NM - 38

INSPECTIONS & DATA

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

April 28, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-326-936-282

Mr. Donnie Hill, President
BC & D Oil and Gas Corporation
P.O. Box 837
Hobbs, New Mexico 88241

RE: Centralized Land Farm Monitoring and Closure Requirements
SE/4 NE/4, Sec. 1, Twn. 17 North, Rng. 9 West, NMPM
McKinley County, New Mexico
Hospah Field

Dear Mr Hill:

The New Mexico Oil Conservation Division (OCD) has received BC&D Oil and Gas Corporation's (BC&D) request, dated April 9, 1997, for closure of the centralized land farm. The OCD has reviewed the BC&D request along with the facility permit and has determined that BC&D centralized land farm has been remediated below OCD standards. According to the land farm permit BC&D is required to return the site to its natural state. This shall include leveling/dressing the soils and reseeding the site. Upon completion of these requirements OCD will finalize a review of your closure request for the centralized land farm at Hospah.

Please be advised that OCD approval does not relieve BC&D of liability should remaining contaminants pose a future threat to human health, ground water, surface water or the environment. In addition, OCD approval does not relieve BC&D of responsibility for compliance with other federal, state, and/or local regulations.

If you have any questions please do not hesitate to contact me at (505) 827-7153.

Sincerely,

Martyne J. Kieling
Environmental Geologist

xc: Denny Foust - OCD Aztec

BC & D OIL & GAS CORP.

April 9, 1997

Mr. Roger Anderson
State of New Mexico
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Re: Centralized Land Farm Monitoring and Closure Requirements
Sec. 1, T17N, R9W
McKinley County, New Mexico
Hospah Field

Dear Mr. Anderson,

Please find attached soil sampling results of the referenced land farm. The sample analysis appear to meet or exceed your requirements. Therefore, BC & D is requesting approval to close the land farm. BC & D would like to reserve the right for future use, at which time we would apply for a new permit.

If we can be of additional assistance, please advise the undersigned at (505) 397-3972.

Thank you,

Donnie Hill

Donnie Hill, President
BC & D Oil and Gas Corp.

DH/ysh

enclosure

cc: Mr. Denny Foust - Aztec
file

P.O. BOX 837 HOBBS, NM 88241 TELEPHONE NO.: (505) 392-7681

HOSPAH 711 FACILITY INSPECTION (PHOTOS BY OCD)

PHOTO NO. 1 DATE:06/12/97

PHOTO NO. 2 DATE:06/12/97

HOSPAH 711 FACILITY INSPECTION (PHOTOS BY OCD)

PHOTO NO. 3 DATE: 06/12/97

PHOTO NO. 4 DATE: 06/12/97

HOSPAH 711 FACILITY INSPECTION (PHOTOS BY OCD)

PHOTO NO. 3 DATE: 06/12/97

PHOTO NO. 4 DATE: 06/12/97

HOSPAH 711 FACILITY INSPECTION (PHOTOS BY OCD)

PHOTO NO. 3 DATE: 06/12/97

PHOTO NO. 4 DATE: 06/12/97

HOSPAH 711 FACILITY INSPECTION (PHOTOS BY OCD)

PHOTO NO. 1 DATE:06/12/97

PHOTO NO. 2 DATE:06/12/97

HOSPAH 711 FACILITY INSPECTION (PHOTOS BY OCD)

PHOTO NO. 1 DATE:06/12/97

PHOTO NO. 2 DATE:06/12/97

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

Mr. Donnie Hill, President
B, C, & D Oil & Gas Company
P.O. Box 837
Hobbs, New Mexico 88241

January 23, 1997

Ref: Closure Sampling Results Sec. 1 Land Farm, Hospah, New Mexico

Dear Mr. Hill

Enclosed are the results of the land farm treatment zone closure sampling that was conducted on 12-9-96 at the above referenced site.

Mr. Dennis Foust of the New Mexico Oil Conservation Division witnessed the sampling.

Two 5 point composite soil samples were collected from the landfarm. Composite sample C-1 was collected from the north ½ of the land farm and compostie sample C-2 was collected from the south ½ of the land farm. Two samples were collected at each location using a backhoe from depths of 6" and 2.5' below existing ground surface and are labeled C-1 @ 6" and C-2 @ 2.5'.

The following analysis were run on each sample:

TPH EPA method 8015
BTEX EPA method 8020
Total Metals
Major Cations and Anions

All sample analysis appear to be below New Mexico Oil Conservation Division action levels.

Please call if you have any questions or need additional information.

Sincerely,
Envirotech Inc.

C. Jack Collins, P.G.
Senior Scientist/Hydrogeologist

CJC/cjc
Attachments

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 1 @ 2.5'	Date Reported:	01-14-97
Laboratory Number:	A809	Date Sampled:	12-09-96
Sample Matrix:	Soil Extract	Date Received:	12-09-96
Preservative:	Cool	Date Analyzed:	01-13-97
Condition:	Cool & Intact	Chain of Custody:	5025

Parameter	Analytical Result	Units		Units
pH	**8.17**	s.u.		
Conductivity @ 25° C	**112**	umhos/cm		
Total Alkalinity as CaCO3	**17.6**	mg/L		
Total Hardness as CaCO3	**30.8**	mg/L		
SAR	**0.45**	ratio		
Bicarbonate as HCO3	**17.6**	mg/L	0.29	meq/L
Carbonate as CO3	**0**	mg/L	0.00	meq/L
Hydroxide as OH	**0**	mg/L	0.00	meq/L
Nitrate Nitrogen	**0.75**	mg/L	0.01	meq/L
Nitrite Nitrogen	**0.024**	mg/L	0.00	meq/L
Chloride	**7.91**	mg/L	0.22	meq/L
Sulfate	**22.0**	mg/L	0.46	meq/L
Calcium	**6.72**	mg/L	0.34	meq/L
Magnesium	**3.42**	mg/L	0.28	meq/L
Potassium	**4.25**	mg/L	0.11	meq/L
Sodium	**5.74**	mg/L	0.25	meq/L
Cations			0.98	meq/L
Anions			0.98	meq/L
Cation/Anion Difference			**0.72%**	

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 Waste Water", 18th ed., 1992.

Comments: **Hospah Sec. 1 Landfarm.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 2 @ 2.5'	Date Reported:	01-14-97
Laboratory Number:	A811	Date Sampled:	12-09-96
Sample Matrix:	Soil Extract	Date Received:	12-09-96
Preservative:	Cool	Date Analyzed:	01-13-97
Condition:	Cool & Intact	Chain of Custody:	5025

Parameter	Analytical Result	Units		Units
pH	**8.18**	s.u.		
Conductivity @ 25° C	**62**	umhos/cm		
Total Alkalinity as CaCO3	**10.8**	mg/L		
Total Hardness as CaCO3	**14.2**	mg/L		
SAR	**0.85**	ratio		
Bicarbonate as HCO3	**10.8**	mg/L	0.18	meq/L
Carbonate as CO3	**0**	mg/L	0.00	meq/L
Hydroxide as OH	**0**	mg/L	0.00	meq/L
Nitrate Nitrogen	**0.25**	mg/L	0.00	meq/L
Nitrite Nitrogen	**0.02**	mg/L	0.00	meq/L
Chloride	**4.25**	mg/L	0.12	meq/L
Sulfate	**17.0**	mg/L	0.35	meq/L
Calcium	**3.44**	mg/L	0.17	meq/L
Magnesium	**1.36**	mg/L	0.11	meq/L
Potassium	**1.4**	mg/L	0.04	meq/L
Sodium	**7.36**	mg/L	0.32	meq/L
Cations			0.64	meq/L
Anions			0.66	meq/L
Cation/Anion Difference			**2.41%**	

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 Waste Water", 18th ed., 1992.

Comments: **Hospah Sec. 1 Landfarm.**

Analyst

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CHAIN OF CUSTODY RECORD

Client/Project Name: B C&D oil 95039

Project Location: Hospah Sec 1 Land Farm

Sampler: (Signature) C. Jack Collins

Chain of Custody Tape No.:

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8015 TPH BTEX	RCRA Metals	Cations Anion				Remarks
C-1 @ 6"	12-9-96	1024 ~~1030~~	A 808	Soil	1	✓						
C-1 @ 2.5'	12-9-96	1030	A 809	Soil	2	✓	✓	✓				
C-2 @ 6"	12-9-96	1039 ~~1029~~	A 810	Soil	1	✓						
C-2 @ 2.5'	12-9-96	1104	A 811	Soil	2	✓	✓	✓				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
C. Jack Collins	12-9-96	1331	Dean L. [signature]	12-9-96	1331
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

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 1 @ 6"	Date Reported:	12-10-96
Laboratory Number:	A808	Date Sampled:	12-09-96
Chain of Custody No:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Extracted:	12-09-96
Preservative:	Cool	Date Analyzed:	12-10-96
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**1.0**	**0.1**
Total Petroleum Hydrocarbons	**1.0**	**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: **Hospah Sec 1 Landfarm.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 1 @ 2.5'	Date Reported:	12-10-96
Laboratory Number:	A809	Date Sampled:	12-09-96
Chain of Custody No:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Extracted:	12-09-96
Preservative:	Cool	Date Analyzed:	12-10-96
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
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: **Hospah Sec 1 Landfarm.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 2 @ 6"	Date Reported:	12-10-96
Laboratory Number:	A810	Date Sampled:	12-09-96
Chain of Custody No:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Extracted:	12-09-96
Preservative:	Cool	Date Analyzed:	12-10-96
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**1.0**	**0.1**
Total Petroleum Hydrocarbons	**1.0**	**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: **Hospah Sec 1 Landfarm.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 2 @ 2.5'	Date Reported:	12-10-96
Laboratory Number:	A811	Date Sampled:	12-09-96
Chain of Custody No:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Extracted:	12-09-96
Preservative:	Cool	Date Analyzed:	12-10-96
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
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: **Hospah Sec 1 Landfarm.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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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:	Laboratory Blank	Date Reported:	12-10-96
Laboratory Number:	12-10-TPH.BLANK	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	12-10-96
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 A808 - A811.**

Analyst

Review

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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:	12-10-96
Laboratory Number:	A808	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	Cool	Date Analyzed:	12-10-96
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Sample Result (mg/Kg)	Duplicate Result (mg/Kg)	Percent Difference
Gasoline Range (C5 - C10)	**ND**	**ND**	**0.0%**
Diesel Range (C10 - C28)	**1.0**	**1.0**	**0.0%**
Total Petroleum Hydrocarbons	**1.0**	**1.0**	**0.0%**

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 A808 - A811.**

Analyst

Review

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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:	12-10-96
Laboratory Number:	A808	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	TPH	Date Analyzed:	12-10-96
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)	**ND**	**250**	**245**	**0.2**	**98%**
Diesel Range (C10 - C28)	**1.0**	**250**	**248**	**0.1**	**99%**
Total Petroleum Hydrocarbons	**1.0**	**500**	**493**	**0.2**	**98%**

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 A808 - A811.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 1 @ 6"	Date Reported:	12-10-96
Laboratory Number:	A808	Date Sampled:	12-09-96
Chain of Custody:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Analyzed:	12-10-96
Preservative:	Cool	Date Extracted:	12-09-96
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**8.8**
Toluene	**29.7**	**8.4**
Ethylbenzene	**11.8**	**7.6**
p,m-Xylene	**23.1**	**10.8**
o-Xylene	**10.3**	**5.2**
Total BTEX	**74.9**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**98 %**
	Bromofluorobenzene	**101 %**

References: Method 5030, 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. 1994.

Comments: **Hospah Sec 1 Landfarm.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 1 @ 2.5'	Date Reported:	12-10-96
Laboratory Number:	A809	Date Sampled:	12-09-96
Chain of Custody:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Analyzed:	12-10-96
Preservative:	Cool	Date Extracted:	12-09-96
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**35.8**	**8.8**
Toluene	**54.8**	**8.4**
Ethylbenzene	**21.8**	**7.6**
p,m-Xylene	**41.4**	**10.8**
o-Xylene	**22.6**	**5.2**
Total BTEX	**176**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**102 %**
	Bromofluorobenzene	**101 %**

References: Method 5030, 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. 1994.

Comments: **Hospah Sec 1 Landfarm.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 2 @ 6"	Date Reported:	12-10-96
Laboratory Number:	A810	Date Sampled:	12-09-96
Chain of Custody:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Analyzed:	12-10-96
Preservative:	Cool	Date Extracted:	12-09-96
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**8.8**
Toluene	**25.0**	**8.4**
Ethylbenzene	**ND**	**7.6**
p,m-Xylene	**16.3**	**10.8**
o-Xylene	**6.7**	**5.2**
Total BTEX	**48.0**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**98 %**
	Bromofluorobenzene	**100 %**

References: Method 5030, 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. 1994.

Comments: **Hospah Sec 1 Landfarm.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 2 @ 2.5'	Date Reported:	12-10-96
Laboratory Number:	A811	Date Sampled:	12-09-96
Chain of Custody:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Analyzed:	12-10-96
Preservative:	Cool	Date Extracted:	12-09-96
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**8.7**
Toluene	**35.4**	**8.3**
Ethylbenzene	**8.3**	**7.6**
p,m-Xylene	**28.2**	**10.8**
o-Xylene	**15.5**	**5.2**
Total BTEX	**87.4**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**101 %**
	Bromofluorobenzene	**100 %**

References: Method 5030, 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. 1994.

Comments: **Hospah Sec 1 Landfarm.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	12-10-96
Laboratory Number:	12-10-BTEX.BLANK	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	12-10-96
Condition:	N/A	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	**ND**	**0.2**
Toluene	**ND**	**0.2**
Ethylbenzene	**ND**	**0.2**
p,m-Xylene	**ND**	**0.2**
o-Xylene	**ND**	**0.1**

ND - Parameter not detected at the stated detection limit.

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

References: Method 5030, 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. 1994.

Comments: **QA/QC for samples A808 - A811.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	12-10-96
Laboratory Number:	A808	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	Cool	Date Analyzed:	12-10-96
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Sample Result (ug/Kg)	Duplicate Result (ug/Kg)	Det. Limit (ug/Kg)	Percent Difference
Benzene	**ND**	**ND**	**8.8**	**0.0%**
Toluene	**29.7**	**29.8**	**8.4**	**0.5%**
Ethylbenzene	**11.8**	**11.9**	**7.6**	**1.1%**
p,m-Xylene	**23.1**	**22.8**	**10.8**	**1.3%**
o-Xylene	**10.3**	**10.0**	**5.2**	**2.3%**

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference
	8020 Compounds	**30 %**

References: Method 5030, 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. 1994.

Comments: **QA/QC for samples A808 - A811.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spike	Date Reported:	12-10-96
Laboratory Number:	A808	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	Cool	Date Extracted:	12-09-96
Condition:	Cool and Intact	Date Analyzed:	12-10-96

Parameter	Sample Result (ug/Kg)	Spike Added (ug/Kg)	Spiked Sample Result (ug/Kg)	Det. Limit (ug/Kg)	Percent Recovery	SW-846 % Rec. Accept. Range
Benzene	**ND**	**50.0**	**48.5**	**8.8**	**97%**	**39-150**
Toluene	**29.7**	**50.0**	**77.4**	**8.4**	**97%**	**46-148**
Ethylbenzene	**11.8**	**50.0**	**59.7**	**7.6**	**97%**	**32-160**
p,m-Xylene	**23.1**	**100**	**120**	**10.8**	**98%**	**46-148**
o-Xylene	**10.3**	**50.0**	**58.0**	**5.2**	**96%**	**46-148**

ND - Parameter not detected at the stated detection limit.

References: Method 5030, 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. 1994.

Comments: **QA/QC for samples A808 - A811.**

Analyst

Review

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5025

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
B C&D oil 95039	Hospah Sec 1 Land Farm	
Sampler: (Signature) C. Jack Collins	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8015 TPH BTEX	RCRA Metals	Cations / Anions				Remarks
C-1 @ 6"	12-9-96	1024 ~~1030~~	A808	Soil	1	✓						
C-1 @ 2.5'	12-9-96	1030	A809	Soil	2	✓	✓	✓				
C-2 @ 6"	12-9-96	~~1030~~ 1029	A810	Soil	1	✓						
C-2 @ 2.5'	12-9-96	1104	A811	Soil	2	✓	✓	✓				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
C. Jack Collins	12-9-96	1331			
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

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

TRACE METAL ANALYSIS

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 1 @ 2.5'	Date Reported:	12-13-96
Laboratory Number:	A809	Date Sampled:	12-09-96
Chain of Custody:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Analyzed:	12-12-96
Preservative:	Cool	Analysis Needed:	Trace metals
Condition:	Cool & Intact		

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	**ND**	**0.005**
Barium	**96.8**	**0.005**
Cadmium	**0.110**	**0.005**
Chromium	**2.74**	**0.005**
Lead	**4.01**	**0.005**
Mercury	**ND**	**0.005**
Selenium	**ND**	**0.005**
Silver	**ND**	**0.005**

ND - Parameter not detected at the stated detection limit.

References: Method 3050, Acid Digestion of Sediments, Sludges, and Soils for total Metals, SW-846, USEPA, July 1992.

Methods 7060, 7080, 7131, 7191, 7421, 7471, 7740 and 7761 Analysis of Metals by GFAA and FLAA, SW-846, USEPA.

Comments: **Hospah Sec 1 Landfarm.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

TRACE METAL ANALYSIS

Client:	B C & D Oil	Project #:	95039
Sample ID:	C - 2 @ 2.5'	Date Reported:	12-13-96
Laboratory Number:	A811	Date Sampled:	12-09-96
Chain of Custody:	5025	Date Received:	12-09-96
Sample Matrix:	Soil	Date Analyzed:	12-12-96
Preservative:	Cool	Analysis Needed:	Trace metals
Condition:	Cool & Intact		

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	**ND**	**0.005**
Barium	**130**	**0.005**
Cadmium	**0.135**	**0.005**
Chromium	**3.41**	**0.005**
Lead	**4.88**	**0.005**
Mercury	**ND**	**0.005**
Selenium	**ND**	**0.005**
Silver	**ND**	**0.005**

ND - Parameter not detected at the stated detection limit.

References: Method 3050, Acid Digestion of Sediments, Sludges, and Soils for total Metals, SW-846, USEPA, July 1992.

Methods 7060, 7080, 7131, 7191, 7421, 7471, 7740 and 7761 Analysis of Metals by GFAA and FLAA, SW-846, USEPA.

Comments: **Hospah Sec 1 Landfarm.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

TRACE METAL ANALYSIS
BLANKS

Client:	QA/QC	Project #:	N/A
Sample ID:	Blanks	Date Reported:	12-13-96
Laboratory Number:	12-12-96-Blank	Date Sampled:	N/A
Sample Matrix:	Water / Soil	Date Received:	N/A
Preservative:	Cool	Date Analyzed:	12-12-96
Condition:	N/A	Analysis Needed:	Trace Metals

Parameter	Instrument Blank (mg/L)	Method Blank (mg/L)	Det. Limit (mg/L)
Arsenic	**ND**	**ND**	**0.0001**
Barium	**ND**	**ND**	**0.001**
Cadmium	**ND**	**ND**	**0.0001**
Chromium	**ND**	**ND**	**0.0001**
Lead	**ND**	**ND**	**0.0001**
Mercury	**ND**	**ND**	**0.0001**
Selenium	**ND**	**ND**	**0.0001**
Silver	**ND**	**ND**	**0.0001**

ND - Parameter not detected at the stated detection limit.

References: Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, July 1992.

Methods 7060, 7080, 7131, 7191, 7421, 7471, 7740 and 7761 Analysis of Metals by GFAA and FLAA, SW-846, USEPA.

Comments: **QA/QC for samples A809 and A811.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

TRACE METAL ANALYSIS
DUPLICATE

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	12-13-96
Laboratory Number:	A809	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	Trace Metals	Date Analyzed:	12-12-96
Condition:	N/A		

Parameter	Sample Result (mg/Kg)	Duplicate Result (mg/Kg)	Detection Limit (mg/Kg)	Percent Difference
Arsenic	**ND**	**ND**	**0.005**	**0.0%**
Barium	**96.8**	**96.6**	**0.005**	**0.2%**
Cadmium	**0.110**	**0.095**	**0.005**	**13.6%**
Chromium	**2.74**	**2.77**	**0.005**	**1.1%**
Lead	**4.01**	**3.98**	**0.005**	**0.7%**
Mercury	**ND**	**ND**	**0.005**	**0.0%**
Selenium	**ND**	**ND**	**0.005**	**0.0%**
Silver	**ND**	**ND**	**0.005**	**0.0%**

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference
	Trace Metals	**30 %**

References: Method 3050 Acid Digestion of Sediments, Sludges, and Soils for Total Metals, SW-846, USEPA, July 1992.

Methods 7060, 7080, 7131, 7191, 7421, 7471, 7740 and 7761 Analysis of Metals by GFAA and FLAA, SW-846, USEPA.

Comments: **QA/QC for samples A809 and A811.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

TRACE METAL ANALYSIS
SPIKE

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Spike	Date Reported:	12-13-96
Laboratory Number:	A809	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	Trace Metals	Date Analyzed:	12-12-96
Condition:	N/A		

Parameter	Spike Added (mg/Kg)	Sample Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Percent Recovery
Arsenic	**5.00**	**ND**	**4.94**	**99%**
Barium	**50.0**	**96.8**	**147**	**100%**
Cadmium	**2.50**	**0.110**	**2.62**	**100%**
Chromium	**2.50**	**2.74**	**5.27**	**100%**
Lead	**5.00**	**4.01**	**8.98**	**100%**
Mercury	**1.25**	**ND**	**1.23**	**98%**
Selenium	**5.00**	**ND**	**4.98**	**100%**
Silver	**2.50**	**ND**	**2.47**	**99%**

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Acceptance Range %
	Trace Metals	**80 - 120 %**

References: Method 3050, Acid Digestion of Sediments, Sludges, and Soils for Total Metals, SW-846, USEPA, July 1992.
Methods 7060, 7080, 7131, 7191, 7421, 7471, 7740 and 7761 Analysis of Metals by GFAA and FLAA, SW-846, USEPA.

Comments: **QA/QC for samples A809 and A811.**

Analyst

Review

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STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

March 16, 1994

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-241-913

Mr. Donnie Hill
BC & D Operating, Inc.
P.O. Box 5926
Hobbs, New Mexico 88241

RE: SOIL REMEDIATION COMPLETION REPORT
BC & D OPERATING, INC. HOSPAH FIELD
MCKINLEY COUNTY, NEW MEXICO

Dear Mr. Hill:

The New Mexico Oil Conservation Division (OCD) has completed a review of the BC & D Operating, Inc. October 6, 1993 "COMPLETION OF EXCAVATION AT HOSPAH FIELD, MCKINLEY COUNTY, NEW MEXICO" and February 10, 1994 "SOIL REMEDIATION COMPLETION REPORT, HOSPAH FIELD, MCKINLEY COUNTY, NM". These reports document the results of the remediation of contaminated soils from the arroyo and two settling ponds adjacent to BC & D Operating's Hanson Sand Unit, Hanson and SFRR tank batteries in the Hospah Field.

The closure activities described in the above referenced reports are approved.

Please be advised that OCD approval does not relieve BC & D Operating of liability should remaining contaminants pose a future threat to human health, surface water, ground water or the environment. In addition, OCD approval does not relieve BC & D Operating of responsibility for compliance with any other federal state or local laws and/or regulations.

If you have any questions, please contact me at (505) 827-5885.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Aztec Office

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DIVISION
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

February 22, 1994

Certified Mail Receipt #P 987-892-074

BC & D Operating, Inc.
Attn Donnie Hill
President
POB 5926
Hobbs, NM 88241

RE: Centralized Landfarm Hospah Field

Dear Mr. Hill:

This is a reminder that all lifts in BC & D Operating's centralized landfarm at the Hospah Field are not to exceed one foot in thickness or a lesser depth the that can be turned with the equipment available. The materials on the landfarm are to be spread to lifts not exceeding one foot by April 1, 1994. The landfarm is to be tilled biweekly from this date until weather conditions deteriorate about November 1, 1994. Keep a record of the tilling dates. Your permit also calls for an identifying sign on the landfarm which I didn't see on my last visit. I do not have the treatment zone background sample results in my files. Please forward a copy of these results for my records.

If you have questions on the permit or the items outlined above please give me a call at 505-334-6178.

Yours truly,

Denny G. Foust
Environmental Geologist

Xc: OCD Environmental Bureau
DGF File
Environmental File

BC & D OPERATING, INC.

February 10, 1994

State of New Mexico
Oil Conservation Division
Mr. William C. Olson
P.O. Box 2088
State Land Business
Santa Fe, NM 87504

RE: Soil Remediation Completion Report
Hospah Field
McKinley County, NM

Dear Mr. Olson:

In response to your letter requesting additional information of the "completion of excavation" at Hospah Field, McKinley County, New Mexico, we have attempted to identify and address your points of concern.

If additional information is needed please advise the undersigned.

Thank you,

Donnie Hill

Donnie Hill
President

Enclosures

DH:sn

cc: Hospah file

P.O. BOX 5926 HOBBS, NM 88241 TELEPHONE NO.: (505) 392-2041

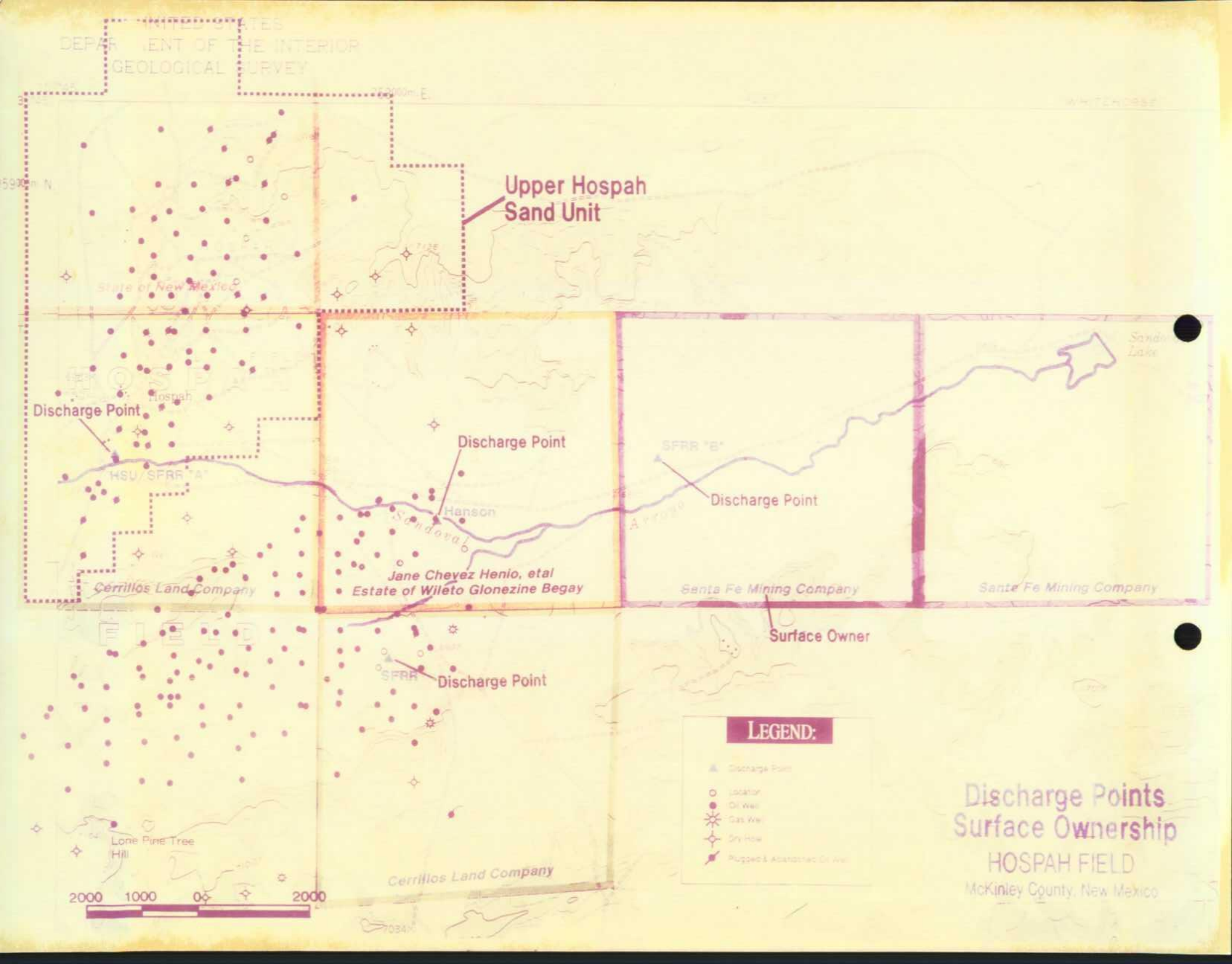
In response to the question posed by the Oil Conservation Division's letter dated November 4, 1993, the following information will hopefully answer the information requested.

** Enclosed is a map of the sampling points along the sandavol arroyo indicating the footage and comments concerning the sampling. Please notice on the North Hospah Sand Unit (Sec. 1) that a portion was skipped due to wet conditions and we returned at a later date to continue sampling.

** The soil sample analytical method used on-site was EPA method 418.1.

** Sampling was initially initiated from the emergency overflow pits in the Hospah Sand Unit (Sec. 1). The arroyo was excavated with a trackhoe. Until it was determined the soil was clean to pass standards set for remediation. The samples were taken by grab and composite sampling at the points indicated along the arroyo.

** All of the arroyo was remediated below the 100 parts per million of total petroleum hydrocarbons.


Upper Hospah
Sand Unit
Discharge Point
Discharge Point
Discharge Point
Discharge Point
Surface Owner
Jane Cheyez Henio, etal
Estate of Wileto Glonezine Begay
Cerrillos Land Company
Santa Fe Mining Company
Sante Fe Mining Company
Cerrillos Land Company
Hanson
Hospah
Lone Pine Tree Hill
HSU / SFRR "A"
SFRR "B"
SFRR
2000 1000 0 2000
LEGEND:
Discharge Point
Locator
Oil Well
Gas Well
Dry Hole
Plugged & Abandoned Oil Well
Discharge Points
Surface Ownership
HOSPAH FIELD
McKinley County, New Mexico

ENVIRONMENTAL SPILL CONTROL, INC.

SITE SURVEY

DATE: 08/26/93
CLIENT: B C & D OPERATION — ORDERED BY: D. HILL
FACILITY: HOSPAH — HOSPAH PIT & DRAW

****

DATE OF SPILL: N/A — TIME OF SPILL: N/A : AM PM
OF BARRELS: N/A — CLOSE PROXIMITY: ____YES __X__NO
DATE CONTACTED: 8/25/93 — TIME CONTACTED 9 :00 (AM) PM
DATE ON LOCATION: 8/26/93 — TIME ON LOCATION 1 : 00 AM (PM)
SUPERVISOR: A. HODGE — CLIENT CONTACT: D. HILL
SUPERVISOR PHONE: 505/392-6167 — CLIENT PHONE: 505/392-2041

****

REMEDIATION METHOD

_____ DILUTION — # OF CU. YDS. USED:
SOURCE OF SOIL:
_____ENHANCED REMEDIATION — BACTERIA TYPE:
AMOUNT USED:
_____ OFF-SITE DISPOSAL — DISPOSAL SITE NAME:
MANIFEST #:
MINOR PERMIT #:
___X__ OTHER — Soil excavation of draws and soil test for TPH to verify contamination has been removed.

****

Stoney Thomas
SUPERVISOR SIGNATURE

_____
CUSTOMER SIGNATURE

ENVIRONMENTAL SPILL CONTROL, INC.

SITE SURVEY

DATE: 09/08/93
CLIENT: B C & D OPERATION — ORDERED BY: D. HILL
FACILITY: SANTA FE & HANSON — WELL# SETTING POND

****

DATE OF SPILL: N/A — TIME OF SPILL: N/A : AM PM
OF BARRELS: N/A — CLOSE PROXIMITY: ____YES __X__NO
DATE CONTACTED: 9/07/93 — TIME CONTACTED 8 :30 (AM) PM
DATE ON LOCATION: 9/07/93 — TIME ON LOCATION 2 : 00 AM (PM)
SUPERVISOR: S. THOMAS — CLIENT CONTACT: D. HILL .
SUPERVISOR PHONE: 505/392-6167 — CLIENT PHONE: 505/392-2041

****

REMEDIATION METHOD

_____ DILUTION — # OF CU. YDS. USED:
SOURCE OF SOIL:

_____ENHANCED REMEDIATION — BACTERIA TYPE:
AMOUNT USED:

_____ OFF-SITE DISPOSAL — DISPOSAL SITE NAME:
MANIFEST #:
MINOR PERMIT #:

___X__ OTHER — Soil excavation of setting pond and soil test for TPH to verify contamination has been removed.

****

Steve Thomas
SUPERVISOR SIGNATURE

_____
CUSTOMER SIGNATURE

ENVIRONMENTAL SPILL CONTROL, INC.

SITE SURVEY

DATE: 09/04/93
CLIENT: B C & D OPERATION — ORDERED BY: D. HILL
FACILITY: HOSPAH SAND UNIT — SETTING POND

****

DATE OF SPILL: N/A — TIME OF SPILL: N/A : AM PM
OF BARRELS: N/A — CLOSE PROXIMITY: ____YES __X___NO
DATE CONTACTED: 9/01/93 — TIME CONTACTED 9 :00 (AM) PM
DATE ON LOCATION: 9/04/93 — TIME ON LOCATION 7 : 30 (AM) PM
SUPERVISOR: S. THOMAS — CLIENT CONTACT: D. HILL
SUPERVISOR PHONE: 505/392-6167 — CLIENT PHONE: 505/392-2041

****

REMEDIATION METHOD

_____ DILUTION — # OF CU. YDS. USED:
SOURCE OF SOIL:

_____ENHANCED REMEDIATION — BACTERIA TYPE:
AMOUNT USED:

_____ OFF-SITE DISPOSAL — DISPOSAL SITE NAME:
MANIFEST #:
MINOR PERMIT #:

___X__ OTHER — Soil excavation of setting pond and soil test for TPH to verify contamination has been removed.

****

Stoney Thomas
SUPERVISOR SIGNATURE

_____
CUSTOMER SIGNATURE

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TEXAS 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NEW MEXICO 88240

FINAL ANALYSIS REPORT

Company: Environmental Spill Control, Inc. Date: 9/21/93
Address: P.O. Box 5890 Lab#: H1360
City, State: Hobbs, NM 88241-5890

Project Name:
Project Location: Hospah
Sampled by: AH Date: 9/15/93 Time:
Analyzed by: MF Date: 9/20/93 Time: 7:30
Type of Samples: Soil Sample Condition: GIST Units: mg/kg, mg/l

Samp #	Field Code	BENZENE	TOLUENE	ETHYL BENZENE	PARA-XYLENE	META-XYLENE	ORTHO-XYLENE	MTBE
1	SFRR St.Pt.0'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2	SFRR Arroyo 20'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3	SFRR Arr. 100'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4	SFRR Arr. 300'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
5	HSUS Pond 10'	2.297	0.576	0.597	0.088	0.050	0.047	1.171
6	HSUS St.Pt. 0'	<0.001	<0.001	<0.001	<0.001	0.008	0.020	<0.001
7	HSU Arroyo 20'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
8	HSU " 100'	<0.001	<0.001	0.009	<0.001	<0.001	0.023	<0.001
9	HSU " 300'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10	HSU " 600'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11	HSU " 900'	<0.001	<0.001	<0.001	<0.001	<0.001	0.008	<0.001
12	HSU " 1200'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
13	HSU " 1500'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
14	HSU " 1800'	<0.001	<0.001	<0.001	<0.001	<0.001	0.007	<0.001
15	HSU " 2100'	<0.001	<0.001	<0.001	<0.001	<0.001	0.008	<0.001
16	HSU " 2400'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	QC Recovery	1.802	1.939	1.958	1.914	1.951	2.049	1.398
	QC Spike	1.910	1.970	1.970	1.912	1.912	1.939	1.597
	Accuracy	94.3	98.4	99.3	100.1%	102.0%	105.7%	87.4%
	Air Blank	***	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Methods - AUTOMATED HEADSPACE GC
- EPA SW-846; EPA METHODS 8020

Michael R. Fowler

Date 9/21/93

Michael R. Fowler

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TEXAS 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NEW MEXICO 88240

FINAL ANALYSIS REPORT

Company: Environmental Spill Control, Inc. Date: 9/23/93
Address: P.O. Box 5890 Lab#: H1365
City, State: Hobbs, NM 88241-5890

Project Name:
Project Location: Hospah, NM
Sampled by: ST Date: 9/21/93 Time: 8:40
Analyzed by: MF/HM Date: 9/22/93 Time: 9:30
Type of Samples: Soil Sample Condition: GST Units: mg/kg

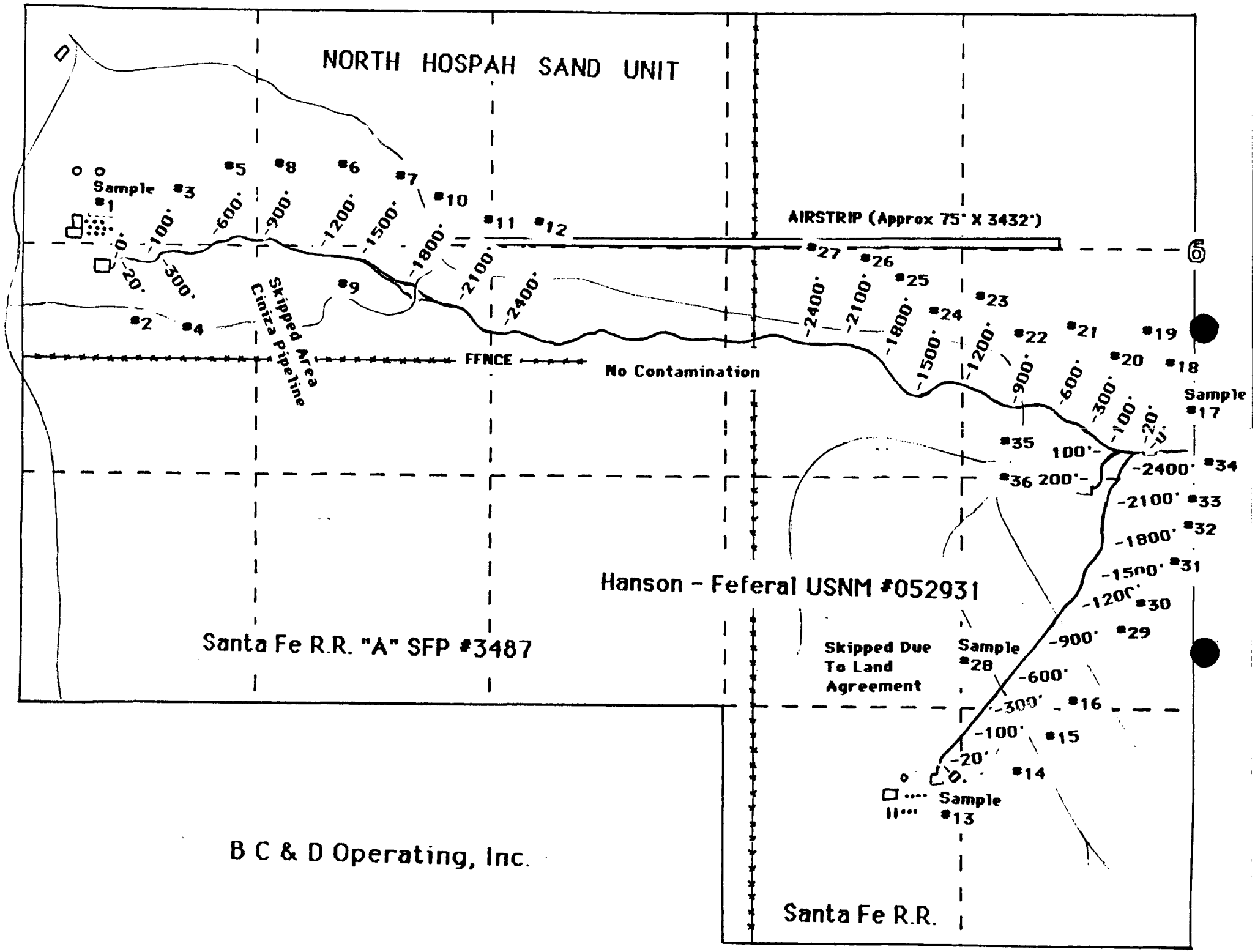
Samp #	Field Code	BENZENE	TOLUENE	ETHYL BENZENE	PARA-XYLENE	META-XYLENE	ORTHO-XYLENE	MTBE
1	0' Hanson Sec.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2	20' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3	100' "	<0.001	<0.001	0.011	<0.001	0.004	<0.001	<0.001
4	300' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
5	600' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
6	900' "	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001
7	1200' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
8	1500' "	0.004	<0.001	0.004	<0.001	0.002	0.003	<0.001
9	1800' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10	2100' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11	2400' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12	900' S.F.Sec.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
13	1200' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
14	1500' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
15	1800' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
16	2100' "	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001
	QC Recovery	1.988	2.193	2.205	2.131	2.104	2.210	1.525
	QC Spike	2.144	2.212	2.212	2.147	2.147	2.177	1.794
	Accuracy	92.7%	99.1%	99.7%	99.3%	98.0%	101.5%	85.0%
	Air Blank	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Methods - AUTOMATED HEADSPACE GC
- EPA SW-846; EPA METHODS 8020

Michael R. Fowler

Date 9/23/93

Michael R. Fowler


NORTH HOSPAH SAND UNIT
Sample
#1
#3
#5
#8
#6
#7
#10
#11
#12
AIRSTRIP (Approx 75' X 3432')
#27
#26
#25
#23
#24
#22
#21
#19
#20
#18
Sample
#17
#35
#36
#34
#33
#32
#31
#30
#29
#28
#16
#15
#14
Sample
#13
#9
#2
#4
Skipped Area
Cimiza Pipeline
FENCE
No Contamination
0
-20'
-100'
-300'
-600'
-900'
-1200'
-1500'
-1800'
-2100'
-2400'
100'
200'
Hanson - Feferal USNM #052931
Santa Fe R.R. "A" SFP #3487
Skipped Due
To Land
Agreement
B C & D Operating, Inc.
Santa Fe R.R.
6

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, 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

Form C-103
Revised 1-1-89

WELL API NO.

5. Indicate Type of Lease STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: HOSPAH FIELD

1. Type of Well: OIL WELL ☐ GAS WELL ☐ OTHER Excavation - Soil Contamination

2. Name of Operator: B C & D Operating, Inc.

8. Well No.

3. Address of Operator: P.O. Box 5926, Hobbs, NM 88241

9. Pool name or Wildcat

4.
Section 1 Township 17N Range 9W
Section 6 Township 17N Range 8W
SEction 7 Township 17N Range 8W

10. Elevation *(Show whether DF, RKB, RT, GR, etc.)*

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER: Completion of Excavation			☐

12. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

The settling ponds (pits) and arroyos were excavated associated with the Sandoval Arroyo in the Hospah Field to under 100 parts per million (ppm) of Total Petroleum Hydrocarbons (TPH). The BTEX levels were well under the "Unlined Surface Impoundment Closure Guidelines". The excavated material (soil), spproximately 15,000 cubic yards was removed to the old land strip located in Section 1, T17N, R9W.*

*Upon approval of centralized landfarm permit, remediation will commence.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Donnie Hill TITLE President DATE 10/6/93

TYPE OR PRINT NAME Donnie Hill TELEPHONE NO. (505) 392-2041

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Confined Space Entry Permit

Effective Date: (/ /)
Commencing: _____ AM PM
Expiring: _____ AM PM
Time Removed: _____ AM PM

Permit

Lease (OCS-) _____ Facility _____ Tank Battery/Well: _____
Worksite _____ Block _____ Platform _____ Rig: _____
Division _____ Area _____ SubArea: _____
Hot Work Permit Required: ☐ Yes ☐ No Hot Work Permit number: _____
Hazardous material (last product contained): _____ MSDS(s) available: ☐ Yes ☐ No
Work Description: _____ MSDS(s) Location: _____

Checklist

Conditions of Area/Equipment Prior to Confined Space Entry

Write initials or N/A (not applicable) in column.

	Initial:	Yes	No
Out of service		X	
Confined space emptied		X	
Liquid residue present			X
Ignition sources checked		X	
Lines blinded, removed, plugged		X	
Lockout/tagout procedures followed		X	
Explosion-proof equipment used		X	
Nonexplosion-proof equipment location checked		X	
Fire extinguisher and first-aid kit present		X	
Personal protection equipment listed below ready		X	
Respiratory protection required			X
Atmospheric monitoring (continuous preferred)		X	
O_2 (>19.5% but <23.5%)		X	
L.E.L. (0.0% desired, < 10.0% required)		X	
H_2S (<PEL/TLV)		X	
NORM			X
Other:			

	Initial:	Yes	No
Ventilation equipment operating		N	A
Intrinsically-safe explosion-proof lighting		N	A
Nearby area checked for hazards		X	
Warning signs posted		X	
Notified affected employees		X	
Emergency communication established		X	
Standby person present and trained			
Standby person's name: S.T.			
Rescue plan reviewed		X	
Water washed/displaced with water		N	A
Vessel steamed		N	A
Initial cleaning done from outside		N	A
Other:		N	A
Entrants trained and briefed		N	A
Entrant's Names S.T.			

PPE

Personal Protective Equipment (Mark Required Items)

Ears/Eyes	Extremities	Body Suits	Respirator	Rescue	Fire Protection	Other: write in
☐ Goggles ☐ Face Shield ☐ Ear plugs ☐ Ear muffs ☑ Safety glasses	☑ Gloves ☐ Boots ☑ Hard hats ☐ Avoid skin contact	☑ Coveralls ☐ Fire retardant ☐ PVC suit ☐ Fully encapsulated	☐ SCBA ☐ Airline (with egress bottle) ☐ Particulate resp. (HEPA)	☐ Safety belt ☐ Lifeline ☐ Harness ☐ Alarm Horn ☑ First aid kit ☐ Tripod unit	☑ Extinguisher ☐ Fire hose ☐ Blanket ☐ Shield ☐ Wet down area ☐ Cover drain ☐ Fire watch	

Test Results

Time	Oxygen (%)	L.E.L. (%)	H_2S (ppm)	Toxic/Other write in:	NORM µRs/CPM	Instrument Number(s)	Person Testing
9:00	20.1	0	0	N/A	N/A	LR81532	ST
10:00	20.1	0	0				
12:00	20.1	0	0				
1:00	20.1	0	0				
3:00	20.1	0	0				
4:00	20.1	0	0				
5:45	20.1	0	0				

Additional Precautions:

Signature

The location where this work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

(Qualified person's signature) _____

(Supervisor's approval signature) Stoney Thomas

Job completed ☐ Yes ☑ No

Notified supervisor of completion ☐ Yes ☑ No

Blinds and locks removed ☐ Yes ☐ No

Distribution: Original (blue) - Post at work site then forward to department maintaining the Work Permit file.
Copy (white) - Keep with pad.

Confined Space Entry Permit

Effective Date (/ /)
Commencing _____ AM PM
Expiring: _____ AM PM
Time Removed _____ AM PM

Permit

Lease (OCS-) _____ Facility _____ Tank Battery/Well _____
Worksite _____ Block _____ Platform _____ Rig _____
Division _____ Area _____ SubArea _____
Hot Work Permit Required: ☐ Yes ☐ No Hot Work Permit number: _____
Hazardous material (last product contained): _____ MSDS(s) available: ☐ Yes ☐ No
Work Description: _____ MSDS(s) Location: _____

Checklist

Conditions of Area/Equipment Prior to Confined Space Entry

Write initials or N/A (not applicable) in column.

Initial:	Yes	No
Out of service	X	
Confined space emptied	X	
Liquid residue present		X
Ignition sources checked	X	
Lines blinded, removed, plugged	X	
Lockout/tagout procedures followed	X	
Explosion-proof equipment used	X	
Nonexplosion-proof equipment location checked	X	
Fire extinguisher and first-aid kit present	X	
Personal protection equipment listed below ready	X	
Respiratory protection required		X
Atmospheric monitoring (continuous preferred)	X	
O_2 (>19.5% but <23.5%)	X	
L.E.L. (0.0% desired, < 10.0% required)	X	
H_2S (<PEL/TLV)	X	
NORM		X
Other:		

Initial:	Yes	No
Ventilation equipment operating	N	A
Intrinsically-safe explosion-proof lighting	N	A
Nearby area checked for hazards	X	
Warning signs posted	X	
Notified affected employees	X	
Emergency communication established	X	
Standby person present and trained		
Standby person's name: S.T.		
Rescue plan reviewed	X	
Water washed/displaced with water	N	A
Vessel steamed	N	A
Initial cleaning done from outside	N	A
Other	N	A
Entrants trained and briefed	N	A
Entrant's Names S.T.		

PPE

Personal Protective Equipment (Mark Required Items)

Ears/Eyes	Extremities	Body Suits	Respirator	Rescue	Fire Protection		Other: write in
☐ Goggles ☐ Face Shield ☐ Ear plugs ☐ Ear muffs ☐ Safety glasses	☐ Gloves ☐ Boots ☐ Hard hats ☐ Avoid skin contact	☐ Coveralls ☐ Fire retardant ☐ PVC suit ☐ Fully-encapsulated	☐ SCBA ☐ Airline (with egress bottle) ☐ Particulate resp. (HEPA)	☐ Safety belt ☐ Lifeline ☐ Harness ☐ Alarm Horn ☐ First aid kit ☐ Tripod unit	☐ Extinguisher ☐ Fire hose ☐ Blanket ☐ Shield	☐ Wet down area ☐ Cover drain ☐ Fire watch	

Test Results

Time	Oxygen (%)	L.E.L. (%)	H_2S (ppm)	Toxic/Other write in:	NORM µRs/CPM	Instrument Number(s)	Person Testing
10:00	20.1	0	0				
12:00	20.1	0	0				
2:00	20.1	0	0				
4:00	20.1	0	0				

Additional Precautions:

Signature

The location where this work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

(Qualified person's signature) _____

(Supervisor's approval signature) Stoney Thomas

Job completed ☐ Yes ☒ No
Notified supervisor of completion ☐ Yes ☒ No
Blinds and locks removed ☐ Yes ☐ No

Distribution: Original (blue) - Post at work site then forward to department maintaining the Work Permit file.
Copy (white) - Keep with pad.

Confined Space Entry Permit

Effective Date: (/ /)
Commencing: _____ AM PM
Expiring: _____ AM PM
Time Removed: _____ AM PM

Permit

Lease (OCS-): _____ Facility: _____ Tank Battery/Well: _____
Worksite _____ Block: _____ Platform: _____ Rig: _____
Division: _____ Area: _____ SubArea: _____
Hot Work Permit Required: ☐ Yes ☐ No Hot Work Permit number: _____
Hazardous material (last product contained): _____ MSDS(s) available: ☐ Yes ☐ No
Work Description: _____ MSDS(s) Location: _____

Checklist

Conditions of Area/Equipment Prior to Confined Space Entry

Write initials or N/A (not applicable) in column.

	Initial:	Yes	No
Out of service		X	
Confined space emptied		X	
Liquid residue present			X
Ignition sources checked		X	
Lines blinded, removed, plugged		X	
Lockout/tagout procedures followed		X	
Explosion-proof equipment used		X	
Nonexplosion-proof equipment location checked		X	
Fire extinguisher and first-aid kit present		X	
Personal protection equipment listed below ready		X	
Respiratory protection required			X
Atmospheric monitoring (continuous preferred)		X	
O_2 (>19.5% but <23.5%)		X	
L.E.L. (0.0% desired, < 10.0% required)		X	
H_2S (<PEL/TLV)		X	
NORM			X
Other:			

	Initial:	Yes	No
Ventilation equipment operating		N	A
Intrinsically-safe explosion-proof lighting		N	A
Nearby area checked for hazards		X	
Warning signs posted		X	
Notified affected employees		X	
Emergency communication established		X	
Standby person present and trained			
Standby person's name: S.T.			
Rescue plan reviewed		X	
Water washed/displaced with water		N	A
Vessel steamed		N	A
Initial cleaning done from outside		N	A
Other:		N	A
Entrants trained and briefed		N	A
Entrant's Names: S.T.			

PPE

Personal Protective Equipment (Mark Required Items)

Ears/Eyes	Extremities	Body Suits	Respirator	Rescue	Fire Protection	Other: write in
☐ Goggles ☐ Face Shield ☐ Ear plugs ☐ Ear muffs ☐ Safety glasses	☐ Gloves ☐ Boots ☐ Hard hats ☐ Avoid skin contact	☐ Coveralls ☐ Fire retardant ☐ PVC suit ☐ Fully-encapsulated	☐ SCBA ☐ Airline (with egress bottle) ☐ Particulate resp. (HEPA)	☐ Safety belt ☐ Lifeline ☐ Harness ☐ Alarm Horn ☐ First aid kit ☐ Tripod unit	☐ Extinguisher ☐ Fire hose ☐ Blanket ☐ Shield ☐ Wet down area ☐ Cover drain ☐ Fire watch	

Test Results

Time	Oxygen (%)	L.E.L. (%)	H_2S (ppm)	Toxic/Other write in:	NORM µRs/CPM	Instrument Number(s)	Person Testing
12:00	20.1	0	0	N/A	N/A	LR81532	S.T.
1:45	20.1	0	0				
3:00	20.1	0	0				
4:45	19.9	0	0				
6:00	19.9	0	0				

Additional Precautions:

Signature

The location where this work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

(Qualified person's signature) _____

(Supervisor's approval signature) Steven Thomas

Job completed ☐ Yes ☒ No

Notified supervisor of completion ☐ Yes ☒ No

Blinds and locks removed ☐ Yes ☐ No

Distribution: Original (blue) - Post at work site then forward to department maintaining the Work Permit file.
Copy (white) - Keep with pad.

Confined Space Entry Permit

Effective Date: (/ /)
Commencing: _____ AM PM
Expiring: _____ AM PM
Time Removed: _____ AM PM

Permit

Lease (OCS-) _____ Facility _____ Tank Battery/Well: _____
Worksite _____ Block _____ Platform: _____ Rig: _____
Division _____ Area: _____ SubArea: _____
Hot Work Permit Required: ☐ Yes ☐ No Hot Work Permit number: _____
Hazardous material (last product contained): _____ MSDS(s) available: ☐ Yes ☐ No
Work Description: _____ MSDS(s) Location: _____

Checklist

Conditions of Area/Equipment Prior to Confined Space Entry

Write initials or N/A (not applicable) in column.

	Initial:	Yes	No
Out of service		X	
Confined space emptied		X	
Liquid residue present			X
Ignition sources checked		X	
Lines blinded, removed, plugged		X	
Lockout/tagout procedures followed		X	
Explosion-proof equipment used		X	
Nonexplosion-proof equipment location checked		X	
Fire extinguisher and first-aid kit present		X	
Personal protection equipment listed below ready		X	
Respiratory protection required			X
Atmospheric monitoring (continuous preferred)		X	
O_2 (>19.5% but <23.5%)		X	
L.E.L. (0.0% desired, < 10.0% required)		X	
H_2S (<PEL/TLV)		X	
NORM			X
Other:			

	Initial:	Yes	No
Ventilation equipment operating		N	A
Intrinsically-safe explosion-proof lighting		N	A
Nearby area checked for hazards		X	
Warning signs posted		X	
Notified affected employees		X	
Emergency communication established		X	
Standby person present and trained			
Standby person's name: S.T.			
Rescue plan reviewed		X	
Water washed/displaced with water		N	A
Vessel steamed		N	A
Initial cleaning done from outside		N	A
Other:		N	A
Entrants trained and briefed		N	A
Entrant's Names: S.T.			

PPE

Personal Protective Equipment (Mark Required Items)

Ears/Eyes	Extremities	Body Suits	Respirator	Rescue	Fire Protection		Other: write in
☐ Goggles ☐ Face Shield ☐ Ear plugs ☐ Ear muffs ☐ Safety glasses	☐ Gloves ☐ Boots ☐ Hard hats ☐ Avoid skin contact	☐ Coveralls ☐ Fire retardant ☐ PVC suit ☐ Fully encapsulated	☐ SCBA ☐ Airline (with egress bottle) ☐ Particulate resp. (HEPA)	☐ Safety belt ☐ Lifeline ☐ Harness ☐ Alarm Horn ☐ First aid kit ☐ Tripod unit	☐ Extinguisher ☐ Fire hose ☐ Blanket ☐ Shield	☐ Wet down area ☐ Cover drain ☐ Fire watch	

Test Results

Time	Oxygen (%)	L.E.L. (%)	H_2S (ppm)	Toxic/Other write in:	NORM µRs/CPM	Instrument Number(s)	Person Testing
8:30	20.1	0	0	N/A	N/A	LR81532	S.T.
9:45	20.1	0	0				
11:00	20.1	0	0				
1:00	20.1	0	0				
2:45	20.1	0	0				
4:00	19.9	0	0				
6:00	19.9	0	0				

Additional Precautions:

Signature

The location where this work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

(Qualified person's signature) _____

(Supervisor's approval signature) Stoney Thomas

Job completed ☐ Yes ☒ No
Notified supervisor of completion ☐ Yes ☒ No
Blinds and locks removed ☐ Yes ☒ No

Distribution: Original (blue) - Post at work site then forward to department maintaining the Work Permit file.
Copy (white) - Keep with pad.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

November 4, 1993

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-242-404

Mr. Donnie Hill
BC & D Operating, Inc.
P.O. Box 5926
Hobbs, New Mexico 88241

RE: SOIL REMEDIATION COMPLETION REPORT
BC & D OPERATING, INC. HOSPAH FIELD
MCKINLEY COUNTY, NEW MEXICO

Dear Mr. Hill:

The New Mexico Oil Conservation Division (OCD) is in the process of reviewing the BC & D Operating, Inc. October 6, 1993 "COMPLETION OF EXCAVATION AT HOSPAH FIELD, MCKINLEY COUNTY, NEW MEXICO". This report documents the results of the remediation of contaminated soil from the arroyo and two settling ponds adjacent to BC & D Operating's tank batteries in the Hospah Field.

The OCD has the following comments, questions and requests for information regarding the above referenced report:

1. The report does not contain any diagrams or maps delineating the limits and depths of the excavated areas and the sample locations. Please provide OCD with this information.

2. The soil sample analytical results for total petroleum hydrocarbons (TPH) do not indicate what method was used for the laboratory analysis of the soils. Please provide OCD with this information.

3. The report does not contain any descriptive information regarding the remedial activities, sample collection methods and the sampling points. Please provide this information.

4. The report states that soils were excavated to below 100 parts per million (ppm) of TPH. However, the soil analytical results contain results in excess of 100 ppm of TPH. Were these soils excavated after these measurements were taken or do they represent the final levels attained during remediation? Please clarify what these samples represent.

Submission of the above information will allow OCD to complete a review of your remedial action report.

If you have any questions, please contact me at (505) 827-5885.

Sincerely,

William C. Olson
Environmental Bureau Chief

Enclosure

xc: OCD Aztec Office

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

November 4, 1993

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-242-404

Mr. Donnie Hill
BC & D Operating, Inc.
P.O. Box 5926
Hobbs, New Mexico 88241

RE: SOIL REMEDIATION COMPLETION REPORT
BC & D OPERATING, INC. HOSPAH FIELD
MCKINLEY COUNTY, NEW MEXICO

Dear Mr. Hill:

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If you have any questions, please contact me at (505) 827-5885.

Sincerely,

William C. Olson
Environmental Bureau Chief

Enclosure

xc: OCD Aztec Office

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

October 13, 1993

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-242-016

Mr. Donnie Hill
BC & C Operating, Inc.
P.O. Box 5926
Hobbs, New Mexico 88241

RE: **CENTRALIZED LANDFARM, HOSPAH FIELD**
OCD RULE 711 PERMIT APPROVAL
MC KINLEY COUNTY, NEW MEXICO

Dear Mr. Hill:

The **permit application for the BC & D Operating, Inc. Centralized Landfarm** located in the SE/4 NE/4, Section 1, Township 17 North, Range 9 West, NMPM, McKinley County, New Mexico, **is hereby approved** in accordance with the Oil Conservation Division (OCD) Rule 711 under the conditions contained in the enclosed attachment. The application consists of the original application dated August 30, 1993.

The operation, monitoring and reporting shall be as specified in the enclosed attachment. All modifications and alternatives to the approved landfarming methods must receive prior OCD approval. You are required to notify the Director of any facility expansion or process modification and to file the appropriate materials with the Division.

Please be advised approval of this facility does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment actionable under other laws and/or regulations. In addition, the OCD approval does not relieve you of liability for compliance with any other laws and/or regulations.

Please be advised that all tanks exceeding 16 feet in diameter and exposed pits, ponds or lagoons must be screened, netted or otherwise rendered nonhazardous to migratory birds.

This permit approval is for a period of five (5) years. This approval will expire on October 13, 1998 and you should submit an application for renewal in ample time before that date. The Division shall have the authority to administratively change this permit to protect fresh water, human health and the environment.

If you have any questions, please do not hesitate to contact Kathy Brown at (505) 827-5884.

Sincerely,

William J. LeMay
Director

WJL/kmb

Attachment

xc: Denny Foust, OCD Aztec Office
Jim Walker, U.S. EPA Region IX
Sadie Hoskie, U.S. EPA Navajo Nation Division
Chris Shuey, Southwest Research and Information Center

ATTACHMENT TO OCD 711 PERMIT APPROVAL
B C & D OPERATING, INC.
CENTRALIZED LANDFARM
(October 13, 1993)

LANDFARM CONSTRUCTION

1. A fence will be constructed and maintained around the perimeter of the facility so as to prevent livestock and people from entering the facility area.

2. A sign will be posted on the fence at the entrance to the facility. The sign will be legible from at least fifty (50) feet and contain the following information: a) name of the facility, b) location by section, township and range, and c) emergency phone number.

3. An adequate berm will be constructed and maintained to prevent runoff and runon for that portion of the facility containing contaminated soils.

4. No contaminated soils will be placed within fifty (50) feet of any pipelines crossing the landfarm. In addition, no equipment will be operated within ten (10) feet of a pipeline. All pipelines crossing the facility will have surface markers identifying the location of the pipelines.

5. All aboveground tanks located at the landfarm and containing materials other than fresh water will be bermed to contain one and one third the volume of the largest or all interconnected tanks.

LANDFARM OPERATION

1. The facility will be secured when no attendant is present.

2. Soils will be spread on the surface in one foot lifts or less provided that the disking equipment can turn over the entire lift.

3. Soils will be disked a minimum of one time every two weeks (biweekly) to enhance biodegradation of contaminants.

4. Successive lifts of contaminated soils will not be spread until a laboratory measurement of Total Petroleum Hydrocarbons (TPH) in the previous lift is less than 100 parts per million (ppm), and the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and the benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations will be maintained at the facility. Authorization from the OCD will be obtained prior to application of successive lifts.

5. The facility is authorized to accept only:

   a. Soils excavated from the closure of the two settling ponds adjacent to BC & D Operating's tank batteries and the associated arroyos at the Hospah Field.

   b. Oilfield contaminated solids which are exempt from RCRA Subtitle C regulations and which are from BC & D owned operations. Tank bottoms may only be accepted on a case-by-case basis after conducting appropriate analyses and receiving OCD approval.

6. Moisture will be added as necessary to enhance bioremediation and to control blowing dust. There will be no ponding, pooling or run-off of water allowed. Any ponding of precipitation will be removed within seventy-two (72) hours of discovery.

7. Microbes (MICRO-BLAZE) may be utilized to enhance bio-remediation. Records will be made and kept on the location, amount and frequency of the microbes applied.

8. No free liquids or soils with free liquids will be accepted at the facility.

9. Comprehensive records of all material disposed of at the facility will be maintained. The records for each load will include: 1) the origin, 2) date received 3) quantity, and 4) exact cell location and any addition of microbes, moisture, fertilizers, etc.

TREATMENT ZONE MONITORING

1. One (1) background soil sample will be taken from the center portion of the landfarm two (2) feet below the native ground surface prior to operation. The sample will be analyzed for total petroleum hydrocarbons (TPH), major cations/anions, volatile aromatic organics (BTEX), and heavy metals using approved EPA methods.

2. A treatment zone not to exceed three (3) feet beneath the land farm will be monitored. A minimum of one random soil sample should be taken per five (5) acres, six (6) months after the first contaminated soils are received in the cell and then quarterly thereafter. The sample will be taken at two to three (2-3) feet below the native ground surface.

3. The soil samples will be analyzed using approved EPA methods for TPH and BTEX quarterly, and for major cations/anions and heavy metals semi-annually the first year and annually thereafter.

4. After obtaining the soil samples the boreholes will be filled with an impermeable material such as cement.

REPORTING

1. Analytical results from the treatment zone monitoring will be submitted to the OCD Santa Fe Office for review within ten (10) days of receipt from the laboratory. The results will be submitted on a regular schedule as determined by the BC & D.

2. The OCD will be notified of any break, spill, blow out, or fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.

CLOSURE

1. The operator will notify the Division of cessation of operations. Upon cessation of disposal operations for six (6) consecutive months, the operator will complete cleanup of constructed facilities and restoration of the facility site within the following six (6) months, unless an extension for time is granted by the Director.

2. When the facility is to be closed no new material will be accepted. Existing soils will be remediated until they meet the OCD standards in effect at the time of closure. The area will then be reseeded with natural grasses and allowed to return to its natural state.

3. Closure will be pursuant to all OCD requirements in effect at the time of closure, and any other applicable local, state and/or federal regulations.

BC & D OPERATING, INC.

OIL CONSERVATION DIVISION
RECEIVED

'93 OCT 12 AM 9 51

October 6, 1993

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Attn: Mr. Roger Anderson
Bureau Chief

RE: COMPLETION OF EXCAVATION AT HOSPAH FIELD, MCKINLEY COUNTY, NEW MEXICO

Dear Mr. Anderson:

Enclosed herewith, is the Completion of Excavation as defined in OCD Form C-103 for the project located in the Hospah Field, McKinley County, New Mexico. Attached to the form are "Site Survey Requests", "Soil Analysis Reports", and "Confined Space Entry Permits", on the excavation of the arroyos and pits which had hydrocarbon contamination in the Hospah Field.

Approximately 15,000 cubic yards of hydrocarbon contaminated soil was excavated and removed from the Sandavol Arroyo and associated settling ponds (pits) and temporarily stored on the old abandoned airstrip, which we have applied for a centralized landfarm facility in Section 1.

If you have any questions or desire further information, please contact the undersigned.

Sincerely,

Donnie Hill

Donnie Hill
President

DH:sn

Enclosure

P.O. BOX 5926 HOBBS, NM 88241 TELEPHONE NO.: (505) 392-2041

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, 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

Form C-103
Revised 1-1-89

WELL API NO.

5. Indicate Type of Lease STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: HOSPAH FIELD

1. Type of Well: OIL WELL ☐ GAS WELL ☐ OTHER: Excavation - Soil Contamination

2. Name of Operator: B C & D Operating, Inc.

8. Well No.

3. Address of Operator: P.O. Box 5926, Hobbs, NM 88241

9. Pool name or Wildcat

4.
Section 1 Township 17N Range 9W
Section 6 Township 17N Range 8W
SEction 7 Township 17N Range 8W

10. Elevation *(Show whether DF, RKB, RT, GR, etc.)*

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER: Completion of Excavation			☐

12. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

The settling ponds (pits) and arroyos were excavated associated with the Sandoval Arroyo in the Hospah Field to under 100 parts per million (ppm) of Total Petroleum Hydrocarbons (TPH). The BTEX levels were well under the "Unlined Surface Impoundment Closure Guidelines". The excavated material (soil), spproximately 15,000 cubic yards was removed to the old land strip located in Section 1, T17N, R9W.*

*Upon approval of centralized landfarm permit, remediation will commence.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

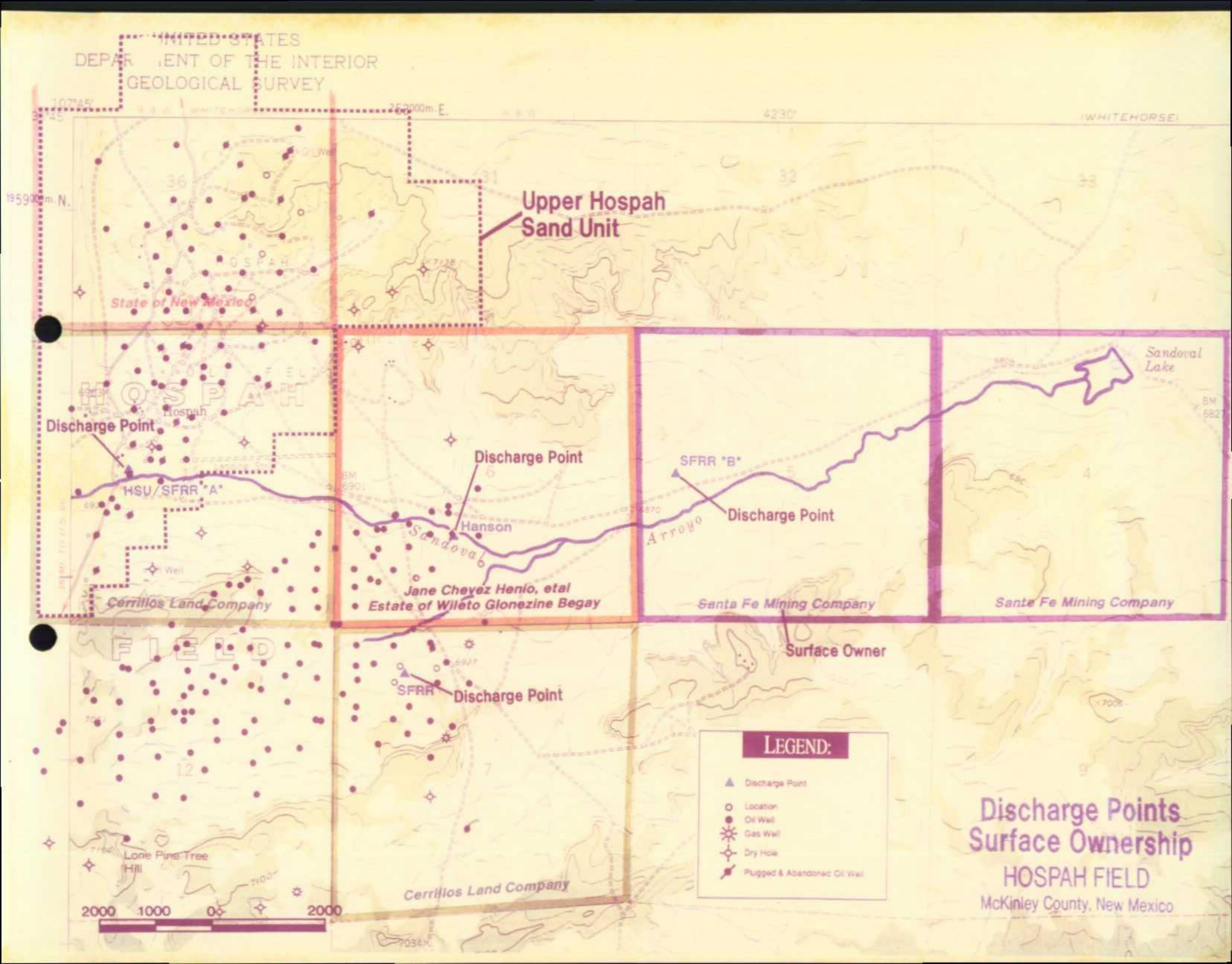
SIGNATURE Donnie Hill TITLE President DATE 10/6/93

TYPE OR PRINT NAME Donnie Hill TELEPHONE NO. (505) 392-2041

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Upper Hospah
Sand Unit
State of New Mexico
HOSPAH
FIELD
Hospah
Discharge Point
HSU/SFRR "A"
Discharge Point
Hanson
Sandoval
Arroyo
SFRR "B"
Discharge Point
Sandoval
Lake
Cerrillos Land Company
Jane Cheyez Henio, etal
Estate of Wileto Glonezine Begay
Santa Fe Mining Company
Sante Fe Mining Company
Surface Owner
SFRR
Discharge Point
Lone Pine Tree
Hill
Cerrillos Land Company
2000 1000 0 2000
LEGEND:
Discharge Point
Location
Oil Well
Gas Well
Dry Hole
Plugged & Abandoned Oil Well
Discharge Points
Surface Ownership
HOSPAH FIELD
McKinley County, New Mexico

ENVIRONMENTAL SPILL CONTROL, INC.

SITE SURVEY

DATE: 08/26/93
CLIENT: B C & D OPERATION — ORDERED BY: D. HILL
FACILITY: HOSPAH — HOSPAH PIT & DRAW

****

DATE OF SPILL: N/A — TIME OF SPILL: N/A : AM PM
OF BARRELS: N/A — CLOSE PROXIMITY: ____YES __X__NO
DATE CONTACTED: 8/25/93 — TIME CONTACTED 9 :00 (AM) PM
DATE ON LOCATION: 8/26/93 — TIME ON LOCATION 1 : 00 AM (PM)
SUPERVISOR: A. HODGE — CLIENT CONTACT: D. HILL
SUPERVISOR PHONE: 505/392-6167 — CLIENT PHONE: 505/392-2041

****

REMEDIATION METHOD

_____ DILUTION	# OF CU. YDS. USED:
	SOURCE OF SOIL:
_____ENHANCED REMEDIATION	BACTERIA TYPE:
	AMOUNT USED:
_____ OFF-SITE DISPOSAL	DISPOSAL SITE NAME:
	MANIFEST #:
	MINOR PERMIT #:
___X__ OTHER	Soil excavation of draws and soil test for TPH to verify contamination has been removed.

****

Stoney Thomas
SUPERVISOR SIGNATURE

_____
CUSTOMER SIGNATURE

ENVIRONMENTAL SPILL CONTROL, INC.

SITE SURVEY

DATE: 09/08/93
CLIENT: B C & D OPERATION — ORDERED BY: D. HILL
FACILITY: SANTA FE & HANSON — WELL# SETTING POND

****

DATE OF SPILL: N/A — TIME OF SPILL: N/A : AM PM
OF BARRELS: N/A — CLOSE PROXIMITY: ____YES __X__NO
DATE CONTACTED: 9/07/93 — TIME CONTACTED 8 :30 (AM) PM
DATE ON LOCATION: 9/07/93 — TIME ON LOCATION 2 : 00 AM (PM)
SUPERVISOR: S. THOMAS — CLIENT CONTACT: D. HILL
SUPERVISOR PHONE: 505/392-6167 — CLIENT PHONE: 505/392-2041

****

REMEDIATION METHOD

_____ DILUTION — # OF CU. YDS. USED:
SOURCE OF SOIL:

_____ENHANCED REMEDIATION — BACTERIA TYPE:
AMOUNT USED:

_____ OFF-SITE DISPOSAL — DISPOSAL SITE NAME:
MANIFEST #:
MINOR PERMIT #:

___X__ OTHER — Soil excavation of setting pond and soil test for TPH to verify contamination has been removed.

****

Stoney Thomas
SUPERVISOR SIGNATURE

_____
CUSTOMER SIGNATURE

ENVIRONMENTAL SPILL CONTROL, INC.

SITE SURVEY

DATE: 09/04/93
CLIENT: B C & D OPERATION — ORDERED BY: D. HILL
FACILITY: HOSPAH SAND UNIT — SETTING POND

****

DATE OF SPILL: N/A — TIME OF SPILL: N/A : AM PM
OF BARRELS: N/A — CLOSE PROXIMITY: ____YES __X__NO
DATE CONTACTED: 9/01/93 — TIME CONTACTED 9 :00 (AM) PM
DATE ON LOCATION: 9/04/93 — TIME ON LOCATION 7 : 30 (AM) PM
SUPERVISOR: S. THOMAS — CLIENT CONTACT: D. HILL
SUPERVISOR PHONE: 505/392-6167 — CLIENT PHONE: 505/392-2041

****

REMEDIATION METHOD

_____ DILUTION	# OF CU. YDS. USED:
	SOURCE OF SOIL:
_____ENHANCED REMEDIATION	BACTERIA TYPE:
	AMOUNT USED:
_____ OFF-SITE DISPOSAL	DISPOSAL SITE NAME:
	MANIFEST #:
	MINOR PERMIT #:
___X__ OTHER	Soil excavation of setting pond and soil test for TPH to verify contamination has been removed.

****

Stoney Thomas
SUPERVISOR SIGNATURE

_____
CUSTOMER SIGNATURE

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TEXAS 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NEW MEXICO 88240

FINAL ANALYSIS REPORT

Company: Environmental Spill Control, Inc. Date: 9/21/93
Address: P.O. Box 5890 Lab#: H1360
City, State: Hobbs, NM 88241-5890

Project Name:
Project Location: Hospah
Sampled by: AH Date: 9/15/93 Time:
Analyzed by: MF Date: 9/20/93 Time: 7:30
Type of Samples: Soil Sample Condition: GIST Units: mg/kg, mg/l

Samp #	Field Code	BENZENE	TOLUENE	ETHYL BENZENE	PARA-XYLENE	META-XYLENE	ORTHO-XYLENE	MTBE
1	SFRR St.Pt.0'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2	SFRR Arroyo 20'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3	SFRR Arr. 100'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4	SFRR Arr. 300'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
5	HSUS Pond 10'	2.297	0.576	0.597	0.088	0.050	0.047	1.171
6	HSUS St.Pt. 0'	<0.001	<0.001	<0.001	<0.001	0.008	0.020	<0.001
7	HSU Arroyo 20'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
8	HSU " 100'	<0.001	<0.001	0.009	<0.001	<0.001	0.023	<0.001
9	HSU " 300'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10	HSU " 600'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11	HSU " 900'	<0.001	<0.001	<0.001	<0.001	<0.001	0.008	<0.001
12	HSU " 1200'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
13	HSU " 1500'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
14	HSU " 1800'	<0.001	<0.001	<0.001	<0.001	<0.001	0.007	<0.001
15	HSU " 2100'	<0.001	<0.001	<0.001	<0.001	<0.001	0.008	<0.001
16	HSU " 2400'	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	QC Recovery	1.802	1.939	1.958	1.914	1.951	2.049	1.398
	QC Spike	1.910	1.970	1.970	1.912	1.912	1.939	1.597
	Accuracy	94.3	98.4	99.3	100.1%	102.0%	105.7%	87.4%
	Air Blank	***	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Methods - AUTOMATED HEADSPACE GC
- EPA SW-846; EPA METHODS 8020

Michael R. Fowler

Date 9/21/93

Michael R. Fowler

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TEXAS 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NEW MEXICO 88240

FINAL ANALYSIS REPORT

Company: Environmental Spill Control, Inc. Date: 9/23/93
Address: P.O. Box 5890 Lab#: H1365
City, State: Hobbs, NM 88241-5890

Project Name:
Project Location: Hospah, NM
Sampled by: ST Date: 9/21/93 Time: 8:40
Analyzed by: MF/HM Date: 9/22/93 Time: 9:30
Type of Samples: Soil Sample Condition: GST Units: mg/kg

Samp #	Field Code	BENZENE	TOLUENE	ETHYL BENZENE	PARA-XYLENE	META-XYLENE	ORTHO-XYLENE	MTBE
1	0' Hanson Sec.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2	20' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3	100' "	<0.001	<0.001	0.011	<0.001	0.004	<0.001	<0.001
4	300' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
5	600' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
6	900' "	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001
7	1200' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
8	1500' "	0.004	<0.001	0.004	<0.001	0.002	0.003	<0.001
9	1800' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10	2100' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11	2400' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12	900' S.F.Sec.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
13	1200' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
14	1500' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
15	1800' "	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
16	2100' "	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001
	QC Recovery	1.988	2.193	2.205	2.131	2.104	2.210	1.525
	QC Spike	2.144	2.212	2.212	2.147	2.147	2.177	1.794
	Accuracy	92.7%	99.1%	99.7%	99.3%	98.0%	101.5%	85.0%
	Air Blank	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Methods - AUTOMATED HEADSPACE GC
- EPA SW-846; EPA METHODS 8020

Michael R. Fowler

Date 9/23/93

Michael R. Fowler

ENVIRONMENTAL SPILL CONTROL, INC.
6210 Lovington Highway
P.O. Box 5890
Hobbs, NM 88240
(505) 392-6167 (800) 390-6167

SOIL ANALYSIS REPORT

DATE: 08/26/93
CLIENT: B C & D OPERATING
SUPERVISOR: A. HODGE

FACILITY: HOSAH SAND UNIT
1ST OVER FLOW PIT
DISCHARGE & ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	7	PPM	4.5'	30 yds down
SAMPLE NO. 2:	12	PPM	4.5'	40 yds
SAMPLE NO. 3:	3260	PPM	1'	50 yds
SAMPLE NO. 4:	43	PPM	4'	50 yds
SAMPLE NO. 5:	34280	PPM	1'	90 yds
SAMPLE NO. 6:	66	PPM	4'	90 yds
SAMPLE NO. 7:	27	PPM	4.5'	100 yds
SAMPLE NO. 8:	19	PPM	1'	200 yds up from pit background
SAMPLE NO. 9:	20	PPM	4'	110 yds
SAMPLE NO. 10:	23	PPM	4.5'	120 yds

COMMENTS: From outdrop to 30 yds needs to be redug because of rain and broken pipeline.

Sample # 8 was taken upstream in the draw to get a background for future tests.

ENVIRONMENTAL SPILL CONTROL, INC.
6210 Lovington Highway
P.O. Box 5890
Hobbs, NM 88240
(505) 392-6167 (800) 390-6167

SOIL ANALYSIS REPORT

DATE: 08/31/93 FACILITY: HOSAH SAND UNIT
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	127	PPM	8'	1370'
SAMPLE NO. 2:	284	PPM	10'	1400'
SAMPLE NO. 3:	80	PPM	10'	1430'
SAMPLE NO. 4:	18	PPM	10'	1460'
SAMPLE NO. 5:	27	PPM	10'	1490'
SAMPLE NO. 6:	672	PPM	10'	1520'
SAMPLE NO. 7:	96	PPM	10'	1550'
SAMPLE NO. 8:	29	PPM	10'	1580'
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Skipped section 600' to 1370' because Ceniza has a pipline to close to arroyo. At 1370' the contamination was under about 8" to 10" of silt. The earth is saturated and was a black sludge. Around 10' it started clearing up and tested ok.

ENVIRONMENTAL SPILL CONTROL, INC.
6210 Lovington Highway
P.O. Box 5890
Hobbs, NM 88240
(505) 392-6167 (800) 390-6167

SOIL ANALYSIS REPORT

DATE: 09/01/93 FACILITY: HOSAH SAND UNIT
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	446	PPM	1'	590'
SAMPLE NO. 2:	27	PPM	5'	600'
SAMPLE NO. 3:	24	PPM	7"	630'
SAMPLE NO. 4:	795	PPM	3.5'	660'
SAMPLE NO. 5:	23	PPM	6.5'	660'
SAMPLE NO. 6:	32	PPM	6.5'	690'
SAMPLE NO. 7:	44	PPM	6'	720'
SAMPLE NO. 8:	46	PPM	6'	750'
SAMPLE NO. 9:	142	PPM	5'	825'
SAMPLE NO. 10:	746	PPM	7'	825'

COMMENTS: Contamination differs in depth and width the farther down the arroyo we go. There is a layer of clay that is stopping contamination from going deeper into the earth. Below that level is clean earth. That same level of clay or layer differs in depth. The width of the ditch is random spots, probably from past spills down the arroyo.

ENVIRONMENTAL SPILL CONTROL, INC.
6210 Lovington Highway
P.O. Box 5890
Hobbs, NM 88240
(505) 392-6167 (800) 390-6167

SOIL ANALYSIS REPORT

DATE: 09/01/93 FACILITY: HOSAH SAND UNIT
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	476	PPM	9'	825'
SAMPLE NO. 2:	58	PPM	10'	825'
SAMPLE NO. 3:	852	PPM	4'	855'
SAMPLE NO. 4:	47	PPM	6'	875'
SAMPLE NO. 5:	24	PPM	9'	855'
SAMPLE NO. 6:	423	PPM	5'	880'
SAMPLE NO. 7:	123	PPM	13'	890'
SAMPLE NO. 8:	97	PPM	3.5'	920'
SAMPLE NO. 9:	56	PPM	4'	950'
SAMPLE NO. 10:	27	PPM	4'	980'

COMMENTS: Most of the contamination is coming from leaks in Cinizas pipeline. The pipeline is over forty years old. Contamination has been seeping out of pipeline for some time because it starts about three feet under top soil and travels downward and in some places outward as well. There has been leaks that have been cleaned but not to the standards of today. All samples of 9/1/93 were taken not more than 10' away from the pipeline. Excavated 1020 yds.

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SOIL ANALYSIS REPORT

DATE: 09/02/93 FACILITY: HOSAH SAND UNIT
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	15	PPM	4'	1010'
SAMPLE NO. 2:	5	PPM	4'	1040'
SAMPLE NO. 3:	13	PPM	4'	1070'
SAMPLE NO. 4:	11	PPM	4'	1100'
SAMPLE NO. 5:	29	PPM	4'	1140'
SAMPLE NO. 6:	222	PPM	4'	1170'
SAMPLE NO. 7:	35	PPM	4'	1200'
SAMPLE NO. 8:	552	PPM	4'	1230'
SAMPLE NO. 9:	82	PPM	5'	1170'
SAMPLE NO. 10:	27	PPM	5'	1230'

COMMENTS: Ditch cleared up, got into some good earth, nearing the crossover at Ciniza's pipeline. There is about a 4" to 8" layer of black saturated earth, but at 4' to 5' it becomes clean.

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SOIL ANALYSIS REPORT

DATE: 09/02/93 FACILITY: HOSAH SAND UNIT
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	17	PPM	4'	1260'
SAMPLE NO. 2:	26	PPM	7'	1290'
SAMPLE NO. 3:	24	PPM	7'	1320'
SAMPLE NO. 4:	16	PPM	9'	1350'
SAMPLE NO. 5:	24	PPM	9'	1370'
SAMPLE NO. 6:	29	PPM	10.5'	1400'
SAMPLE NO. 7:	35	PPM	10.5'	1520'
SAMPLE NO. 8:	72	PPM	8'	880'
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Passed over Ciniza's pipeline at 1265'. Black sludge is reappearing at 2' to 4'. Bottom is testing ok. Last three tests were hot spots from Monday.

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SOIL ANALYSIS REPORT

DATE: 09/0393 FACILITY: HOSAH SAND UNIT
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	28	PPM	9'	1610'
SAMPLE NO. 2:	74	PPM	9'	1640'
SAMPLE NO. 3:	98	PPM	9'	1670'
SAMPLE NO. 4:	69	PPM	9'	1700'
SAMPLE NO. 5:	17	PPM	9'	1730'
SAMPLE NO. 6:	10	PPM	8'	1770'
SAMPLE NO. 7:	38	PPM	8'	1800'
SAMPLE NO. 8:	62	PPM	8'	1830'
SAMPLE NO. 9:	41	PPM	8'	1860'
SAMPLE NO. 10:	43	PPM	8'	1890'

COMMENTS: Arrayo is getting wider the closer we go to the settling pond. Black sludge is becoming worse. It is now a layer 2' to 4' thick and 6' to 8' wide. In other places the sludge was 4' to 6' thick and 10' to 14' wide. Layer of clay keeps contamination from going any deeper.

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SOIL ANALYSIS REPORT

DATE: 09/04/93 FACILITY: HOSAH SAND UNIT
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS FIRST SETTLING POND & ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	86	PPM	8'	1920'
SAMPLE NO. 2:	4	PPM	8'	1950'
SAMPLE NO. 3:	107	PPM	8'	1980'
SAMPLE NO. 4:	20,200	PPM	2'	2000'
SAMPLE NO. 5:	52	PPM	8'	2030'
SAMPLE NO. 6:	9	PPM	8'	2050'
SAMPLE NO. 7:	12	PPM	8'	2080'
SAMPLE NO. 8:	9	PPM	8'	2110'
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: The settling pond starts at about 1900' down from the pit. At 5' to 6' there is a layer of black sludge and is about 18' to 24' wide. The clay under the sludge held the contamination from going deeper into the earth. At 8' it tests ok.

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SOIL ANALYSIS REPORT

DATE: 09/05/93
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS

FACILITY: HOSAH SAND UNIT
FIRST SETTLING POND 75' on other side down from pond

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	13	PPM	20'	2140'
SAMPLE NO. 2:	27	PPM	20'	2170'
SAMPLE NO. 3:	21	PPM	18'	2215'
SAMPLE NO. 4:	9	PPM	4'	2245'
SAMPLE NO. 5:		PPM		
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Fluid from 4 vessels contaminated earth up to 17'. At 20' reached good earth and tested ok. Across drainage there was a little contamination. Spot checked arroyo 300 yds. past the drainage and found no contamination.

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SOIL ANALYSIS REPORT

DATE: 09/06/93 FACILITY: SANTE FE
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS PIT DISCHARGE AND ARROYO

	TPH	DEPTH	LOCATION
SAMPLE NO. 1:	67,000 PPM	1'	5'
SAMPLE NO. 2:	794 PPM	1'	35'
SAMPLE NO. 3:	39 PPM	3.5'	65'
SAMPLE NO. 4:	27 PPM	4'	5'
SAMPLE NO. 5:	23 PPM	4'	35'
SAMPLE NO. 6:	17 PPM	4'	95'
SAMPLE NO. 7:	35 PPM	5'	125'
SAMPLE NO. 8:	14 PPM	5'	155'
SAMPLE NO. 9:	18 PPM	5'	185'
SAMPLE NO. 10:	11 PPM	5'	215'

COMMENTS: The Santa Fe arroyo was a bucket wide and 5' deep. Contamination was 1' to 2' deep. 4' to 5' was good earth and tested ok.

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SOIL ANALYSIS REPORT

DATE: 09/06/93 FACILITY: SANTE FE
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	8	PPM	5'	245'
SAMPLE NO. 2:	11	PPM	5'	275'
SAMPLE NO. 3:	19	PPM	5'	305'
SAMPLE NO. 4:	12	PPM	5'	335'
SAMPLE NO. 5:	3	PPM	5'	365'
SAMPLE NO. 6:	14	PPM	5'	395'
SAMPLE NO. 7:	17	PPM	5'	425'
SAMPLE NO. 8:	15	PPM	5'	455'
SAMPLE NO. 9:	11	PPM	5'	485'
SAMPLE NO. 10:	13	PPM	5'	515'

COMMENTS: Contamination was 1' to 2' deep. 4' to 5' was good earth and tested ok.

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SOIL ANALYSIS REPORT

DATE: 09/06/93 FACILITY: SANTE FE
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	22	PPM	5'	545'
SAMPLE NO. 2:	9	PPM	5'	575'
SAMPLE NO. 3:		PPM		
SAMPLE NO. 4:		PPM		
SAMPLE NO. 5:		PPM		
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: With track hoe, dug 1 bucket wide and 5' deep. Earth tested ok.

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SOIL ANALYSIS REPORT

DATE: 09/07/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS SETTLING POND

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	27	PPM	20'	0'
SAMPLE NO. 2:	724	PPM	20'	30'
SAMPLE NO. 3:	51	PPM	21'	30'
SAMPLE NO. 4:	38	PPM	20'	60'
SAMPLE NO. 5:		PPM		
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Contents of settling pond were real soupy. Pond is 25' wide and 20' deep. Layer of silt about 2' thick, then small layer of black sludge about 4" to 8" thick. Another small layer of silt. Large layer of black sludge about 4' to 5' thick. Bottom of clay tests ok.

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SOIL ANALYSIS REPORT

DATE: 09/08/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS SETTLING POND #2

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	57	PPM	20'	90'
SAMPLE NO. 2:	20	PPM	15'	120'
SAMPLE NO. 3:	24	PPM	15'	150'
SAMPLE NO. 4:		PPM		
SAMPLE NO. 5:		PPM		
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Dimensions of pond is 25' wide and 20' deep, then near the mouth of the pond, level of contamination raised to 5'.

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SOIL ANALYSIS REPORT

DATE: 09/13/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	37	PPM	10'	180'
SAMPLE NO. 2:	19	PPM	10'	210'
SAMPLE NO. 3:	24	PPM	10'	240'
SAMPLE NO. 4:	97	PPM	10'	270'
SAMPLE NO. 5:	67	PPM	10'	300'
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Layer of silt on top about 10" to 18". Small layer of sludge about 3" to 5" thick. Another layer of sludge 3' to 5'. Layer of grey clay that is mixed with sludge to make a barrier to good earth underneath the contaminated earth. Ditch is about 15' wide.

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SOIL ANALYSIS REPORT

DATE: 09/14/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	9	PPM	10'	330'
SAMPLE NO. 2:	38	PPM	10'	360'
SAMPLE NO. 3:	12	PPM	10'	390'
SAMPLE NO. 4:	15	PPM	10'	420'
SAMPLE NO. 5:	51	PPM	10'	450'
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Ditch now is 12' deep and 10' across.

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SOIL ANALYSIS REPORT

DATE: 09/15/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	14	PPM	10'	480'
SAMPLE NO. 2:	19	PPM	10'	510'
SAMPLE NO. 3:	7	PPM	10'	540'
SAMPLE NO. 4:	29	PPM	10'	570'
SAMPLE NO. 5:	45	PPM	10'	600'
SAMPLE NO. 6:	86	PPM	10'	630'
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Same as day before, but ditch is now a constant 10' wide.

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SOIL ANALYSIS REPORT

DATE: 09/17/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	44	PPM	8'	660'
SAMPLE NO. 2:	31	PPM	8'	690'
SAMPLE NO. 3:	32	PPM	8'	720'
SAMPLE NO. 4:	89	PPM	8'	750'
SAMPLE NO. 5:	97	PPM	7'	780'
SAMPLE NO. 6:	85	PPM	6'	810'
SAMPLE NO. 7:	74	PPM	5'	840'
SAMPLE NO. 8:	31	PPM	5'	870'
SAMPLE NO. 9:	13	PPM	5'	1300'
SAMPLE NO. 10:	91	PPM	5'	1330'

COMMENTS: Layer of silt 2'. Layer of black sludge 2' to 4'. Then clay under that. Traces of contamination from the above layer. About 1' of that clay has to be excavated. Below that is good earth. The reason for the jump in distance between samples at 870' and 1300' is because that part of the arroyo is under water.

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SOIL ANALYSIS REPORT

DATE: 09/17/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	28	PPM	5'	1360'
SAMPLE NO. 2:	31	PPM	5'	1390'
SAMPLE NO. 3:	56	PPM	5'	1420'
SAMPLE NO. 4:		PPM		
SAMPLE NO. 5:		PPM		
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: Top layer of silt 2', then layer of contamination 1.5', then good earth at about 5'.

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SOIL ANALYSIS REPORT

DATE: 09/18/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	74	PPM	5'	1450'
SAMPLE NO. 2:	26	PPM	5'	1480'
SAMPLE NO. 3:	93	PPM	5'	1510'
SAMPLE NO. 4:	37	PPM	5'	1540'
SAMPLE NO. 5:	49	PPM	5'	1570'
SAMPLE NO. 6:	22	PPM	5'	1600'
SAMPLE NO. 7:	17	PPM	5'	1630'
SAMPLE NO. 8:	51	PPM	5'	1660'
SAMPLE NO. 9:	19	PPM	5'	1690'
SAMPLE NO. 10:	41	PPM	5'	1720'

COMMENTS: 2' layer of silt. Then 1.5' to 2' layer of contamination. Good earth below that tested ok.

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SOIL ANALYSIS REPORT

DATE: 09/18/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	35	PPM	5'	1750'
SAMPLE NO. 2:	38	PPM	5'	1780'
SAMPLE NO. 3:	20	PPM	5'	1810'
SAMPLE NO. 4:	48	PPM	5'	1840'
SAMPLE NO. 5:	41	PPM	5'	1870'
SAMPLE NO. 6:	12	PPM	5'	1900'
SAMPLE NO. 7:	23	PPM	4'	1930'
SAMPLE NO. 8:	28	PPM	4'	1960'
SAMPLE NO. 9:	16	PPM	4'	1990'
SAMPLE NO. 10:	42	PPM	4'	2020'

COMMENTS: 2' layer of silt. Then 1.5' to 2' layer of contamination. Good earth below that tested ok.

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SOIL ANALYSIS REPORT

DATE: 09/18/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	40	PPM	3'	2050'
SAMPLE NO. 2:	28	PPM	2'	2080'
SAMPLE NO. 3:	35	PPM	2'	2110'
SAMPLE NO. 4:	31	PPM	2'	2140'
SAMPLE NO. 5:	29	PPM	2'	2170'
SAMPLE NO. 6:	23	PPM	2'	2200'
SAMPLE NO. 7:	28	PPM	2'	2230'
SAMPLE NO. 8:	14	PPM	2'	2260'
SAMPLE NO. 9:	10	PPM	2'	2300'
SAMPLE NO. 10:	18	PPM	2'	2400'

COMMENTS: Small layer of silt. Then a small layer of contamination about 2" to 4". Then good earth under that tested ok.

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SOIL ANALYSIS REPORT

DATE: 09/19/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	26	PPM	5	900'
SAMPLE NO. 2:	21	PPM	5'	930'
SAMPLE NO. 3:	32	PPM	5'	960'
SAMPLE NO. 4:	28	PPM	5'	990'
SAMPLE NO. 5:	17	PPM	5'	1020'
SAMPLE NO. 6:	24	PPM	5'	1050'
SAMPLE NO. 7:	39	PPM	5'	1080'
SAMPLE NO. 8:	27	PPM	5'	1110'
SAMPLE NO. 9:	42	PPM	5'	1140'
SAMPLE NO. 10:	53	PPM	5'	1170'

COMMENTS: 2' layer of silt. 1.5' to 2' layer of contamination. Then grey clay under that tested ok. Some places instead of clay, it is earth which tested ok also.

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SOIL ANALYSIS REPORT

DATE: 09/19/93 FACILITY: HANSON/SANTA FE
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	58	PPM	5	1200'
SAMPLE NO. 2:	30	PPM	5'	1230'
SAMPLE NO. 3:	34	PPM	5'	1260'
SAMPLE NO. 4:	49	PPM	5'	1290'
SAMPLE NO. 5:	Santa Fe	PPM	Santa Fe	Santa Fe
SAMPLE NO. 6:	18	PPM	4'	600'
SAMPLE NO. 7:	14	PPM	4'	630'
SAMPLE NO. 8:	9	PPM	4'	660'
SAMPLE NO. 9:	13	PPM	4'	690'
SAMPLE NO. 10:	10	PPM	4'	720'

COMMENTS: Hanson arroyo is same. Santa Fe arroyo is a bucket wide and 4' deep. Small top soil layer, then a 1' to 2' layer of contamination. Good earth under that.

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SOIL ANALYSIS REPORT

DATE: 09/20/93 FACILITY: SANTA FE
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	26	PPM	5	750'
SAMPLE NO. 2:	11	PPM	5'	780'
SAMPLE NO. 3:	17	PPM	5'	810'
SAMPLE NO. 4:	16	PPM	5'	840'
SAMPLE NO. 5:	20	PPM	5'	870'
SAMPLE NO. 6:	19	PPM	5'	900'
SAMPLE NO. 7:	13	PPM	5'	930'
SAMPLE NO. 8:	8	PPM	5'	960'
SAMPLE NO. 9:	10	PPM	5'	990'
SAMPLE NO. 10:	4	PPM	5'	1020'

COMMENTS: Arroyo had a strip of contamination that was 1' wide and 2' deep. 1' to 1.5' under surface. Good earth under that and it tested ok.

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SOIL ANALYSIS REPORT

DATE: 09/20/93 FACILITY: SANTA FE
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	7	PPM	5	1050'
SAMPLE NO. 2:	12	PPM	5'	1080'
SAMPLE NO. 3:	11	PPM	5'	1110'
SAMPLE NO. 4:	19	PPM	5'	1140'
SAMPLE NO. 5:	10	PPM	5'	1170'
SAMPLE NO. 6:	4	PPM	5'	1200'
SAMPLE NO. 7:	22	PPM	5'	1230'
SAMPLE NO. 8:	28	PPM	5'	1260'
SAMPLE NO. 9:	17	PPM	5'	1290'
SAMPLE NO. 10:	14	PPM	5'	1320'

COMMENTS: Arroyo had a strip of contamination that was 1' wide and 2' deep. 1' to 1.5' under surface. Good earth under that and it tested ok.

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SOIL ANALYSIS REPORT

DATE: 09/20/93 FACILITY: SANTA FE
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	16	PPM	5	1350'
SAMPLE NO. 2:	13	PPM	5'	1380'
SAMPLE NO. 3:	17	PPM	5'	1410'
SAMPLE NO. 4:	11	PPM	5'	1440'
SAMPLE NO. 5:	9	PPM	5'	1470'
SAMPLE NO. 6:	17	PPM	5'	1500'
SAMPLE NO. 7:	10	PPM	5'	1530'
SAMPLE NO. 8:	3	PPM	5'	1560'
SAMPLE NO. 9:	8	PPM	5'	1590'
SAMPLE NO. 10:	11	PPM	5'	1620'

COMMENTS: Arroyo had a strip of contamination that was 1' wide and 2' deep. 1' to 1.5' under surface. Good earth under that and it tested ok.

ENVIRONMENTAL SPILL CONTROL, INC.
6210 Lovington Highway
P.O. Box 5890
Hobbs, NM 88240
(505) 392-6167 (800) 390-6167

SOIL ANALYSIS REPORT

DATE: 09/20/93 FACILITY: SANTA FE
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	19	PPM	5'	1650'
SAMPLE NO. 2:	12	PPM	5'	1680'
SAMPLE NO. 3:	16	PPM	5'	1710'
SAMPLE NO. 4:	10	PPM	4'	1740'
SAMPLE NO. 5:	17	PPM	4'	1770'
SAMPLE NO. 6:	18	PPM	4'	1800'
SAMPLE NO. 7:	31	PPM	2.5'	1830'
SAMPLE NO. 8:	27	PPM	2.5'	1860'
SAMPLE NO. 9:	46	PPM	2.5'	1890'
SAMPLE NO. 10:	23	PPM	2.5'	1920'

COMMENTS: The strip of contamination is only a few inches thick. Good earth under it.

ENVIRONMENTAL SPILL CONTROL, INC.
6210 Lovington Highway
P.O. Box 5890
Hobbs, NM 88240
(505) 392-6167 (800) 390-6167

SOIL ANALYSIS REPORT

DATE: 09/20/93 FACILITY: SANTA FE/HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS ARROYO

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	32	PPM	2.5'	1950'
SAMPLE NO. 2:	27	PPM	2.5'	1980'
SAMPLE NO. 3:	22	PPM	2.5'	2010'
SAMPLE NO. 4:	29	PPM	2.5'	2040'
SAMPLE NO. 5:	58	PPM	4'	2070'
SAMPLE NO. 6:	64	PPM	6'	2100'
SAMPLE NO. 7:	52	PPM	10'	2130'
SAMPLE NO. 8:		PPM	HANSON PIT DISCHARGE	
SAMPLE NO. 9:	33	PPM	7'	30'
SAMPLE NO. 10:	21	PPM	7'	60'

COMMENTS: As the tributary neared the main arroyo it got deeper to same depth as the main arroyo. The contamination was 3.5' wide and 4' thick. The earth tested ok under that. At the Hanson pit discharge, the contamination was 2.5' wide and 3' to 4' thick. At 7' it cleaned up and tested ok.

ENVIRONMENTAL SPILL CONTROL, INC.
6210 Lovington Highway
P.O. Box 5890
Hobbs, NM 88240
(505) 392-6167 (800) 390-6167

SOIL ANALYSIS REPORT

DATE: 09/20/93 FACILITY: HANSON
CLIENT: B C & D OPERATING
SUPERVISOR: S. THOMAS PIT DISCHARGE

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	18	PPM	4'	90'
SAMPLE NO. 2:	26	PPM	2.5'	120'
SAMPLE NO. 3:	35	PPM	2.5'	150'
SAMPLE NO. 4:	31	PPM	2.5'	180'
SAMPLE NO. 5:	47	PPM	4'	210'
SAMPLE NO. 6:	40	PPM	8'	240'
SAMPLE NO. 7:	52	PPM	10'	270'
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: The contamination level raised to only 2" to 3" thick. As the small arroyo neared the main arroyo it deepened to the same depth. The strip of contamination became 2' wide and 3' thick. At 10' it cleaned up and tested ok.

Confined Space Entry Permit

Effective Date: (/ /)
Commencing: _____ AM/PM
Expiring: _____ AM/PM
Time Removed: _____ AM/PM

Permit

Lease (OCS-): _____ Facility: _____ Tank Battery/Well: _____
Worksite _____ Block: _____ Platform: _____ Rig: _____
Division: _____ Area: _____ SubArea: _____
Hot Work Permit Required: ☐ Yes ☐ No Hot Work Permit number: _____
Hazardous material (last product contained): _____ MSDS(s) available: ☐ Yes ☐ No
Work Description: _____ MSDS(s) Location: _____

Checklist

Conditions of Area/Equipment Prior to Confined Space Entry

Write initials or N/A (not applicable) in column.

	Initial:	Yes	No
Out of service		X	
Confined space emptied		X	
Liquid residue present			X
Ignition sources checked		X	
Lines blinded, removed, plugged		X	
Lockout/tagout procedures followed		X	
Explosion-proof equipment used		X	
Nonexplosion-proof equipment location checked		X	
Fire extinguisher and first-aid kit present		X	
Personal protection equipment listed below ready		X	
Respiratory protection required			X
Atmospheric monitoring (continuous preferred)		X	
O_2 (>19.5% but <23.5%)		X	
L.E.L. (0.0% desired, < 10.0% required)		X	
H_2S (<PEL/TLV)		X	
NORM			X
Other:			

	Initial:	Yes	No
Ventilation equipment operating		N	A
Intrinsically-safe explosion-proof lighting		N	A
Nearby area checked for hazards		X	
Warning signs posted		X	
Notified affected employees		X	
Emergency communication established		X	
Standby person present and trained			
Standby person's name: S.T.			
Rescue plan reviewed		X	
Water washed/displaced with water		N	A
Vessel steamed		N	A
Initial cleaning done from outside		N	A
Other:		N	A
Entrants trained and briefed		N	A
Entrant's Names: S.T.			

PPE

Personal Protective Equipment (Mark Required Items)

Ears/Eyes	Extremities	Body Suits	Respirator	Rescue	Fire Protection	Other: write in
☐ Goggles ☐ Face Shield ☐ Ear plugs ☐ Ear muffs ☑ Safety glasses	☑ Gloves ☑ Boots ☑ Hard hats ☐ Avoid skin contact	☑ Coveralls ☐ Fire retardant ☐ PVC suit ☐ Fully encapsulated	☐ SCBA ☐ Airline (with egress bottle) ☐ Particulate resp. (HEPA)	☐ Safety belt ☐ Lifeline ☐ Harness ☐ Alarm Horn ☑ First aid kit ☐ Tripod unit	☑ Extinguisher ☐ Fire hose ☐ Blanket ☐ Shield ☐ Wet down area ☐ Cover drain ☐ Fire watch	

Test Results

Time	Oxygen (%)	L.E.L. (%)	H_2S (ppm)	Toxic/Other write in:	NORM µRs/CPM	Instrument Number(s)	Person Testing
9:00	20.1	0	0	N/A	N/A	LR81532	ST
10:00	20.1	0	0				
12:00	20.1	0	0				
1:00	20.1	0	0				
3:00	20.1	0	0				
4:00	20.1	0	0				
5:45	20.1	0	0				

Additional Precautions:

Signature

The location where this work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

(Qualified person's signature)

Stony Thomas
(Supervisor's approval signature)

Job completed ☐ Yes ☑ No
Notified supervisor of completion ☐ Yes ☑ No
Blinds and locks removed ☐ Yes ☐ No

Distribution: Original (blue) - Post at work site then forward to department maintaining the Work Permit file.
Copy (white) - Keep with pad.

Confined Space Entry Permit

Effective Date: (/ /)
Commencing: _____ AM PM
Expiring: _____ AM PM
Time Removed: _____ AM PM

Permit

Lease (OCS-) _____ Facility: _____ Tank Battery/Well: _____
Worksite _____ Block: _____ Platform: _____ Rig: _____
Division _____ Area: _____ SubArea: _____
Hot Work Permit Required. ☐ Yes ☐ No Hot Work Permit number: _____
Hazardous material (last product contained): _____ MSDS(s) available: ☐ Yes ☐ No
Work Description: _____ MSDS(s) Location: _____

Checklist

Conditions of Area/Equipment Prior to Confined Space Entry

Write initials or N/A (not applicable) in column.

	Initial	Yes	No
Out of service		X	
Confined space emptied		X	
Liquid residue present			X
Ignition sources checked		X	
Lines blinded, removed, plugged		X	
Lockout/tagout procedures followed		X	
Explosion-proof equipment used		X	
Nonexplosion-proof equipment location checked		X	
Fire extinguisher and first-aid kit present		X	
Personal protection equipment listed below ready		X	
Respiratory protection required			X
Atmospheric monitoring (continuous preferred)		X	
O_2 (>19.5% but <23.5%)		X	
L.E.L (0.0% desired, < 10.0% required)		X	
H_2S (<PEL/TLV)		X	
NORM			X
Other:			

	Initial	Yes	No
Ventilation equipment operating		N	A
Intrinsically-safe explosion-proof lighting		N	A
Nearby area checked for hazards		X	
Warning signs posted		X	
Notified affected employees		X	
Emergency communication established		X	
Standby person present and trained			
Standby person's name: S.T.			
Rescue plan reviewed		X	
Water washed/displaced with water		N	A
Vessel steamed		N	A
Initial cleaning done from outside		N	A
Other:		N	A
Entrants trained and briefed		N	A
Entrant's Names: S.T.			

PPE

Personal Protective Equipment (Mark Required Items)

Ears/Eyes	Extremities	Body Suits	Respirator	Rescue	Fire Protection	Other: write in
☐ Goggles ☐ Face Shield ☐ Ear plugs ☐ Ear muffs ☐ Safety glasses	☐ Gloves ☐ Boots ☐ Hard hats ☐ Avoid skin contact	☐ Coveralls ☐ Fire retardant ☐ PVC suit ☐ Fully encapsulated	☐ SCBA ☐ Airline (with egress bottle) ☐ Particulate resp. (HEPA)	☐ Safety belt ☐ Lifeline ☐ Harness ☐ Alarm Horn ☐ First aid kit ☐ Tripod unit	☐ Extinguisher ☐ Fire hose ☐ Blanket ☐ Shield ☐ Wet down area ☐ Cover drain ☐ Fire watch	

Test Results

Time	Oxygen (%)	L.E.L. (%)	H_2S (ppm)	Toxic/Other write in:	NORM µRs/CPM	Instrument Number(s)	Person Testing
10:00	20.1	0	0				
12:00	20.1	0	0				
2:00	20.1	0	0				
4:00	20.1	0	0				

Additional Precautions:

Signature

The location where this work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

(Qualified person's signature) _____

(Supervisor's approval signature) Stoney Thomas

Job completed ☐ Yes ☒ No
Notified supervisor of completion ☐ Yes ☒ No
Blinds and locks removed ☐ Yes ☐ No

Distribution: Original (blue) - Post at work site then forward to department maintaining the Work Permit file.
Copy (white) - Keep with pad.

Confined Space Entry Permit

Effective Date: (/ /)
Commencing: _____ AM PM
Expiring: _____ AM PM
Time Removed: _____ AM PM

Permit

Lease (OCS-): _____ Facility: _____ Tank Battery/Well: _____
Worksite: _____ Block: _____ Platform: _____ Rig: _____
Division: _____ Area: _____ SubArea: _____
Hot Work Permit Required: ☐ Yes ☐ No Hot Work Permit number: _____
Hazardous material (last product contained): _____ MSDS(s) available: ☐ Yes ☐ No
Work Description: _____ MSDS(s) Location: _____

Checklist

Conditions of Area/Equipment Prior to Confined Space Entry

Write initials or N/A (not applicable) in column.

	Initial:	Yes	No
Out of service		X	
Confined space emptied		X	
Liquid residue present			X
Ignition sources checked		X	
Lines blinded, removed, plugged		X	
Lockout/tagout procedures followed		X	
Explosion-proof equipment used		X	
Nonexplosion-proof equipment location checked		X	
Fire extinguisher and first-aid kit present		X	
Personal protection equipment listed below ready		X	
Respiratory protection required			X
Atmospheric monitoring (continuous preferred)		X	
O_2 (>19.5% but <23.5%)		X	
L.E.L. (0.0% desired, < 10.0% required)		X	
H_2S (<PEL/TLV)		X	
NORM			X
Other:			

	Initial:	Yes	No
Ventilation equipment operating		N	A
Intrinsically-safe explosion-proof lighting		N	A
Nearby area checked for hazards		X	
Warning signs posted		X	
Notified affected employees		X	
Emergency communication established		X	
Standby person present and trained			
Standby person's name: S.T.			
Rescue plan reviewed		X	
Water washed/displaced with water		N	A
Vessel steamed		N	A
Initial cleaning done from outside		N	A
Other:		N	A
Entrants trained and briefed		N	A
Entrant's Names: S.T.			

PPE

Personal Protective Equipment (Mark Required Items)

Ears/Eyes	Extremities	Body Suits	Respirator	Rescue	Fire Protection	Other: write in
☐ Goggles ☐ Face Shield ☐ Ear plugs ☐ Ear muffs ☐ Safety glasses	☐ Gloves ☐ Boots ☐ Hard hats ☐ Avoid skin contact	☐ Coveralls ☐ Fire retardant ☐ PVC suit ☐ Fully-encapsulated	☐ SCBA ☐ Airline (with egress bottle) ☐ Particulate resp. (HEPA)	☐ Safety belt ☐ Lifeline ☐ Harness ☐ Alarm Horn ☐ First aid kit ☐ Tripod unit	☐ Extinguisher ☐ Fire hose ☐ Blanket ☐ Shield ☐ Wet down area ☐ Cover drain ☐ Fire watch	

Test Results

Time	Oxygen (%)	L.E.L. (%)	H_2S (ppm)	Toxic/Other write in:	NORM µRs/CPM	Instrument Number(s)	Person Testing
12:00	20.1	0	0	N/A	N/A	LR81532	S.T.
1:45	20.1	0	0				
3:00	20.1	0	0				
4:45	19.9	0	0				
6:00	19.9	0	0				

Additional Precautions:

Signature

The location where this work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

(Qualified person's signature) _____

(Supervisor's approval signature) _____

Job completed ..... ☐ Yes ☒ No

Notified supervisor of completion ..... ☐ Yes ☒ No

Blinds and locks removed ..... ☐ Yes ☐ No

Distribution: Original (blue) - Post at work site then forward to department maintaining the Work Permit file.
Copy (white) - Keep with pad.

Confined Space Entry Permit

Effective Date: (/ /)
Commencing: _____ AM PM
Expiring: _____ AM PM
Time Removed: _____ AM PM

Permit

Lease (OCS-) _____ Facility: _____ Tank Battery/Well: _____
Worksite _____ Block: _____ Platform: _____ Rig: _____
Division: _____ Area: _____ SubArea: _____
Hot Work Permit Required: ☐ Yes ☐ No Hot Work Permit number: _____
Hazardous material (last product contained): _____ MSDS(s) available: ☐ Yes ☐ No
Work Description: _____ MSDS(s) Location: _____

Checklist

Conditions of Area/Equipment Prior to Confined Space Entry

Write initials or N/A (not applicable) in column.

	Initial	Yes	No
Out of service		X	
Confined space emptied		X	
Liquid residue present			X
Ignition sources checked		X	
Lines blinded, removed, plugged		X	
Lockout/tagout procedures followed		X	
Explosion-proof equipment used		X	
Nonexplosion-proof equipment location checked		X	
Fire extinguisher and first-aid kit present		X	
Personal protection equipment listed below ready		X	
Respiratory protection required			X
Atmospheric monitoring (continuous preferred)		X	
O_2 (>19.5% but <23.5%)		X	
L.E.L (0.0% desired, < 10.0% required)		X	
H_2S (<PEL/TLV)		X	
NORM			X
Other:			

	Initial	Yes	No
Ventilation equipment operating		N	A
Intrinsically-safe explosion-proof lighting		N	A
Nearby area checked for hazards		X	
Warning signs posted		X	
Notified affected employees		X	
Emergency communication established		X	
Standby person present and trained			
Standby person's name: S.T.			
Rescue plan reviewed		X	
Water washed/displaced with water		N	A
Vessel steamed		N	A
Initial cleaning done from outside		N	A
Other:		N	A
Entrants trained and briefed		N	A
Entrant's Names: S.T.			

PPE

Personal Protective Equipment (Mark Required Items)

Ears/Eyes	Extremities	Body Suits	Respirator	Rescue	Fire Protection	Other: write in
☐ Goggles ☐ Face Shield ☐ Ear plugs ☐ Ear muffs ☐ Safety glasses	☐ Gloves ☐ Boots ☐ Hard hats ☐ Avoid skin contact	☐ Coveralls ☐ Fire retardant ☐ PVC suit ☐ Fully-encapsulated	☐ SCBA ☐ Airline (with egress bottle) ☐ Particulate resp. (HEPA)	☐ Safety belt ☐ Lifeline ☐ Harness ☐ Alarm Horn ☐ First aid kit ☐ Tripod unit	☐ Extinguisher ☐ Fire hose ☐ Blanket ☐ Shield ☐ Wet down area ☐ Cover drain ☐ Fire watch	

Test Results

Time	Oxygen (%)	L.E.L. (%)	H_2S (ppm)	Toxic/Other write in:	NORM µRs/CPM	Instrument Number(s)	Person Testing
8:30	20.1	0	0	N/A	N/A	LR81532	S.T.
9:45	20.1	0	0				
11:00	20.1	0	0				
1:00	20.1	0	0				
2:45	20.1	0	0				
4:00	19.9	0	0				
6:00	19.9	0	0				

Additional Precautions:

Signature

The location where this work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

(Qualified person's signature) _____

(Supervisor's approval signature) Stony Thomas

Job completed ☐ Yes ☒ No
Notified supervisor of completion ☐ Yes ☒ No
Blinds and locks removed ☐ Yes ☒ No

Distribution: Original (blue) - Post at work site then forward to department maintaining the Work Permit file.
Copy (white) - Keep with pad.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

July 23, 1993

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-242-359

Mr. Donnie Hill
BC & D Operating, Inc.
P.O. Box 5926
Hobbs, New Mexico 88241

RE: SOIL REMEDIATION
BC & D OPERATING, INC. HOSPAH FIELD
MCKINLEY COUNTY, NEW MEXICO

Dear Mr. Hill:

The New Mexico Oil Conservation Division (OCD) has reviewed the July 16, 1993 BC & D Operating, Inc. request to excavate and stockpile contaminated soil from the arroyo and two settling ponds adjacent to BC & D Operating's tank batteries in the Hospah Field.

The above referenced request **is hereby approved with the following conditions:**

1. BC & D Operating will document the final contaminant levels upon completion of excavation as per OCD's February 1993 "UNLINED SURFACE IMPOUNDMENT CLOSURE GUIDELINES" which are enclosed for you reference.

2. A completion report containing the results of all final contaminant level sampling, locations of sampling points, volumes excavated, maps showing the locations of the areas excavated and the stockpile areas and any other pertinent information related to this project will be submitted to OCD by October 1, 1993.

3. BC & D Operating will notify OCD at least 72 hours in advance of all activities such that OCD may have the opportunity to witness the work elements and/or spilt samples.

Please be advised that OCD approval does not limit BC & D Operating to the work plan proposed should BC & D Operating's actions fail to adequately remediate contaminants related to their operations. In addition, OCD approval does not relieve BC & D Operating of responsibility for compliance with any other federal, state or local laws and/or regulations.

If you have any questions, please contact me at (505) 827-5885.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

Enclosure

xc: OCD Aztec Office

BC & D OPERATING, INC.

OIL CONSERVATION DIVISION
RECEIVED

'93 JUL 21 AM 10 33

Fax recieved 7/16/93

State of New Mexico
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Attn: William Olson

Dear Mr. Olson:

B C & D Operating, Inc. has purchased the Hospah Field, McKinley County, New Mexico from American Exploration Company. We have a concern for the weather condition that late July and August may yield. Generally this time of the year the weather tends to be wet. The arroyo and the two settling ponds in Section 1 and Section 6 have dried considerably which will allow the oil stained soil to be removed much easier. If it should rain it could cause a delay in the cleanup operation.

B C & D is requesting permission to remove the soil from the two settling ponds and stock pile it in a secured area near the arroyo. The stock piles will be protected from the rain with a burma around each to prevent any storm water run off from carrying any of the soil back to the arroyo. Following the permitting of the centralized land farm facilities, the material will be loaded on truck and carried to the site for remediation.

Please advise of your decision at (505) 392-2041 or fax to (505) 392-2793.

Thank you,

Donnie Hill

Donnie Hill
President

DH/sn

cc: Aztec OCD - Denny Foust
Santa Fe OCD - Roger Anderson
Santa Fe OCD - Kathy Brown
American Exploration - Lloyd Hetrick

P.O. BOX 5926 HOBBS, NM 88241 TELEPHONE NO.: (505) 392-2041

AMERICAN EXPLORATION COMPANY

FACSIMILE TRANSMITTAL

DATE: 5-26-93

TO: Denny Foust

ATTN:

FAX #: 505/334-6170

FROM: Rod Oxford

PAGES TO FOLLOW EXCLUDING COVER PAGE 4

COMMENTS:

IF THERE ARE ANY PROBLEMS WITH THE TRANSMITTAL OF THIS FAX,

PLEASE CALL (713) 756-6395

FAX # (713) 756-6006

1331 Lamar Street, Suite 900, Houston, Texas 77010-3088, Telephone: (713) 756-6000
885 Third Avenue, Suite 1200, New York, New York 10022-4802, Telephone: (212) 644-6900

American Exploration Company

May 26, 1993

Mr. David Coss
New Mexico Environment Department
Water and Waste Management Division
Surface Water Quality Bureau
1190 St. Francis Bureau
P. O. Box 26110
Santa Fe, New Mexico 87502

RE: Hospah Oil Field
McKinley County, New Mexico

Dear Mr. Coss:

Enclosed is our completed application for a New Mexico water quality certification. We understand the certification is required to qualify for a Nationwide Permit under Section 404 of the Clean Water Act. Should you require any further information to process our application, please call me at (713)756-6386. Thank you.

Yours truly,

Roderick Oxford
Vice President - Legal

RO/rg
l-699ro

Enclosure

cc: Denny G. Foust, N.M. O.C.D.
Lloyd Hetrick, American Exploration Co.

1331 Lamar Street, Suite 600, Houston, Texas 77010-3088, Telephone: (713) 756-6000
885 Third Avenue, Suite 1200, New York, New York 10022-4802, Telephone: (212) 644-6900

APPLICATION FOR NEW MEXICO WATER QUALITY APPROVAL TO CONDUCT WORK UNDER A NATIONWIDE SECTION 404 PERMIT

New Mexico Environment Department
Water and Waste Management Division
Surface Water Quality Bureau
1190 St. Francis Drive, P.O. Box 26110, Santa Fe, New Mexico 87502

State of New Mexico water quality certification of nationwide permits requires that plans for any work in a perennial water course or work that disturbs more than 1/2 acre of wetlands must be approved by the Environment Department prior to conducting the work.

1. **Applicant:**

Name	American Exploration Company
Address	1331 Lamar, Suite 900
	Houston, Texas 77010-3088
Contact Person:	Roderick Oxford / Lloyd Hetrick
Phone Number	713/756-6386 / 756-6499

2. **Describe the location of the proposed dredging or filling activity (include an area map) and river or waterbody affected. Be as specific as possible:**

Excavated material will be landfarmed at a location designated as "Landing Strip" on the attached map and located approximately 1/2 mile east of Hospah, New Mexico

3. **Type of work:** ____Bank Stabilization ____Road Crossing
____Maintenance X Above Headwaters
Other(describe) excavation and landfarming

4. **Describe the work to be done and its purpose:**

removal of soil and oily materials immediately downstream from water discharge points and skimming ponds identified on the attached map

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MAY 26 1993
OIL CON. DIV.
DIST. 3

5. Describe any adverse water quality impacts that may result from the proposed activity such as increased turbidity or erosion. How long will such impacts occur?

None identified

6. Describe methods to be used to prevent water quality impacts which could interfere with attainment of State designated fishery, recreation, irrigation, water supply or other uses. If those actions include constructing sediment ponds, retention dams, or other structures, please attach plans, schedules and other information as appropriate:

Landfarming activities will be conducted in accordance with New Mexico Oil Conservation Division regulations and a levee system will be constructed to prevent runoff.

7. Describe the physical and chemical characteristics of the dredged or fill materials (such as rock size, mineral content or man-made materials). Be as specific as possible:

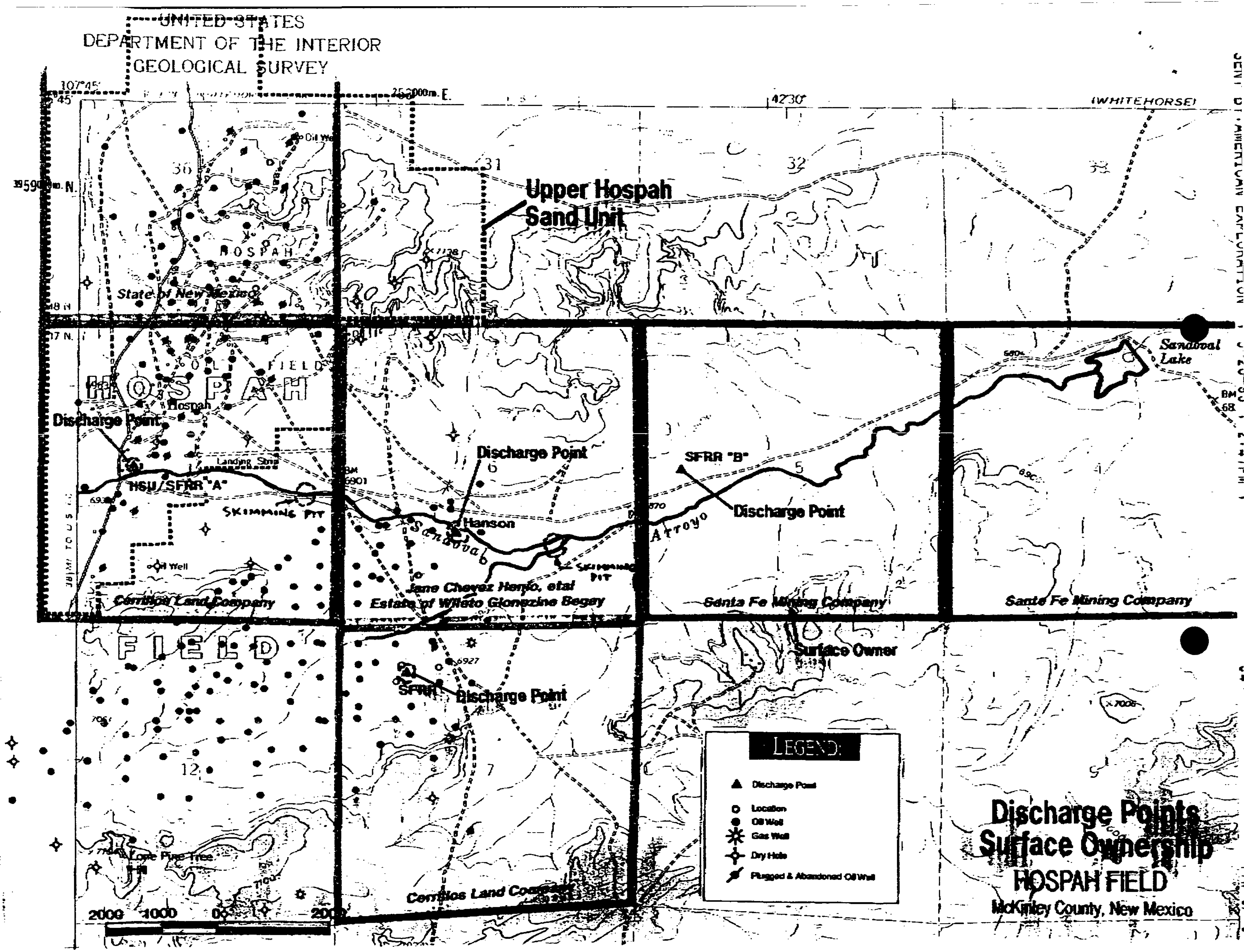
soil, oily soil and oil

8. Project Schedule: Start date 6/15/93 End date 8/15/93

9. I certify that the information contained in this application, to the best of my knowledge, is true, complete and accurate.

Applicant [signature] Date 5/26/93

Note: There is no authorization to work under a nationwide permit in New Mexico until this application is approved by the Environment Department.



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Discharge Points
Surface Ownership
HOSPAH FIELD
McKinley County, New Mexico
LEGEND
Discharge Point
Location
Oil Well
Gas Well
Dry Hole
Plugged & Abandoned Oil Well
Upper Hospah Sand Unit
Discharge Point
HSU/SFRR "A"
SFRR "B"
Discharge Point
Discharge Point
SFRR
Discharge Point
Hanson
Hospah
Landing Strip
Skimming Pit
Skimming Pit
State of New Mexico
Cerrillos Land Company
Jane Chevez Henio, etal
Estate of Wileto Glonezine Begay
Santa Fe Mining Company
Sante Fe Mining Company
Surface Owner
Cerrillos Land Company
Sandoval Lake
Arroyo
HOSPAH
HOSPAH OIL FIELD
FIELD
Lone Pine Tree
(WHITEHORSE)
2000 1000 0 2000

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DIVISION
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

FAX TRANSMITTAL SHEET AND INVOICE

DATE: 6/22/93

TO: Kathy Brown - Bill Olson
OCD
Santa Fe, NM

FROM: Denny Foust OCD Aztec

FAX: 505-334-6170

COMMENTS: Do you have any input on this.

NUMBER OF PAGES INCLUDING COVER: 2

CHARGES: ———

PLEASE REMIT TO LETTERHEAD ADDRESS WHEN THERE IS A CHARGE

AMERICAN EXPLORATION COMPANY

EXCAVATION PLAN FOR THE HOSPAH FIELD

MAY, 1993

DRAFT

6-16-93

I. Prerequisites

A. All required USCOE and NMOCD permits to excavate and remediate oily soils.

B. Landing strip site improvements to accommodate 10,000+ cubic yards of material for remediation and properly manage stormwater runoff.

C. Field testing of an Organic Vapor Analyzer (OVA) to use field benzene vapor readings to predict hydrocarbon content of the soil.

D. Approval of this Excavation Plan by the NMOCD.

II. Excavation Activities

A. Mobilize backhoe, dump truck(s) and American supervisor with OVA to the HSU/SFRR"A" discharge point. Hold prejob safety meeting and individual responsibilities.

B. Remove oily soil along the arroyo until the 100 mg/kg limit is reached.

C. Place excavated material into dump truck(s) for transport to the landing strip/treatment site.

D. Spread out the material at the treatment site.

E. Continue removal of oily soil along the arroyo until the HSU/SFRR"A" discharge area is below 100 mg/kg limit. Confirm this result with NMOCD Field Inspector and BC&D Oil & Gas.

F. Repeat above steps A. through E. for the Hanson discharge point, SFRR discharge point, skimming pit #1 and skimming pit #2.

Attachment - Field Map

MI-018

AMERICAN EXPLORATION COMPANY

FACSIMILE TRANSMITTAL

DATE: 5-5-93

TO: DENNY FOUST

ATTN:

FAX #: 505/334-6170

FROM: ROD OXFORD

PAGES TO FOLLOW EXCLUDING COVER PAGE 6

COMMENTS:

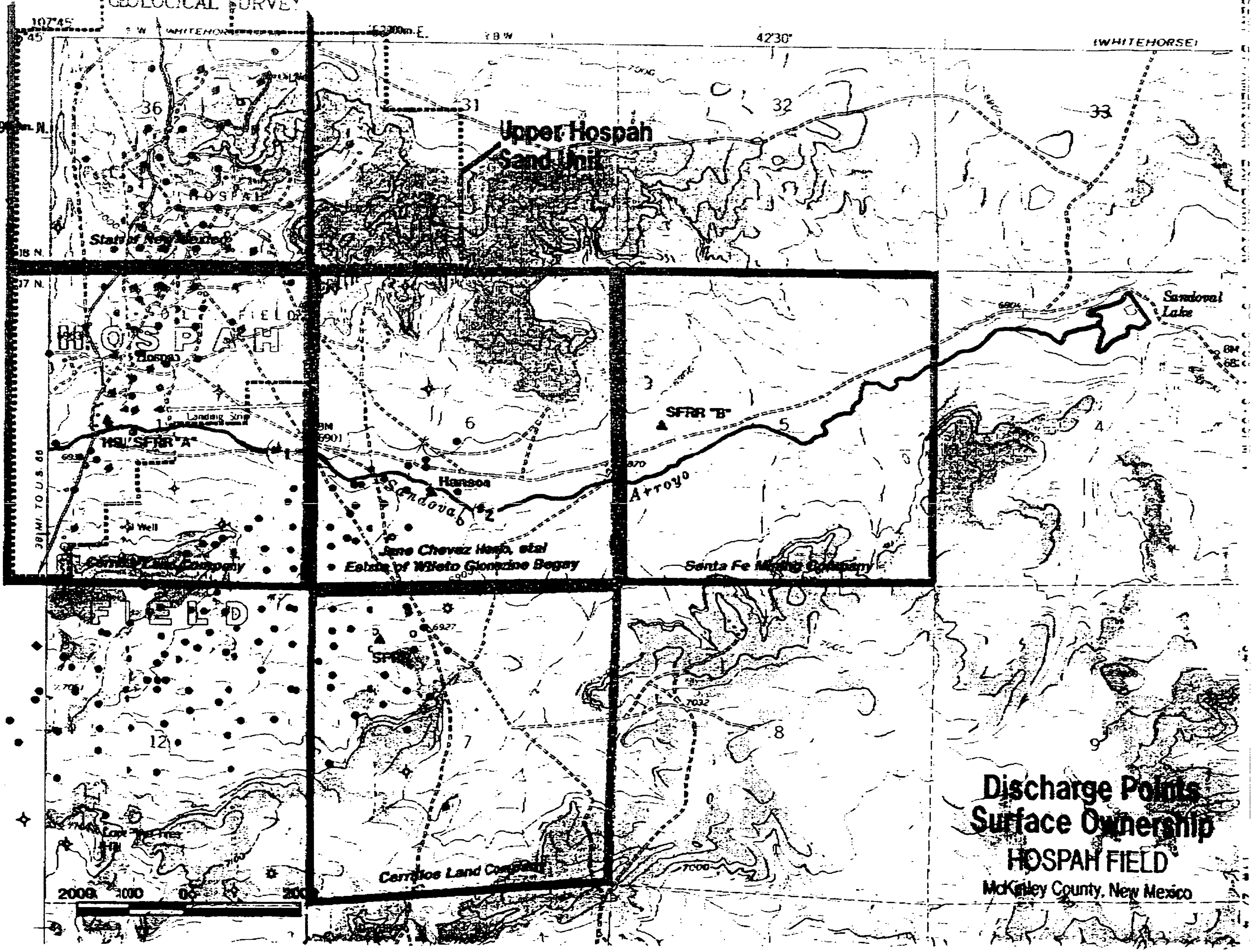
IF THERE ARE ANY PROBLEMS WITH THE TRANSMITTAL OF THIS FAX,

PLEASE CALL (713) 756-6395

FAX # (713) 756-6006

1331 Lamar Street, Suite 900, Houston, Texas 77010-3088, Telephone: (713) 756-6000
885 Third Avenue, Suite 1200, New York, New York 10022-4802, Telephone: (212) 644-6900

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Discharge Points
Surface Ownership
HOSPAH FIELD
McKinley County, New Mexico

LAB ANALYSIS INSTRUCTIONS

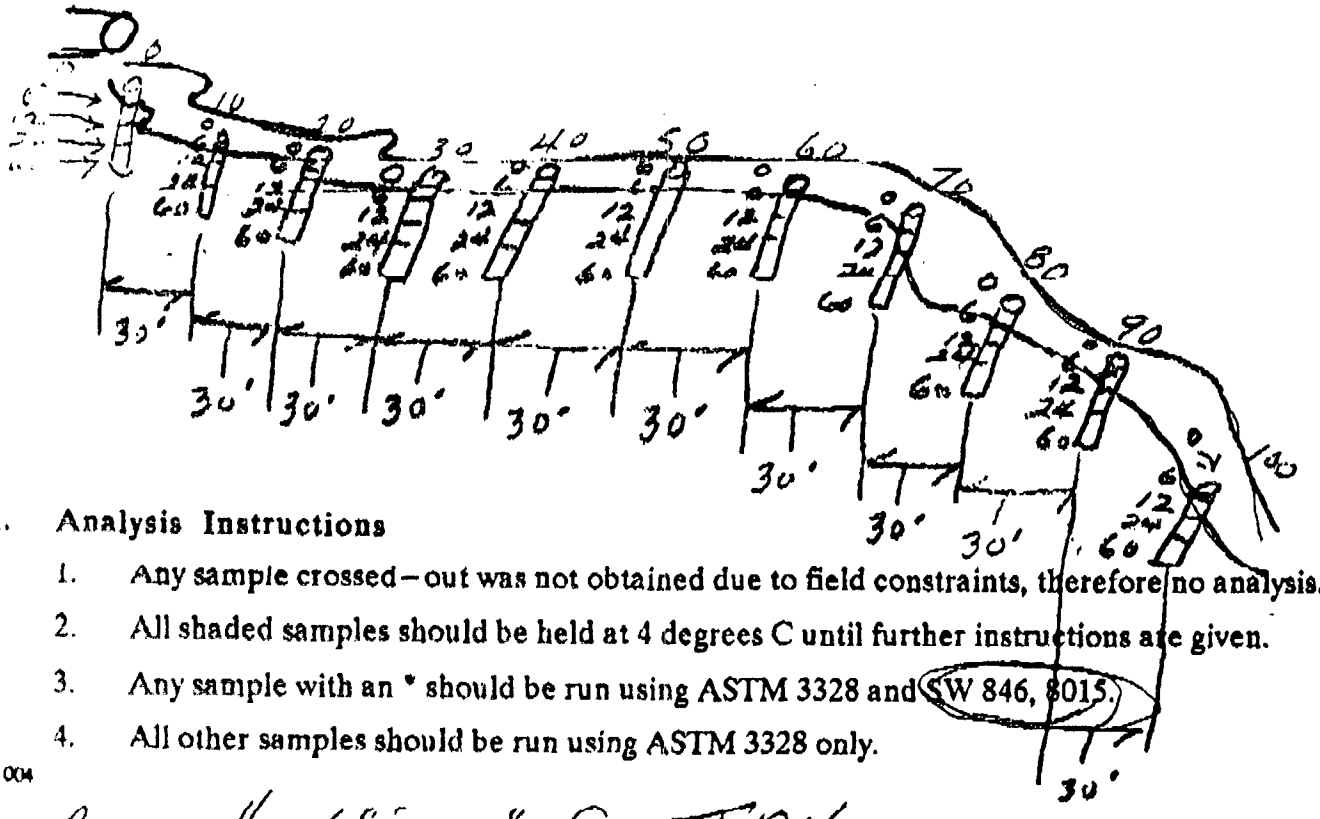
Discharge Point: HSO/SFRR "A"

Sampling Date: 4/2/93 **By:** [signature]

I. Samples Obtained

0 – 0"	0 – 6"*	0 – 12"	0 – 24"	0 – 60"
10 – 0"	10 – 6"*	10 – 12"	10 – 24"	10 – 60"
20 – 0"	20 – 6"	20 – 12"	20 – 24"	20 – 60"
30 – 0"	30 – 6"	30 – 12"	30 – 24"	30 – 60"
40 – 0"	40 – 6"	40 – 12"	40 – 24"	40 – 60"
50 – 0"	50 – 6"	50 – 12"	50 – 24"	50 – 60"
60 – 0"	60 – 6"	60 – 12"	60 – 24"	60 – 60"
70 – 0"	70 – 6"	70 – 12"	70 – 24"	70 – 60"
80 – 0"	80 – 6"	80 – 12"	80 – 24"	80 – 60"
90 – 0"	90 – 6"	90 – 12"	90 – 24"	90 – 60"
100 – 0"	100 – 6"	100 – 12"	100 – 24"	100 – 60"

II. Field Sketch of the Sampling



III. Analysis Instructions

1. Any sample crossed – out was not obtained due to field constraints, therefore no analysis.
2. All shaded samples should be held at 4 degrees C until further instructions are given.
3. Any sample with an * should be run using ASTM 3328 and SW 846, 8015.
4. All other samples should be run using ASTM 3328 only.

MI-004

Run all 6" & 12" for TPH

LAB ANALYSIS INSTRUCTIONS

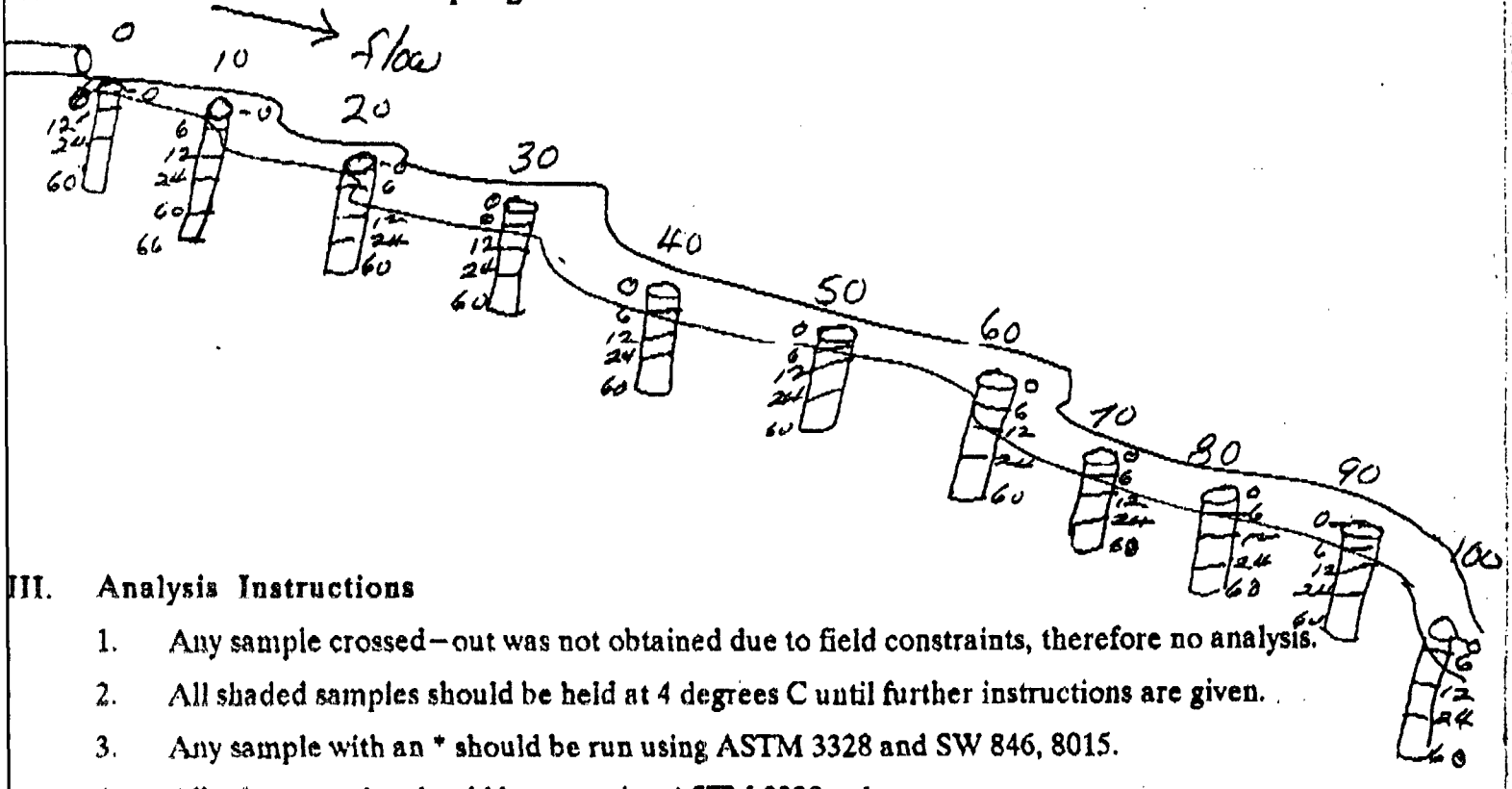
Discharge Point: Hanson

Sampling Date: 4/2/93 By: D Jones

I. Samples Obtained

0 – 0"	0 6"*	0 – 12"	0 – 24"	0 – 60"
10 – 0"	10 – 6"*	10 – 12"	10 – 24"	10 – 60"
20 – 0"	20 – 6"	20 – 12"	20 – 24"	20 – 60"
30 – 0"	30 – 6"	30 – 12"	30 – 24"	30 – 60"
40 – 0"	40 – 6"	40 – 12"	40 – 24"	40 – 60"
50 – 0"	50 – 6"	50 – 12"	50 – 24"	50 – 60"
60 – 0"	60 – 6"	60 – 12"	60 – 24"	60 – 60"
70 – 0"	70 – 6"	70 – 12"	70 – 24"	70 – 60"
80 – 0"	80 – 6"	80 – 12"	80 – 24"	80 – 60"
90 – 0"	90 – 6"	90 – 12"	90 – 24"	90 – 60"
100 – 0"	100 – 6"	100 – 12"	100 – 24"	100 60"

II. Field Sketch of the Sampling



III. Analysis Instructions

1. Any sample crossed–out was not obtained due to field constraints, therefore no analysis.
2. All shaded samples should be held at 4 degrees C until further instructions are given.
3. Any sample with an * should be run using ASTM 3328 and SW 846, 8015.
4. All other samples should be run using ASTM 3328 only.

MI-004

Run all 24"

LAB ANALYSIS INSTRUCTIONS

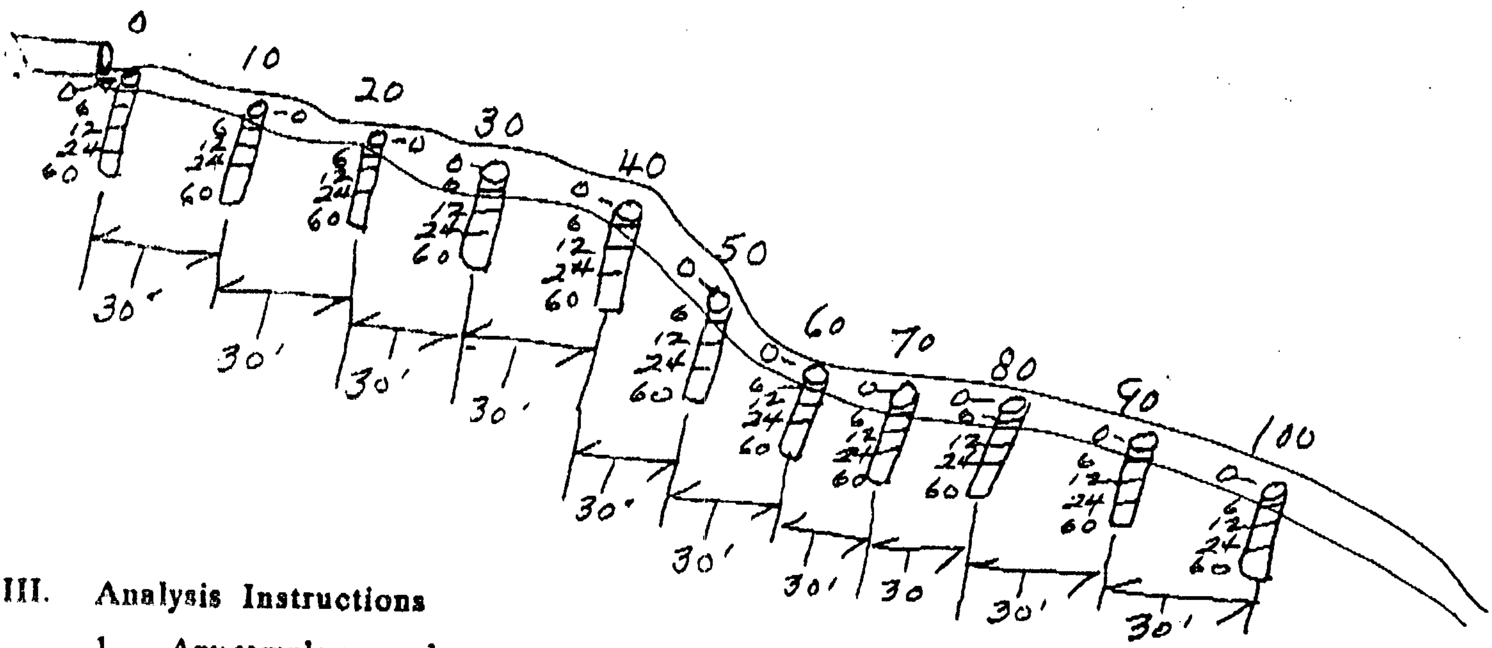
Discharge Point: S[illegible]RR

Sampling Date: 4/2/93 **By:** D Jones

I. Samples Obtained

0 – 0"	0 – 6"*	0 – 12"	0 – 24"	0 – 60"
10 – 0"	10 – 6"*	10 – 12"	10 – 24"	10 – 60"
20 – 0"	20 – 6"	20 – 12"	20 – 24"	20 – 60"
30 – 0"	30 – 6"	30 – 12"	30 – 24"	30 – 60"
40 – 0"	40 – 6"	40 – 12"	40 – 24"	40 – 60"
50 – 0"	50 – 6"	50 – 12"	50 – 24"	50 – 60"
60 – 0"	60 – 6"	60 – 12"	60 – 24"	60 – 60"
70 – 0"	70 – 6"	70 – 12"	70 – 24"	70 – 60"
80 – 0"	80 – 6"	80 – 12"	80 – 24"	80 – 60"
90 – 0"	90 – 6"	90 – 12"	90 – 24"	90 – 60"
100 – 0"	100 – 6"	100 – 12"	100 – 24"	100 – 60"

II. Field Sketch of the Sampling



III. Analysis Instructions

1. Any sample crossed–out was not obtained due to field constraints, therefore no analysis.
2. All shaded samples should be held at 4 degrees C until further instructions are given.
3. Any sample with an * should be run using ASTM 3328 and SW 846, 8015.
4. All other samples should be run using ASTM 3328 only.

MI–004

ANALYSIS INSTRUCTIONS

Skimming Pit: #1 (Down stream from H.S.W. Fac.)

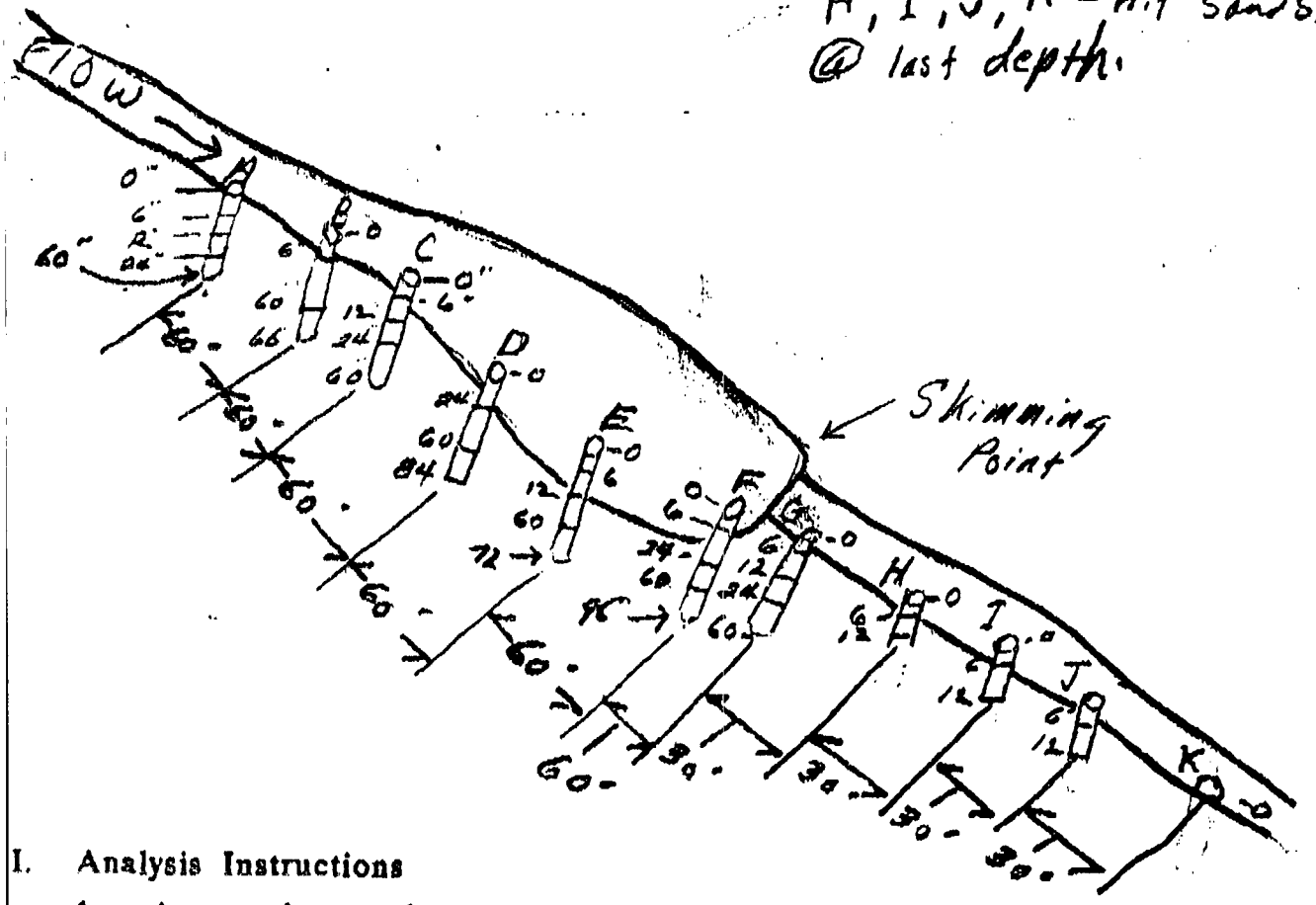
Sampling Date: 4/13/93 By: A. D. Jones

I. Samples Obtained

A – 0"	A – 6"*	A – 12"	A – 24"	A – 60"
B – 0"	B – 6"*	B – 12"	B – 24"	B – 60"
C – 0"	C – 6"	C – 12"	C – 24"	C – 60"
D – 0"	D – 6"	D – 12"	D – 24"	D – 60"
E – 0"	E – 6"	E – 12"	E – 24"	E – 60"
F – 0"	F – 6"	F – 12"	F – 24"	F – 60"

II. Field Sketch of the Skimming Pit and Location A through F for Sampling Points:

H, I, J, K – Hit Sandstone @ last depth.



I. Analysis Instructions

1. Any sample crossed–out was not obtained due to field constraints, therefore no analysis.
2. All shaded samples should be held at 4 degrees C until further instructions are given.
3. Any sample with an * should be run using ASTM 3328 and SW 846, 8015.
4. All other samples should be run using ASTM 3328 only.

-005

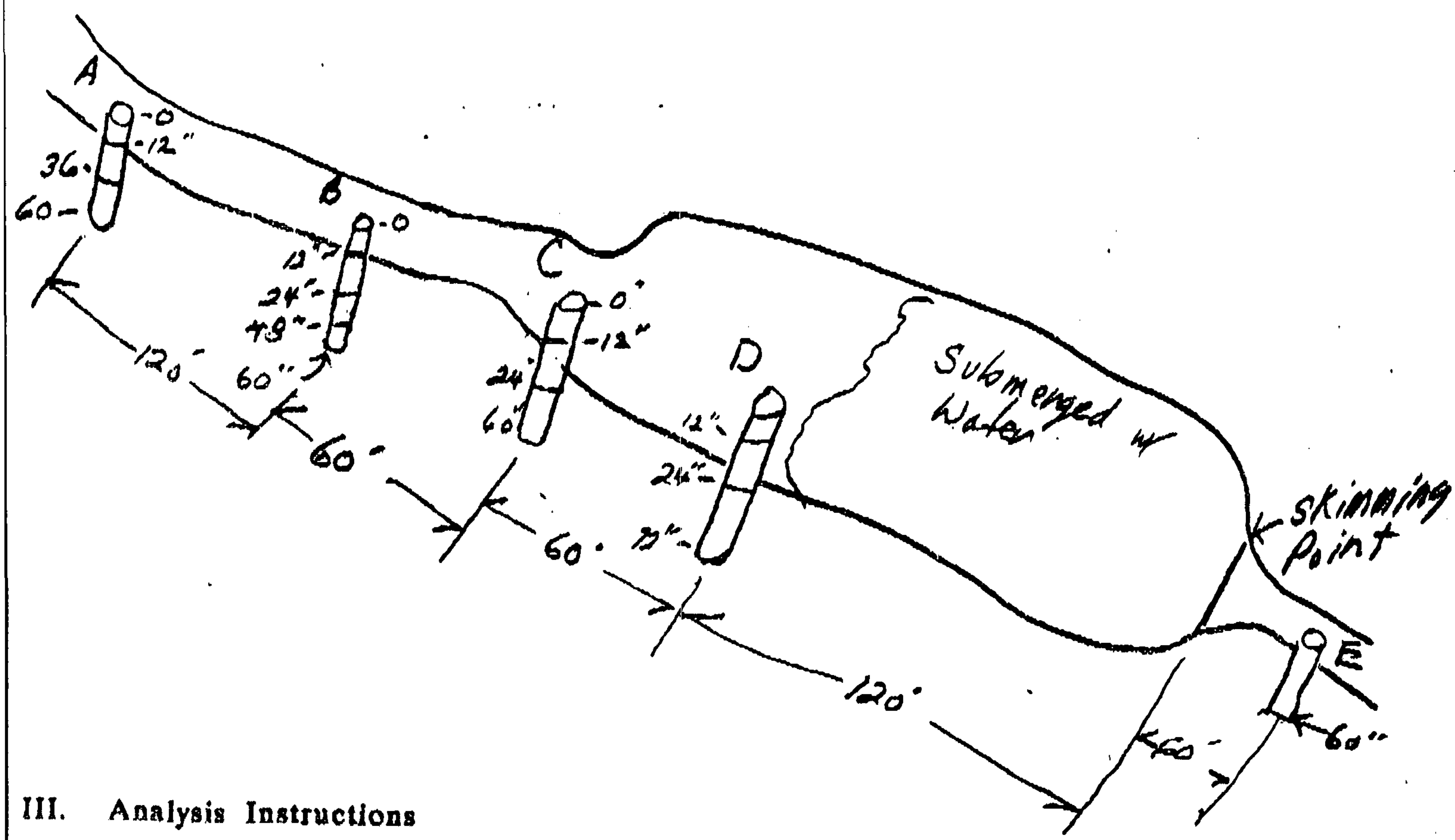
Skimming Pit: #2 ([redacted]ownstream from Pit [redacted] 1 & Hanson)

Sampling Date: 4/3/93   **By:** A. D. Jones

I. Samples Obtained

A – 0"	A – 6"*	A – 12"	A – 24"	A – 60"
B – 0"	B – 6"*	B – 12"	B – 24"	B – 60"
C – 0"	C – 6"	C – 12"	C – 24"	C – 60"
D – 0"	D – 6"	D – 12"	D – 24"	D – 60"
E – 0"	E – 6"	E – 12"	E – 24"	E – 60"
F – 0"	F – 6"	F – 12"	F – 24"	F – 60"

II. Field Sketch of the Skimming Pit and Location A through F for Sampling Points:



III. Analysis Instructions

1. Any sample crossed–out was not obtained due to field constraints, therefore no analysis.
2. All shaded samples should be held at 4 degrees C until further instructions are given.
3. Any sample with an * should be run using ASTM 3328 and SW 846, 8015.
4. All other samples should be run using ASTM 3328 only.

MI-005

American Exploration Company

April 29, 1993

FEDERAL EXPRESS

Mr. Denny A. Foust
Environmental Geologist
Energy, Minerals and Natural Resources Division
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

RECEIVED
APR 30 1993
OIL CON. DIV.
DIST. 3

RE: Hospah Oil Field
McKinley County, New Mexico

Dear Mr. Foust:

We are following up on yesterday's correspondence by delivering copies of a complete set of lab analyses of soil samples taken at the Hospah Field during the first week of April. To determine the location and depth of each analysis, refer to the description following the words "SAMPLE ID". For example "SFRR 10-6" refers to a sample taken at a point 10 feet downstream from the discharge point at Sante Fe Railroad lease at a depth of 6 inches. If you need further explanation, do not hesitate to call me at (713) 756-6386.

Very truly yours,

AMERICAN EXPLORATION COMPANY

Roderick Oxford
Vice President - Legal

RO:nb

cc: Bob McBride
Lloyd Hetrick

RO:0001

1331 Lamar Street, Suite 900, Houston, Texas 77010-3088, Telephone: (713) 756-6000
885 Third Avenue, Suite 1200, New York, New York 10022-4802, Telephone: (212) 644-6900

OCD/BC+D O.I Meeting on Hospah 4/21/93 10:30 am

participants – Bill Olson – OCD Envir. Bureau
Roger Anderson – "
Kathy Brown – "
Donny Hill – BC+D O.I + Gas
Eddie Stevens – Envir. Spill Control, Inc.

D.H. – BC+D O.I & Gas negotiating purchase of AEC Hospah want to know jurisdiction of field

RCA – OCD has authority over all O&G operations except in original tribal boundaries based on Cotton O.I tax case ruling by Supreme Court. Includes alloted lands.

* Citation O.I & Gas operates adjacent field in sec 12

– since field has centralized facility remediation is under Santa Fe office. Individual field remediation, except for surface water, G.W. remediation, under District office

D.H. Would like – long term soil remediation on old airstrip
– short term " " adjacent to arroyo

RCA Short term for individual remediation OK on one time basis but cannot be used to backfill arroyo unless toxic's levels are zero

* handout of AEC results
results show total Lead, chrome above TC

RCA Need to run TCLP Lead Chrome to demonstrate below TC levels. If above TC need statement that it is the result of E+P exempt waste in order to present to ED Haz Waste

Key issues – permitting of centralized facility
remediation of contaminated soils
remediation/closure of former unlined pits

OCD/OCAD 0.1
4/21/93 Meeting handout

Certificate of Analysis No. 9304240-01

American Exploration Co.
1331 Lamar, Ste 900
Houston, TX 77010
ATTN: Mr. Lloyd Hetrick

DATE: 04/21/93

PROJECT: Hospah Arroyo Analysis
SITE:
SAMPLED BY: American Exploration
SAMPLE ID: SPRR - 0-0" P 1/2

PROJECT NO:
MATRIX: SOIL
DATE SAMPLED: 04/02/93
DATE RECEIVED: 04/07/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Petroleum Hydrocarbons-Diesel (Soil) METHOD MOD. CA. DHS Analyzed by: KA Date: 04/14/93 12:21:00	5900	200	mg/Kg
Silver, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	ND	1	mg/Kg
Arsenic, Total METHOD 7060 *** Analyzed by: WFL Date: 04/15/93	ND	0.2	mg/Kg
Barium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	54.9	0.5	mg/Kg
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	ND	2	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	5	1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

ICPL®

Certificate of Analysis No. 9304240-01

American Exploration Co.
1331 Lamar, Ste 900
Houston, TX 77010
ATTN: Mr. Lloyd Hetrick

DATE: 04/21/93

PROJECT: Hospah Arroyo Analysis
SITE:
SAMPLED BY: American Exploration
SAMPLE ID: SFRR - 0-0" p 2/2

PROJECT NO:
MATRIX: SOIL
DATE SAMPLED: 04/02/93
DATE RECEIVED: 04/07/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 04/12/93	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: DSE Date: 04/12/93	7	1	wt. %
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 04/13/93	04/13/93		
Lead, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	ND	10	mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 04/16/93	ND	1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

ICPL

Certificate of Analysis No. 9304240-14

American Exploration Co.
1331 Lamar, Ste 900
Houston, TX 77010
ATTN: Mr. Lloyd Hetrick

DATE: 04/21/93

PROJECT: Hospah Arroyo Analysis
SITE:
SAMPLED BY: American Exploration
SAMPLE ID: HSU - 0-0" 1p 1/2

PROJECT NO:
MATRIX: SOIL
DATE SAMPLED: 04/02/93
DATE RECEIVED: 04/07/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Petroleum Hydrocarbons-Diesel (Soil) METHOD MOD. CA. DHS Analyzed by: KA Date: 04/14/93 12:21:00	1900	200	mg/Kg
Silver, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	ND	1	mg/Kg
Arsenic, Total METHOD 7060 *** Analyzed by: WFL Date: 04/15/93	ND	0.2	mg/Kg
Barium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	86.8	0.6	mg/Kg
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	ND	2	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	7	1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

IPL®

Certificate of Analysis No. 9304240-14

American Exploration Co.
1331 Lamar, Ste 900
Houston, TX 77010
ATTN: Mr. Lloyd Hetrick

DATE: 04/21/93

PROJECT: Hospah Arroyo Analysis
SITE:
SAMPLED BY: American Exploration
SAMPLE ID: HSU - 0-0" p 2/2

PROJECT NO:
MATRIX: SOIL
DATE SAMPLED: 04/02/93
DATE RECEIVED: 04/07/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 04/12/93	ND	0.2	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: DSE Date: 04/12/93	10	1	wt. %
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 04/13/93	04/13/93		
Lead, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	10	10	mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 04/16/93	ND	1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

ICPL®

Certificate of Analysis No. 9304240-27

American Exploration Co.
1331 Lamar, Ste 900
Houston, TX 77010
ATTN: Mr. Lloyd Hetrick

DATE: 04/21/93

PROJECT: Hospah Arroyo Analysis
SITE:
SAMPLED BY: American Exploration
SAMPLE ID: HANSON - 0-0" P 1/2

PROJECT NO:
MATRIX: SOIL
DATE SAMPLED: 04/02/93
DATE RECEIVED: 04/07/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Petroleum Hydrocarbons-Diesel (Soil) METHOD MOD. CA. DHS Analyzed by: KA Date: 04/14/93 12:21:00	2000	200	mg/Kg
Silver, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	1	1	mg/Kg
Arsenic, Total METHOD 7060 *** Analyzed by: WFL Date: 04/15/93	1.7	0.3	mg/Kg
Barium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	145	0.6	mg/Kg
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	ND	3	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	10	1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

ICPL®

Certificate of Analysis No. 9304240-27

American Exploration Co.
1331 Lamar, Ste 900
Houston, TX 77010
ATTN: Mr. Lloyd Hetrick

DATE: 04/21/93

PROJECT: Hospah Arroyo Analysis
SITE:
SAMPLED BY: American Exploration
SAMPLE ID: HANSON - 0-0" p 2/2

PROJECT NO:
MATRIX: SOIL
DATE SAMPLED: 04/02/93
DATE RECEIVED: 04/07/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 04/12/93	ND	0.2	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: DSE Date: 04/12/93	22	1	wt. %
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 04/13/93	04/13/93		
Lead, Total METHOD 6010 *** Analyzed by: DQ Date: 04/14/93	10	10	mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 04/16/93	ND	1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Dear Ms. Hoskie:

Thank you for bringing to our attention that resdents of the Hospah area have concerns about oil and gas operations. It has always been our policy to listen to and address the concerns of citizens who are affected by oil and gas operations near their homes. Please have all of those persons who had complaints contact this office and we will make arrangements to meet with them singly or in a group as is necessary.

As per your specific concerns:

1. AEC is monitoring hydrogen sulfide emissions as is required by this office under Rule 118.

2. The spills you reported were reported by the operator and appropriately remediated.

3. The bird netting was torn by weather and has been repaired as it is each time it is torn.

4. Any individual impacted by an NMOCD permit can request a public hearing on the matter or submit comments on the application to the Director.

5. Requiring all operators to obtain NPDES permits to cover accidental discharges is impractical and inappropriate.

~~Please explain Navajo EPA's authority, responsibility, and jurisdiction over AEC in these matters so that we can adequately respond.~~

April 12, 1993
Frank Chavez, Aztec OCD

Bill Olson

OIL CONSERVATION DIVISION
RECEIVED
'93 APR 6 AM 8 51

American Exploration Company

CERTIFIED MAIL

March 29, 1993

New Mexico Oil Conservation Division
Aztec District Office
1000 Rio Brazos Road
Aztec, New Mexico 87410

RECEIVED
APR 1 1993
OIL CON. DIV.
DIST. 3

Attention: Mr. Denny G. Foust

Re: Hospah Field, McKinley County, NM

Dear Denny:

In response to your March 15, 1993 letter and subsequent conversations and faxes, attached is the site investigation procedure for determining potential hydrocarbon contamination of the arroyos in the Hospah Field. Field sampling activities are scheduled to begin on April 2, 1993. Any questions concerning this project may be directed to me at (713) 756-6499.

Sincerely,

AMERICAN EXPLORATION COMPANY

Lloyd H. Hetrick
Manager - Environmental, Health & Safety

LHH:mm
Attachment

cc: Rod Oxford
Bob McBride
Bill Priebe
Donnie Hill (BC & D Oil & Gas)
Bill Olson

L-039

1331 Lamar Street, Suite 900, Houston, Texas 77010-3088, Telephone: (713) 756-6000
885 Third Avenue, Suite 1200, New York, New York 10022-4802, Telephone: (212) 644-6900

HOSPAH FIELD REMEDIATION PROJECT

FOR POTENTIAL HYDROCARBON CONTAMINATION OF THE ARROYOS

March 29, 1993; L. H. Hetrick

I. Site Investigation of the Arroyos - By American Exploration Company

A. Scope of the Investigation Phase

The scope of this investigation is to evaluate the Hospah Field for potential hydrocarbon impacts on the Sandoval Arroyo resulting from numerous years of produced water discharges. A series of downstream samples will be obtained at each discharge location from the surface to -60" subsurface and analyzed for petroleum hydrocarbons using GC methods. Sampling sites will include the following discharge locations:

- HSU/SFRR "A" Facility Outfall
- Hanson Federal Facility Outfall
- SFRR Facility Outfall
- Intermediate and Final Skimming Pits in the Sandoval Arroyo

See attached field map for these locations.

Note that the SFRR "B" Facility has not historically discharged into the Arroyo and is beyond the scope of this investigation.

B. Items Furnished by American Exploration Company

1. Lab sample bottles, paperwork and shipping containers for compliance with EPA protocols.

2. Fresh water and garden hose type sprayer for washdown.

3. Field sampling procedure, which shall be approved by the NMOCD before work begins.

C. Items Furnished by Stewart Brothers

1. Rig, sampling equipment and labor as per March 23, 1993 letter.

2. Personal protective equipment as deemed necessary to perform the sampling.

3. New rags and brushes for cleaning the sampling equipment between borings.

4. Survey stakes and measuring tape.

D. Analytical Services by Southern Petroleum Labs

1. Technical Advisor - David Summers

2. Project Manager - Scott Sample

E. Procedure for Investigation Phase

1. Mobilize rig and sampling equipment to the Hospah Field at the HSU/SFRR "A" Facility, skimming pit outfall pipe.

2. Starting with the outfall pipe as location 0, measure and stake locations in 10 yard intervals down the Arroyo, continuing out to 100 yards total. Each stake should be placed along the side of the Arroyo and identified as 0, 10, 20, 30, through 100 accordingly, with a total of eleven locations.

3. Auger with rig or hand tools in the center of the Arroyo (as practical) at each of the eleven locations to a depth of 60" below surface. A soil sample should be obtained from the surface (0") and subsurface at each -6", -12", -24" and -60" for a total of five samples collected per boring. The sampling and augering equipment should be brushed and rinsed-out after each hole is sampled to prevent contamination of later samples.

4. If the hand auger is used and cannot penetrate the entire depth, then get whatever shallower samples that are possible. In either situation, hand auger or rig auger, the bore hole should be back filled with native soils.

5. Each sample should be placed in an individual jar, sealed and identified by each:

   - Outfall location (HSU/SFRR "A" Facility)
   - Location stake (0 through 100 yards)
   - Depth of sample (0" through 60")

   Note that these labels and the Chain-of-Custody will be pre-filled out and provided with the sample bottles and shipping containers.

6. Once all eleven staked locations have been sampled, a total of 55 sample bottles (11 locations times 5 samples each) should be placed on ice or in the refrigerator to 39°F (4°C).

7. All 55 samples will be kept and shipped together in the same container and not mixed with other samples taken from other outfall sites.

8. Ship the container, complete with Chain-of-Custody to SPL in Houston, as per the provided prepaid Federal Express manifest.

9. Repeat steps 1. through 8. for the remaining outfalls at the Hanson Facility, SFRR Facility and the Skimming Pits.

10. Upon receipt of the samples at the lab, American Exploration will direct the lab to run a diesel analysis, ASTM 3328 or hold the samples accordingly for each outfall site:

Stake Location	Sample @ Depth 0"	Sample @ Depth -6"	Sample @ Depth -12"	Sample @ Depth -24"	Sample @ Depth -60"
0	Run	Run*	Run	Run	Hold
10	Run	Run*	Run	Hold	Hold
20	Run	Run	Run	Hold	Hold
30	Run	Run	Hold	Hold	Hold
40	Run	Hold	Hold	Hold	Hold
50	Hold	Hold	Hold	Hold	Hold
60	Hold	Hold	Hold	Hold	Hold
70	Hold	Hold	Hold	Hold	Hold
80	Hold	Hold	Hold	Hold	Hold
90	Hold	Hold	Hold	Hold	Hold
100	Hold	Hold	Hold	Hold	Hold

* Note that these two samples will have both a diesel analysis ASTM 3328 and gasoline analysis SW 846, 8015.

11. Upon receipt of the above results, American Exploration will run additional samples if necessary to define the limits of 100 mg/kg hydrocarbon impacts.

12. All results will be provided to the NMOCD and B C&D Oil & Gas Corp. immediately upon receipt.

II. Site Remediation - By B C&D Oil & Gas Corp.

A. Scope of the Remediation Phase

This portion of the project will restore the hydrocarbon impacted soil identified in Part I. to levels below 100 mg/kg.

B. Procedure for the Remediation Work

This procedure will be submitted to the NMOCD by approximately April 23, 1993 and shall begin field work by May 3, 1993. The procedure employed by B C&D will be pre-approved by the NMOCD and American Exploration Company.

FIELD SAMPLING RECORD AND LAB ANALYSIS INSTRUCTIONS

Discharge Point: _____

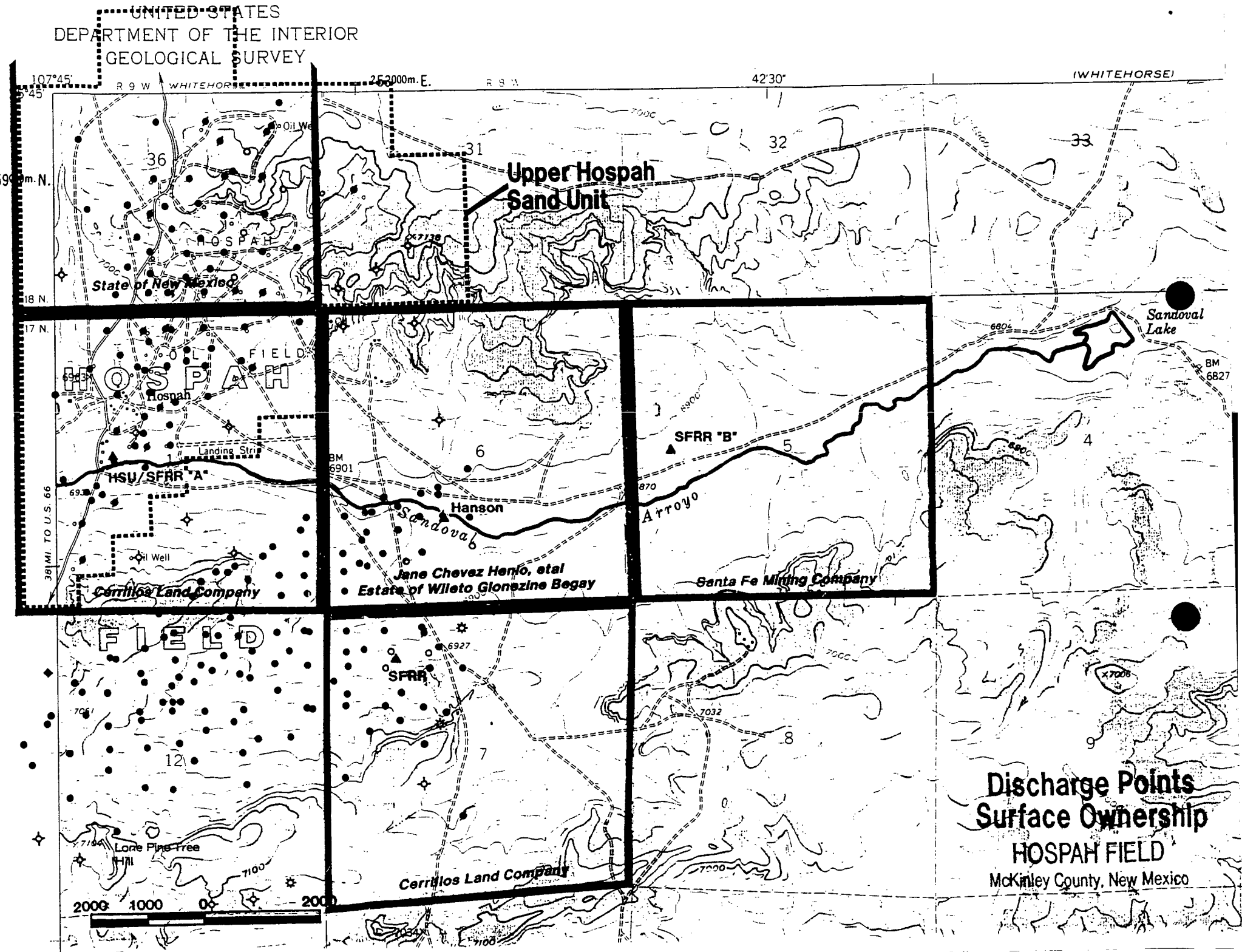
Sampling Date: _____ **By:** _____

I. Samples Obtained

0 – 0"	0 – 6"*	0 – 12"	0 – 24"	0 – 60"
10 – 0"	10 – 6"*	10 – 12"	10 – 24"	10 – 60"
20 – 0"	20 – 6"	20 – 12"	20 – 24"	20 – 60"
30 – 0"	30 – 6"	30 – 12"	30 – 24"	30 – 60"
40 – 0"	40 – 6"	40 – 12"	40 – 24"	40 – 60"
50 – 0"	50 – 6"	50 – 12"	50 – 24"	50 – 60"
60 – 0"	60 – 6"	60 – 12"	60 – 24"	60 – 60"
70 – 0"	70 – 6"	70 – 12"	70 – 24"	70 – 60"
80 – 0"	80 – 6"	80 – 12"	80 – 24"	80 – 60"
90 – 0"	90 – 6"	90 – 12"	90 – 24"	90 – 60"
100 – 0"	100 – 6"	100 – 12"	100 – 24"	100 – 60"

II. Analysis Instructions

1. Any sample crossed–out was not obtained due to field constraints, therefore no analysis.
2. Any sample with the letter H should be held at 4 degrees C until further instructions are given.
3. Any sample with an * should be run using ASTM 3328 and SW 846, 8015.
4. All other samples should be run using ASTM 3328 only.


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Upper Hospah Sand Unit
HOSPAH
OIL FIELD
State of New Mexico
HSU/SFRR "A"
SFRR "B"
Hospah
Landing Strip
Hanson
Sandoval Arroyo
Sandoval Lake
Jane Chevez Henio, etal
Estate of Wileto Gionezine Begay
Cerrillos Land Company
Santa Fe Mining Company
SFRR
Lone Pine Tree Hill
38 MI. TO U.S. 66
2000 1000 0 2000
Discharge Points
Surface Ownership
HOSPAH FIELD
McKinley County, New Mexico

HOSPAH FIELD REMEDIATION PROJECT

FOR POTENTIAL HYDROCARBON CONTAMINATION OF THE ARROYOS

DRAFT

March 24, 1993; L. H. Hetrick

I. Site Investigation of the Arroyos - By American Exploration Company

A. Scope of the Investigation Phase

The scope of this investigation is to evaluate the Hospah Field for potential hydrocarbon impacts on the Sandoval Arroyo resulting from numerous years of produced water discharges. A series of downstream samples will be obtained at each discharge location from the surface to -60" subsurface and analyzed for total petroleum hydrocarbons using EPA method 503 B/E. Sampling sites will include the following four discharge locations:

- HSU/SFRR "A" Facility Outfall
- Hanson Federal Facility Outfall
- SFRR Facility Outfall
- Final Skimming Pit Outfall

See attached field map for these locations.

Note that the SFRR "B" Facility has not historically discharged into the Arroyo and is beyond the scope of this investigation.

B. Items Furnished by American Exploration Company

1. Lab sample bottles, paperwork and shipping containers for compliance with EPA protocols.
2. Fresh water and garden hose type sprayer for washdown.
3. Field sampling procedure, which shall be approved by the NMOCD before work begins.

C. Items Furnished by Stewart Brothers

1. Rig, sampling equipment and labor as per March 23, 1993 letter.
2. Personal protective equipment as deemed necessary to perform the sampling.

DRAFT

3. New rags and brushes for cleaning the sampling equipment between borings.

4. Survey stakes and measuring tape.

D. Procedure for Investigation Phase

1. Mobilize rig and sampling equipment to the Hospah Field at the HSU/SFRR "A" Facility, skimming pit outfall pipe.

2. Starting with the outfall pipe as location 0, measure and stake locations in 10 yard intervals down the Arroyo, continuing out to 100 yards total. Each stake should be placed along the side of the Arroyo and identified as 0, 10, 20, 30, through 100 accordingly, with a total of eleven locations.

3. Auger with rig or hand tools (as practical) at each of the eleven locations to a depth of 60" below surface. A soil sample should be obtained from the center of the Arroyo at the surface (0") and subsurface at each -6", -12", -24" and -60" for a total of five samples collected per boring. The sampling and augering equipment should be brushed and rinsed-out after each hole is sampled to prevent contamination of later samples.

4. If the hand auger is used and cannot penetrate the entire depth, then get whatever shallower samples that are possible. In either situation, hand auger or rig auger, the bore hole should be back filled with native soils.

5. Each sample should be placed in an individual jar, sealed and identified by each:

   - Outfall location (HSU/SFRR "A" Facility)
   - Location stake (0 through 100 yards)
   - Depth of sample (0" through 60")

   Note that these labels and the Chain-of-Custody will be pre-filled out and provided with the sample bottles and shipping containers.

6. Once all eleven staked locations have been sampled, a total of 55 sample bottles (11 locations times 5 samples each) should be placed on ice or in the refrigerator to 39°F (4°C).

7. All 55 samples will be kept and shipped together in the same container and not mixed with other samples taken from other outfall sites.

8. Ship the container, complete with Chain-of-Custody to SPL in Houston, as per the provided prepaid Federal Express manifest.

9. Repeat steps 1. through 8. for the remaining outfalls at the Hanson Facility, SFRR Facility and the Final Skimming Pit.

DRAFT

10. Upon receipt of the samples at the lab, American Exploration will direct the lab to run the analysis or hold* the samples accordingly for each outfall site:

Stake Location	Sample @ Depth 0"	Sample @ Depth -6"	Sample @ Depth -12"	Sample @ Depth -24"	Sample @ Depth -60"
0	Run	Run	Run	Run	Run
10	Run	Run	Run	Run	Hold
20	Run	Run	Run	Run	Hold
30	Run	Run	Run	Hold	Hold
40	Run	Run	Run	Hold	Hold
50	Run	Run	Hold	Hold	Hold
60	Run	Run	Hold	Hold	Hold
70	Run	Hold	Hold	Hold	Hold
80	Run	Hold	Hold	Hold	Hold
90	Run	Hold	Hold	Hold	Hold
100	Run	Hold	Hold	Hold	Hold

* Note that maximum holding time is 28 days at 4°C for method 503.

11. Upon receipt of the above results, American Exploration will run additional samples if necessary to define the limits of 100 mg/kg hydrocarbon impacts.

12. All results will be provided to the NMOCD and B C&D Oil & Gas Corp. immediately upon receipt.

II. Site Remediation - By B C&D Oil & Gas Corp.

A. Scope of the Remediation Phase

This portion of the project will restore the hydrocarbon impacted soil identified in Part I. to levels below 100 mg/kg.

B. Procedure for the Remediation Work

This procedure will be submitted to the NMOCD by April 23, 1993 and shall begin field work by May 3, 1993. This procedure employed by B C&D will be pre-approved by the NMOCD and American Exploration Company.

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

FAX TRANSMITTAL SHEET

DATE: 3/25/93

TO: Bill Olson
OCD
Santa Fe

FROM: Denny Foust

FAX: 505-334-6170

COMMENTS: See if you have suggestions for additions

NUMBER OF PAGES INCLUDING COVER: 5

AMERICAN EXPLORATION COMPANY

FROM ..... Lloyd H. Hetrick
Manager, Environment
Health and Safety

1331 Lamar, Suite 900
Houston, Texas 77010-3088
Direct: (713) 756-6000
FAX: (713) 756-6001

F A X

Date: MARCH 24, 93

Cover and 3 page(s) to follow

To: DENNY FOUST

Company: NMOCD

FAX No.: 505-334-6170

Comments: DENNY,
ATTACHED IS A DRAFT HOSPAH INVESTIGATION PROCEDURE FYI & COMMENT. THANKS
Lloyd

If there are any problems receiving this transmission, please call: (713)

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DIVISION
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(500) 334-6178

March 22, 1993

American Exploration Company
Attn. Rod Oxford
1331 Lamar, Suite 900
Houston, TX 77010-3088

RE: Oil Conservation Division Rules applicable to remediation of hydrocarbons along arroyos in the Hospah Field, Mckinley County, New Mexico

Dear Mr. Oxford:

The New Mexico Oil Conservation Division has directed American Exploration to remediate contamination along arroyos below discharge points in the Hospah Field under Rule 3 and Rule 313. The Oil Conservation Division has also been granted authority to protect human health and the environment under the New Mexico Oil and Gas Act.

The Oil Conservation Division can document produced water discharges to the surface drainages for thirty-five years. No single event or period is indicated to be the source of hydrocarbon contamination within the arroyos. The contamination is believed to be the result of more than thirty-five years of produced water discharges. On a field inspection trip by Kathy Brown of the OCD Santa Fe office and myself, samples were taken and subsequently analyzed for Total Petroleum Hydrocarbon. Results from these samples (see your files) indicate a problem with hydrocarbon contamination from your outlet points downstream to at least your final skimming pond located in P-6-17N-08W, Mckinley County, New Mexico. The Oil Conservation Division needs to know the extent of this contamination, method and schedule for remediation. American Exploration will adhere to the time schedule outlined previously and approved by District III Supervisor Frank Chavez.

Yours truly,

Denny G. Foust
Environmental Geologist

XC: OCD Environmental Bureau
Environmental File
DGF File

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DIVISION
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Certified Mail Receipt #P 987 892 057

March 15, 1993

American Exploration Company
Attn. Lloyd Hetrick
Manger Environment Health and Safety
1331 Lamar, Suite 900
Houston, TX 77010-3088

RE: Remediation of hydrocarbon contamination along arroyos in Hospah Field, Mckinley County, New Mexico

Dear Mr. Hetrick:

American Exploration Company has not complied with two prior requests in writing to submit a proposal for evaluating hydrocarbon contamination along arroyos at the Hospah Field and to submit a time schedule for the remediation of hydrocarbon contamination. American Exploration Company is directed to submit to the New Mexico Oil Conservation District III office a proposal for evaluating the contamination in the arroyos at the Hospah Field downstream from your tank batteries by March 29, 1993. Evaluation is to start by April 5, 1993, and a remediation plan is to be submitted to the Oil Conservation Division after evaluation. Actual remediation is to start by May 3, 1993. Any remediation plans must consider Bureau of Land Management regulations for moving contaminated material from federal leases.

Failure to comply with Oil Conservation Division Rules and Regulations will result in fines of $1,000 per day per violation from the date of this letter and cancellation of allowables for wells in Hospah Field on March 29, 1993. If you have questions concerning these requirements please feel free to contact this office.

Yours truly,

Denny G. Foust
Environmental Geologist

XC: OCD-Environmental Bureau
Don Ellsworth-BLM
Environmental File
DGF File
Billy M. Priebe-American

FAX + Frank copy Roger

THE NAVAJO NATION

P.O. BOX 308 • WINDOW ROCK, ARIZONA 86515 • (602) 871-4941

PETERSON ZAH
PRESIDENT

MARSHALL PLUMMER
VICE PRESIDENT

March 5, 1993

Mr. William J. LeMay, Director
New Mexico Oil Conservation Division
P.O. Box 2088
Sante Fe, NM 87504-2088

Re: **American Exploration Company, Hospah, N.M. Operations**

Dear Mr. LeMay,

The Navajo Nation respectfully requests that the New Mexico Oil Conservation Division (NMOCD) hold a public meeting concerning American Exploration Company's (AEC) oil production operations and environmental remediation activities in the Hospah Oil Field in McKinley County, New Mexico.

The Navajo Nation's interest in AEC's facilities and clean-up activities are based on concerns raised by some Navajo residents of the affected area, on my staff's observations during visits to the Hospah Oil Field, and on various field studies that have been conducted by state, federal and private agencies since July of last year.

Prior to US EPA's September 11, 1992 order requiring AEC to cease unpermitted discharges to Sandoval Arroyo, Navajo residents living adjacent to tank batteries complained about chronic hydrogen sulfide emissions and their noxious effects. They are currently concerned about the possibility of the emissions being re-initiated and whether remediation associated with the discharge locations and tank batteries will proceed to their benefit at some time in the future.

In addition to the issues cited above my staff observed several problems of special concern associated with the AEC ponds at Hospah during a site tour on February 18, 1993. The first problem was an unpermitted discharge to Sandoval Arroyo from ponds in T17N R9W SEC1. The second problem was an open gate providing human/animal access to ponds containing oily water in T17N R8W SEC6. The third problem was torn netting for the protection of migratory birds over the ponds in T17N R8W SEC6 and T17N R8W SEC7. These are problems which require the immediate attention of your staff since they violate NMOCD, NMWQCC and even USEPA regulations.

It is my understanding that AEC has submitted a Plan of Operations pursuant to NMOCD Rule 711 and that you have in turn notified AEC that operations under such a permit will require hydrogen sulfide emissions monitoring as well as the support of an NPDES permit issued by USEPA for discharge authorization (see letter to AEC from Kathy Brown, NMOCD, January 26, 1993). It is also my understanding that AEC is preparing a remediation plan for facilities and contaminated areas in the field.

All of the matters discussed above are of great interest to the Navajo Nation and to the Navajo people who live in the area. A public meeting on AEC's proposed Rule 711 permit and its remediation program will allow local input in your process and help clarify the company's plans and your schedule for approving them. A meeting would also allow the Navajo Nation Environmental Protection Administration (Navajo EPA) staff to comment on American Exploration's current and future operations.

Navajo EPA will continue to monitor the progress on AEC's application for a federal NPDES permit. However, we are presently under the advisement of Lee Gibson with USEPA Region VI that AEC may withdraw their intent to pursue such a permit. In the event that the company would chose to discontinue discharging and instead inject all produced water, we would recommend that they still be required to obtain an NPDES permit to cover emergencies such as failure of injection pumps since it is apparently such a failure that created the unpermitted discharges observed by my staff on February 18, 1993. The alternative would be for them to develop an adequate contingency plan to cover unplanned discharges which would still meet USEPA, NMOCD and NMWQCC standards. We hope that the various state and federal permits being proposed for the Hospah operations can be coordinated to prevent new releases and to remediate past pollution.

My staff will be happy to work with your staff to find a mutually convenient location for a meeting. We prefer that you schedule the meeting at a location near Hospah, such as the Whitehorse Lake or Crownpoint Chapter House, to facilitate the attendance of the local residents. Amos Johnson or Bonnie Koch of my staff will serve as the Navajo Nation EPA liaison for this matter. Mr. Johnson can be reached at (602) 729-4147 and Ms. Koch can be reached at (602) 871-~~7040~~ 7684. Please do not hesitate to call them for any other questions or concerns you may have.

Sincerely,

Sadie Hoskie

Sadie Hoskie, Director
Navajo Environmental Protection Administration

xc: Charlotte Benson-Crossland
Department of Justice
Natural Resources Unit

Thommy Chavez, Councilman
Whitehorse Lake Chapter

Lee Gibson
USEPA, Region VI, Industrial Permits Section, 6-WPI
1445 Ross Ave.
Dallas, TX 75202

Jim Piatt
NMED, Surface Water Bureau
P.O. Box 26100
Sante Fe, NM 87502

Don Ellsworth
Bureau of Land Management
1235 La Plata Highway
Farmington, NM 87401

Lena Tsosie
HCR 79, Box 100
Whitehorse Lake Chapter
Cuba, NM 87013

Jean Yazzie
HCR 79, Box 100
Whitehorse Lake Chapter
Cuba, NM 87013

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DIVISION
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Certified Mail Receipt #P 987 892 057

March 15, 1993

American Exploration Company
Attn. Lloyd Hetrick
Manger Environment Health and Safety
1331 Lamar, Suite 900
Houston, TX 77010-3088

RE: Remediation of hydrocarbon contamination along arroyos in Hospah Field, Mckinley County, New Mexico

Dear Mr. Hetrick:

American Exploration Company has not complied with two prior requests in writing to submit a proposal for evaluating hydrocarbon contamination along arroyos at the Hospah Field and to submit a time schedule for the remediation of hydrocarbon contamination. American Exploration Company is directed to submit to the New Mexico Oil Conservation District III office a proposal for evaluating the contamination in the arroyos at the Hospah Field downstream from your tank batteries by March 29, 1993. Evaluation is to start by April 5, 1993, and a remediation plan is to be submitted to the Oil Conservation Division after evaluation. Actual remediation is to start by May 3, 1993. Any remediation plans must consider Bureau of Land Management regulations for moving contaminated material from federal leases.

Failure to comply with Oil Conservation Division Rules and Regulations will result in fines of $1,000 per day per violation from the date of this letter and cancellation of allowables for wells in Hospah Field on March 29, 1993. If you have questions concerning these requirements please feel free to contact this office.

Yours truly,

Denny G. Foust
Environmental Geologist

XC: OCD-Environmental Bureau
Don Ellsworth-BLM
Environmental File
DGF File
Billy M. Priebe-American

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time	Date
	9:00 A.M.	March 4, 1993

Originating Party	Other Parties
Denny Foust OCD Aztec	Kathy Brown OCD Santa Fe

Subject: Hospah - Spill

Discussion: 20 bbl water spilled out of pond from one of the batteries and went into the arroyo. Denny has told them to cap the ~~line~~ pipe leaving the pond. Currently the only type of safety guard is keeping the water level below the overflow pipe. The spill resulted from oil flowing into the pond and forcing the oil out.

Conclusions or Agreements

Distribution

Signed Kathy Brown

Kathy Brown

OIL CONSERVATION DIVISION
RECEIVED
'93 MAR 15 AM 10 14

American Exploration Company

March 1, 1993

New Mexico Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410
ATTN: Denny Foust

RECEIVED
MAR 8 1993
OIL CON. DIV.
DIST. 3

Dear Mr. Foust:

On 2/19/93 between 9:00 a.m. and 12:00 (noon), the injection pumps at the Hospah Sand Unit Facility air locked. At this time the produced water holding tanks high leveled floating approximately 10 barrels of oil to the first earth pit. Water continued to be discharged to the earth pits causing them to overflow discharging approximately 50 barrels of produced water to the wash below the pits. The water flow reached the first skimmer below the facility. When it was discovered that the pumps were air locked, the air was bled off and normal operations resumed. Oil was skimmed from the first pit.

On 3/02/93 at 5:30 p.m. a water dump valve on the heater treater at the Hospah Sand Unit Facility hung in the open position which diverted approximately 25 barrels of produced water and oil to the first earth pit. Approximately 10 barrels of produced water was displaced to the wash. The dump valve was repaired and oil was skimmed from the pit.

Sincerely,

A.D. Jones
Production Foreman

CC: Lloyd Hetrick
File

March 1, 1993

511 West Ohio, Suite 202, Midland, Texas 79701, Telephone: (915) 687-0587
700 Louisiana, Suite 2100, Houston, Texas 77002-2791, Telephone: (713) 237-0800

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time	Date
	9:00	3/1/93

Originating Party	Other Parties
Bonnie Koch Navajo EPA	Kathy Brown OCD

Subject

Hospah Update - American Exploration Company (AEC)

Discussion

Called to update OCD on Hospah. Dallas EPA has ~~st~~informed them that AEC is no longer going to discharge produced water and therefore won't be applying for a NPDES permit. They are going to go entirely to injection. The discharge reported last week due to a broken pump has ceased because the pump has been fixed. The Navajo's would like to be involved in the proposed remediation. They are also going to request a public meeting be held on the reservation so that the remediation and the H_2S monitoring can be discussed

Conclusions or Agreements

Will keep EPA Navajo updated. Will also arrange a public meeting upon receipt of letter

Distribution

file

Signed Kathy Brown

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal | Time 1100 hrs | Date 2/23/93

Originating Party	Other Parties
Bonnie Koch - Navajo EPA (602) 871-7186	Bill Olson - Envir. Bureau

Subject

AEC Hospah Field

Discussion

She was at Hospah field recently and observed discharge of produced water into arroyo from one of the tank batteries. Discharge of approx. 5-10 gpm. Company told her it was emergency discharge because injection well was having problems.

Conclusions or Agreements

I will forward info. to Kathy and ask Denny to check it out

Distribution

Denny Foust
Kathy Brown

Signed Bill Olson

SOUTHWEST RESEARCH AND INFORMATION CENTER
P.O. Box 4524 Albuquerque, NM 87106 505-262-1862

February 5, 1993

Mr. Lee Gibson
Industrial Permits Section, 6-WPI
U.S. Environmental Protection Agency, Region VI
1445 Ross Avenue
Dallas, TX 75202

Re: **American Exploration Company Hospah, N.M., Oil Field NPDES Application**

Dear Mr. Gibson:

As promised, I have copied and enclosed documents related to the American Exploration Company operations in the Hospah Oil Field, McKinley County, New Mexico. The documents cover a period of July 1992 through January 1993. Additional documentation that predates this material is available in the files of the New Mexico Oil Conservation Division.

Based on our telephone conversation of January 27, 1993, it is my understanding that EPA's processing of AEC's application for a National Pollution Discharge Elimination System (NPDES) permit is on hold pending submittal by the company of detailed waste characterization and effluent toxicity testing data for produced water generated by its operations. Southwest Research and Information Center (SRIC) requests copies of those data when they become available.

Upon visiting the Hospah Oil Field on the afternoon of January 29, 1993, I observed no discharges emanating from any of the four tank batteries in the field. There were no discernable hydrogen sulfide odors in the area other than immediately adjacent to one of the tank batteries.

I spoke again on that same day with local residents who continued to express concern about the potential for generation of hydrogen sulfide should the discharges resume. I expect that those residents will communicate their concerns directly to EPA.

Please feel free to call if you have questions.

Sincerely,

Chris Shuey, Director
Community Water Quality Program

Enclosures as stated.

xc: Roger Anderson, NMOCD/Environmental Bureau
Sadie Hoskie, Navajo Nation EPA
Glenn Saums, NMED/Surface Water Bureau
Lena Tsosie, Hospah, N.M.
Jeannie Yazzie, Hospah, N.M.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

January 26, 1993

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-241-936

Mr. Lloyd H. Hetrick
American Exploration Company
1331 Lamar Street, Suite 900
Houston, Texas 77010-3088

RE: **Information for OCD Rule 711 Compliance**
American Exploration Company Hospah Field
McKinley County, New Mexico

Dear Mr. Hetrick:

The Oil Conservation Division (OCD) has received and is in the process of reviewing the above referenced application for a centralized surface disposal facility located in Township 18 North, Range 9 West, and in T17N, R9W, and T17N, R8W, NMPM, McKinley County, New Mexico. The following comments and requests for additional information are based on review of the application, dated November 20, 1992. In order for the review process to continue the OCD requires the following information:

1. Facility Diagram: The OCD requests that American Exploration (AE) submit a detailed diagram of the facility which includes the following information:

   a. Field boundaries including any appropriate fences and berms;

   b. The four (4) oil/water separation facilities including inlet and outlet points and all ponds, pits, pipings and tanks;

   c. Drainage ditches from the point of discharge at the separation facilities to the point of entry into Sandoval Lake.

d. Location of the landing strip and proposed soil remediation area;

e. Office and maintenance buildings including all centralized drum or tank storage areas.

2. Landowners and Occupants: The OCD is concerned about the impact of disposal facilities to landowners and private residences. The OCD will give written notice of the application to all owners of surface lands and occupants both at and within one-half (1/2) mile of the proposed centralized disposal site. Please provide the OCD with a list of names and addresses of all landowners and occupants both at and within one-half mile of the facility.

3. NPDES Permit: The OCD acknowledges that all surface discharges to Sandoval Lake have ceased and will not resume unless AE obtains an NPDES Permit from the Environmental Protection Agency (EPA). Upon obtaining an NPDES permit from the EPA the proposed OCD 711 permit, if approved, will need to be modified to reflect this permitted discharge. Please note the OCD will require that all surface discharges meet the appropriate New Mexico Water Quality Control Commission (WQCC) water quality standards.

4. Separation Facilities: The OCD will allow AE to use the existing unlined ponds for settling of produced water prior to injection. The OCD will not allow the ponds to be used for oil/water separation or for the storage of oil. Note that OCD Rule 310 prohibits oil from being stored or retained in earthen reservoirs or in open receptacles. Please submit an alternative plan for the separation of oil and water at the facility. In addition, AE has committed to close or line the ponds by December 31, 1995. Please submit a plan for either closure or lining of the ponds prior to December 31, 1995 for OCD approval. To aid you in your engineering plans I have enclosed the OCD guidelines for "Below-Grade Tanks," "Waste Storage/Disposal Ponds," and "Surface Impoundment Closure".

5. Protection of Fresh Water: The OCD is concerned with the impact of your operations on fresh water in the area. Please submit the location, by quarter/quarter section, of all water wells drilled or hand dug within one-half (1/2) mile of your facility. Include all available data for the wells including aquifer name, well depth, water level, date drilled, water quality, and type of well (ie. domestic, stock, community water supply). Describe any current or proposed water monitoring plans designed to ensure that fresh water has not or will not be contaminated.

6. Soil Remediation: Please submit a detailed diagram of the landing strip area identifying the location of the planned oily soil remediation area in relation to the area used for aviation activities. How does AE plan to prohibit the blowing of oily soils caused by winds generated from aviation activities? The OCD has stringent requirements for the operation of all commercial and centralized landfarms. Attached are the current OCD guidelines for the operation of landfarms. AE must either commit to the attached guidelines or propose an alternative plan of operations with sufficient justification that your operations will not endanger human health or the environment.

7. Berming of Tanks: The OCD requires all above ground tanks other then fresh water to be bermed to contain a volume one-third more than the largest tank or all interconnected tanks, and to be placed on gravel pads. Do all of the tanks at your facility meet the OCD berming requirements? If not, submit a time schedule for meeting these requirements.

8. H2S Monitoring: The OCD is currently revising all surface disposal facility permits to include specific requirements for H2S monitoring and contingency plans. This includes, but is not limited to, measuring the concentrations of H2S around the perimeter of the ponds and dissolved oxygen and sulfide levels within the ponds. Approval of all OCD 711 surface disposal facilities will be subject to specific H2S monitoring and contingency plans.

Submission of the above requested information will allow the review process to continue. If you have any questions please do not hesitate to contact me at (505) 827-5884.

Sincerely,

Kathy M. Brown

Kathy M. Brown
Geologist

Enclosures

xc: Denny Foust, OCD Aztec Office
Jim Walker, U.S. EPA Region IX
Sadie Hoskie, U.S. EPA Navajo Nation Division
Chris Shuey, Southwest Research and Information Center

CHECKLIST FOR COMPLIANCE WITH RULE 711

FACILITY NAME: American Exploration Company

AREA: Hospah Field

LOCATION: T18N, R9W & T17N, R9W, & T17N, R8W

MAILING ADDRESS: American Exploration Company
1331 Lamar Street, Suite 900
Houston, Texas 77010-3088

CONTACT PERSON: Lloyd H. Hetrick (Environmental Manager), Bill Priebe (Operations Manager)

PHONE NO.: 713/756-6499 915/687-0587

DATE OF REVIEW: January 1993

1. Affidavit of verification (disposal application signed).
   Signed affidavit
2. OCD public notice issued (commercial facilities).
   Not necessary for centralized facilities
3. Proof that owners and occupants within 1/2 mile were notified, including copy of letter, certified mail receipt, names and addresses.
   Not necessary for centralized facilities.
   Will request address & names of landowners & adjacent landowners.
4. A $25,000 bond is required as of 12/30/88 for commercial facilities prior to commencing construction. Not required for centralized facilities.
5. Plat and topo maps showing location in relation to governmental surveys and roads, watercourses, water wells and dwellings within one mile.
   Need diagram indicating location of tank batteries, unlined pits, drainage ditches, Sandoval Arroyo, landing strip, office & maintenance buildings.
6. Names and addresses of facility site landowners and landowners of record within one-half mile.
   Not included - need

7. Description of facility with a diagram indicating location of fences and cattleguards, and detailed engineering construction/installation diagrams of pits, liners, dikes, piping, sprayers, and tanks.

Not included - need

8. Routine inspection and maintenance plan requires commitments to Rule 711 operating requirements including:

   a. Monthly reports kept on site (2 year retention period) of source, location, volume and type of waste, date of disposal, and hauling company that disposes of wastes at the facility.

   NA

   b. Disposal permitted only when attendant is on duty, otherwise the facility must be secured.

   NA

   c. Netting requirements, may be waived by District Supervisor.

   Have addressed

   d. All motor vehicles transporting produced water to the facility must have a valid Form C-133, on file with the Division.

   NA

9. Plan for disposal of approved waste solids or liquids.

Need to address solid disposal
Landing strip for contaminated soils

7. Geohydrological evidence that fresh water will not be affected.

10. Contingency plan for reporting and cleanup of spills or releases.

Yes, very complete,
Also, need commitment to OCD Rule 116

11. Closure plan. After operations have ceased for 6 consecutive months the OCD must be notified and and clean-up operations initiated.

Need commitment

Hospah Land Farm

HOSPAH Landfarm
6/12/97

Hospah ~~Coal Fm~~
6/12/97

Hospah ~~Burnt Fences~~

6/12/97