OK

District I
P.O. Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

OIL & GAS INSPECTOR
MAY 02 1990

PIT REMEDIATION AND CLOSURE REPORT

Approved

C4328

Operator: Amoco Production Company **Telephone:** (505) - 326-9200

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name: HARE GC C 1E

Location: Unit or Qtr/Qtr Sec F Sec 25 T 29N R 10W County SAN JUAN

Pit Type: Separator ___ Dehydrator ___ Other BLOW

Land Type: BLM ___, State ___, Fee ___, Other Com. AGMT.

it Location: (Attach diagram)
Pit dimensions: length 30', width 40', depth 7'
Reference: wellhead X, other ___
Footage from reference: 195'
Direction from reference: 75 Degrees X East North X of ___ West South ___

Depth To Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 Points)	20
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)	0
istance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet (20 points) 200 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)	10
	RANKING SCORE (TOTAL POINTS):	30

Date Remediation Started: _____ **Date Completed:** 3/23/94

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 400

Landfarmed X Insitu Bioremediation ___

Other _____

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

General Description Of Remedial Action: _____

PIT EXCAVATED & SOILS LANDFARMED ON-SITE

Ground Water Encountered: No ___ Yes X Depth 7'

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location REFER TO CLOSURE VERIFICATION" SHEET

Sample depth _____

Sample date _____ Sample time _____

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

Field headspace(ppm) _____

TPH _____

Ground Water Sample: Yes X No ___ (If yes, attach sample results)

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

DATE 4/27/94

SIGNATURE B J Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

R80

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

C4328
COCR 3448 (3/23)
COCR 3426

FIELD REPORT: CLOSURE VERIFICATION

JOB No: 9240
PAGE No: 1 of 1

LOCATION: LEASE: HARE GC WELL: C 1E QD: SE/4 NW/4 (F)
SEC: 25 TWP: 29N RNG: 10W BM: NM CNTY: SAN JUAN ST: NM PIT: BLOW
CONTRACTOR: P. VELASQUEZ
EQUIPMENT USED: TRACKHOE

DATE STARTED: 3/14/94
DATE FINISHED: 3/23/94
ENVIRONMENTAL SPECIALIST: MV

SOIL REMEDIATION: QUANTITY: 30' x 40' x 7'
DISPOSAL FACILITY: LANDFARMED ON-SITE
LAND USE: RANGE
SURFACE CONDITIONS: UNKNOWN (SEE SITE ASSESSMENT FIELD REPORT 94328)

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 65 YARDS N75°E FROM WELLHEAD.
DEPTH TO GROUNDWATER: 3'
NEAREST WATER SOURCE: > 500'
NEAREST SURFACE WATER: > 500'

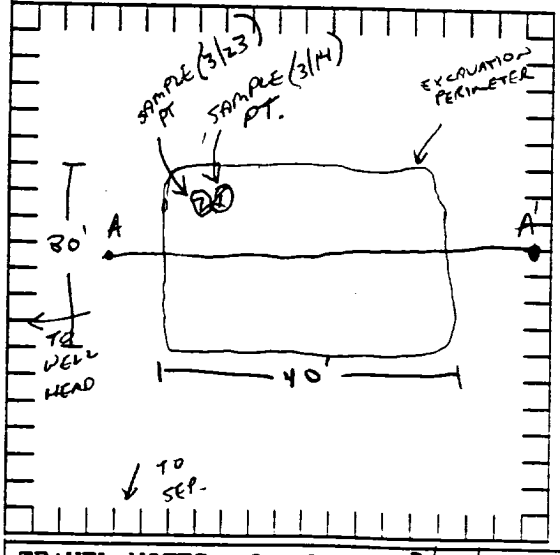
COLLECTED GW SAMPLE FOR BTEX (8020) @ (1640-TIME 3/14.)
SIDEWALLS ON NORTH & WEST SIDES UNSTABLE DUE TO MUDDY SOIL.
SIDEWALLS ON SOUTH & WEST SIDES NOT ACCESSIBLE (NOT SLOPED PROPERLY
COLLECTED GW SAMPLE FOR BTEX (8020) @ (1245-TIME 3/23) (50-gum)

FIELD 418.1 CALCULATIONS

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

SCALE
0 FEET

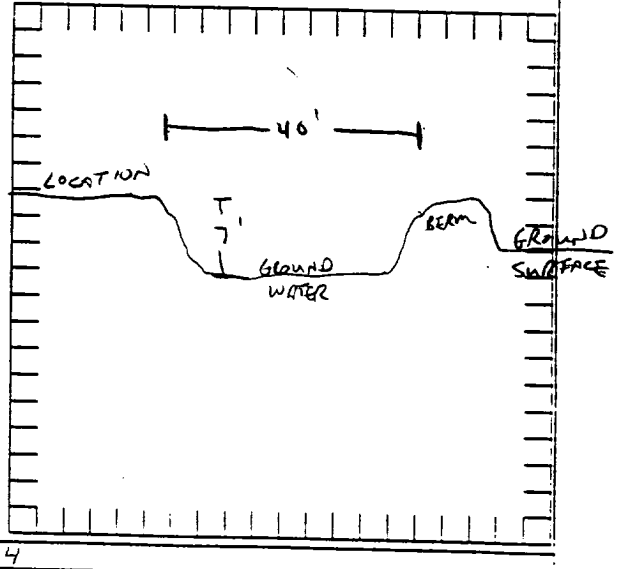
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
@GW(3')	

PIT PROFILE



TRAVEL NOTES: CALLOUT: 3/14/94 ONSITE: 3/14/94

Y

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	1 @ GW (3')	Date Reported:	03-16-94
Laboratory Number:	7056	Date Sampled:	03-14-94
Sample Matrix:	Water	Date Received:	03-15-94
Preservative:	HgCl and Cool	Date Analyzed:	03-15-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	16.3	0.2
Toluene	163	0.4
Ethylbenzene	5.5	0.2
p,m-Xylene	101	0.3
o-Xylene	20.4	0.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	95 %

Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Hare GC C1E Blow Pit C4328

Analyst

Review

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	2 @ GW (3')	Date Reported:	03-24-94
Laboratory Number:	7095	Date Sampled:	03-23-94
Sample Matrix:	Water	Date Received:	03-23-94
Preservative:	HgCl and Cool	Date Analyzed:	03-23-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	11.0	0.2
Toluene	90	0.4
Ethylbenzene	1.8	0.4
p,m-Xylene	40.3	0.5
o-Xylene	10.5	0.4

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	97 %

Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Hare GC C 1E Blow Pit C4328

Analyst

Review

CHAIN OF CUSTODY RECORD

C4328

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
AMOCO 92140	BLOW PIT HARE GC C1E	
Sampler: (Signature) Nelson Velez	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8020)						Remarks
(2)@GW (3')	3/23/94	1245	7095	WATER	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	3/23/94	1326	Kevin L. Spencer	3-23-94	1326
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

FIGURE 1

MW #3

DOWN SLOPE

METER HOUSE
&
SALE'S LINE

MW #2

ACCESS RD.

WELL
HEAD

DOWN SLOPE

SEP

TANK
PIT

FENCE

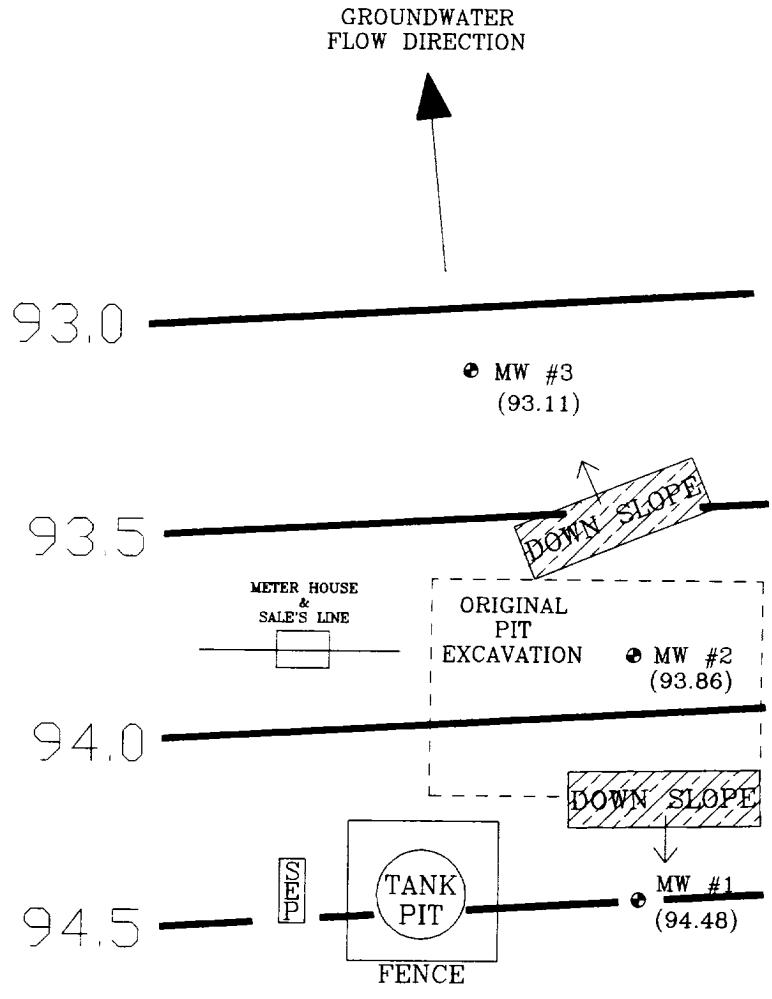
MW #1

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO SCALE.

0 25 50 FT.

AMOCO PRODUCTION COMPANY HARE GC C1E SE/4 NW/4 SEC. 25, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: MW INSTALL. DRAWN BY: NJV FILENAME: HARE-C1E	SITE MAP 6/96

FIGURE 2
(2nd 1/4, 1996)



ACCESS RD.

WELL HEAD

	Top of Well Elevation
MW #1	(99.59)
MW #2	(99.68)
MW #3	(98.38)
MW #1 (94.48)	Groundwater Elevation as of 6/12/96.

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO SCALE.

0 25 50 FT.

AMOCO PRODUCTION COMPANY HARE GC C1E SE/4 NW/4 SEC. 25, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: 1/4ly MONITOR. DRAWN BY: NJV FILENAME: HARE-C1E REVISED 2/10/97 NJV	GROUNDWATER GRADIENT MAP 6/96

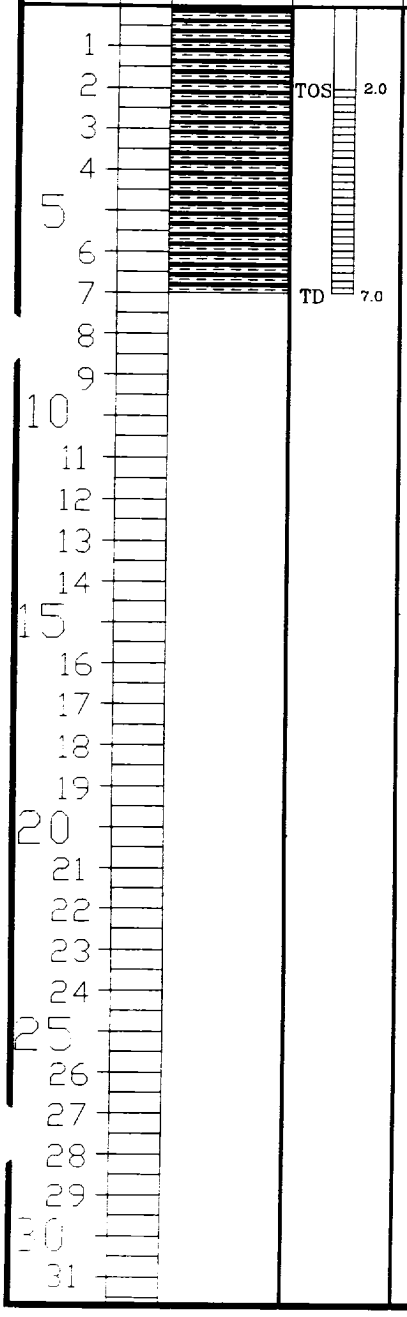
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	HARE GC C # 1E
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION:	S80E, 210 FEET FROM WELL HEAD.

BORING #.....	BH - 1
MW #.....	1
PAGE #.....	1
DATE STARTED	5/10/96
DATE FINISHED	5/10/96
OPERATOR.....	JCB
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 3.00 FT. ABOVE GROUND SURFACE.

▼ GW DEPTH ON 6/12/96 = 2.11 FT. (APPROX.)

DARK YELLOWISH BROWN SILTY SAND TO SILTY CLAY CONTINUOUS THROUGHOUT ENTIRE BORING, COHESIVE, SLIGHTLY MOIST TO SATURATED, FIRM TO STIFF, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 7.0 FT. INTERVAL).

NOTES:
- SILTY SAND TO SILTY CLAY.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: HARE-1	DATE: 1/24/97	DWN BY: NJV

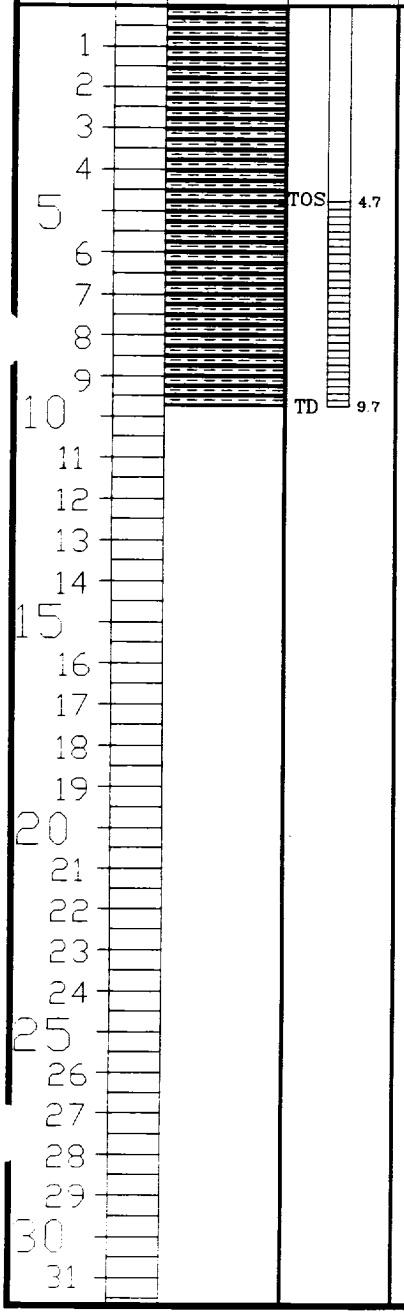
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	HARE GC C # 1E
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION:	N82E, 207 FEET FROM WELL HEAD.

BORING #.....	BH - 2
MW #.....	2
PAGE #.....	2
DATE STARTED	5/10/96
DATE FINISHED	5/10/96
OPERATOR.....	JCB
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

TOP OF CASING APPROX. 0.30 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SILTY SAND TO SILTY CLAY CONTINUOUS THROUGHOUT ENTIRE BORING, COHESIVE, SLIGHTLY MOIST TO SATURATED, FIRM TO STIFF, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 9.7 FT. INTERVAL).

▼ GW DEPTH ON 6/12/96 = 5.52 FT. (APPROX.)

NOTES:
- SILTY SAND TO SILTY CLAY.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: HARE-2	DATE 1/24/97	DWN BY: NJV

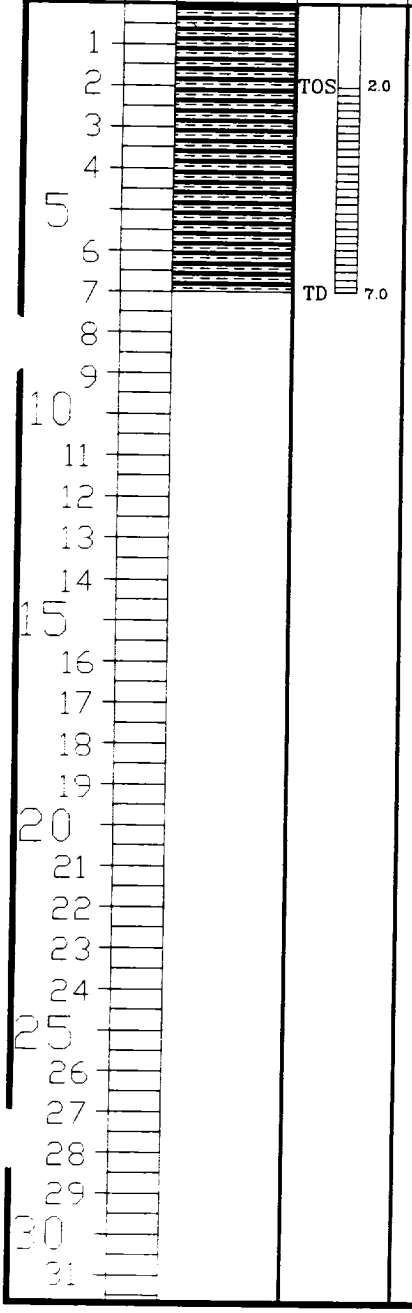
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	HARE GC C # 1E
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION:	N57E, 192 FEET FROM WELL HEAD.

BORING #.....	BH - 3
MW #.....	3
PAGE #.....	3
DATE STARTED	5/10/96
DATE FINISHED	5/10/96
OPERATOR.....	JCB
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

TOP OF CASING APPROX. 3.00 FT. ABOVE GROUND SURFACE.

▼ GW DEPTH ON 6/12/96 = 2.27 FT. (APPROX.)

DARK YELLOWISH BROWN SILTY SAND TO SILTY CLAY CONTINUOUS THROUGHOUT ENTIRE BORING, COHESIVE, SLIGHTLY MOIST TO SATURATED, FIRM TO STIFF, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 7.0 FT. INTERVAL).

NOTES:
- SILTY SAND TO SILTY CLAY.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: HARE-3	DATE: 1/24/97	DWN BY: NJV

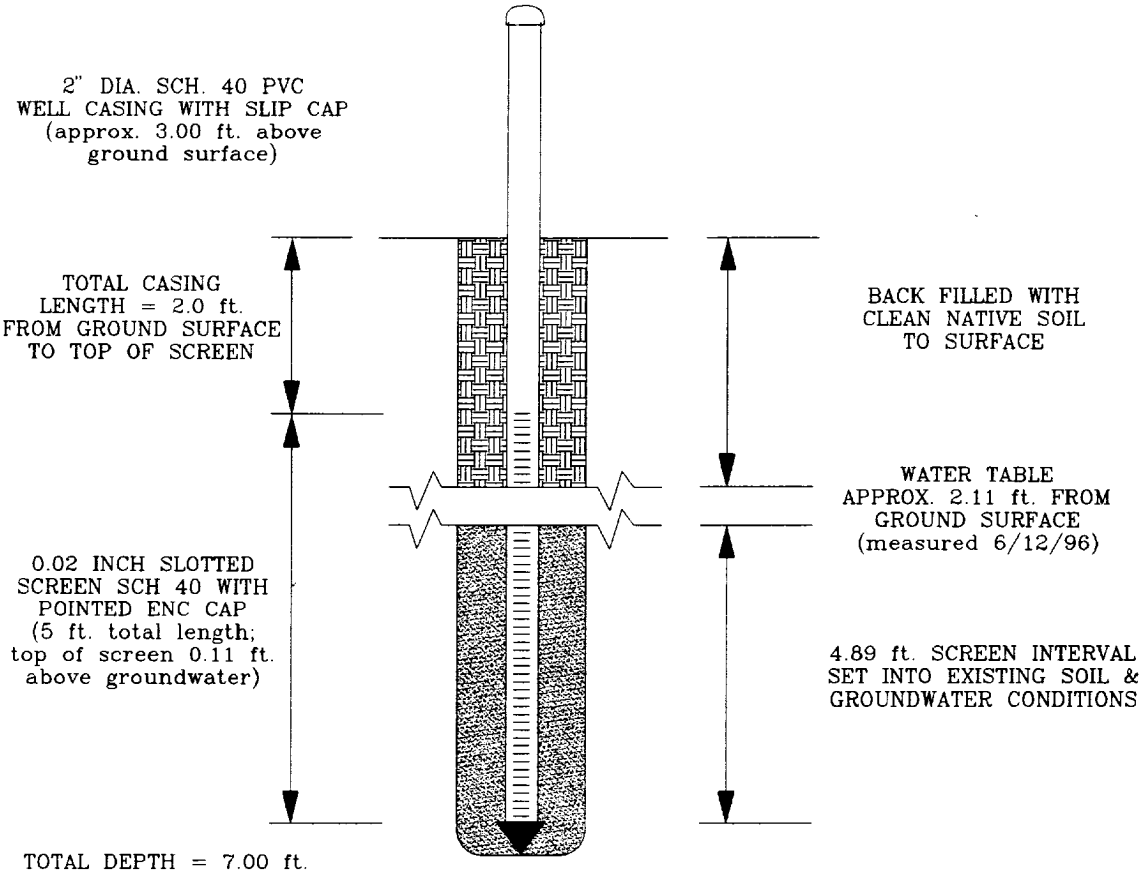
MONITOR WELL #1

AMOCO PRODUCTION COMPANY

HARE GC C # 1E

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG



BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: MAR. '97

FILENAME: MW-

MONITOR WELL #2

AMOCO PRODUCTION COMPANY

HARE GC C # 1E

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

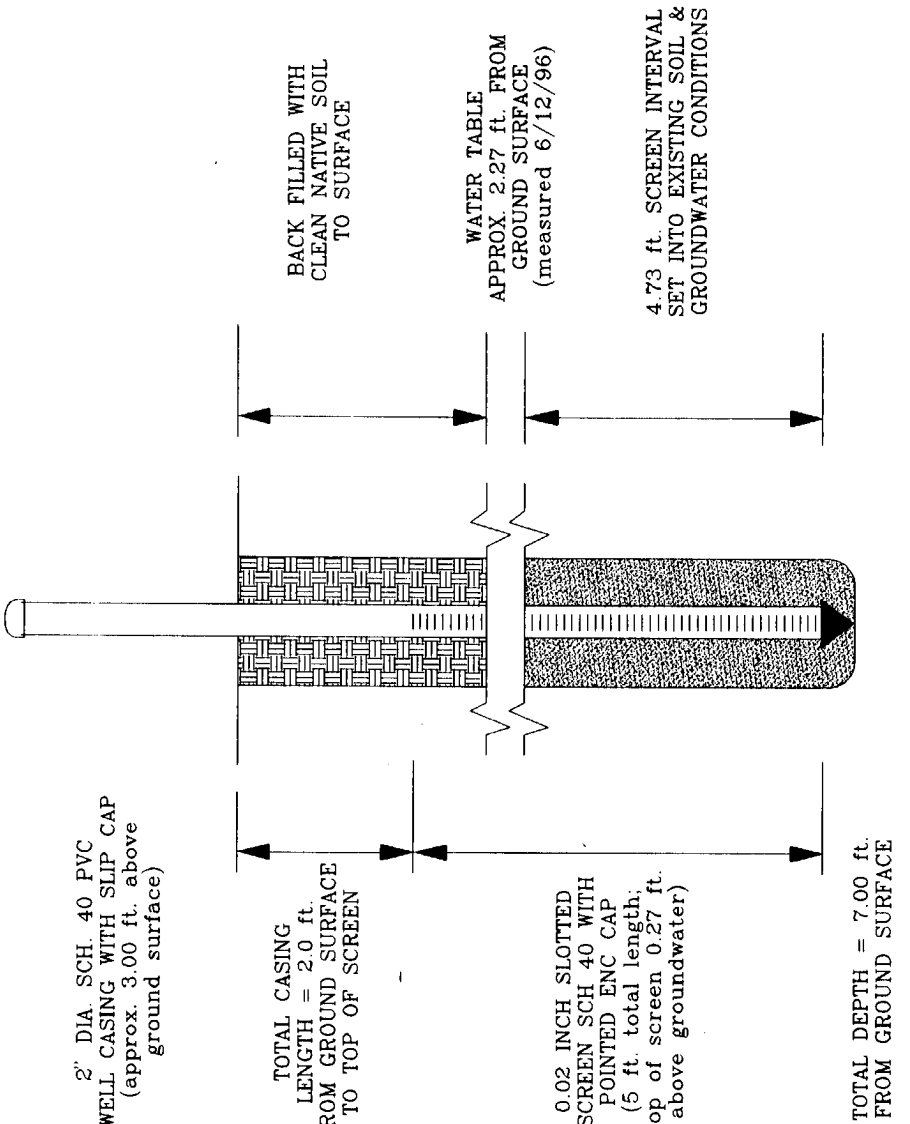
MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: MAR. '97

FILENAME: MW-

MONITOR WELL #3



AMOCO PRODUCTION COMPANY

HARE GC C # 1E

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: MAR. '97

FILENAME: MW-

AMOCO GROUNDWATER MONITOR WELL LABORATORY RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

HARE GC C # 1E – BLOW PIT
UNIT F, SEC. 25, T29N, R10W

REVISED DATE: JANUARY 13, 1997

FILENAME: (HA-2Q-96.WK3) NJV

SAMPLE DATE	MONITOR WELL No:	D.T.W. (ft)	T.D. (ft)	TDS mg/L	COND. umhos	pH	PRODUCT (in)	BTEX EPA METHOD 8020 (PPB) Benzene	Toluene	Ethyl Benzene	Total Xylene
12-Jun-96	MW #1	5.11	10.05	5930	4200	7.5		ND	4	ND	ND
12-Jun-96	MW #2	5.82	10.05	7580	5000	7.0		ND	ND	ND	ND
12-Jun-96	MW #3	5.27	10.05	7860	5000	7.0		ND	5	ND	ND

GENERAL WATER QUALITY

AMOCO PRODUCTION COMPANY

HARE GC C # 1E

SAMPLE DATE : JUNE 12, 1996

PARAMETERS		MW # 1	MW # 2	MW # 3	Units
GENERAL	LAB pH	7.8	7.6	8.1	s. u.
	LAB CONDUCTIVITY (25 DEG. CELCIUS)	6,780	8,020	8,400	umhos cm
	TOTAL DISSOLVED SOLIDS (180 DEG. CELCIUS)	5,930	7,580	7,860	mg / L
	TOTAL DISSOLVED SOLIDS (CALCULATED)	5,530	7,270	7,740	mg / L
ANIONS	TOTAL ALKALINITY AS CaCO3	430	573	525	mg / L
	BICARBONATE ALKALINITY (AS CaCO3)	430	573	525	mg / L
	CARBONATE ALKALINITY (AS CaCO3)	NA	NA	NA	mg / L
	HYDROXIDE ALKALINITY (AS CaCO3)	NA	NA	NA	mg / L
	CHLORIDE	65.0	55.0	57.5	mg / L
	SULFATE	3,440	4,640	4,890	mg / L
	NITRATE + NITRITE – N	NA	NA	NA	
	NITRATE – N	NA	NA	NA	
	NITRITE – N	NA	NA	NA	
CATIONS	TOTAL HARDNESS AS CaCO3	1,260	1,340	1,310	mg / L
	CALCIUM	391	231	379	mg / L
	MAGNESIUM	70.1	185	88.3	mg / L
	POTASSIUM	12.0	7.00	6.00	mg / L
	SODIUM	1,300	1,800	2,000	mg / L
DATA VALIDATION					ACCEPTANCE LEVEL
	CATION/ANION DIFFERENCE	0.04	2.10	0.33	+/– 5 %
	TDS (180):TDS (CALCULATED)	1.1	1.0	1.0	1.0 – 1.2

BLAGG ENGINEERING INC.

MONITOR WELL QUARTERLY MONITORING DATA

DATE: 6-12-96 PROJECT NO: _____

CLIENT: Amoco CHAIN-OF-CUSTODY NO: 2493

LOCATION: HARE 6C C 1E

PROJECT MANAGER: RLO SAMPLER: RLO

MONITOR WELL DATA

9.76
.29
10.05

WELL #	WELL ELEV.	WATER ELEV.	DTW (FT)	T.D. (FT)	TIME	pH	COND. (uMHO)	BAIL (GAL)	PROD (IN)	
MW-1	99.59	94.48	5.11	10.05	0845	7.5	4200	0.5	—	CAT 0.12'
MW-2	99.68	93.86	5.82	10.05	0905	7.0	5000	0.5	—	CAT 0.12'
MW-3	98.38	93.11	5.27	10.05	0930	7.0	5000	0.5	—	CAT 0.12'

Notes: Volume of water bailed from well prior to sampling.
Ideally a minimum of 3 well volumes:
1.25" well = 24 oz. per foot of water.
= 2 bails per foot - small teflon bailer
= 3 bails per foot - 3/4" disposable bailer
2" well = 0.49 gallons per foot of water.
4" well = 1.95 gallons per foot of water.
Note well diameter if not standard 2".

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	Hare GC C 1E	Report Date:	06/28/96
Sample ID:	MW - 1	Date Sampled:	06/12/96
Lab ID:	3920	Date Received:	06/12/96
Sample Matrix:	Water	Date Analyzed:	06/24/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	4.30	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50
Total BTEX	**4.30**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	108	88 - 110%
Bromofluorobenzene	109	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	Hare GC C 1E	Report Date:	06/28/96
Sample ID:	MW - 2	Date Sampled:	06/12/96
Lab ID:	3921	Date Received:	06/12/96
Sample Matrix:	Water	Date Analyzed:	06/24/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50
Total BTEX	**ND**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	107	88 - 110%
Bromofluorobenzene	109	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	Hare GC C 1E	Report Date:	06/28/96
Sample ID:	MW - 3	Date Sampled:	06/12/96
Lab ID:	3922	Date Received:	06/12/96
Sample Matrix:	Water	Date Analyzed:	06/24/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	4.94	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50
Total BTEX	**4.94**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	104	88 - 110%
Bromofluorobenzene	106	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

ANAITAS
ENVIRONMENTAL LABS

General Water Quality
Blagg Engineering, Inc.

Project ID:	Hare GC C 1E	Date Reporte	06/28/96
Sample ID:	MW - 1	Date Sample	06/12/96
Laboratory ID:	3920	Time Sample	08:45
Sample Matrix:	Water	Date Receive	06/12/96

Parameter		Analytical Result	Units
General	Lab pH	7.8	s.u.
	Lab Conductivity @ 25° C	6,780	µmhos/cm
	Total Dissolved Solids @ 180°C	5,930	mg/L
	Total Dissolved Solids (Calc)	5,530	mg/L
Anions	Total Alkalinity as $CaCO_3$	430	mg/L
	Bicarbonate Alkalinity as $CaCO_3$	430	mg/L
	Carbonate Alkalinity as $CaCO_3$	NA	mg/L
	Hydroxide Alkalinity as $CaCO_3$	NA	mg/L
	Chloride	65.0	mg/L
	Sulfate	3,440	mg/L
	Nitrate + Nitrite - N	NA	
	Nitrate - N	NA	
	Nitrite - N	NA	
Cations	Total Hardness as $CaCO_3$	1,260	mg/L
	Calcium	391	mg/L
	Magnesium	70.1	mg/L
	Potassium	12.0	mg/L
	Sodium	1,300	mg/L

Data Validation			Acceptance Le
	Cation/Anion Difference	0.04	+/- 5 %
	TDS (180):TDS (calculated)	1.1	1.0 - 1.2

Reference U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.

Review

ANAITAS ENVIRONMENTAL LABS

General Water Quality
Blagg Engineering, Inc.

Project ID:	Hare GC C 1E	Date Reporte	06/28/96
Sample ID:	MW - 2	Date Sample	06/12/96
Laboratory ID:	3921	Time Sample	09:05
Sample Matrix:	Water	Date Receive	06/12/96

Parameter		Analytical Result	Units
General	Lab pH	7.6	s.u.
	Lab Conductivity @ 25° C	8,020	µmhos/cm
	Total Dissolved Solids @ 180°C	7,580	mg/L
	Total Dissolved Solids (Calc)	7,270	mg/L
Anions	Total Alkalinity as $CaCO_3$	573	mg/L
	Bicarbonate Alkalinity as $CaCO_3$	573	mg/L
	Carbonate Alkalinity as $CaCO_3$	NA	mg/L
	Hydroxide Alkalinity as $CaCO_3$	NA	mg/L
	Chloride	55.0	mg/L
	Sulfate	4,640	mg/L
	Nitrate + Nitrite - N	NA	
	Nitrate - N	NA	
	Nitrite - N	NA	
Cations	Total Hardness as $CaCO_3$	1,340	mg/L
	Calcium	231	mg/L
	Magnesium	185	mg/L
	Potassium	7.00	mg/L
	Sodium	1,800	mg/L

Data Validation			Acceptance Le
	Cation/Anion Difference	2.10	+/- 5 %
	TDS (180):TDS (calculated)	1.0	1.0 - 1.2

Reference U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.

Review

ANAITAS
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General Water Quality
Blagg Engineering, Inc.

Project ID:	Hare GC C 1E	Date Reporte	06/28/96
Sample ID:	MW - 3	Date Sample	06/12/96
Laboratory ID:	3922	Time Sample	09:30
Sample Matrix:	Water	Date Receive	06/12/96

Parameter		Analytical Result	Units
General	Lab pH	8.1	s.u.
	Lab Conductivity @ 25° C	8,400	µmhos/cm
	Total Dissolved Solids @ 180°C	7,860	mg/L
	Total Dissolved Solids (Calc)	7,740	mg/L
Anions	Total Alkalinity as $CaCO_3$	525	mg/L
	Bicarbonate Alkalinity as $CaCO_3$	525	mg/L
	Carbonate Alkalinity as $CaCO_3$	NA	mg/L
	Hydroxide Alkalinity as $CaCO_3$	NA	mg/L
	Chloride	57.5	mg/L
	Sulfate	4,890	mg/L
	Nitrate + Nitrite - N	NA	
	Nitrate - N	NA	
	Nitrite - N	NA	
Cations	Total Hardness as $CaCO_3$	1,310	mg/L
	Calcium	379	mg/L
	Magnesium	88.3	mg/L
	Potassium	6.00	mg/L
	Sodium	2,000	mg/L

Data Validation			Acceptance Le
	Cation/Anion Difference	0.33	+/- 5 %
	TDS (180):TDS (calculated)	1.0	1.0 - 1.2

Reference U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.

Review

ANAITAS
ENVIRONMENTAL LABS

June 28, 1996

Bob O'Neill
Blagg Engineering, Inc.
PO Box 87
Bloomfield, NM 87413

Dear Mr. O'Neill:

Enclosed are the results for the analysis of the samples received June 12, 1996. The samples were from the Hare GC C 1E site. Analyses for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and general water quality parameters were performed on the samples, as per the accompanying chain of custody form.

Analysis was performed on the samples according to EPA Method 602, using a Hewlett-Packard 5890 gas chromatograph equipped with an OI Analytical purge and trap (model 4560) and a photoionization detector. Detectable levels of btex analytes were found in the samples, as reported.

Water parameters were determined for the samples according to the appropriate methodologies as outlined in Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992.

Quality control reports appear at the end of the analytical package and can be identified by title. Should you have any questions regarding the analysis, feel free to call.

Sincerely,

Denise A. Bohemier
Lab Director

807 SOUTH CARLTON • FARMINGTON, NM 87401• (505) 326-2395 PH • 326-2486 FAX

ANAITAS ENVIRONMENTAL LABS

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

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CHAIN OF CUSTODY

Page 1 of 1

PROJECT MANAGER:
Anaitas Lab I.D.:

Company: BLAGG
Address:

Phone: 632-1199
Fax:

Bill To: SAME
Company:
Address:

Sample ID	Date	Time	Matrix	Lab ID	ORGANIC ANALYSES														WATER ANALYSES								METALS				COMMENTS
					Petroleum Hydrocarbons (418.1)	Gasoline / Diesel (mod. 8015)	Gasoline (GRO)	Aromatic HCs (BTEX / MTBE (602 / 8020)	Chlorinated Hydrocarbons (8010)	SDWA Volatiles (502.1 / 503.1)	Chlorinated Pesticides / PCBs (608 / 8080)	Herbicides (615 / 8150)	Volatiles GC/MS (624 / 8240 / 8260)	Base / Neutral / Acid GC/MS (625 / 8270)	Polynuclear Aromatic Hydrocarbons (8100)	TCLP Extraction	Other (specify):		Cation / Anion	Specific Cations (specify):	Specific Anions (specify):	BOD / Fecal / Total Coliform	Solids: TDS / TSS / SS	Nutrients: NH4+ / NO2– / NO3– / TKN	Oil and Grease	Other (specify):	Priority Pollutants	RCRA Metals (Total)	RCRA Metals TCLP (1311)	Other (specify):	
MW-1	6-12	0845	WATER					✓											✓												
MW-2	"	0905	"					✓											✓												
MW-3	"	0930	"					✓											✓												

Project Information	Sample Receipt
Proj. #:	No. Containers:
Proj. Name: AMOCO	Custody Seals: Y / N / NA
P. O. No:	Received Intact:
Shipped Via: DEL'D	Received Cold:

Required Turnaround Time (Prior Authorization Required for Rush)

HARE 6C C 1E

Sampled By:	Relinquished By:	Relinquished By:
Signature: REJ Date: 6-12-96	Signature: REJ Date: 6-12-96	Signature: Date:
Company: BEJ Time: —	Company: BEJ Time: 1445	Company: Time:
Received By:	**Received By:**	**Received By:**
Signature: Date:	Signature: Date:	Signature: Date:
Company: Time:	Company: Time:	Company: Time:

Please Fill Out Thoroughly.

Shaded areas for lab use only.

White/Yellow: Anaitas
Pink: Client

HARE GC C # 1E - Blow Pit
Se/4 Nw/4 Sec. 25, T29N, R10W

Site Assessment Date:	**June 18, 1992 (Documentation Included)**
Pit closure Date:	**March 23, 1994 (Documentation Included)**
Monitor Well Installation Date:	**May 10, 1996**
Monitor Well Sampling Date:	**June 12, 1996**

Groundwater Monitor Well Sampling Procedures:

Groundwater samples were collected from site monitor wells following USEPA: SW-846 protocol. The samples were collected using new disposable bailers and placed in new laboratory supplied 40 ml glass vials with teflon septa caps. Samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) per USEPA Method 8020. When applicable, additional groundwater was collected and place in laboratory supplied 250 or 500 ml plastic containers and analyzed for general water quality per USEPA Method 600/4-79-020. The samples were preserved cool (BTEX samples also preserved with mercuric chloride) and hand delivered to a qualified laboratory for testing. Waste generated during monitor well sampling and development was disposed of utilizing the separator tank pit located on the well site.

Water Quality Information:

The BTEX results for all three (3) monitor wells during the June 12, 1997 sampling event were non detectable or below the New Mexico Water Quality Control Commission's allowable concentration for groundwater. The general water quality results revealed total dissolved solids within the blow pit area (MW #2) to be above the apparent background level (MW #1). However, the background level itself exceed the allowable concentration for domestic consumption. Groundwater from all monitor wells appear to be statistically equivalent for all general water quality parameters.

Summary and/or Recommendations:

Based on the enclosed documentation, the groundwater within the blow pit area appears to meet all the criteria for permanent closure. All aspects of the Amoco groundwater plan dated October 22, 1996 (approved by NMOCD with letter dated February 7, 1997) has been adhered to. Therefore, Amoco is requesting permanent closure status for this pit.

94328

1459 JJ

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

FIELD REPORT: SITE ASSESSMENT

JOB No: 92140
PAGE No: 1 of 1

PROJECT: PIT ASSESSMENTS & CLOSURE
CLIENT: AMOCO PRODUCTION COMPANY
CONTRACTOR: ENVIROTECH, INC.
EQUIPMENT USED: Extendahoe

DATE STARTED: 6-18-92
DATE FINISHED: 6-18-92
ENVIRO. SPCLT: J.W.
OPERATOR: G.S.
ASSISTANT: T.C.

LOCATION: LSE: Hare Gas Com C WELL: No. 1E QD: SE 1/4 NW 1/4 F
SEC: 25 TWP: 29N RNG: 10W PM: NM CNTY: SJ ST: NM PIT: Blow
LAND USE: River bottom - FARM - Irrigated fields - Pasture
SURFACE CONDITIONS: Earthen Pit approx 3' deep.

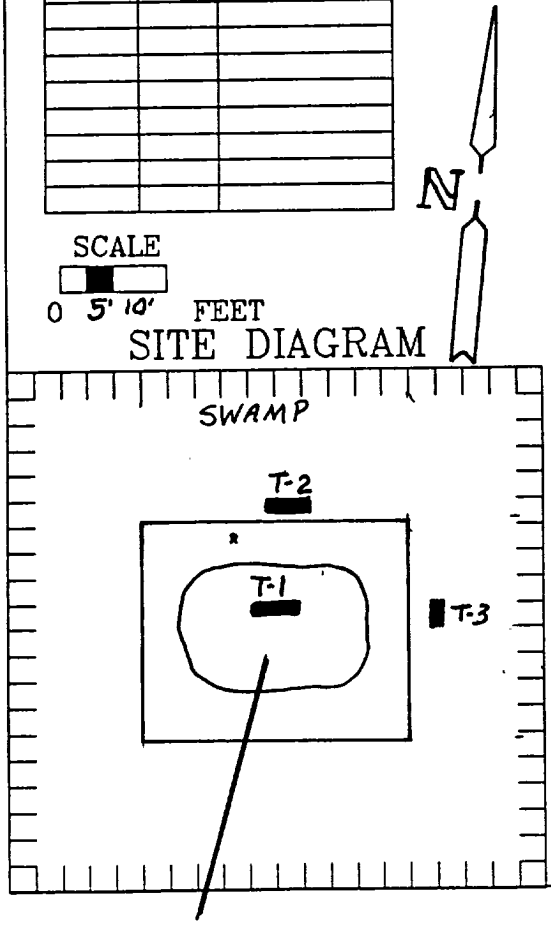
FIELD NOTES & REMARKS: Pit is located approx 25' north and 210' east of well head. Contamination seems to be in pit area.

SAMPLE INVENTORY:

SMPL ID:	SMPL TYPE:	LABORATORY ANALYSIS:	
F1@8'	SOIL	TPH	1340
F1@10'	H2O	TPH	1400
T-1@10'	H2O	BETEX	1400
T-1@10'	H2O	BETEX	1400
T-2@10'	H2O	H.S. BETEX	1440
T-3@6'	H2O	H.S. BETEX	1500

SCALE
0 5' 10' FEET

SITE DIAGRAM



TEST HOLE LOGS:

TH#: 1

SOIL TYPE:	SMPL TYPE:	OVM/TPH
SP	Soil	317
	H2O	80.0

TH#: 2

SOIL TYPE:	SMPL TYPE:	OVM/TPH
	H2O	000

TH#: 3

SOIL TYPE:	SMPL TYPE:	OVM/TPH
	H2O	000

TH#:

SOIL TYPE:	SMPL TYPE:	OVM/TPH

1 2 3 4 5 6 7 8 9 10 12 14 16 18 20

SOIL TYPE: C - Clay, M - Silt, S - Sand, G - Gravel Plasticity: L - None, H - Plastic Grading: P - Poorly, W - Well

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	AMOCO	Project #:	92140
Sample ID:	T-1 @ 8'	Date Reported:	06-23-92
Laboratory Number:	1468	Date Sampled:	06-18-92
Sample Matrix:	Soil	Date Received:	06-18-92
Preservative:	Cool	Date Analyzed:	06-19-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	62	5.0

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: Hare Gas Com C #1E Blow Pit 94328

Analyst

Review

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EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	AMOCO	Project #:	92140
Sample ID:	T-1 @ 10'	Date Reported:	06-25-92
Laboratory Number:	1469	Date Sampled:	06-18-92
Sample Matrix:	Water	Date Received:	06-18-92
Preservative:	Cool	Date Analyzed:	06-24-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
TPH	ND	10.0

Method: Method 418.1, Total Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: Hare Gas Com C #1E Blow Pit 94328

Analyst

Review

ENVIROTECH LABS

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	T1 @ 10'	Date Reported:	10-01-92
Laboratory Number:	1470	Date Sampled:	06-18-92
Sample Matrix:	Water	Date Received:	06-18-92
Preservative:	HgCl & Cool	Date Analyzed:	09-02-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	7.0	1.0
Toluene	25.0	19.0
Ethylbenzene	19.5	13.0
p,m-Xylene	29.6	26.5
o-Xylene	19.1	12.5

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	89.2 %
Bromfluorobenzene	97.4 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Hare GC C 1E---Blow Pit---94328.

Robert M Young
Analyst

Review

ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS
HEADSPACE EXTRACTION

Client:	Amoco	Project #:	92140
Sample ID:	T2 @ 10'	Date Reported:	09-21-92
Laboratory Number:	1471	Date Sampled:	06-18-92
Sample Matrix:	Water	Date Received:	06-18-92
Preservative:	Cool	Date Analyzed:	09-08-92
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.6
Toluene	3.3	1.6
Ethylbenzene	2.1	1.6
p,m-Xylene	2.2	1.6
o-Xylene	3.2	1.6

Method: Method 3810, Headspace, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Hare Gas Com C #1E---Blow Pit---94328

Analyst

Review

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS
HEADSPACE EXTRACTION

Client:	Amoco	Project #:	92140
Sample ID:	T3 @ 6'	Date Reported:	09-21-92
Laboratory Number:	1472	Date Sampled:	06-18-92
Sample Matrix:	Water	Date Received:	06-18-92
Preservative:	Cool	Date Analyzed:	09-08-92
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.6
Toluene	3.2	1.6
Ethylbenzene	ND	1.6
p,m-Xylene	5.0	1.6
o-Xylene	3.4	1.6

Method: Method 3810, Headspace, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Hare Gas Com C #1E---Blow Pit---94328

Analyst

Review

(1.59)
94329

CHAIN OF CUSTODY RECORD

Client/Project Name: Amoco 92140

Project Location: Blow pit Hake Gas Com C #1E

Sampler: (Signature) Tommy Coddington

Chain of Custody Tape No.:

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH	Betex	Head space Betex				Remarks
T-1 @ 8'	6-18-92	13:40	1468	soil	1	✓						
T-1 @ 10'	6-18-92	14:00	1469	water	1	✓						
T-1 @ 10'	6-18-92	14:00	1470	water	2		✓					
T-2 @ 10'	6-18-92	14:40	1471	water	1			✓				
T-3 @ 6'	6-18-92	15:00	1472	water	1			✓				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Tommy Coddington	6-18-92	17:05	Tony Tristano	6/18/92	1715
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615