

Blow - Risk - Denial
BT 285 Sep-Risk-b.111
SUBMIT 1 COPY TO
NATURAL RESOURCE DEPT
AND OIL & GAS ADMINISTRATION
RECEIVED
AUG 16 1999
OIL CON. DIV.
DIST. 3

TOHL CON. DIV.
DIST. 3

Land Type: RANGE

Direction from reference: 90 Degrees X East of North X
West South

Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 100 feet	(20 points)	0
	100 feet to 1000 feet	(10 points)	
	Greater than 1000 feet	(0 points)	

RANKING SCORE (TOTAL POINTS): 0

Date Remediation Started: _____ Date Completed: 5/19/95

Remediation Method: Excavation ☒ Approx. cubic yards 1200
 Check all appropriate (i.e. landfarming, phytoremediation, etc.)
 Landfarmed ☐ Insitu Bioremediation ☐
 Other COMPOSTED

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

General Description of Remedial Action: ExcavationGroundwater Encountered: No ☒ Yes ☐ Depth _____

Final Pit: Sample location see Attached Documents - MULTIPLE SAMPLES
 Closure Sampling: _____
 (if multiple samples, attach sample results and diagram of sample locations and depths)
 Sample depth 25'
 Sample date 5/16/95 & 5/24/95 Sample time 0945 & 1355
 Sample Results

Soil: Benzene	(ppm)	_____	Water: Benzene	(ppb)	<u>1.1</u>
Total BTEX	(ppm)	_____	Toluene	(ppb)	<u>0.9</u>
Field Headspace	(ppm)	<u>619</u>	Ethylbenzene	(ppb)	<u>2.1</u>
TPH	(ppm)	<u>13,200</u>	Total Xylenes	(ppb)	<u>28.8</u>

Groundwater Sample: Yes ☐ No ☒ (If yes, attach sample results)

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

DATE 5/25/95 PRINTED NAME Buddy D. Shaw
 SIGNATURE Buddy D. Shaw AND TITLE Environmental Coordinator

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

APPROVED: YES ☐ NO ☐ (REASON) _____

SIGNED: _____ DATE: _____

FAK TO FRANK 5-18-95 PEO

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BJ285</u> C.O.C. NO: <u>2933</u>
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FIELD REPORT: PIT CLOSURE VERIFICATION

LOCATION: NAME: <u>JICARILLA CONTRACT 146</u> WELL #: <u>11</u> PIT: <u>RLOW</u>	DATE STARTED: <u>5-16-95</u> DATE FINISHED: <u>5-19-95</u>
QUAD/UNIT: <u>K</u> SEC: <u>4</u> TWP: <u>25 N</u> RNG: <u>5 W</u> BM: <u>NM</u> CNTY: <u>RA</u> ST: <u>NM</u>	ENVIRONMENTAL SPECIALIST: <u>PEO/NV</u>
QTR/FOOTAGE: <u>NE/SW</u> CONTRACTOR: <u>EPL</u>	

EXCAVATION APPROX. 35 FT. x 35 FT. x 25 FT. DEEP. CUBIC YARDS: 1200
DISPOSAL FACILITY: ON SITE REMEDIATION METHOD: COMPOST
LAND USE: RANGE LEASE: FED LSE # 146 FORMATION: _____

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 260 FEET EAST FROM WELLHEAD.

DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'

NMOC RANKING SCORE: 20 NMOC TPH CLOSURE STD: 100 PPM

SOIL AND EXCAVATION DESCRIPTION: PIT DISPOSITION: ABANDONED

PIT EXCAVATED TO SANDSTONE BOTTOM. BOTTOM GRAY WITH ODOOR.
SOME MOISTURE IN PIT BOTTOM ON TOP OF SANDSTONE - MOST LIKELY RUNOFF WATER PERCHED ON SANDSTONE. SOIL IS SAND TO SILTY SAND - MOIST - MED. → DARK BROWN.

NV 5/19 - DRILLED BORING WITHIN EXCAVATED AREA AFTER PARTIAL FILLING WITH CLEAN MATERIAL UP APPROX. 7' ABOVE PIT BOTTOM. DRILLING SLOW (1' PER HR. FOR THE LAST 1' TO 2') BORING SLIGHTLY DEVIATED. SAMPLES COLLECTED FROM AUGER FLIGHT POSSIBLY DERIVED FROM BOTTOM OF BORING OR MAY CONTAIN SOME CONTAMINATED MATERIAL FROM PIT BOTTOM AREA DUE TO DEVIATION. FIELD 418.1 CALCULATIONS SAMPLES CONTAINED SOME HC ODOR.

RISK ASSESSED

SCALE

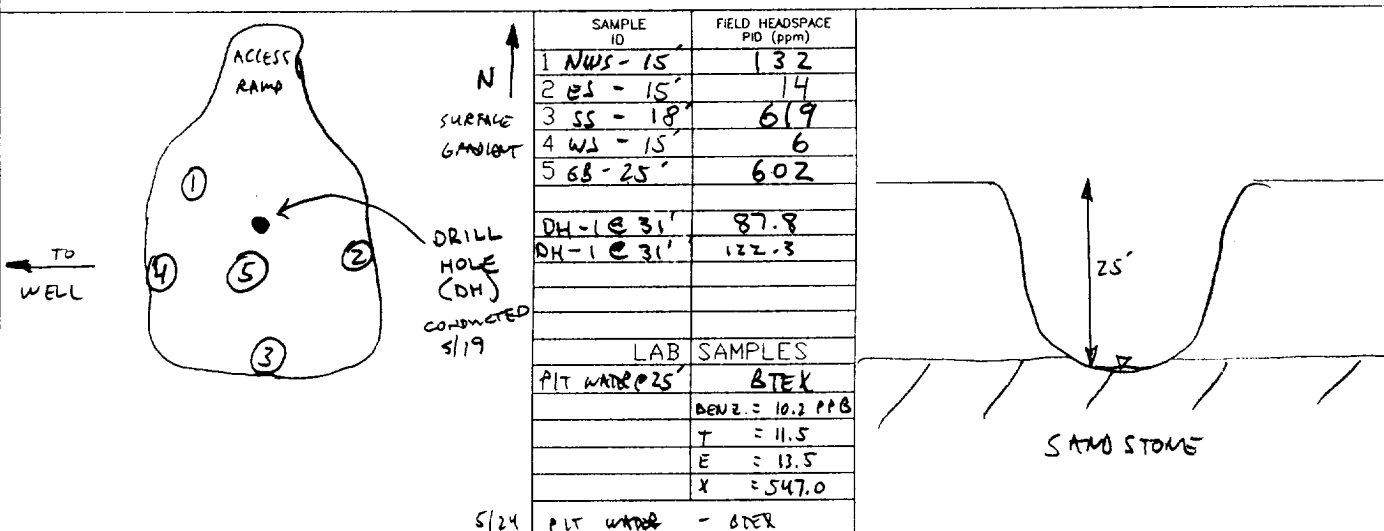
0 10 20 FT

PIT PERIMETER

OVM RESULTS

PIT PROFILE

417 **CONDITIONAL**



TRAVEL NOTES: CALLOUT: 5-15-95 ONSITE: 5-16-95 0915
LESSON ON SITE - JIC. TRIBE

Well Name:

Well Site location:

Pit Type:

Producing Formation:

Pit Category:

Horizontal Distance to Surface Water:

Vicinity Groundwater Depth:

Jicarilla Contract 146 #11

Unit K, Sec. 4, T25N, R5W

Blow Pit

Basin Dakota/Mesa Verde

Non Vulnerable

> 1000 ft.

> 100 ft.

RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 25 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 25 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 0.34 miles northeast 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 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.

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:	South Side @ 18'	Date Analyzed:	5-16-95
Project Location:	Jicarilla Contract 146-11	Date Reported:	5-16-95
Laboratory Number:	TPH-1504	Sample Matrix:	Soil

Parameter -----	Result, mg/kg -----	Detection Limit, mg/kg -----
Total Recoverable Petroleum Hydrocarbons	13,200	100

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg -----	Duplicate TPH mg/kg -----	% *Diff. -----
	648	604	7

*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 - BJ285

R. E. O'Neil
Analyst

Thomas J. J.
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:

South Side @ 18'

Date Analyzed:

5-16-95

Project Location:

Jicarilla Contract 146-11

Date Reported:

5-16-95

Laboratory Number:

TPH-1504

Sample Matrix:

Soil

Sample Weight: 10.00 grams
Volume Freon: 20.00 mL
Dilution Factor: 10 (unitless)
TPH Reading: 660 mg/kg

TPH Result: 13200.0 mg/kg
Reported TPH Result: 13200.0 mg/kg
Actual Detection Limit: 100.0 mg/kg
Reported Detection Limit: 100 mg/kg

QA/QC:

Original
TPH mg/kg

Duplicate
TPH mg/kg

%
Diff.

648

604

7

Comments:

*****Max Characters*****

Comments:

Blow Pit - BJ285

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *R.E. O'Neill*
Company: *Blagg Engineering, Inc.*
Address: *P.O. Box 87*
City, State: *Bloomfield, NM 87413*

Date: *5/18/95*
Lab ID: *2933*
Sample ID: *6387*
Job No. *2-1000*

Project Name: *Jicarilla 146-11*
Project Location: *Pit Water @ 25'*
Sampled by: *REO* Date: *5/16/95*
Analyzed by: *DC* Date: *5/17/95*
Sample Matrix: *Water*

Time: *9:45*

Aromatic Volatile Organics

<i>Component</i>	<i>Measured Concentration ug/L</i>	<i>Detection Limit Concentration ug/L</i>
<i>Benzene</i>	<i>10.2</i>	<i>0.2</i>
<i>Toluene</i>	<i>11.5</i>	<i>0.2</i>
<i>Ethylbenzene</i>	<i>13.5</i>	<i>0.2</i>
<i>m,p-Xylene</i>	<i>432.2</i>	<i>0.2</i>
<i>o-Xylene</i>	<i>114.8</i>	<i>0.2</i>
	<i>TOTAL 582.3 ug/L</i>	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *Da 4*
Date: *5/18/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Nelson Velez*
Company: *Blagg Engineering, Inc.*
Address: *P.O. Box 87*
City, State: *Bloomfield, NM 87413*

Date: *5/25/95*
Lab ID: *2939*
Sample ID: *6510*
Job No. *2-1000*

Project Name: *Jicarilla Contract 146-11*
Project Location: *PW2 @ GW (25') - Blow Pit*
Sampled by: *NV* Date: *5/24/95*
Analyzed by: *DC* Date: *5/25/95*
Sample Matrix: *Water*

Time: *13:55*

Aromatic Volatile Organics

<i>Component</i>	<i>Measured Concentration ug/L</i>	<i>Detection Limit Concentration ug/L</i>
<i>Benzene</i>	<i>1.1</i>	<i>0.2</i>
<i>Toluene</i>	<i>0.9</i>	<i>0.2</i>
<i>Ethylbenzene</i>	<i>2.1</i>	<i>0.2</i>
<i>m,p-Xylene</i>	<i>0.5</i>	<i>0.2</i>
<i>o-Xylene</i>	<i>28.3</i>	<i>0.2</i>
	<i>TOTAL 32.9 ug/L</i>	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *Da 4*
Date: *5/25/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

— TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT —

CHAIN OF CUSTODY RECORD

ON SITE

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 5-16-95

Page 1 of 1

B5285

[illegible]

Distribution:	White – On Site	Yellow – LAB	Pink – Sampler	Goldenrod – Client
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CHAIN OF CUSTODY RECORD

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

[illegible]

Distribution:	White – On Site	Yellow – LAB	Pink – Sampler	Goldenrod – Client
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85 285

**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 146-11
Location: Unit or Qtr/Qtr Sec K Sec 4 T 25N R 5W County RIO ARriba
Pit Type: Separator ☒ Dehydrator ☐ Other ☐
Land Type: RANGE

Pit Location: Pit dimensions: length 25', width 33', depth 28'
(Attach diagram) Reference: wellhead ☒, other ☐
Footage from reference: 170'
Direction from reference: 80 Degrees ☒ East of North ☒
West South

Depth To Groundwater: (Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 points)	<u>0</u>
Distance to an Ephemeral Stream (Downgradient dry wash greater than ten feet in width)	Less than 100 feet (10 points) Greater than 100 feet (0 points)	<u>0</u>
Distance to Nearest Lake, Playa, or Watering Pond (Downgradient lakes, playas and livestock or wildlife watering ponds)	Less than 100 feet (10 points) Greater than 100 feet (0 points)	<u>0</u>
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or: less than 1000 feet from all other water sources)	Yes (20 points) No (0 points)	<u>0</u>
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 100 feet (20 points) 100 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)	<u>0</u>

RANKING SCORE (TOTAL POINTS): 0

BJ285

Date Remediation Started: _____ Date Completed: 5/19/95

Remediation Method: Excavation X Approx. cubic yards 800
(check all appropriate actions) Landfarmed _____ Insitu Bioremediation _____
Other COMPOSTED

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

General Description of Remedial Action: Excavation - SHALE SANDSTONE BOTTOMGroundwater Encountered: No X Yes _____ Depth _____

Final Pit: Sample location see Attached Documents
Closure Sampling: _____
(if multiple samples, attach sample results and diagram of sample locations and depths)

Sample depth 20'
Sample date 5/19/95 Sample time 1330

Sample Results

Soil: Benzene	(ppm)	_____	Water: Benzene	(ppb)	_____
Total BTEX	(ppm)	_____	Toluene	(ppb)	_____
Field Headspace	(ppm)	<u>573</u>	Ethylbenzene	(ppb)	_____
TPH	(ppm)	<u>13,320</u>	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 KNOWLEDGE AND BELIEF

DATE 5/19/95 PRINTED NAME Buddy D. Shaw
SIGNATURE Buddy D. Shaw AND TITLE Environmental Coordinator

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

APPROVED: YES _____ NO _____ (REASON) _____

SIGNED: _____ DATE: _____

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>Bjz85</u> C.O.C. NO: _____
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FIELD REPORT: CLOSURE VERIFICATION		PAGE No: <u>1</u> of <u>1</u>
LOCATION: NAME: <u>JICARILLA CONTRACT 146</u> WELL #: <u>11</u> PIT: <u>SEP</u>		DATE STARTED: <u>5/19/95</u>
QUAD/UNIT: <u>K</u> SEC: <u>4</u> TWP: <u>25N</u> RNG: <u>5W</u> PM: <u>NM</u> CNTY: <u>RA</u> ST: <u>NM</u>		DATE FINISHED: _____
QTR/FOOTAGE: <u>NE 1/4 SW 1/4</u> CONTRACTOR: <u>EPC</u>		ENVIRONMENTAL SPECIALIST: <u>NV</u>

EXCAVATION APPROX. <u>25</u> FT. x <u>33</u> FT. x <u>28</u> FT. DEEP. CUBIC YARDAGE: <u>800</u>
DISPOSAL FACILITY: <u>ON-SITE</u> REMEDIATION METHOD: <u>COMPOSTED</u>
LAND USE: <u>RANGE</u> LEASE: <u>FED. 146</u> FORMATION: <u>MV/DK</u>

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY <u>170</u> FT. <u>N80E</u> FROM WELLHEAD.		
DEPTH TO GROUNDWATER: <u><50'</u>	NEAREST WATER SOURCE: <u>>1000'</u>	NEAREST SURFACE WATER: <u>>1000'</u>
NMOC RANKING SCORE: <u>20</u>	NMOC TPH CLOSURE STD: <u>100</u> PPM	

SOIL AND EXCAVATION DESCRIPTION:	CHECK ONE: <input type="checkbox"/> PIT ABANDONED <input checked="" type="checkbox"/> STEEL TANK INSTALLED
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GRAYISH ORANGE TO DK. YELL. ORANGE SAND TO SILTY SAND MOSTLY NON-COHESIVE, SOME SILTY SAND COHESIVE, SLIGHTLY MOIST, FIRM, STRONG HC ODOR IN WEST SIDEWALL OVM SAMPLE.

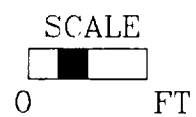
BOTTOM - SHALE/SANDSTONE, DENSE, STRONG HC ODOR.
HARD

CONDITIONAL

RISK ASSESSED

FIELD 418.1 CALCULATIONS

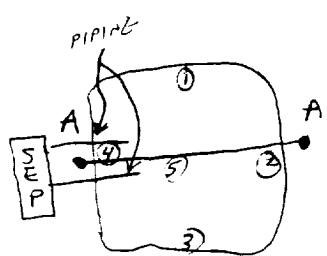
TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1330	<u>4 @ 20'</u>	<u>TPH-1507</u>	<u>5</u>	<u>20</u>	<u>10:1</u>	<u>333</u>	<u>13,320</u>



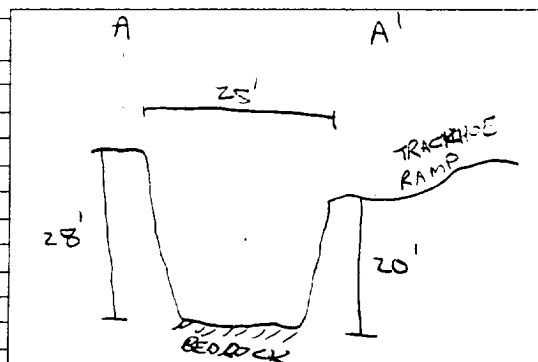
PIT PERIMETER

OVM RESULTS

PIT PROFILE



SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 21'	8.2
2 @ 23'	3.2
3 @ 23'	8.6
4 @ 20'	573
5 @ 28'	555



LAB SAMPLES		
SAMPLE ID	ANALYSIS	TIME

TRAVEL NOTES: CALLOUT: <u>5/18/95 AFTER.</u> ONSITE: <u>5/19/95 MORN.</u>

Well Name:

Well Site location:

Pit Type:

Producing Formation:

Pit Category:

Horizontal Distance to Surface Water:

Vicinity Groundwater Depth:

Jicarilla Contract 146 #11

Unit K, Sec. 4, T25N, R5W

Separator Pit

Basin Dakota/Mesa Verde

Non Vulnerable

> 1000 ft.

> 100 ft.

RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 28 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 28 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 0.34 miles northeast 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 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.

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 @ 20'	Date Analyzed:	05-19-95
Project Location:	Jicarilla Contract 146 - 11	Date Reported:	05-19-95
Laboratory Number:	TPH-1507	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	13,300	200

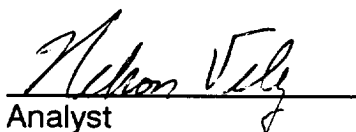
ND = Not Detectable at stated detection limits.

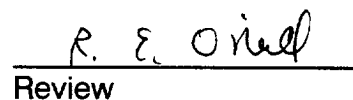
QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	648	604	7.03

*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: Separator Pit - BJ285


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 @ 20'

Date Analyzed:

05-19-95

Project Location:

Jicarilla Contract 146 - 11

Date Reported:

05-19-95

Laboratory Number:

TPH-1507

Sample Matrix:

Soil

Sample Weight:

5.00 grams

Volume Freon:

20.00 mL

Dilution Factor:

10 (unitless)

TPH Reading:

333 mg/kg

TPH Result:

13320.0 mg/kg

Reported TPH Result:

13300 mg/kg

Actual Detection Limit:

200.0 mg/kg

Reported Detection Limit:

200 mg/kg

QA/QC:

Original
TPH mg/kg

Duplicate
TPH mg/kg

%
Diff.

648

604

7.03

Comments:

*****Max Characters*****

Comments:

Separator Pit - BJ285

85285

**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 CONTRACT 146-11
Location: Unit or Qtr/Qtr Sec K Sec 4 T ZSN R SW County RIO ARriba
Land Type: RANGE

Date Remediation Started: 5/16/95 **Date Completed:** 8/25/97
Remediation Method: Landfarmed Approx. cubic yards 2,450
Composted (ALSO INCLUDES 300 C.Y. FROM JICARILLA CONTRACT 146-12)
Other STOCKPILED (MATERIAL ORIGINALLY LANDFARMED & COMPOSTED)

<p>Depth To Groundwater: (pts.) <u>20</u> Distance to an Ephemeral Stream (pts.) <u>0</u> Distance to Nearest Lake, Playa, or Watering Pond (pts.) <u>0</u> Wellhead Protection Area: (pts.) <u>0</u> Distance To Surface Water: (pts.) <u>0</u> RANKING SCORE (TOTAL POINTS): <u>20</u></p>	<p style="text-align: center;">Final Closure Sampling:</p> <p>Sampling Date: <u>8/19/97</u> Time: <u>0945</u> Sample Results: Field Headspace (ppm) <u>0.0</u> TPH (ppm) <u>39.2</u> Method <u>8015</u> Other <u> </u></p>
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I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 8/25/97 **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 ☒ NO ☐ (REASON)

SIGNED: Ken C. Mammill **DATE:** 9-2-97

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BT285</u> C.D.C. NO: <u>5385</u>
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FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: <u>JICARILLA CONTR. 146</u> WELL #: <u>11</u> PITS: <u>SEP, BLOW (2)</u> QUAD/UNIT: <u>K</u> SEC: <u>4</u> TWP: <u>25N</u> RNG: <u>5W</u> PM: <u>NM</u> CNTY: <u>KA</u> ST: <u>NM</u> UTE FOOTAGE: <u>NE/4 SW/4</u> CONTRACTOR: <u>ERC + P+S</u>	DATE STARTED: <u>8/19/97</u> DATE FINISHED: _____ ENVIRONMENTAL SPECIALIST: <u>NV</u>
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SOIL REMEDIATION:

REMEDIATION SYSTEM: STOCKPILED APPROX. CUBIC YARDAGE: 2,450
 LAND USE: RANGE LIFT DEPTH (ft): NA

FIELD NOTES & REMARKS:

DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'
 NMDCD FARMING SLOPE: 20 NMDCD TPH CLOSURE STD: 100 PPM

MOSTLY DR. YELL. BROWN SAND TO SILTY SAND W/ MANURE, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HC ODOR OR DISCOLORATION OBSERVED W/IN ANY OF THE SAMPLE PTS. MATERIAL ORIGINALLY COMPOSTED (1500 CUBIC YDS.) & LANDFARMED (650 CUBIC YDS.) ADJACENT WELL SITE (JICARILLA CONTRACT 146-12) INCLUDED (ORIGINALLY LANDFARMED 300 CUBIC YDS). NO APPARENT HC ODOR OBSERVED IN OVM SAMPLE.

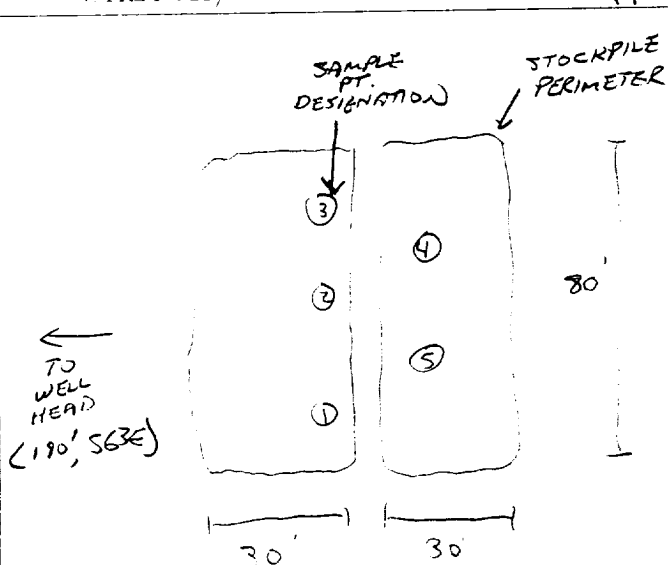
(CLOSED)

FIELD 418.1 CALCULATIONS

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

5 PT. COMPOSITE COLLECTED FOR LAB ANALYSIS.

SKETCH/SAMPLE LOCATIONS



OVM RESULTS

LAB SAMPLES

SAMPLE ID	FIELD HEADSPACE PID (ppm)	SAMPLE ID	ANALYSIS	TIME	RESULTS
SP-1	0.0	SP-1	TPH (8015)	0945	39.2

SCALE

 0 FT

TRAVEL NOTES: CALLOUT: NA ONSITE: 8/19/97

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

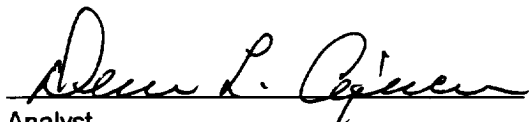
Client:	Blagg / Amoco	Project #:	04034-10
Sample ID:	SP - 1	Date Reported:	08-20-97
Laboratory Number:	B884	Date Sampled:	08-19-97
Chain of Custody No:	5385	Date Received:	08-19-97
Sample Matrix:	Soil	Date Extracted:	08-19-97
Preservative:	Cool	Date Analyzed:	08-20-97
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

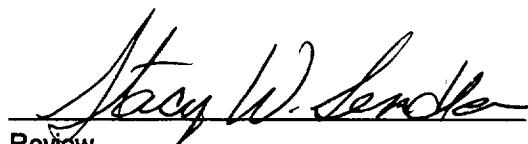
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	5.4	0.2
Diesel Range (C10 - C28)	33.8	0.1
Total Petroleum Hydrocarbons	39.2	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: Jicarilla Contract 146-11 Stockpiles. 5 pt. Composite.


Analyst


Review

**QUALITY ASSURANCE / QUALITY CONTROL
DOCUMENTATION**

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified Nonhalogenated Volatile Organic Total Petroleum Hydrocarbons

Quality Assurance Report

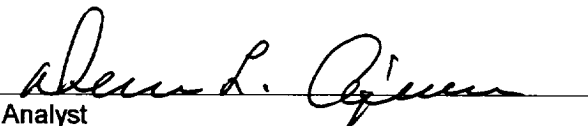
Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	08-20-97
Laboratory Number:	08-20-TPH.BLANK	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-20-97
Condition:	N/A	Analysis Requested:	TPH

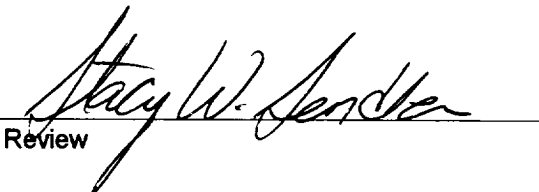
Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: QA/QC for samples B883 - B887.


Analyst


Review

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:	Matrix Duplicate	Date Reported:	08-20-97
Laboratory Number:	B883	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	Cool	Date Analyzed:	08-20-97
Condition:	Cool and Intact	Analysis Requested:	TPH

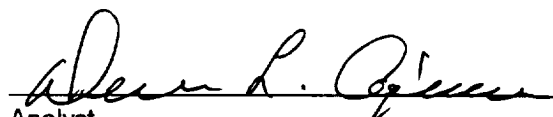
Parameter	Sample Result (mg/Kg)	Duplicate Result (mg/Kg)	Percent Difference
Gasoline Range (C5 - C10)	22.4	21.3	5.0%
Diesel Range (C10 - C28)	1,100	1,070	2.5%
Total Petroleum Hydrocarbons	1,120	1,090	2.6%

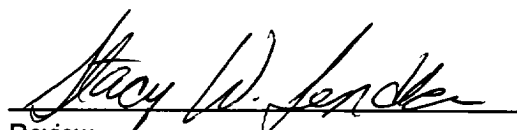
ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Max Difference
	Petroleum Hydrocarbons	30%

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: QA/QC for samples B883 - B887.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Hydrocarbons Total Petroleum Hydrocarbons Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spike	Date Reported:	08-20-97
Laboratory Number:	B883	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	TPH	Date Analyzed:	08-20-97
Condition:	N/A		

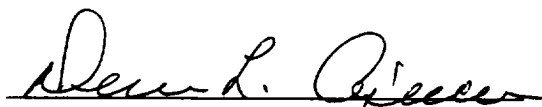
Parameter	Sample Result (mg/kg)	Spike Added (mg/kg)	Spiked Sample Result (mg/kg)	Det. Limit (mg/kg)	Percent Recovery
Gasoline Range (C5 - C10)	22.4	250	269	0.2	99%
Diesel Range (C10 - C28)	1,100	250	1,350	0.1	100%
Total Petroleum Hydrocarbons	1,120	500	1,620	0.2	100%

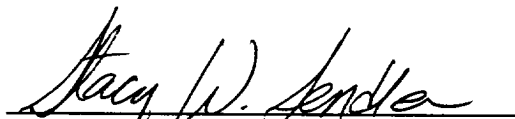
ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Acceptance Range
	Petroleum Hydrocarbons	75 - 125%

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: QA/QC for samples B883 - B887.


Analyst


Review

[illegible]

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BJ 285</u> C.D.C. NO: _____
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FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: <u>JIC. CONTRAST 146 WELL #:</u> <u>11</u> PITS: <u>SEP. BLOW</u>	DATE STARTED: <u>8/3/95</u>
QUAD/UNIT: <u>K SEC: 4 TWP: 25N RNG: SW PM: NM CNTY: RA ST: NM</u>	DATE FINISHED: _____
QTR/FOOTAGE: <u>NE SW</u> CONTRACTOR: <u>EPC</u>	ENVIRONMENTAL SPECIALIST: <u>NV</u>

SOIL REMEDIATION:

REMEDICATION SYSTEM: COMPOSTED APPROX. CUBIC YARDAGE: 1500

LAND USE: RANGE LEASE: 146

FIELD NOTES & REMARKS:

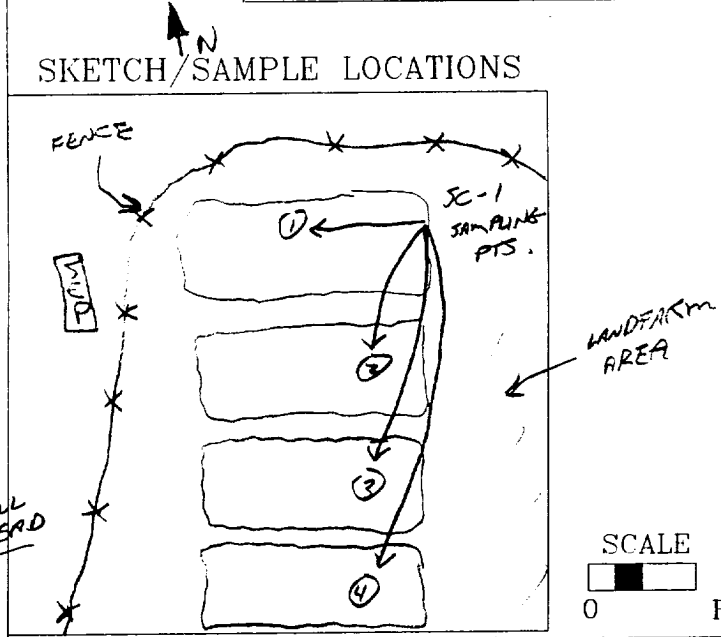
DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'

NMOCB RANKING SCORE: 20 NMOCB TPH CLOSURE STD: 100 PPM

DK. YELL. BROWN TO GRAYISH BLACK SILTY CLAY, COHESIVE, SLIGHTLY MOIST, FIRM TO STIFF, STRONG HC ODOR IN OVM SAMPLES. UNKNOWN IF JICARILLA CONTRAST 146 - 12 - BLOW PIT IS INCLUDED IN COMPOST PILES OR LANDFARM.

FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	ML. FREON	DILUTION	READING	CALC. ppm
SC-1	TPH-1554	5	20	10:1	211	8440



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
SC-1	375

LAB SAMPLES

SAMPLE ID	ANALYSIS

TRAVEL NOTES: CALLOUT: 8/1/95 MORN. ONSITE: 8/3/95 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:	SC - 1	Date Analyzed:	08-03-95
Project Location:	Jicarilla Contract 146-11	Date Reported:	08-03-95
Laboratory Number:	TPH-1554	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
-----	-----	-----
Total Recoverable Petroleum Hydrocarbons	8,400	200

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	-----	-----	-----
	1040	956	8.42

*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: Compost piles: Composite sample - BJ285


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

Sample ID: SC - 1

Project Location: Jicarilla Contract 146-11

Laboratory Number: TPH-1554

Project #:

Date Analyzed: 08-03-95

Date Reported: 08-03-95

Sample Matrix: Soil

Sample Weight: 5.00 grams
Volume Freon: 20.00 mL
Dilution Factor: 10 (unitless)
TPH Reading: 211 mg/kg

TPH Result: 8440.0 mg/kg
Reported TPH Result: 8400 mg/kg
Actual Detection Limit: 200.0 mg/kg
Reported Detection Limit: 200 mg/kg

QA/QC:	Original TPH mg/kg -----	Duplicate TPH mg/kg -----	% Diff. -----
	1040	956	8.42

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

Comments: Compost piles: Composite sample - BJ285

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BJ285</u> C.O.C. NO: _____
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FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: <u>JIC - CONTRACT 146</u> WELL #: <u>11</u> PITS: <u>SEP., BLOW</u> QUAD/UNIT: <u>K</u> SEC: <u>4</u> TWP: <u>25N</u> RNG: <u>5W</u> PM: <u>NM</u> CNTY: <u>RF</u> ST: <u>NM</u> QTR/FOOTAGE: <u>NE SW</u> CONTRACTOR: <u>EPC</u>	DATE STARTED: <u>8/3/95</u> DATE FINISHED: _____ ENVIRONMENTAL SPECIALIST: <u>NV</u>
---	--

SOIL REMEDIATION:

REMEDICATION SYSTEM: <u>LANDFARM</u>	APPROX. CUBIC YARDAGE: <u>650</u>
LAND USE: <u>RANGE</u>	LEASE: <u>146</u>

FIELD NOTES & REMARKS:

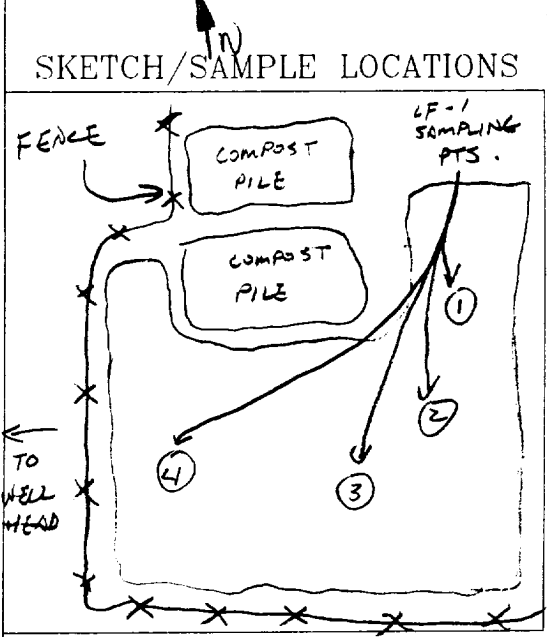
DEPTH TO GROUNDWATER: 50' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'

NMDCD RANKING SCORE: 20 NMDCD TPH CLOSURE STD: 120 PPM

DK. YELL. BROWN TO OLIVE GRAY SILTY CLAY, COHESIVE, SLIGHTLY MOIST, STIFF STRONG HC ODOR IN OVM SAMPLE, UNKNOWN IF JICARILLA CONTRACT 146 - 12 - BLOW PIT IS INCLUDED IN LANDFARM OR COMPOST PILES.

FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
<u>LF-1</u>	<u>TAH-1555</u>	<u>5</u>	<u>20</u>	<u>10:1</u>	<u>318</u>	<u>12,720</u>



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
<u>LF-1</u>	<u>558</u>

LAB SAMPLES

SAMPLE ID	ANALYSIS

TRAVEL NOTES: CALLOUT: 8/1/95 MORN. ONSITE: 8/3/95 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:	LF - 1	Date Analyzed:	08-03-95
Project Location:	Jicarilla Contract 146-11	Date Reported:	08-03-95
Laboratory Number:	TPH-1555	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
-----	-----	-----
Total Recoverable Petroleum Hydrocarbons	12,700	200

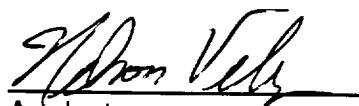
ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	-----	-----	-----
	1040	956	8.42

*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: Landfarmed soils: Composite sample - BJ285


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:

LF - 1

Date Analyzed:

08-03-95

Project Location:

Jicarilla Contract 146-11

Date Reported:

08-03-95

Laboratory Number:

TPH-1555

Sample Matrix:

Soil

Sample Weight:

5.00 grams

Volume Freon:

20.00 mL

Dilution Factor:

10 (unitless)

TPH Reading:

318 mg/kg

TPH Result:

12720.0 mg/kg

Reported TPH Result:

12700 mg/kg

Actual Detection Limit:

200.0 mg/kg

Reported Detection Limit:

200 mg/kg

QA/QC:

Original
TPH mg/kg

Duplicate
TPH mg/kg

%
Diff.

1040

956

8.42

Comments:

*****Max Characters*****

Comments:

Landfarmed soils: Composite sample - BJ285