight:	5.00	grams
Volume Freon:	20.00	mL
Dilution Factor:	1	(unitless)
TPH Reading:	4	mg/kg

TPH Result:	16.0	mg/kg
Reported TPH Result:	16	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.
	1684	1712	1.65

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

Comments: Blow Pit - BJ567

BT567

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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 CONTRACT 148-13

Location: **Unit or Qtr/Qtr Sec** C **Sec** 15 **T** 25N **R** 5W **County** RIO ARRIBA

Pit Type: **Separator**____ **Dehydrator**____ **Other** PRODUCTION TANK

Land Type: RANGE

Pit Location: (Attach diagram)

Pit dimensions: length 28', width 25', depth 3'

Reference: wellhead X, other_____

Footage from reference: 306'

Direction from reference: 0 Degrees X East North ____ 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 567 PROD. TANK PIT

Date Remediation Started: _____ **Date Completed:** 6/18/98

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 35

Landfarmed X Insitu Bioremediation _____

Other _____

Remediation Location: (i.e. landfarmed onsite, name and location of offsite facility) Onsite ____ Offsite X JICARILLA CONTRACT 148-14 (C-15-25-5)

General Description of Remedial Action: Excavation. EXCAVATION MOSTLY 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 3' (PIT BOTTOM)

Sample date 6/18/98 Sample time 0930

Sample Results

Soil:	Benzene	(ppm)		Water: Benzene	(ppb)
	Total BTEX	(ppm)		Toluene	(ppb)
	Field Headspace	(ppm)	156.9	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 6/18/98 **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.

SIGNED: Kim C Marcus **DATE:** 7-27-98

CLIENT: AMOCO

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

LOCATION NO: 81567
C.O.C. NO: ____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICA. CONTR. 148 WELL #: 13 PIT: PROD.
QUAD/UNIT: C SEC: 15 TWP: 25N RNG: 5W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: 1005' FNL | 1750' FWL CONTRACTOR: P&S

DATE STARTED: 6/18/98
DATE FINISHED: ____
ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 28 FT. x 25 FT. x 3 FT. DEEP. CUBIC YARDAGE: 35
DISPOSAL FACILITY: JICA. CONTR. 148 - 14 REMEDIATION METHOD: LANDFARM
LAND USE: RANGE LEASE: JIC 148 FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 306 FT. ONE EAST 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 MOSTLY BEDROCK (SANDSTONE) PALE YELL. ORANGE, FRIABLE NEAR GROUND SURFACE TO VERY HARD @ PIT BOTTOM, BOTTOM OLIVE GRAY IN COLOR W/ HC ODOR, DUE TO BEDROCK, NO TPH ANALYSIS WAS CONDUCTED.

EXCAVATION MOSTLY BEDROCK

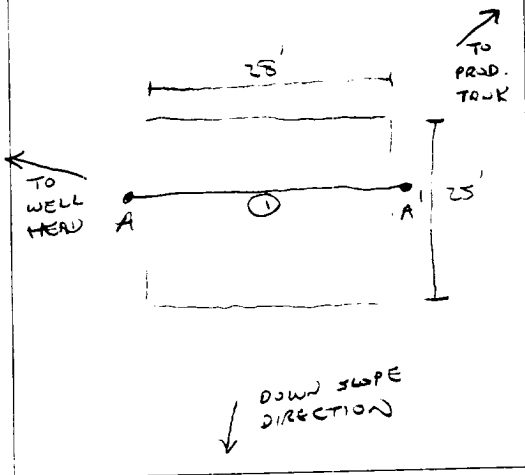
RISK ASSESSED

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
0930							

SCALE
0 FT

PIT PERIMETER



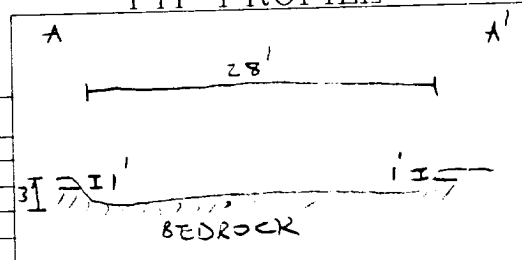
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 3'	156.9
2	
3	
4	
5	

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: 6/16/98 - MORN. ONSITE: 6/18/98 - MORN.

Well Name:	**Jicarilla Contract 148 #13**
Well Site location:	Unit C, Sec. 15, T25N, R5W
Pit Type:	Production Tank Pit
Producing Formation:	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 3 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 3 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 0.42 miles east of the nearest vulnerable area boundary (Gonzales Canyon wash).

   (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 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.

BJ567

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 CONTRACT 148 - 13

Location: **Unit or Qtr/Qtr Sec** C **Sec** 15 **T** 25N **R** 5W **County** RIO ARRIBA

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

Land Type: ____

Pit Location: (Attach diagram)

Pit dimensions: length 17', width 22', depth 3'

Reference: wellhead X, other ____

Footage from reference: 180'

Direction from reference: 84 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

BJ567 SEP. PIT

Date Remediation Started: _____ **Date Completed:** 6/18/98

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 25

Landfarmed X Insitu Bioremediation _____

Other _____

Remediation Location: (i.e. landfarmed onsite, name and location of offsite facility) Onsite ____ Offsite X JICARILLA CONTRACT 148-14 (C-15-25-5)

General Description of Remedial Action: Excavation. EXCAVATION MOSTLY 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 3' (PIT BOTTOM)

Sample date 6/18/98 Sample time 0945

Sample Results

Soil:	Benzene	(ppm)		Water: Benzene	(ppb)
	Total BTEX	(ppm)		Toluene	(ppb)
	Field Headspace	(ppm)	325	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 6/18/98 **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:** 7-27-98

CLIENT: AMOCO

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

LOCATION NO: BJ567
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICA. CONTR. 148 WELL #: 13 PIT: SEP
QUAD/UNIT: C SEC: 15 TWP: 25N RNG: 5W PM: NM CNTY: RA ST: NM
QTR/FOOTAGE: 1005' FNL / 1750' FWL CONTRACTOR: P&S

DATE STARTED: 6/18/98
DATE FINISHED: _____
ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 17 FT. x 22 FT. x 3 FT. DEEP. CUBIC YARDAGE: 25
DISPOSAL FACILITY: JICA. CONTR. 148-14 REMEDIATION METHOD: LANDFARM
LAND USE: RANGE LEASE: JIC 148 FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 180 FT. N84E 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 MOSTLY BEDROCK (SANDSTONE), PALE YELL. ORANGE, VERY HARD, LT. TO DK. GRAY DISCOLORATION W/ STRONG HC ODOR OBSERVED ON PIT BOTTOM, DUE TO BEDROCK NO TPH ANALYSIS WAS CONDUCTED.

EXCAVATION MOSTLY BEDROCK

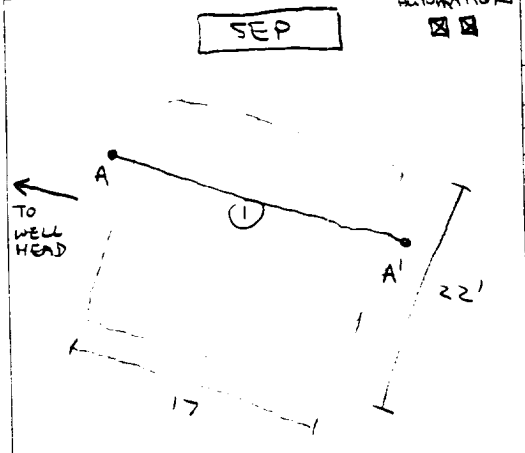
RISK ASSESSED

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
0945							

SCALE
0 FT

PIT PERIMETER



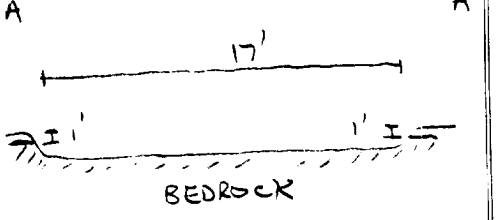
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 3'	325
2	
3	
4	
5	

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: 6/16/98 - MORN. ONSITE: 6/18/98 - MORN.

Well Name:	**Jicarilla Contract 148 #13**
Well Site location:	Unit C, Sec. 15, T25N, R5W
Pit Type:	Separator Pit
Producing Formation:	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 3 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 3 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 0.42 miles east of the nearest vulnerable area boundary (Gonzales Canyon wash).

   (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 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.