

GW - 55

**INSPECTIONS &
DATA**

1992

Case Narrative

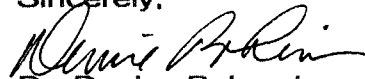
On June 24, 1992, Inter-Mountain Labs-Farmington received a sample from the Oil Conservation District, designated Thriftway Refinery. The sample was received cool and intact. Analysis for Benzene-Toluene-Ethylbenzene-Xylenes (BTEX) was performed according to the accompanying chain of custody form.

BTEX analysis was performed By EPA 5030, Purge and Trap, and Method 8020, Aromatic Volatile Hydrocarbons using an OI Analytical Purge and Trap and A Hewlett-Packard 5890 Gas Chromatograph. BTEX analytes were detected above the stated detection limits, as indicated on the report sheets.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analyses of samples reported here are found in "Test Methods for Evaluating Solid Waste", SW-846, USEPA, 1986.

Quality Control reports have been included for your information. These reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, feel free to call me at your convenience.

Sincerely,


Dr. Denise Bohemier
Organic Chemist

BTEX
Volatile Aromatic Hydrocarbons
Oil Conservation District

Project Name: Thriftway Refinery
Sample ID: 9206231530
Sample Number: 9058
Sample Matrix: Water
Preservative: Cool
Condition: Intact

Report Date: 6/26/92
Date Sampled: 6/23/92
Date Received: 6/24/92
Date Analyzed: 6/25/92

Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	111.5	1.25
Toluene	4.5	1.25
Ethylbenzene	8.1	1.25
m,p-xylene	11.3	2.50
o-xylene	ND	2.50

ND - Analyte not detected at stated detection limit.

Quality Control:

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
Toluene-d8	91%	88-110%
4-Bromofluorobenzene	95%	86-115%

Reference: Method 5030, Purge and Trap
Method 8020, Aromatic Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States
Environmental Protection Agency, September 1986.

Comments:


Analyst


Review

Quality Control Report
Matrix Duplicate: Volatile Aromatic Hydrocarbons

Client: OCD
Sample Matrix: Water
Preservative: Cool
Condition: Intact

Date Sampled: 6/23/92
Date Received: 6/24/92
Date Analyzed: 6/25/92

Analyte	Duplicate Concentration (ppb)	Sample Concentration (ppb)	% Difference
Benzene	114.5	111.5	0.7%
Toluene	4.5	4.5	0.3%
Ethylbenzene	8.1	8.1	0.2%
p,m-xylene	13.1	11.3	3.6%
o-xylene	ND	ND	NA

ND-Analyte not detected at detection limit.

Quality Control: Duplicate acceptance limit at 20%.

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limit</u>
Toluene-d8	92%	88-110%
4-Bromofluorobenzene	95%	86-115%



Analyst



Review

**QUALITY CONTROL REPORT
METHOD BLANK - VOLATILE AROMATIC HYDROCARBONS**

Laboratory ID: 9058 Method Blank
Sample Matrix: Water

Date Analyzed: 06/25/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at stated detection limit.

Quality Control:

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
Toluene-d8	98%	88-110%
Bromofluorobenzene	107%	86-115%

Reference:

Method 5030, Purge and Trap
Method 8020, Aromatic Volatile Organics
Test Methods for Evaluating Solid Wastes, SW-846, United
States Environmental Protection Agency, November 1986.

Comments:


Analyst


Review

Quality Control Report
Spike: Volatile Aromatic Hydrocarbons

Sample Number: 9058
Sample Matrix: Water
Preservative: Cool
Condition: Intact

Report Date: 06/29/92
Date Sampled: 06/23/92
Date Received: 06/24/92
Date Analyzed: 06/25/92

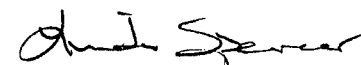
Analyte	Spike Added (ug/L)	Sample Result (ug/L)	Spike Result (ug/L)	Percent Recovery	Acceptance Limit
Benzene	10	111	158	46%	39-150%
Toluene	10	4	65	60%	46-148%
Ethylbenzene	10	8	69	61%	32-160%
p,m-Xylene	20	11	132	60%	NE
o-Xylene	20	ND	128	63%	NE

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Toluene-d8	92%	88-110%
	4-Bromofluorobenzene	94%	86-115%

Reference: Method 5030, Purge and Trap
Method 8020, Aromatic Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, November 1986.

Comments:


Analyst


Review

CLIENT: NMOCD
ID: Thriftway Refinery
SITE: Stripper Effluent
LAB NO: F9058

DATE REPORTED: 07/14/92
DATE RECEIVED: 06/24/92
DATE COLLECTED: 06/23/92

Lab pH (s.u.).....	7.47
Lab Conductivity, umhos/cm @ 25C....	3800
Lab Resistivity, ohm-m.....	2.63
Total Dissolved Solids (180C), mg/L.	3350 *
Total Dissolved Solids (calc), mg/L.	3520
Total Alkalinity as CaCO ₃ , mg/L.....	530
Total Hardness as CaCO ₃ , mg/L.....	949
Sodium Adsorption Ratio.....	11.5
Fluoride, mg/L.....	0.61

	mg/L	meq/L
Bicarbonate as HCO ₃	647	10.6
Carbonate as CO ₃	0	0
Chloride.....	41.1	1.16
Sulfate.....	1980	41.3
Calcium.....	319	15.9
Magnesium.....	37.5	3.08
Potassium.....	3.91	0.10
Sodium.....	816	35.5
Major Cations.....		54.6
Major Anions.....		53
Cation/Anion Difference.....		1.44 %

* Sample reanalyzed with no significant change.


Wanda Orso
Water Lab Supervisor



CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location		ANALYSES / PARAMETERS				
Sampler: (Signature)		Chain of Custody Tape No.		No. of Containers		Remarks		
Sample No./ Identification	Date	Time	Lab Number	Matrix	Catons / Anions			
920623 1530	6/23/92	15:30		water	3 2 1	HgCl ₂		
Relinquished by: (Signature)		Date		Time	Received by: (Signature)		Date	Time
Jennifer J. Jant		6/24/92		16:40	Jennifer Jant		6/24/92	16:40
Relinquished by: (Signature)		Date		Time	Received by: (Signature)		Date	Time
Relinquished by: (Signature)		Date		Time	Received by laboratory: (Signature)		Date	Time
Inter-Mountain Laboratories, Inc.								
05977								

☐ 1633 Terra Avenue
Sheridan, Wyoming 82801
Telephone (307) 672-8945

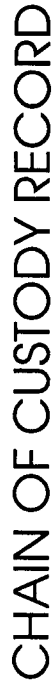
☐ 1714 Phillips Circle
Gillette, Wyoming 82716
Telephone (307) 682-8945

☒ 2506 West Main Street
Farmington, NM 87401
Telephone (505) 326-4737

☐ 910 Technology Blvd. Suite B
Bozeman, Montana 59715
Telephone (406) 586-8450

☐ Route 3, Box 256
College Station, TX 77845
Telephone (409) 776-8945

☐ 3304 Longmire Drive
College Station, TX 77845
Telephone (409) 774-4999

[illegible]

CASE NARRATIVE

On June 26, 1992, a water sample was received by Inter-Mountain Laboratories - College Station, Texas. The sample was received cool and intact and identified by Client Name "OCD". Analysis for Method 8010 - Halogenated Volatile Organics was performed according to the accompanying chain of custody form.

A duplicate analysis was not performed due to the amount of sample received. The elevated detection limit for 1,1,2,2-Tetrachloroethane in all reports is due to surrogate interference with the analyte.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analysis of the sample reported here are found in "SW - 846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986".

Quality Control reports have been included for your information and use. These reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,



Kevin Woodruff
Project Manager

**METHOD 8010
PURGEABLE HALOCARBONS**

Client: **OCD**
Project Location: Thriftway Refinery
Sample ID: 9206231530
Sample Number: C921204
Sample Matrix: Water
Preservative: HgCl₂
Condition: Cool, Intact

Report Date: 07/08/92
Date Sampled: 06/23/92
Date Received: 06/26/92
Date Analyzed: 07/07/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Bromodichloromethane	ND	1.0
Bromoform	ND	1.0
Bromomethane	ND	2.0
Carbon tetrachloride	ND	1.0
Chlorobenzene	ND	1.0
Chloroethane	ND	2.0
2-Chloroethylvinyl ether	ND	1.0
Chloroform	ND	1.0
Chloromethane	ND	2.0
Dibromochloromethane	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Methylene Chloride	ND	1.0
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	1.3	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Trichloroethene	1.8	1.0
Trichlorofluoromethane	ND	1.0
Vinyl chloride	ND	1.0

ND - Analyte not detected at stated detection limit.

METHOD 8010
PURGEABLE HALOCARBONS
Page 2 - Quality Control

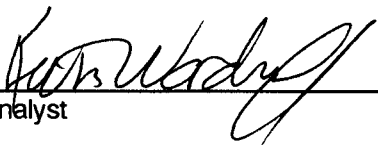
Client: **OCD**
Project Location: Thriftway Refinery
Sample ID: 9206231530
Sample Number: C921204
Sample Matrix: Water
Preservative: HgCl₂
Condition: Cool, Intact

Report Date: 07/08/92
Date Sampled: 06/23/92
Date Received: 06/26/92
Date Analyzed: 07/07/92

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	1,2-Dichloroethane-d4	96%	76-114 %

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental
Protection Agency, September 1986.

Comments:



Analyst



Review

QUALITY CONTROL REPORT - MATRIX SPIKE
Method 8010 - HALOGENATED VOLATILE HYDROCARBONS

Sample Number: C921204 Spike
Sample Matrix: Water
Preservative: HgCl₂
Condition: Cool, Intact

Date Sampled: 06/23/92
Date Received: 06/26/92
Date Analyzed: 07/07/92

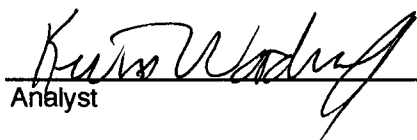
Analyte	Spike Added (ug/L)	Sample Result (ug/L)	Spike Result (ug/L)	Percent Recovery	Acceptance Limit
Carbon tetrachloride	10.0	ND	10.0	100%	43-143%
Chlorobenzene	10.0	ND	11.6	116%	38-150%
Chloroform	10.0	ND	10.1	101%	49-133%
Dibromochloromethane	10.0	ND	11.0	104%	24-191%
1,1-Dichloroethane	10.0	ND	11.3	113%	47-132%
1,1-Dichloroethene	10.0	ND	10.1	101%	28-167%
1,2-Dichloropropane	10.0	ND	10.6	106%	44-156%
Tetrachloroethene	10.0	1.3	11.5	103%	26-162%
1,1,2-Trichloroethane	10.0	ND	10.7	107%	39-136%
Trichloroethene	10.0	1.8	11.9	101%	35-146%
Trichlorofluoromethane	10.0	ND	11.0	110%	21-156%

ND - Analyte not detected at stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	1,2-Dichloroethane-d4	103%	76-114 %

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental
Protection Agency, September 1986.

Comments:


Analyst


Review

QUALITY CONTROL REPORT - METHOD BLANK
Method 8010 - PURGEABLE HALOCARBONSSample Number: MB0707V1
Sample Matrix: Water

Date Analyzed: 07/07/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Bromodichloromethane	ND	1.0
Bromoform	ND	1.0
Bromomethane	ND	2.0
Carbon tetrachloride	ND	1.0
Chlorobenzene	ND	1.0
Chloroethane	ND	2.0
2-Chloroethylvinyl ether	ND	1.0
Chloroform	ND	1.0
Chloromethane	ND	2.0
Dibromochloromethane	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Methylene Chloride	ND	1.0
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Trichloroethene	ND	1.0
Trichlorofluoromethane	ND	1.0
Vinyl chloride	ND	1.0

ND - Analyte not detected at stated detection limit.

QUALITY CONTROL REPORT - METHOD BLANK
Method 8010 - PURGEABLE HALOCARBONS
Page 2

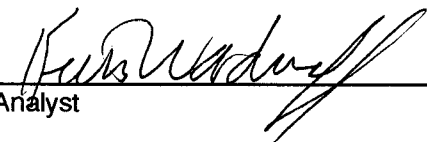
Sample Number: MB0707V1
Sample Matrix: Water

Date Analyzed: 07/07/92

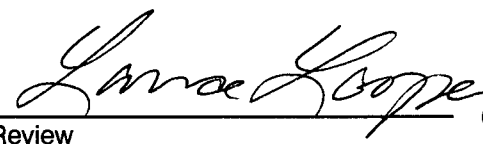
Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	1,2-Dichloroethane-d4	93%	76-114 %

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental
Protection Agency, September 1986.

Comments:



Analyst



Review

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

640 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

OIL CONSERVATION DIVISION
RECEIVED
'91 MAR 8 AM 9 13

February 28, 1991

Mr. William C. Olsen
Hydrogeologist
State of New Mexico
Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87504

RE: Discharge Plan GW-55
Abandoned Waste Water Lagoon Closure
Thriftway Refinery
San Juan County, New Mexico

Dear Mr. Olsen:

Enclosed please find the soil analysis for the Abandoned Waste Water Lagoon Closure as promised in our February 12, 1991 correspondence paragraph 2. A.

According to the analytical results, this soil meets all requirements for acceptance at Envirotech's Soil Remediation Site.

Sincerely,



Morris D. Young, President
Envirotech Inc.

MDY:tjg

426.doc

Verbal approval
3/12/91
1320 hrs
RDS

CLIENT: Envirotech

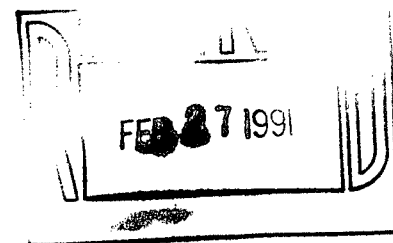
Sample ID:	F5685	Report Date:	02/22/91
Laboratory Number:	44381 (C2364)	Date Sampled:	01/28/91
Analysis Requested:	TCLP Metals	Date Received:	02/05/91
Sample Matrix:	Soil	Date Extracted:	02/07/91
Preservative:	None		
Condition:	Good, Intact		

PARAMETER	RESULT (mg/L)	MAXIMUM ALLOWABLE LEVEL (mg/L)	DETECTION LEVEL (mg/L)
Arsenic	0.002	5.0	0.002
Barium	1.09	100	0.5
Cadmium	< 0.005	1.0	0.005
Chromium	< 0.05	5.0	0.05
Lead	0.02	5.0	0.02
Mercury	< 0.001	0.2	0.001
Selenium	< 0.005	1.0	0.005
Silver	< 0.01	5.0	0.01

Methods Reference: Test Methods for Evaluating Solid Waste
Physical/Chemical Methods. USEPA SW-846
November, 1986.

Reviewed by:


Gary L. Pudge
Director, Soil Laboratory



VOLATILE AROMATIC HYDROCARBONS

Client: Envirotech Report Date: 02-08-91
Sample ID: Abandoned Lagoon Date Sampled: 01-28-91
Laboratory Number: C2364 (F5685) Date Received: 01-30-91
Analysis Requested: BTEX Date Analyzed: 01-31-91
Sample Matrix: Soil
Preservative: None
Temperature: 12 C

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	200
Toluene	ND	200
Ethylbenzene	ND	200
p,m-Xylene	ND	200
o-Xylene	ND	200

Quality Assurance - Surrogate Recoveries
=====

Parameter	Percent Recovery
Toluene-d8	100.4 %
4-Bromofluorobenzene	99.4 %

Method: Method 8020, Aromatic Volatile Organics, SW-846,
USEPA, (Sept. 1986).

ND - Parameter not detected at the stated detection limit.

Comments:

Wanda M. Regan
Analyst

Mary Higginbotham
Review

VOLATILE AROMATIC HYDROCARBONS

Client: Envirotech Report Date: 02-08-91
Sample ID: Abandoned Lagoon Date Sampled: 01-28-91
Laboratory Number: C2364 (F5685) DUP Date Received: 01-30-91
Analysis Requested: BTEX Date Analyzed: 01-31-91
Sample Matrix: Soil
Preservative: None
Temperature: 12 C

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	400
Toluene	ND	400
Ethylbenzene	ND	400
p,m-Xylene	ND	400
o-Xylene	ND	400

Quality Assurance - Surrogate Recoveries
=====

Parameter	Percent Recovery
Toluene-d8	100.1 %
4-Bromofluorobenzene	100.8 %

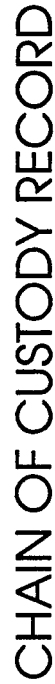
Method: Method 8020, Aromatic Volatile Organics, SW-846,
USEPA, (Sept. 1986).

ND - Parameter not detected at the stated detection limit.

Comments:

Wanda M. Rogers
Analyst

Mary Higginbotham
Review



CHAIN OF CUSTODY RECORD

[illegible]

ENVIROTECH[●] INC.

OIL CONSERVATION DIVISION
UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

3111 KNUDSEN
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 326-2822

'90 NOV 26 AM 10 34

November 20, 1990

Mr. Roger C. Anderson, Environmental Engineer
State of New Mexico, Oil Conservation Division
PO Box 2088
State Land Office Building
Santa Fe, New Mexico 87504

Re: Discharge Plan GW-55
Thriftway's Bloomfield Refinery
San Juan County, New Mexico

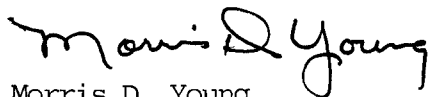
Dear Mr. Anderson:

As requested in your August 29, 1990 correspondence concerning the Thriftway Refinery Discharge Plan, we have sampled the shallow groundwater at the refinery upgradient of the hydrocarbon contaminated area to provide background water quality information.

Attached please find a copy of Intermountain Laboratories analysis. High TDS of 4360, principally gypsum salts and a hydrogen sulfide odor render this water unusable for any domestic and/or industrial need Thriftway has.

Sincerely,

ENVIROTECH INC.



Morris D. Young
President

MDY:mf

Enclosure



CHAIN OF CUSTODY RECORD

[illegible]



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Envirotech, Inc.
ID: 1545
SITE: Thriftway Refinery
LAB NO: F5366

DATE REPORTED: 11/14/90
DATE RECEIVED: 10/31/90
DATE COLLECTED: 10/30/90

Lab pH (s.u.).....	7.26
Lab conductivity, umhos/cm.....	5100
Lab resistivity, ohm-m.....	1.96
Total dissolved solids (180), mg/l..	4360
Total dissolved solids (calc), mg/l.	4310
Total alkalinity as CaCO ₃ , mg/l.....	248
Total acidity as CaCO ₃ , mg/l.....	0
Total hardness as CaCO ₃ , mg/l.....	1480
Sodium absorption ratio.....	8.25

	mg/l	meq/l
Bicarbonate as HCO ₃	303	4.96
Carbonate as CO ₃	0	0
Chloride.....	28.6	0.81
Sulfate.....	2830	58.9
Calcium.....	530	26.5
Magnesium.....	37.3	3.06
Potassium.....	5.2	0.13
Sodium.....	729	31.7
Major cations.....		61.4
Major anions.....		64.7
Cation/anion difference.....		2.63 %



C. Neal Schaeffer
Lab Director

ENVIROTECH[®] INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION
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3111 KNUDSEN
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 326-2822

'90 NOV 1 AM 8 58

October 30, 1990

Mr. David G. Boyer
Environmental Bureau Chief
State of New Mexico
Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87504

Re: Closure Plan for abandoned waste water
lagoon at Thriftway's Bloomfield, New
Mexico Refinery

Dear Mr. Boyer:

Envirotech Inc. recently concluded a site assessment of the Northwestern area of Thriftway Marketing Corp.'s Bloomfield, New Mexico refinery. The site investigation was conducted to determine the origin of free hydrocarbons present on the shallow groundwater.

Soil borings helped locate a previously abandoned wastewater lagoon that had been closed for approximately 7-8 years. At the conclusion of its use, the lagoon was simply filled with granular material (sand) and forgotten until our investigation revealed the presence of free hydrocarbon in the area.

Soil from this site was included in composite sampling analysis by Intermountain Laboratories of Farmington, New Mexico. The soils were within the criteria for acceptance at Envirotech's soil remediation site as per the attached analysis.

It is estimated approximately 170 to 200 yards of soil will be excavated and transported to the Envirotech site for remediation treatment, but the total will depend on the true extent of contaminated soils present. Excavation will continue until all visibly stained soil and/or free hydrocarbons are removed from this lagoon site.

A record of removed soils will be maintained for OCD inspection.

Sincerely,

ENVIROTECH INC.

Morris D. Young
Morris D. Young
President

MDY:mf



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Envirotech DATE REPORTED: 08/17/90
ID: N/A DATE ANALYZED: 08/16/90
SITE: Thriftway DATE RECEIVED: 08/16/90
LAB NO: F4747 DATE COLLECTED: 08/16/90

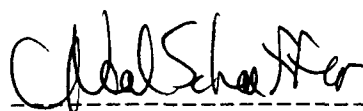
Analysis Requested: Purgeable aromatics in soil.
Method: 8020 Aromatic Volatile Organics, SW-846, USEPA (1982).

Parameter	Concentration	Units
-----	-----	-----
Benzene	<10 (0.05)	ug/g
Toluene	ND (0.05)	ug/g
Ethylbenzene	<10 (0.05)	ug/g
m/p-Xylene	<10 (0.05)	ug/g
o-Xylene	<10 (0.05)	ug/g
Surrogate recovery (TFT)	99.9 %	

Analysis Requested: TPH in soil.
Method:
418.1, TPH by IR Spectrophotometry, USEPA-600/4-79-020 (1983).

Total petroleum hydrocarbons (TPH) 2520 (1000) ug/g

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.



C. Neal Schaeffer
Senior Chemist



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Envirotech
ID: N/A
SITE: Thriftway
LAB NO: F4747

DATE REPORTED: 09/10/90
DATE ANALYZED: 09/10/90
DATE RECEIVED: 08/16/90
DATE COLLECTED: 08/16/90

Analyses Requested: Hazardous Waste Characterization.

Method:

1310 EP Tox Test Method, SW-846, USEPA (1982).

Trace metals by AA (EP Tox Leachate Concentration), mg/l

	Analytical Result:	Detection Limit:	
Arsenic (As).....	ND	<0.2	*
Barium (Ba).....	0.4	<0.1	*
Cadmium (Cd).....	ND	<0.05	*
Chromium (Cr).....	ND	<0.05	*
Lead (Pb).....	ND	<0.2	*
Mercury (Hg).....	ND	<0.002	*
Selenium (Se).....	ND	<0.2	*
Silver (Ag).....	0.03	<0.01	*

C. Neal Schaeffer
Senior Chemist

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time 4 PM

Date 3/14/90

Originating Party

Other Parties

David Boyer OCS

"hefty" Stark, Thriftway, 386-557

Subject

Thriftway Waters

Discussion

Stark sent a copy of the water analysis by FAX (attached). After review, I authorized disposal at SWWD.

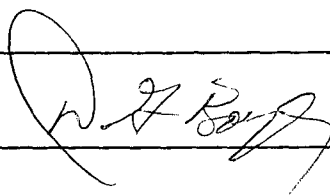
Bob Frank (SWWD) called to verify results. I gave him verbal OK to accept the water.

Conclusions or Agreements

Distribution

Thriftway File.

Signed



505 327 3813 P.01

MAR-14-90 MED 16:01

THRIFTWAY MARKETING CORP.

710 East 20TH Street
Farmington, New Mexico 87401

PHONE (505) 326-5571
FAX (505) 327-3813

FAX TRANSMISSION

DATE: March 14, 1990

TIME: 3:47 PM

TO: Dave Boyer

OF (COMPANY): Oil Conservation Division.

FAX NUMBER: 202-545-1431

FROM: J. M. Stark

THRIFTWAY MARKETING CORPORATION

REMARKS:

NUMBER OF PAGES IN THIS FAX (INCLUDING THIS COVER SHEET)

IF THERE ARE ANY PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL THE 1-800-4-A-
MARKETING CORPORATION AT (505) 326-5571.

007 P01

105 827 3813 THRIFFAY MARKETING

1990-03-14 15:05



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Envirotech
ID: 1A/1B
SITE: N/A*
LAB NO: F4008

DATE REPORTED: 03/13/90
DATE ANALYZED: 03/12/90
DATE RECEIVED: 03/12/90
DATE COLLECTED: 03/12/90

Analyses Requested: Hazardous Waste Characterization.
Methods:
1310 EP Tox Test Method, SW-846, USEPA (1982).

Trace metals by AA (EP Tox Leachate Concentration), mg/l

	Analytical Result:	Detection Limit:
Arsenic (As).....	ND	<1.0
Barium (Ba).....	ND	<0.5
Cadmium (Cd).....	ND	<0.01
Chromium (Cr).....	ND	<0.1
Lead (Pb).....	ND	<0.06
Mercury (Hg).....	ND	<0.0002
Selenium (Se).....	ND	<0.5
Silver (Ag).....	ND	<0.01

ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

*Thriftway Refinery's Process Water



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Envirotech
ID: 1A/1B
SITE: N/A*
LAB NO: F4008
Analysis Requested: Purgeable halocarbons in water.

DATE REPORTED: 03/13/90
DATE ANALYZED: 03/12/90
DATE RECEIVED: 03/12/90
DATE COLLECTED: 03/12/90

Parameter	Concentration	Units
Bromobenzene	ND (50)	ug/l
Bromodichloromethane	ND (50)	ug/l
Bromoform	ND (50)	ug/l
Carbon Tetrachloride	ND (50)	ug/l
Chlorobenzene	ND (50)	ug/l
Chloroethane	ND (50)	ug/l
Chloroform	ND (50)	ug/l
Chloromethane	ND (50)	ug/l
Dibromochloromethane	ND (50)	ug/l
Dibromomethane	ND (50)	ug/l
1,2-Dichlorobenzene	ND (50)	ug/l
1,3-Dichlorobenzene	ND (50)	ug/l
1,4-Dichlorobenzene	ND (50)	ug/l
Dichlorodifluoromethane	ND (50)	ug/l
1,1-Dichloroethane	ND (50)	ug/l
1,2-Dichloroethane	ND (50)	ug/l
1,1-Dichloroethene	ND (50)	ug/l
trans-1,2-Dichloroethene	ND (50)	ug/l
1,2-Dichloropropane	ND (50)	ug/l
1,3-Dichloropropylene	ND (50)	ug/l
2,2-Dichloropropane	ND (50)	ug/l
Dichloromethane	ND (50)	ug/l
1,1,1,2-Tetrachloroethane	ND (50)	ug/l
1,1,2,2-Tetrachloroethane	ND (50)	ug/l
Tetrachloroethene	ND (50)	ug/l
1,1,1-Trichloroethane	ND (50)	ug/l
1,1,2-Trichloroethane	ND (50)	ug/l
Trichloroethene	ND (50)	ug/l
Trichlorofluoromethane	ND (50)	ug/l
1,2,3-Trichloropropane	ND (50)	ug/l
Bromochloromethane	ND (50)	ug/l
1,2-Dibromoethane	ND (50)	ug/l
cis-1,2-Dichloroethene	ND (50)	ug/l
1,1-Dichloropropene	ND (50)	ug/l
Vinyl Chloride	ND (50)	ug/l

*Thriftway Refinery's Process Water



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: Envirotech
ID: 1A/1B
SITE: N/A *
LAB No: F4008

DATE REPORTED: 03/13/90
DATE ANALYZED: 03/12/90
DATE RECEIVED: 03/12/90
DATE COLLECTED: 03/12/90

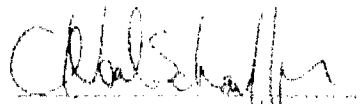
Benzyl Chloride	ND	(50)	ug/l
1,2-(2-chloroethoxy)methane	ND	(50)	ug/l
2,2-(2-chloroisopropyl)ether	ND	(50)	ug/l
Bromomethane	ND	(50)	ug/l
Chloroacetaldehyde	ND	(50)	ug/l
1-Chlorohexane	ND	(50)	ug/l
1-Chloroethyl Vinyl Ether	ND	(50)	ug/l
Chloromethyl methyl ether	ND	(50)	ug/l
Chlorotoluene	ND	(50)	ug/l
1,3-Dichloropropene	ND	(50)	ug/l

Method:

601 Purgeable Halocarbons, 40 CFR Part 136, USEPA (1984).
8010 Halogenated Volatile Organics, SW-846, USEPA (1982).

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

*Thriftyway Refinery's Process Water



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DIVISION

'90 MAR 8 AM 8 55

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

6 Mar 90

Dave Beyer,

This is the most result I can legitimately wring out of my data for the waste pond. Once again, I'm very sorry for ~~losing~~ losing this data.

Ned Schaeffer



Inter-Mountain
Laboratories, Inc.

CLIENT: OGD
ID: 9001111750
SITE: Waste Pond
LAB NO: F3781

Analysis Requested: Purgeable halocarbons in water.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

DATE REPORTED: 03/01/90
DATE ANALYZED: 02/28/90 *
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter	Concentration	Units
Bromobenzene	ND (200)	ug/l
Bromodichloromethane	ND (200)	ug/l
Bromoform	ND (200)	ug/l
Carbon Tetrachloride	ND (200)	ug/l
Chlorobenzene	ND (200)	ug/l
Chloroethane	ND (200)	ug/l
Chloroform	ND (200)	ug/l
Chloromethane	ND (200)	ug/l
Dibromochloromethane	ND (200)	ug/l
Dibromomethane	ND (200)	ug/l
1,2-Dichlorobenzene	ND (200)	ug/l
1,3-Dichlorobenzene	ND (200)	ug/l
1,4-Dichlorobenzene	ND (200)	ug/l
Dichlorodifluoromethane	ND (200)	ug/l
1,1-Dichloroethane	** ND (200)	ug/l
1,2-Dichloroethane	** ND (200)	ug/l
1,1-Dichloroethene	** ND (200)	ug/l
trans-1,2-Dichloroethene	** ND (200)	ug/l
1,2-Dichloropropane	ND (200)	ug/l
1,3-Dichloropropylene	ND (200)	ug/l
2,2-Dichloropropane	ND (200)	ug/l
Dichloromethane	** ND (200)	ug/l
1,1,1,2-Tetrachloroethane	** ND (200)	ug/l
1,1,2,2-Tetrachloroethane	ND (200)	ug/l
Tetrachloroethene	ND (200)	ug/l
1,1,1-Trichloroethane	** ND (200)	ug/l
1,1,2-Trichloroethane	ND (200)	ug/l
Trichloroethene	ND (200)	ug/l
Trichlorofluoromethane	ND (200)	ug/l
1,2,3-Trichloropropane	ND (200)	ug/l
Bromochloromethane	ND (200)	ug/l
1,2-Dibromoethane	ND (200)	ug/l
cis-1,2-Dichloroethene	ND (200)	ug/l
1,1-Dichloropropene	ND (200)	ug/l
Vinyl Chloride	ND (200)	ug/l

Method:

601 Purgeable Halocarbons, 40 CFR Part 136, USEPA (1984).

8010 Halogenated Volatile Organics, SW-846, USEPA (1982).

ND - Parameter not detected at the stated detection limit.

Note: Elevated detection limits (in parenthesis) are due to extreme hydrocarbon interference.

* Sample analyzed significantly after expiration of holding time.

** Chromatographic evidence of these analytes below detection limits.

C. Neal Schaeffer
Senior Chemist

23 February 1990

NMOCD
POB 2088
Santa Fe, NM 87504-2088

Roger Anderson,

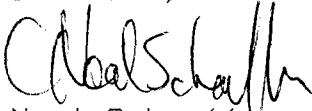
Yesterday I telephoned that we had some trouble analyzing the samples you submitted on 31 January 1990 and Dave Boyer submitted on 12 January 1990. These samples have Project name "Thriftway", and our problems are associated with 8010 and 8020 analyses.

These samples were analyzed within holding times, however during reporting we discovered a qualification error. The samples could not be reanalyzed due to holding times, and the data misinterpretation could not be resolved with available data. Therefore, due to laboratory error the following results are unavailable:

IML #:	Sample ID:	Site:	Analyses unavailable:
3775	9001111545	Hole 1	8010 & 8020
3779	9001111648	Hole 5	8010
3780	9001111708	Hole 6	8010 & 8020
3781	9001111750	Waste pond	8010
3816	1/31 1145	Cooling tower	8010
3817	1/31 1220	Fire pond make-up	8010
3818	1/31 1230	Fire pond	8010

For samples 3775 and 3779 there appear to be 5 halogenated volatiles at concentrations near 20ug/l. I'm unable to offer further interpretation with the available data. Please accept my apology for this loss of your data. The instrument malfunction has already been corrected, and staffing problems that resulted in the late data interpretation have been addressed. As you requested, sample 3781 will be analyzed despite holding times.

Sincerely,


Neal Schaeffer
Lab director



OIL & GAS ANALYSIS DIVISION
RECEIVED

'90 FEB 27 AM 8 31

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

23 February 1990

NMOCD
POB 2088
Santa Fe, NM 87504-2088

Roger Anderson,

Yesterday I telephoned that we had some trouble analyzing the samples you submitted on 31 January 1990 and Dave Boyer submitted on 12 January 1990. These samples have Project name "Thriftway", and our problems are associated with 8010 and 8020 analyses.

These samples were analyzed within holding times, however during reporting we discovered a qualification error. The samples could not be reanalyzed due to holding times, and the data misinterpretation could not be resolved with available data. Therefore, due to laboratory error the following results are unavailable:

IML #:	Sample ID:	Site:	Analyses unavailable:
3775	9001111545	Hole 1	8010 & 8020
3776	9001111556	Hole 2	8010
3777	9001111612	Hole 3	8010
3778	9001111624	Hole 4	8010
3779	9001111648	Hole 5	8010
3780	9001111708	Hole 6	8010 & 8020
3781	9001111750	Waste pond	8010
3816	1/31 1145	Cooling tower	8010
3817	1/31 1220	Fire pond make-up	8010
3818	1/31 1230	Fire pond	8010

For samples 3775 and 3779 there appear to be five halogenated volatiles at concentrations near 20ug/l. I'm unable to offer further interpretation with the available data. Please accept my apology for this loss of your data. The instrument malfunction has already been corrected, and staffing problems that resulted in the late data interpretation have been addressed.

Sincerely,

Neal Schaeffer
Lab director



ALBUQUERQUE DIVISION
RECEIVED

'90 FEB 27 AM 8 31

2506 West Main Street
Birmingham, New Mexico 87401
Tel. (505) 326-4737

23 February 1990

NMOCD
POB 2088
Santa Fe, NM 87504-2088

Roger Anderson,

Yesterday I telephoned that we had some trouble analyzing the samples you submitted on 31 January 1990 and Dave Boyer submitted on 12 January 1990. These samples have Project name "Thriftway", and our problems are associated with 8010 and 8020 analyses.

These samples were analyzed within holding times, however during reporting we discovered a qualification error. The samples could not be reanalyzed due to holding times, and the data misinterpretation could not be resolved with available data. Therefore, due to laboratory error the following results are unavailable:

IML #:	Sample ID:	Site:	Analyses unavailable:
3775	9001111545	Hole 1	8010 & 8020
3776	9001111556	Hole 2	8010
3777	9001111612	Hole 3	8010
3778	9001111624	Hole 4	8010
3779	9001111648	Hole 5	8010
3780	9001111708	Hole 6	8010 & 8020
3781	9001111750	Waste pond	8010
3816	1/31 1145	Cooling tower	8010
3817	1/31 1220	Fire pond make-up	8010
3818	1/31 1230	Fire pond	8010

For samples 3775 and 3779 there appear to be five halogenated volatiles at concentrations near 20ug/l. I'm unable to offer further interpretation with the available data. Please accept my apology for this loss of your data. The instrument malfunction has already been corrected, and staffing problems that resulted in the late data interpretation have been addressed.

Sincerely,

Neal Schaeffer
Lab director



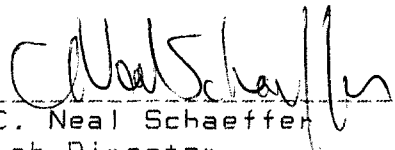
2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
SAMPLE: 9001111545
SITE: Hole #1 Thriftway
LAB NO: F3775

DATE REPORTED: 01/23/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Lab pH (s.u.).....	8.08
Lab Conductivity, umhos/cm.....	4196
Lab resistivity, ohm-m.....	2.3832
Total Dissolved Solids (180), mg/l..	2790
Total Dissolved Solids (calc), mg/l.	2693
Total Alkalinity as CaCO ₃ , mg/l.....	1411.85
Total Acidity as CaCO ₃ , mg/l.....	0.00
Total Hardness as CaCO ₃ , mg/l.....	256.83
Sodium Absorption Ratio.....	25.32

	mg/l	meq/l
Bicarbonate as HCO ₃	1722.46	28.24
Carbonate as CO ₃	0.00	0.00
Chloride.....	218.29	6.16
Sulfate.....	595.44	12.41
Calcium.....	85.06	4.24
Magnesium.....	10.85	0.89
Potassium.....	3.66	0.09
Sodium.....	933.00	40.58
Major Cations.....		45.81
Major Anions.....		46.80
Cation/Anion Difference.....		1.07 %


C. Neal Schaeffer
Lab Director

90 FEB 27 AM 8 39

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2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

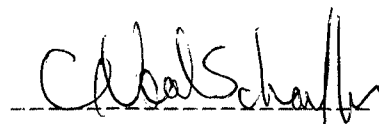
CLIENT: NMOCD
ID: N/A
SITE: Fire pond
LAB NO: F3818
Analysis Requested: Purgeable aromatics in water.

DATE REPORTED: 02/23/90
DATE ANALYZED: 02/06/90
DATE RECEIVED: 01/31/90
DATE COLLECTED: 01/31/90

Parameter -----	Concentration -----	Units -----
Benzene	ND (1.0)	ug/l
Toluene	ND (1.0)	ug/l
Ethylbenzene	ND (1.0)	ug/l
m/p-Xylene	ND (1.0)	ug/l
o-Xylene	ND (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l

Method:
8020 Aromatic Volatile Organics, SW-846, USEPA (1982).
602 Purgeable Aromatics, 40 CFR, Part 136.

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

OIL CONGRESSION DIVISION
RECEIVED
90 FEB 27 AM 8 41



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: NMOCD
ID: N/A
SITE: Fire Pond
LAB NO: 3818

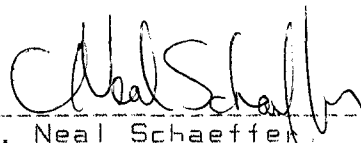
DATE REPORTED: 02/23/90
DATE RECEIVED: 01/31/90
DATE COLLECTED: 01/31/90

Trace metals by AA (Dissolved Concentration), mg/l

	Analytical Result:	Detection Limit:
Arsenic (As).....	ND	<0.0003
Cadmium (Cd).....	ND	<0.0002
Chromium (Cr).....	0.005	<0.001
Lead (Pb).....	0.018	<0.004
Selenium (Se).....	ND	<0.0002

Trace metals by ICAP (Dissolved Concentration), mg/l

	Analytical Result:	Detection Limit:
Silver (Ag).....	ND	<0.05
Aluminum (Al).....	ND	<0.1
Boron (B).....	0.12	<0.01
Barium (Ba).....	ND	<0.5
Beryllium (Be).....	ND	<0.005
Cobalt (Co).....	ND	<0.02
Copper (Cu).....	0.02	<0.01
Iron (Fe).....	0.39	<0.05
Manganese (Mn).....	ND	<0.02
Molybdenum (Mo).....	ND	<0.02
Nickel (Ni).....	0.01	<0.01
Antimony (Sb).....	ND	<0.05
Silicon (Si).....	6.51	<0.05
Thallium (Tl).....	ND	<0.05
Vanadium (V).....	ND	<0.1
Zinc (Zn).....	0.02	<0.01


C. Neal Schaeffer
Lab Director

OIL CONTAMINATION DIVISION
RECEIVED
90 FEB 27 AM 8 41



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

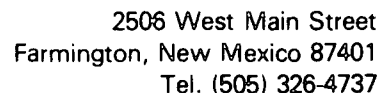
CLIENT: NMOCB
ID: N/A
SITE: Fire Pond
LAB NO: 3818

DATE REPORTED: 02/23/90
DATE RECEIVED: 01/31/90
DATE COLLECTED: 01/31/90

Lab pH (s.u.).....	7.77
Lab Conductivity, umhos/cm.....	3886
Lab resistivity, ohm-m.....	2.5733
Total Dissolved Solids (180), mg/l..	3226
Total Dissolved Solids (calc), mg/l.	3269
Total Alkalinity as CaCO ₃ , mg/l.....	141.34
Total Acidity as CaCO ₃ , mg/l.....	0.00
Total Hardness as CaCO ₃ , mg/l.....	1184.18
Sodium Absorption Ratio.....	6.81

	mg/l	meq/l
Bicarbonate as HCO ₃	172.43	2.83
Carbonate as CO ₃	0.00	0.00
Chloride.....	10.15	0.29
Sulfate.....	2162.02	45.04
Calcium.....	453.10	22.61
Magnesium.....	13.05	1.07
Potassium.....	6.92	0.18
Sodium.....	538.80	23.44
Major Cations.....		47.30
Major Anions.....		48.16
Cation/Anion Difference.....		0.90 %

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ANALYTICAL DIVISION
90 FEB 27 AM 8 41



DATE REPORTED: 02/23/90
DATE ANALYZED: 02/06/90
DATE RECEIVED: 01/31/90
DATE COLLECTED: 01/31/90

Parameter	Concentration	Units
Benzene	ND (1.0)	ug/l
Toluene	ND (1.0)	ug/l
Ethylbenzene	ND (1.0)	ug/l
m/p-Xylene	ND (1.0)	ug/l
o-Xylene	ND (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l

8020 Aromatic Volatile Organics, SW-846, USEPA (1982).
602 Purgeable Aromatics, 40 CFR, Part 136.

ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

RECEIVED
DIVISION
30 FEB 27 AM 8 41



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: NMOCB
ID: N/A
SITE: Cooling tower
LAB NO: 3816

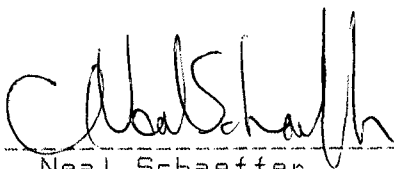
DATE REPORTED: 02/23/90
DATE RECEIVED: 01/31/90
DATE COLLECTED: 01/31/90

Trace metals by AA (Dissolved Concentration), mg/l

	Analytical Result:	Detection Limit:
Arsenic (As).....	0.0012	<0.0003
Cadmium (Cd).....	ND	<0.0002
Chromium (Cr).....	0.002	<0.001
Lead (Pb).....	ND	<0.004
Selenium (Se).....	ND	<0.0002

Trace metals by ICAP (Dissolved Concentration), mg/l

	Analytical Result:	Detection Limit:
Silver (Ag).....	ND	<0.05
Aluminum (Al).....	ND	<0.1
Boron (B).....	ND	<0.01
Barium (Ba).....	ND	<0.5
Beryllium (Be).....	ND	<0.005
Cobalt (Co).....	ND	<0.02
Copper (Cu).....	0.17	<0.01
Iron (Fe).....	1.21	<0.05
Manganese (Mn).....	0.09	<0.02
Molybdenum (Mo).....	ND	<0.02
Nickel (Ni).....	0.01	<0.01
Antimony (Sb).....	ND	<0.05
Silicon (Si).....	7.02	<0.05
Thallium (Tl).....	ND	<0.05
Vanadium (V).....	ND	<0.1
Zinc (Zn).....	0.21	<0.01


C. Neal Schaeffer
Lab Director

OIL SOLS. ANAL. DIVISION
RECEIVED
90 FEB 27 AM 8 40



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: NMOCB
ID: N/A
SITE: Cooling tower
LAB NO: 3816

DATE REPORTED: 02/23/90
DATE RECEIVED: 01/31/90
DATE COLLECTED: 01/31/90

Lab pH (s.u.).....	7.53
Lab Conductivity, umhos/cm.....	531
Lab resistivity, ohm-m.....	18.8324
Total Dissolved Solids (180), mg/l..	342
Total Dissolved Solids (calc), mg/l.	315
Total Alkalinity as CaCO ₃ , mg/l.....	112.69
Total Acidity as CaCO ₃ , mg/l.....	0.00
Total Hardness as CaCO ₃ , mg/l.....	128.42
Sodium Absorption Ratio.....	2.22

	mg/l	meq/l
Bicarbonate as HCO ₃	137.48	2.25
Carbonate as CO ₃	0.00	0.00
Chloride.....	12.85	0.36
Sulfate.....	123.86	2.58
Calcium.....	45.48	2.27
Magnesium.....	3.64	0.30
Potassium.....	3.73	0.10
Sodium.....	57.90	2.52
Major Cations.....		5.18
Major Anions.....		5.20
Cation/Anion Difference.....		0.14 %

ALCOHOL DIVISION
RECEIVED
90 FEB 27 AM 8 40



Inter-Mountain
Laboratories, Inc.

OIL SPILL INVESTIGATION DIVISION
RECEIVED

'90 FEB 27 AM 8 31

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

23 February 1990

NMOCD
POB 2088
Santa Fe, NM 87504-2088

Roger Anderson,

Yesterday I telephoned that we had some trouble analyzing the samples you submitted on 31 January 1990 and Dave Boyer submitted on 12 January 1990. These samples have Project name "Thriftway", and our problems are associated with 8010 and 8020 analyses.

These samples were analyzed within holding times, however during reporting we discovered a qualification error. The samples could not be reanalyzed due to holding times, and the data misinterpretation could not be resolved with available data. Therefore, due to laboratory error the following results are unavailable:

IML #:	Sample ID:	Site:	Analyses unavailable:
3775	9001111545	Hole 1	8010 & 8020
3776	9001111556	Hole 2	8010
3777	9001111612	Hole 3	8010
3778	9001111624	Hole 4	8010
3779	9001111648	Hole 5	8010
3780	9001111708	Hole 6	8010 & 8020
3781	9001111750	Waste pond	8010
3816	1/31 1145	Cooling tower	8010
3817	1/31 1220	Fire pond make-up	8010
3818	1/31 1230	Fire pond	8010

For samples 3775 and 3779 there appear to be five halogenated volatiles at concentrations near 20ug/l. I'm unable to offer further interpretation with the available data. Please accept my apology for this loss of your data. The instrument malfunction has already been corrected, and staffing problems that resulted in the late data interpretation have been addressed.

Sincerely,

Neal Schaeffer
Lab director



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: NMOCD
ID: N/A
SITE: Fire Pond Make-up
LAB NO: 3817

DATE REPORTED: 02/23/90
DATE RECEIVED: 01/31/90
DATE COLLECTED: 01/31/90

Lab pH (s.u.).....	7.50
Lab Conductivity, umhos/cm.....	3886
Lab resistivity, ohm-m.....	2.5733
Total Dissolved Solids (180), mg/l..	3312
Total Dissolved Solids (calc), mg/l.	3143
Total Alkalinity as CaCO ₃ , mg/l.....	191.00
Total Acidity as CaCO ₃ , mg/l.....	0.00
Total Hardness as CaCO ₃ , mg/l.....	1168.39
Sodium Absorption Ratio.....	6.55

	mg/l	meq/l
Bicarbonate as HCO ₃	233.02	3.82
Carbonate as CO ₃	0.00	0.00
Chloride.....	10.15	0.29
Sulfate.....	2038.16	42.46
Calcium.....	444.68	22.19
Magnesium.....	14.32	1.18
Potassium.....	6.28	0.16
Sodium.....	514.80	22.39
Major Cations.....		45.92
Major Anions.....		46.57
Cation/Anion Difference.....		0.70 %

REC'D
RECEIVED
90 FEB 27 AM 8 41
DIVISION



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: NMOCD
ID: N/A
SITE: Fire Pond Make-up
LAB NO: 3817

DATE REPORTED: 02/23/90
DATE RECEIVED: 01/31/90
DATE COLLECTED: 01/31/90

Trace metals by AA (Dissolved Concentration), mg/l

	Analytical Result:	Detection Limit:
Arsenic (As).....	ND	<0.0003
Cadmium (Cd).....	ND	<0.0002
Chromium (Cr).....	0.004	<0.001
Lead (Pb).....	0.015	<0.004
Selenium (Se).....	ND	<0.0002

Trace metals by ICAP (Dissolved Concentration), mg/l

	Analytical Result:	Detection Limit:
Silver (Ag).....	ND	<0.05
Aluminum (Al).....	ND	<0.1
Boron (B).....	0.17	<0.01
Barium (Ba).....	ND	<0.5
Beryllium (Be).....	ND	<0.005
Cobalt (Co).....	ND	<0.02
Copper (Cu).....	ND	<0.01
Iron (Fe).....	0.84	<0.05
Manganese (Mn).....	0.16	<0.02
Molybdenum (Mo).....	ND	<0.02
Nickel (Ni).....	ND	<0.01
Antimony (Sb).....	ND	<0.05
Silicon (Si).....	8.8	<0.05
Thallium (Tl).....	ND	<0.05
Vanadium (V).....	ND	<0.1
Zinc (Zn).....	ND	<0.01


C. Neal Schaeffer
Lab Director

90 FEB 27 AM 8 41
OIL & GAS DIVISION
RECEIVED



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: NMOCB DATE REPORTED: 02/23/90
ID: N/A DATE ANALYZED: 02/06/90
SITE: Fire Pond Make-up DATE RECEIVED: 01/31/90
LAB NO: F3817 DATE COLLECTED: 01/31/90
Analysis Requested: Purgeable aromatics in water.

Parameter -----	Concentration -----	Units -----
Benzene	ND (1.0)	ug/l
Toluene	ND (1.0)	ug/l
Ethylbenzene	ND (1.0)	ug/l
m/p-Xylene	ND (1.0)	ug/l
o-Xylene	ND (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l

Method:

8020 Aromatic Volatile Organics, SW-846, USEPA (1982).
602 Purgeable Aromatics, 40 CFR, Part 136.

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

916016
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90 FEB 27 AM 8 41
DIVISION



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111750
SITE: Waste Pond
LAB NO: F3781
Analysis Requested: Purgeable aromatics in water.

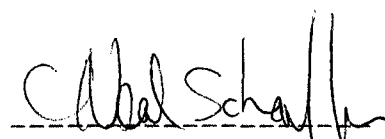
DATE REPORTED: 01/23/90
DATE ANALYZED: 01/16/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter	Concentration	Units
-----	-----	-----
Benzene	85000 (5000)	ug/l
Toluene	107500 (5000)	ug/l
Ethylbenzene	13750 (5000)	ug/l
m,p-Xylene	31250 (5000)	ug/l
o-Xylene	21250 (5000)	ug/l

Method:
8020 Aromatic Volatile Organics, SW-846, USEPA (1982)
602 Purgeable Aromatics, 40 CFR, Part 136

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

Fuel scan: This sample's chromatographic pattern resembled that of diesel fuel, suggesting that this sample is contaminated with diesel.



C. Neal Schaeffer
Senior Chemist

216606
RECEIVED
DIVISION
'90 FEB 27 AM 8 40



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111750
SITE: Waste Pond
LAB NO: F3781
DATE REPORTED: 01/23/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90
Analysis Requested: Polynuclear aromatic hydrocarbons in water.

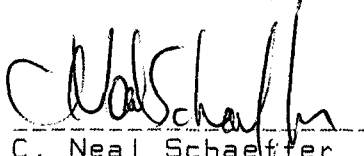
Parameter	Concentration	Units
Acenaphthene	ND (3.0)	mg/l
Acenaphthylene	ND (3.0)	mg/l
Anthracene	ND (3.0)	mg/l
Benzo(a)Anthracene	ND (3.0)	mg/l
Benzo(a)pyrene	ND (3.0)	mg/l
Benzo(k)fluoranthene	ND (3.0)	mg/l
Benzo(g,h,i)perylene	ND (3.0)	mg/l
Dibenzo(a,h)anthracene	ND (3.0)	mg/l
Chrysene	ND (3.0)	mg/l
Fluoranthene	ND (3.0)	mg/l
Fluorene	ND (3.0)	mg/l
Indeno(1,2,3-cd)pyrene	ND (3.0)	mg/l
Naphthalene	732.1 (3.0)	mg/l
Phenanthrene	ND (3.0)	mg/l
Pyrene	ND (3.0)	mg/l
Benzo(b)fluoranthene	ND (3.0)	mg/l

Method:

8100 Polynuclear Aromatic Hydrocarbons, SW-846, USEPA (1982).
610 Polyaromatic Hydrocarbons, 40 CFR Part 136 (1984).

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

OIL POLLUTION DIVISION
RECEIVED
90 FEB 27 AM 8 40



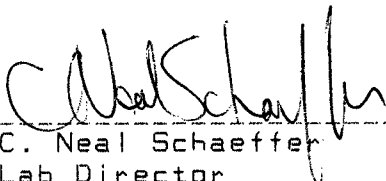
2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
SAMPLE: 9001111750
SITE: Waste Pond
LAB NO: F3781

DATE REPORTED: 01/23/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Lab pH (s.u.).....	7.35
Lab Conductivity, umhos/cm.....	1082
Lab resistivity, ohm-m.....	9.2421
Total Dissolved Solids (180), mg/l..	960
Total Dissolved Solids (calc), mg/l.	730
Total Alkalinity as CaCO ₃ , mg/l.....	188.87
Total Acidity as CaCO ₃ , mg/l.....	0.00
Total Hardness as CaCO ₃ , mg/l.....	202.10
Sodium Absorption Ratio.....	5.28

	mg/l	meq/l
Bicarbonate as HCO ₃	230.42	3.78
Carbonate as CO ₃	0.00	0.00
Chloride.....	45.69	1.29
Sulfate.....	316.44	6.59
Calcium.....	70.74	3.53
Magnesium.....	6.22	0.51
Potassium.....	4.71	0.12
Sodium.....	172.50	7.50
Major Cations.....		11.67
Major Anions.....		11.66
Cation/Anion Difference.....		0.03 %


C. Neal Schaeffer
Lab Director

90 FEB 27 AM 8 40

WATER DIVISION
RECEIVED



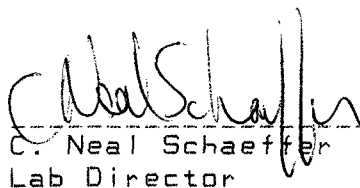
2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
SAMPLE: 9001111708
SITE: Hole #6 Thriftway
LAB NO: F3780

DATE REPORTED: 01/23/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Lab pH (s.u.).....	7.82
Lab Conductivity, umhos/cm.....	6463
Lab resistivity, ohm-m.....	1.5473
Total Dissolved Solids (180), mg/l..	5360
Total Dissolved Solids (calc), mg/l.	5442
Total Alkalinity as CaCO ₃ , mg/l.....	289.85
Total Acidity as CaCO ₃ , mg/l.....	0.00
Total Hardness as CaCO ₃ , mg/l.....	1174.70
Sodium Absorption Ratio.....	16.54

	mg/l	meq/l
Bicarbonate as HCO ₃	353.62	5.80
Carbonate as CO ₃	0.00	0.00
Chloride.....	30.46	0.86
Sulfate.....	3573.88	74.46
Calcium.....	168.44	8.41
Magnesium.....	183.48	15.09
Potassium.....	8.05	0.21
Sodium.....	1303.40	56.69
Major Cations.....		80.39
Major Anions.....		81.11
Cation/Anion Difference.....		0.44 %


C. Neal Schaeffer
Lab Director

30 FEB 27 AM 8 40
OIL STATE LABORATORY DIVISION
RECEIVED



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

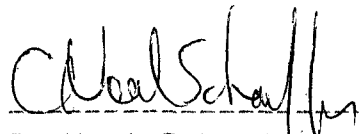
CLIENT: NMOCD
ID: 9001111648
SITE: Thriftway Hole 5
LAB NO: F3779
Analysis Requested: Purgeable aromatics in water.

DATE REPORTED: 02/23/90
DATE ANALYZED: 01/23/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter -----	Concentration -----	Units -----
Benzene	6.5 (1.0)	ug/l
Toluene	10.3 (1.0)	ug/l
Ethylbenzene	9.2 (1.0)	ug/l
m/p-Xylene	10.7 (1.0)	ug/l
o-Xylene	5.2 (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l

Method:
8020 Aromatic Volatile Organics, SW-846, USEPA (1982).
602 Purgeable Aromatics, 40 CFR, Part 136.

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

OIL CONTAMINATION DIVISION
RECEIVED
90 FEB 27 AM 8 39



Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

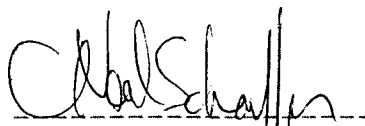
CLIENT: OCD
ID: 9001111624
SITE: Hole #4 Thriftway
LAB NO: F3778
Analysis Requested: Purgeable halocarbons in water.

DATE REPORTED: 02/23/90
DATE ANALYZED: 01/18/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter	Concentration	Units
Bromobenzene	ND (10)	ug/l
Bromodichloromethane	ND (10)	ug/l
Bromoform	ND (10)	ug/l
Carbon Tetrachloride	ND (10)	ug/l
Chlorobenzene	ND (10)	ug/l
Chloroethane	ND (10)	ug/l
Chloroform	ND (10)	ug/l
Chloromethane	ND (10)	ug/l
Dibromochloromethane	ND (10)	ug/l
Dibromomethane	ND (10)	ug/l
1,2-Dichlorobenzene	ND (10)	ug/l
1,3-Dichlorobenzene	ND (10)	ug/l
1,4-Dichlorobenzene	ND (10)	ug/l
Dichlorodifluoromethane	ND (10)	ug/l
1,1-Dichloroethane	ND (10)	ug/l
1,2-Dichloroethane	ND (10)	ug/l
1,1-Dichloroethene	ND (10)	ug/l
trans-1,2-Dichloroethene	ND (10)	ug/l
1,2-Dichloropropane	ND (10)	ug/l
1,3-Dichloropropylene	ND (10)	ug/l
2,2-Dichloropropane	ND (10)	ug/l
Dichloromethane	ND (10)	ug/l
1,1,1,2-Tetrachloroethane	ND (10)	ug/l
1,1,2,2-Tetrachloroethane	ND (10)	ug/l
Tetrachloroethene	ND (10)	ug/l
1,1,1-Trichloroethane	ND (10)	ug/l
1,1,2-Trichloroethane	ND (10)	ug/l
Trichloroethene	ND (10)	ug/l
Trichlorofluoromethane	ND (10)	ug/l
1,2,3-Trichloropropane	ND (10)	ug/l
Bromochloromethane	ND (10)	ug/l
1,2-Dibromoethane	ND (10)	ug/l
cis-1,2-Dichloroethene	ND (10)	ug/l
1,1-Dichloropropene	ND (10)	ug/l
Vinyl Chloride	ND (10)	ug/l

Method:

601 Purgeable Halocarbons, 40 CFR Part 136, USEPA (1984).
(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

90 FEB 27 AM 8 39

ANALYSIS DIVISION
RECEIVED



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111624
SITE: Thriftway Hole #4
LAB NO: F3778
Analysis Requested: Purgeable aromatics in water.

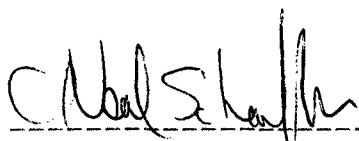
DATE REPORTED: 01/23/90
DATE ANALYZED: 01/16/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter	Concentration	Units
Benzene	23125 (2500)	ug/l
Toluene	63125 (2500)	ug/l
Ethylbenzene	16875 (2500)	ug/l
m,p-Xylene	59375 (2500)	ug/l
o-Xylene	34375 (2500)	ug/l

Method:
8020 Aromatic Volatile Organics, SW-846, USEPA (1982)
602 Purgeable Aromatics, 40 CFR, Part 136

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

Fuel scan: This sample's chromatographic pattern resembled that of gasoline, suggesting that this sample is contaminated with gasoline.


C. Neal Schaeffer
Senior Chemist

90 FEB 27 AM 8 39
RECEIVED
OIL AND GAS DIVISION



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111624
SITE: Hole #4 Thriftway
LAB NO: F3778
DATE REPORTED: 01/23/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90
Analysis Requested: Polynuclear aromatic hydrocarbons in water.

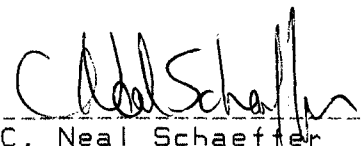
Parameter	Concentration	Units
Acenaphthene	trace (2.0)	mg/l
Acenaphthylene	trace (2.0)	mg/l
Anthracene	ND (2.0)	mg/l
Benzo(a)Anthracene	ND (2.0)	mg/l
Benzo(a)pyrene	ND (2.0)	mg/l
Benzo(k)fluoranthene	ND (2.0)	mg/l
Benzo(g,h,i)perylene	ND (2.0)	mg/l
Dibenzo(a,h)anthracene	ND (2.0)	mg/l
Chrysene	ND (2.0)	mg/l
Fluoranthene	ND (2.0)	mg/l
Fluorene	ND (2.0)	mg/l
Indeno(1,2,3-cd)pyrene	ND (2.0)	mg/l
Naphthalene	250.0 (2.0)	mg/l
Phenanthrene	ND (2.0)	mg/l
Pyrene	ND (2.0)	mg/l
Benzo(b)fluoranthene	ND (2.0)	mg/l

Method:

8100 Polynuclear Aromatic Hydrocarbons, SW-846, USEPA (1982).
610 Polyaromatic Hydrocarbons, 40 CFR Part 136 (1984).

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

90 FEB 27 AM 8 39
OIL & GAS DIVISION
RECEIVED



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111612
SITE: Thriftway Hole #3
LAB NO: F3777
Analysis Requested: Purgeable aromatics in water.

DATE REPORTED: 01/23/90
DATE ANALYZED: 01/16/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter	Concentration	Units
Benzene	ND (5000)	ug/l
Toluene	ND (5000)	ug/l
Ethylbenzene	Trace (5000)	ug/l
m,p-Xylene	Trace (5000)	ug/l
o-Xylene	Trace (5000)	ug/l

Note: Elevated detection limits due to extreme hydrocarbon interference. Chromatographic evidence of ethylbenzene and xylenes at approximately 1 ug/l.

Method:
8020 Aromatic Volatile Organics, SW-846, USEPA (1982)

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

Fuel scan: This sample's chromatographic pattern resembled that of diesel fuel. However the sample appears to be somewhat environmentally degraded, and its chromatographic pattern cannot be unequivocally distinguished from gasoline using my Method 8020 data.

C. Neal Schaeffer
Senior Chemist

90 FEB 27 AM 8 39
RECEIVED
OIL CONTAMINATION DIVISION



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111612
SITE: Hole #3 Thriftway
LAB NO: F3777
Analysis Requested: Purgeable halocarbons in water.

DATE REPORTED: 02/23/90
DATE ANALYZED: 01/18/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter	Concentration	Units
Bromobenzene	ND (10)	ug/l
Bromodichloromethane	ND (10)	ug/l
Bromoform	ND (10)	ug/l
Carbon Tetrachloride	ND (10)	ug/l
Chlorobenzene	ND (10)	ug/l
Chloroethane	ND (10)	ug/l
Chloroform	ND (10)	ug/l
Chloromethane	ND (10)	ug/l
Dibromochloromethane	ND (10)	ug/l
Dibromomethane	ND (10)	ug/l
1,2-Dichlorobenzene	ND (10)	ug/l
1,3-Dichlorobenzene	ND (10)	ug/l
1,4-Dichlorobenzene	ND (10)	ug/l
Dichlorodifluoromethane	ND (10)	ug/l
1,1-Dichloroethane	* ND (10)	ug/l
1,2-Dichloroethane	ND (10)	ug/l
1,1-Dichloroethene	ND (10)	ug/l
trans-1,2-Dichloroethene	ND (10)	ug/l
1,2-Dichloropropane	ND (10)	ug/l
1,3-Dichloropropylene	ND (10)	ug/l
2,2-Dichloropropane	ND (10)	ug/l
Dichloromethane	ND (10)	ug/l
1,1,1,2-Tetrachloroethane	ND (10)	ug/l
1,1,2,2-Tetrachloroethane	ND (10)	ug/l
Tetrachloroethene	ND (10)	ug/l
1,1,1-Trichloroethane	ND (10)	ug/l
1,1,2-Trichloroethane	ND (10)	ug/l
Trichloroethene	ND (10)	ug/l
Trichlorofluoromethane	ND (10)	ug/l
1,2,3-Trichloropropane	ND (10)	ug/l
Bromochloromethane	ND (10)	ug/l
1,2-Dibromoethane	ND (10)	ug/l
cis-1,2-Dichloroethene	ND (10)	ug/l
1,1-Dichloropropene	ND (10)	ug/l
Vinyl Chloride	ND (10)	ug/l

Method:

601 Purgeable Halocarbons, 40 CFR Part 136, USEPA (1984).
(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.

Note: sample appears to contain cis-1,2-dichloroethane, a non-target compound.

* Chromatographic evidence of 1,1-dichloroethane below detection limit.

C. Neal Schaeffer
Senior Chemist

90 FEB 27 AM 8 39

OIL CONSERVATION DIVISION
RECEIVED



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111612
SITE: Hole #3 Thriftway
LAB NO: F3777
DATE REPORTED: 01/23/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90
Analysis Requested: Polynuclear aromatic hydrocarbons in water.

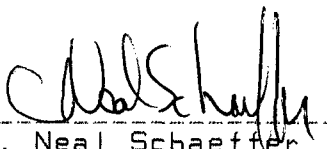
Parameter	Concentration	Units
Acenaphthene	ND (0.02)	mg/l
Acenaphthylene	0.08 (0.02)	mg/l
Anthracene	ND (0.02)	mg/l
Benzo(a)Anthracene	ND (0.02)	mg/l
Benzo(a)pyrene	ND (0.02)	mg/l
Benzo(k)fluoranthene	ND (0.02)	mg/l
Benzo(g,h,i)perylene	ND (0.02)	mg/l
Dibenzo(a,h)anthracene	ND (0.02)	mg/l
Chrysene	ND (0.02)	mg/l
Fluoranthene	ND (0.02)	mg/l
Fluorene	0.06 (0.02)	mg/l
Indeno(1,2,3-cd)pyrene	ND (0.02)	mg/l
Naphthalene	0.56 (0.02)	mg/l
Phenanthrene	0.06 (0.02)	mg/l
Pyrene	ND (0.02)	mg/l
Benzo(b)fluoranthene	ND (0.02)	mg/l

Method:

8100 Polynuclear Aromatic Hydrocarbons, SW-846, USEPA (1982).
610 Polyaromatic Hydrocarbons, 40 CFR Part 136 (1984).

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

'90 FEB 27 AM 8 39

RECEIVED
OIL & GAS DIVISION



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111556
SITE: Hole #2 Thriftway
LAB NO: F3776
DATE REPORTED: 01/23/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90
Analysis Requested: Polynuclear aromatic hydrocarbons in water.

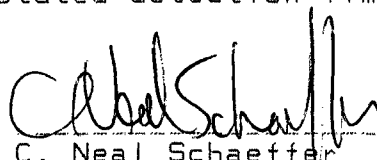
Parameter	Concentration	Units
Acenaphthene	0.8 (0.5)	mg/l
Acenaphthylene	2.5 (0.5)	mg/l
Anthracene	0.65 (0.5)	mg/l
Benzo(a)Anthracene	5.0 (0.5)	mg/l
Benzo(a)pyrene	ND (0.5)	mg/l
Benzo(k)fluoranthene	ND (0.5)	mg/l
Benzo(g,h,i)perylene	ND (0.5)	mg/l
Dibenzo(a,h)anthracene	ND (0.5)	mg/l
Chrysene	1.15 (0.5)	mg/l
Fluoranthene	0.5 (0.5)	mg/l
Fluorene	ND (0.5)	mg/l
Indeno(1,2,3-cd)pyrene	ND (0.5)	mg/l
Naphthalene	20.5 (0.5)	mg/l
Phenanthrene	ND (0.5)	mg/l
Pyrene	2.5 (0.5)	mg/l
Benzo(b)fluoranthene	ND (0.5)	mg/l

Method:

8100 Polynuclear Aromatic Hydrocarbons, SW-846, USEPA (1982).
610 Polyaromatic Hydrocarbons, 40 CFR Part 136 (1984).

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

OIL CONTAMINATION DIVISION
RECEIVED
'90 FEB 27 AM 8 39



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

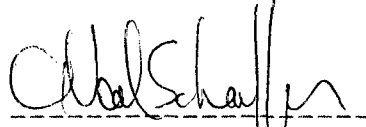
CLIENT: OCD
ID: 9001111556
SITE: Hole #2 Thriftway
LAB NO: F3776
Analysis Requested: Purgeable halocarbons in water.

DATE REPORTED: 02/23/90
DATE ANALYZED: 01/18/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter	Concentration	Units
Bromobenzene	ND (10)	ug/l
Bromodichloromethane	ND (10)	ug/l
Bromoform	ND (10)	ug/l
Carbon Tetrachloride	ND (10)	ug/l
Chlorobenzene	ND (10)	ug/l
Chloroethane	ND (10)	ug/l
Chloroform	ND (10)	ug/l
Chloromethane	ND (10)	ug/l
Dibromochloromethane	ND (10)	ug/l
Dibromomethane	ND (10)	ug/l
1,2-Dichlorobenzene	ND (10)	ug/l
1,3-Dichlorobenzene	ND (10)	ug/l
1,4-Dichlorobenzene	ND (10)	ug/l
Dichlorodifluoromethane	ND (10)	ug/l
1,1-Dichloroethane	26.5 (10)	ug/l
1,2-Dichloroethane	ND (10)	ug/l
1,1-Dichloroethene	ND (10)	ug/l
trans-1,2-Dichloroethene	16.8 (10)	ug/l
1,2-Dichloropropane	ND (10)	ug/l
1,3-Dichloropropylene	ND (10)	ug/l
2,2-Dichloropropane	ND (10)	ug/l
Dichloromethane	ND (10)	ug/l
1,1,1,2-Tetrachloroethane	ND (10)	ug/l
1,1,2,2-Tetrachloroethane	ND (10)	ug/l
Tetrachloroethene	ND (10)	ug/l
1,1,1-Trichloroethane	14.6 (10)	ug/l
1,1,2-Trichloroethane	ND (10)	ug/l
Trichloroethene	ND (10)	ug/l
Trichlorofluoromethane	ND (10)	ug/l
1,2,3-Trichloropropane	ND (10)	ug/l
Bromochloromethane	ND (10)	ug/l
1,2-Dibromoethane	ND (10)	ug/l
cis-1,2-Dichloroethene	ND (10)	ug/l
1,1-Dichloropropene	ND (10)	ug/l
Vinyl Chloride	ND (10)	ug/l

Method:

601 Purgeable Halocarbons, 40 CFR Part 136, USEPA (1984).
(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.


C. Neal Schaeffer
Senior Chemist

OIL & GAS DIVISION
RECEIVED
90 FEB 27 AM 8 39



2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 9001111556
SITE: Thriftway Hole #2
LAB NO: F3776
Analysis Requested: Purgeable aromatics in water.

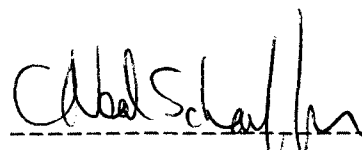
DATE REPORTED: 01/23/90
DATE ANALYZED: 01/12/90
DATE RECEIVED: 01/12/90
DATE COLLECTED: 01/11/90

Parameter	Concentration	Units
-----	-----	-----
Benzene	ND (2500)	ug/l
Toluene	ND (2500)	ug/l
Ethylbenzene	86000 (2500)	ug/l
m,p-Xylene	380000 (2500)	ug/l
o-Xylene	130000 (2500)	ug/l

Method:
8020 Aromatic Volatile Organics, SW-846, USEPA (1982)

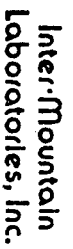
(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

Fuel scan: This sample's chromatographic pattern resembled that of diesel fuel. However the sample appears to be somewhat environmentally degraded, and its chromatographic pattern cannot be unequivocally distinguished from gasoline using my Method 8020 data.



C. Neal Schaeffer
Senior Chemist

94L0116
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90 FEB 27 AM 8 39
DIVISION

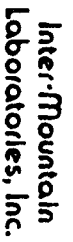


CHAIN OF CUSTODY RECORD

[illegible]

OIL CONS. DIVISION
RECEIVED

No. 197

[illegible]



ANALYSIS REQUEST FORM

Contract Lab TML

Contract No. _____

OCD Sample No. 9001311230

Collection Date	Collection Time	Collected by—Person/Agency	
<u>1/31/90</u>	<u>1230</u>	<u>ANDERSON/OLSON</u>	/OCD
SITE INFORMATION			
Sample location <u>THRIFTWAY REF - FIRE POND</u>			
Collection Site Description			
Township, Range, Section, Tract:			

SEND
FINAL
REPORT
TO ↓ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2QT + 2Vials

- ☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 μ membrane filter
☐ **PF:** Pre-filtered w/45 μ membrane filter

- ☒ **NA:** No acid added 1Q + 1V ☒ **A:** 5ml conc. HNO₃ added 1QT
☒ **A:** HCL 1V ☐ **A:** 4ml fuming HNO₃ added
☐ **A:** 2ml H₂SO₄/L added

SAMPLING CONDITIONS

- ☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400)

7

Water Temp. (00010)

4°C

Water level

Discharge

Sample type

GRAB

Conductivity (Uncorrected)

1530 μ mho

Conductivity at 25° C

 μ mho

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☒ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	



ANALYSIS REQUEST FORM

Contract Lab ZML

Contract No. _____

OCD Sample No. 9001311220

Collection Date	Collection Time	Collected by —Person/Agency
1/31/90	1220	ANDERSON/OLSON
SITE INFORMATION		
Sample location <u>THRIFTWAY REF - FIRE POND MAKE UP</u>		
Collection Site Description <u>DISCHARGE PIPE FROM OJO ALAMO WELL</u>		
		Township, Range, Section, Tract: + + +

SEND
FINAL
REPORT
TO ↓ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2 QTS + 2 Vials (V)

- ☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 μ membrane filter
☐ PF: Pre-filtered w/45 μ membrane filter

- ☒ NA: No acid added 1 Q + 1 V ☒ A: 5ml conc. HNO₃ added 1 Q
☒ A: HCL 1 V ☐ A: 4ml fuming HNO₃ added
☐ A: 2ml H₂SO₄/L added

FIELD COMMENTS:

SAMPLING CONDITIONS	Water level
	Discharge
	Sample type <u>GRAB</u>
	Conductivity (Uncorrected) <u>1990</u> μ mho
	Conductivity at 25° C <u>13</u> μ mho
☐ Bailed ☒ Pump ☒ Dipped ☐ Tap	
pH(00400) <u>7</u>	
Water Temp. (00010) <u>13°C</u>	

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☒ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab IML

Contract No. _____

OCD Sample No. 9001311145

Collection Date	Collection Time	Collected by — Person/Agency	
1/31/90	1145	Anderson/Dison	/OCD

SITE INFORMATION

Sample location THRIFTWAY REF COOLING TOWER

Collection Site Description

Township, Range, Section, Tract:

SEND
FINAL
REPORT
TO ↓

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2 QTS + 2 Vials

- ☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 μ membrane filter
☐ PF: Pre-filtered w/45 μ membrane filter

- ☒ NA: No acid added 1 QT, 1 vial ☒ A: 5ml conc. HNO₃ added 1 QT
☒ A: HCL 1 vial ☐ A: 4ml fuming HNO₃ added
☐ A: 2ml H₂SO₄/L added

FIELD COMMENTS:

SAMPLING CONDITIONS	Water level
	Discharge
	Sample type <u>GRAB</u>
	Conductivity (Uncorrected) <u>240</u> μ mho
	Conductivity at 25° C <u>4</u> μ mho

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400) 6.5

Water Temp. (00010) 50°C

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☒ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

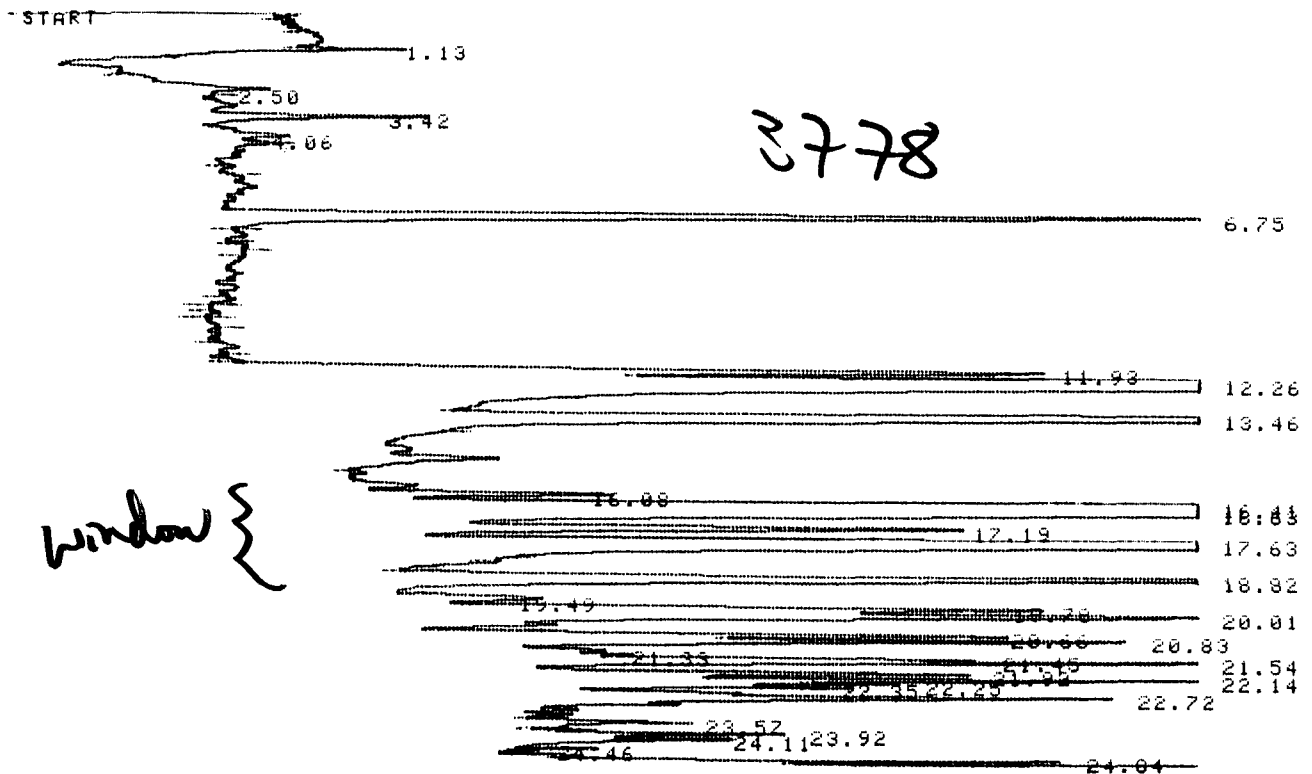
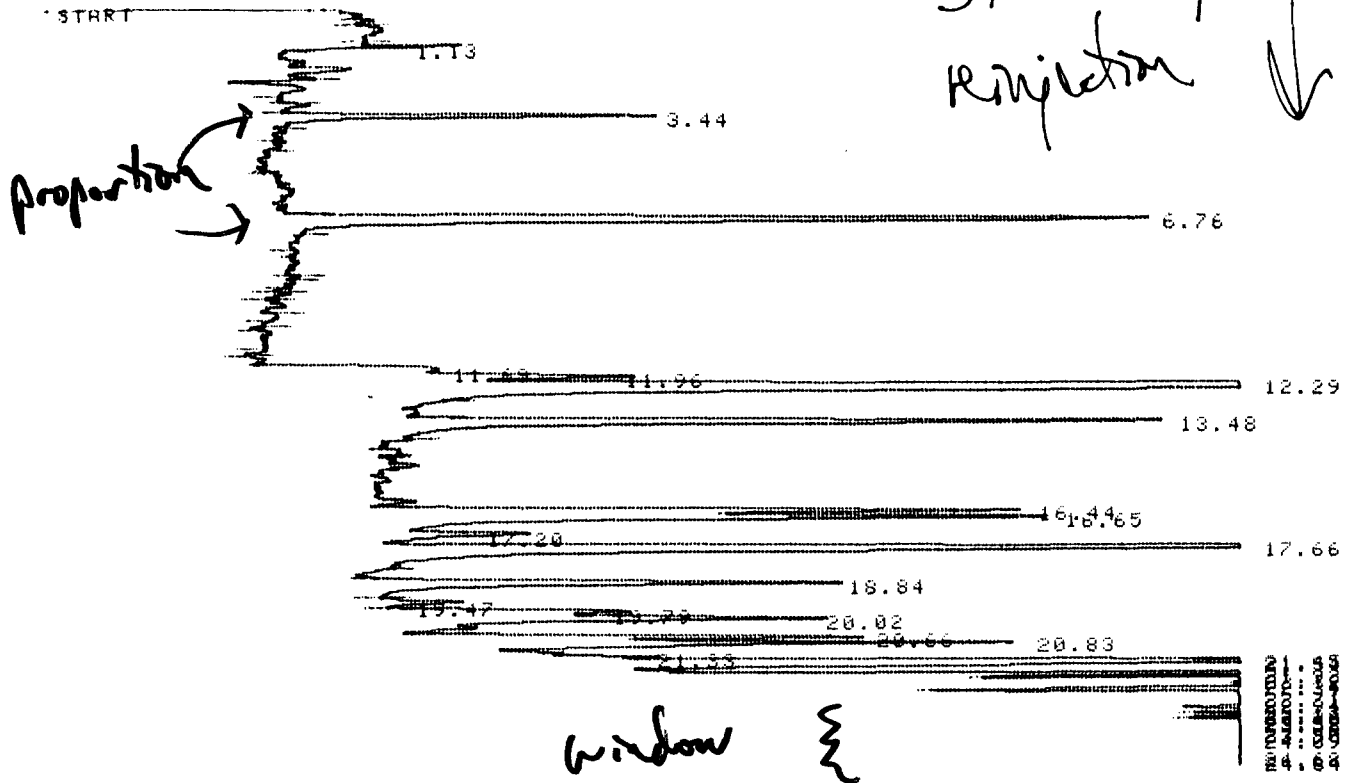
TOTAL HIGHT= 369180
MUL FACTOR= 1.0000E+00

~~3778~~

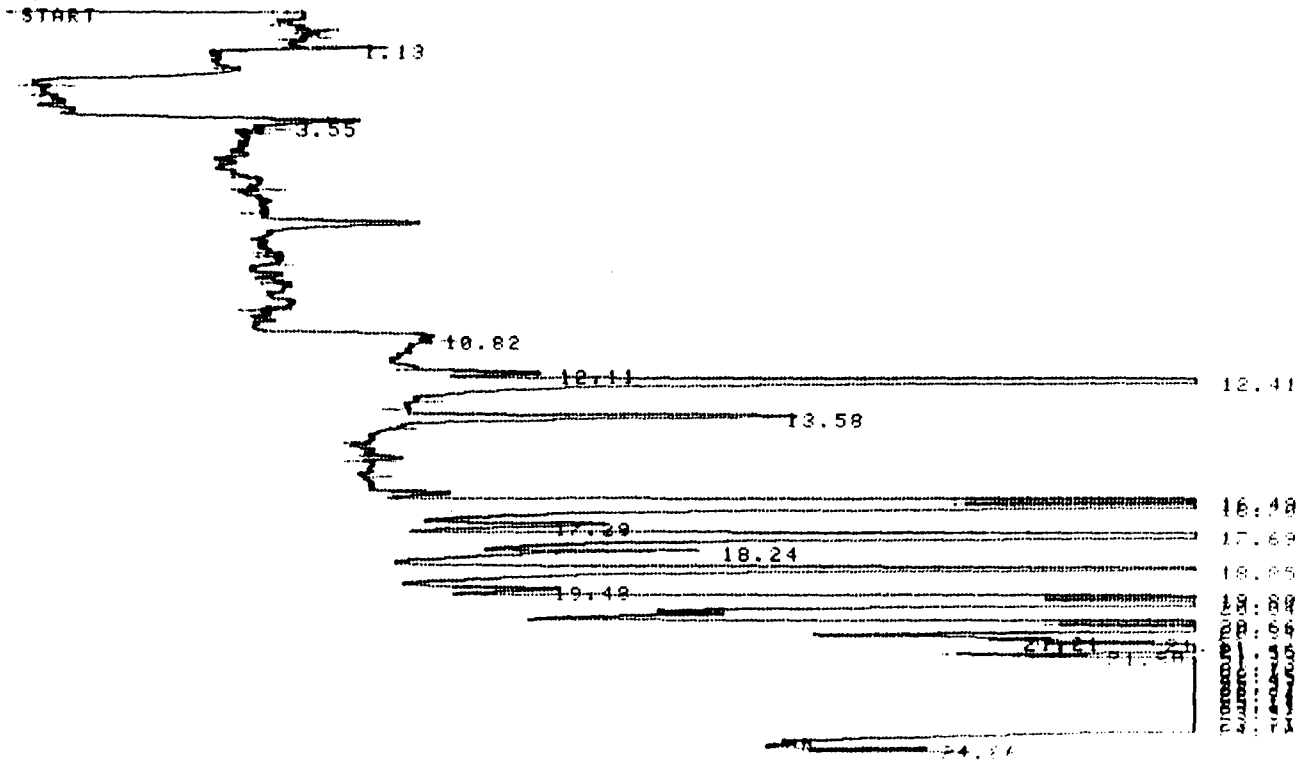
3781

Injection

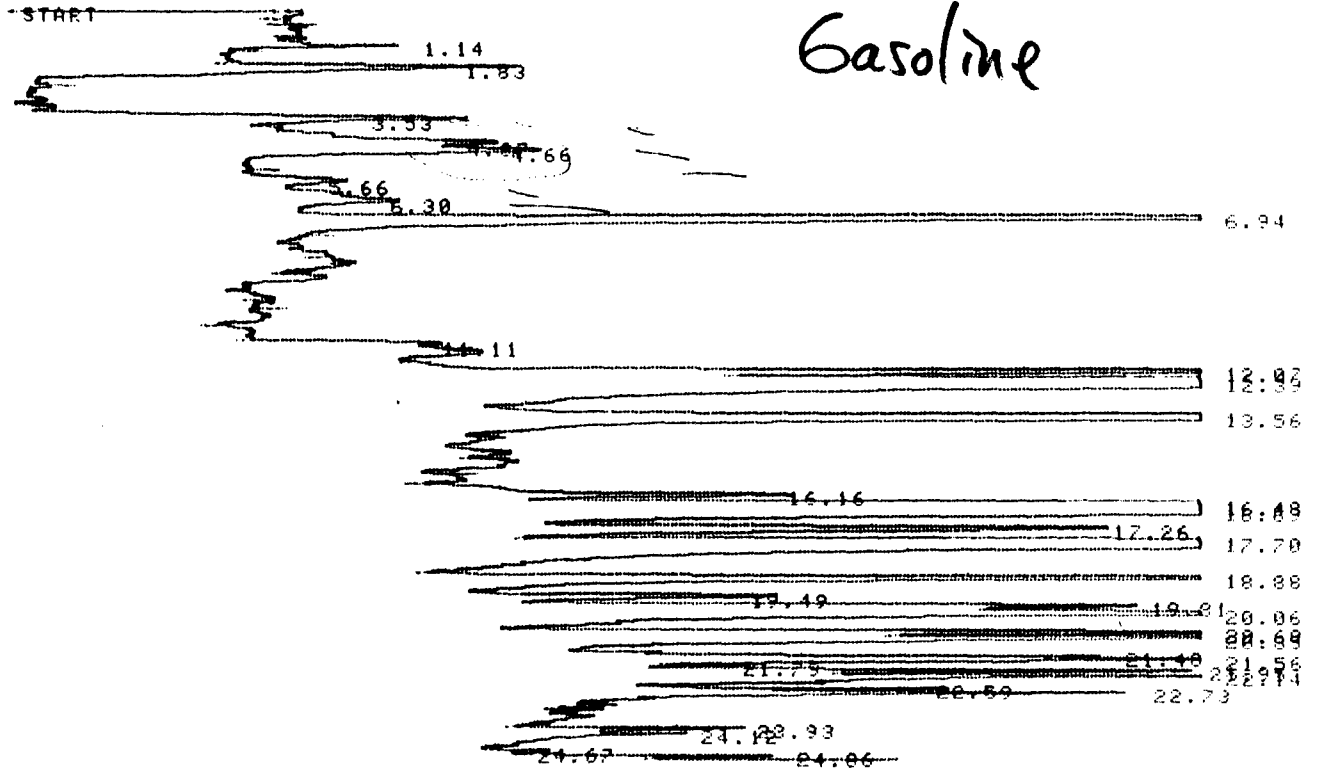
ful
↓



Diesel Fuel



Gasoline



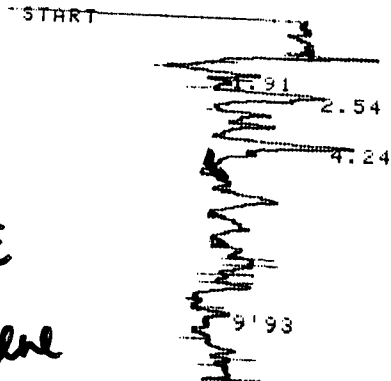
RUN # 291

JAN/17/90 16:55:12

HEIGHT%

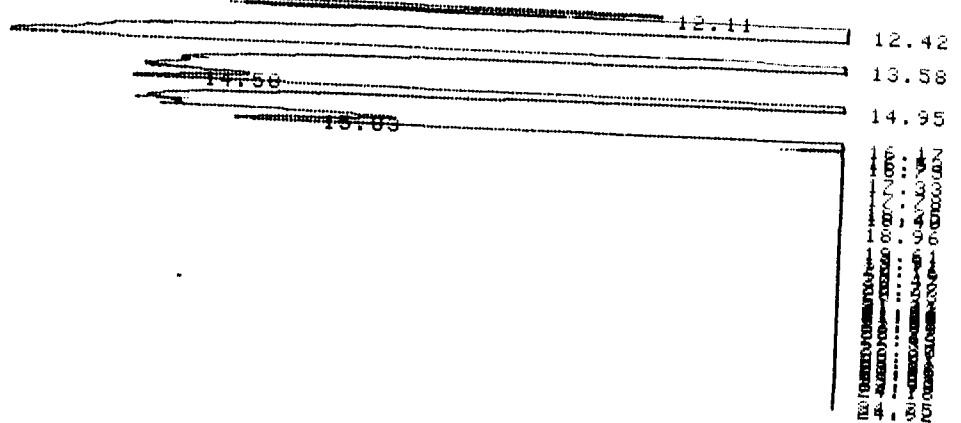
RT	HEIGHT	TYPE	AR/HT	HEIGHT%
1.14	1057	BB	0.121	0.399
1.14	1057	BB	0.399	0.321

1780 2 ml

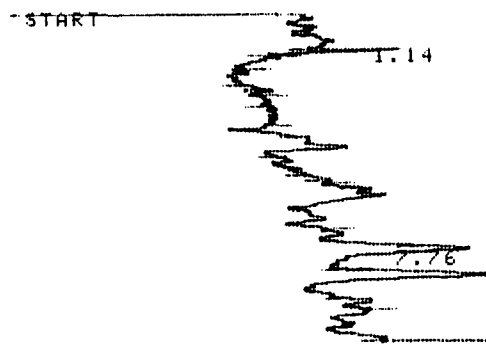


3776

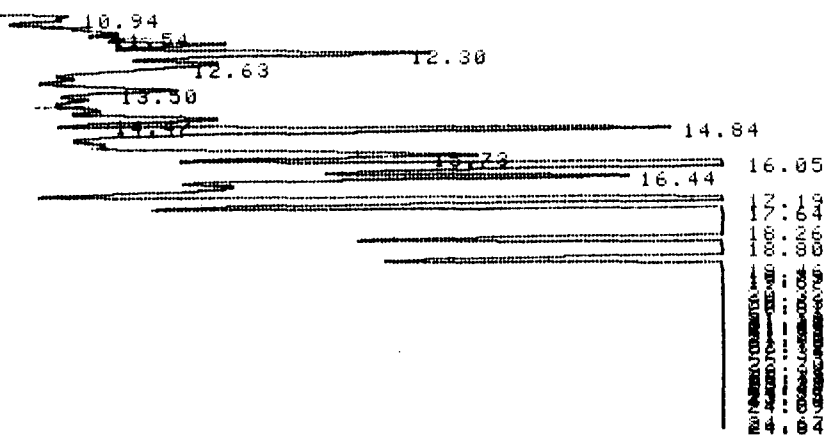
no 87E
to Benzene
or toluene



TOTAL HEIGHT= 216770
MUL FACTOR= 1.0000E+00

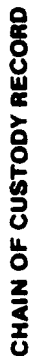


3777





1



No. 195

GBR-13 860605 1900

cond 7800 @ 18 1/2 °C pH-7

Hydrocarbon stream, older

First time it's old

860605 1905 - older, steam
and 1600 @ 21 1/2 °C pH-7

GBR-27 860605 2000 ^{PAH} sample

cond 7200 @ 21 °C, pH-7

located ~~near~~ refinery well (Steam jet)

GBR-21 860605 2040

1' pocket on top of bank 2 mth
like granular

Raw water Pond

860605 1510

cond 350 @ 26 °C pH-7

North west of THRIFFWAY Ref.

in young, dry soil - product? floating

860606 1315, 180' S of west trap

cond 3250 @ 27 °C ^{force}

dug ~ 1 ft sample for lab, 1200

86126061235 - ^{for 1200} water & product

3420 @ 21 °C ^{emulsion in water}
1200 only ^{very wet with some}

~~Thrieffway~~

Thrieffway - Plant channel

Steam 212 F (dry), clean 110
860606 1300, very dry
spec cond 12,000 @ 27 °C

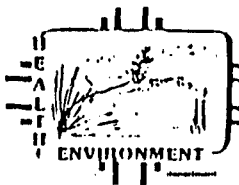
Refinery - Wharfedale, 632-3363

Main 336-5571

710 E. 20th Avenue 87401

Lefty Stork - VP

Jerry Clayton - President of Union



86-0689-C

754
SCIENTIFIC LABORATORY DIVISION700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO: DAVID G. BOYER
PLEASE PRINT
NEW MEXICO OIL CONSERVATION DIV.
P.O. BOX 2088
SANTA FE, NM 87504-2088

S.L.D. No.: OR-689-H.B.
DATE REC.: 6/09/86
SLD PRIORITY #:

PHONE(S): 827-5812

USER CODE: 8|2|2|3|5|

SUBMITTER: DAVID BOYER

SUBMITTER CODE: | | | | |

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 6/6/86-12:15 BY DBB
DATE TIME INITIALS

CODE: 8|6|0|6|0|6|1|2|1|5|0|8|B|
Y Y M M D D H H M M I I I

SOURCE: 10 Arroyo 100ft E. of W. Prop Fence

CODE: | | | | |
AQUIFER DEPTH

NEAREST CITY: Bloomfield

CODE: | | | | |

LOCATION: THRIFTWAY REFINERY

CODE: 2|9|N|1|1|W|3|2|4|4|4|
TOWNSHIP RANGE SECTION TRACTS

pH= ; Conductivity= 3250 umho/cm at 27 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Dug hole APPX 1ft deep in Arroyo. STAINED SOIL. PRODUCT FLOATING ON SURFACE OF WATER

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. *David Boyer*

Method of shipment to the Laboratory HAND CARRIED

This form accompanies 2 Septum Vials, Glass Jugs, Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from *David Boyer* to SLD at (location) SLD on

6/9/86 : and that the statements in this block are correct.
DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures *David Boyer*

(we) certify that this sample was transferred from to at (location) on

6/9/86 : and that the statements in this block are correct.
DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 689

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated purgables	none detected		
benzene	8000		
toluene	7500		
ethylbenzene	1900		
p-xylene	3000		
m-xylene	8100		
o-xylene	3400		
		* DETECTION LIMIT	100 ug/ml

REMARKS: Twelve other compounds were detected by the aromatic screen that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: _____ date: _____
 I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.
 Date(s) of analysis: 13 June 86. Analyst's signature: [Signature]
 I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]

FOR OCD USE -- Date Owner Notified _____ Phone or letter? _____ Initials _____



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED <u>6/10/86</u>	LAB NO. <u>WC-2529</u>	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE <u>86106106</u>	SITE INFORMATION	Sample location <u>THRIFTWAY REFINERY - BLOOMFIELD</u>
Collection TIME <u>1215</u>		Collection site description <u>IN ARROYO 100' EAST OF WEST PROPERTY FENCE</u>
Collected by — Person/Agency <u>BOYER</u>	/OCD	

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type GRAB
pH (00400)	Conductivity (Uncorrected) <u>3250</u> μ mho	Water Temp. (00010) <u>27</u> °C	Conductivity at 25°C (00094) μ mho	
Field comments <u>DEEP HOLE APPX 1ft DEEP IN ARROYO. STAINED SOIL PRODUCT FLOATING ON SURFACE</u>				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted <u>1</u>	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added ☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	NA, NF	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	<u>100</u> mg/l	<u>6/23</u>
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	<u>43.9</u> mg/l	<u>11</u>
☐ Other:			☒ Sodium (00930)	<u>747</u> mg/l	<u>11</u>
☐ Other:			☒ Potassium (00935)	<u>0</u> mg/l	<u>2</u>
☐ Other:			☒ Bicarbonate (00440)	<u>1840</u> mg/l	<u>6/24</u>
			☒ Chloride (00940)	<u>426</u> mg/l	<u>6/17</u>
			☒ Sulfate (00945)	<u>42</u> mg/l	<u>6/19</u>
			☒ Total filterable residue (dissolved) (70300)	<u>2253</u> mg/l	<u>6/20</u>
			☒ Other: <u>CO₃</u>	<u>0</u>	<u>6/24</u>
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					

Laboratory remarks To Lab: You may filter first, if you wish. AYC OCA 6/9/86

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initials ayc



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

850
2

DATE RECEIVED	6/10/86	LAB NO.	WC-2528	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86/06/06	SITE INFORMATION	Sample location	THRIFTWAY REFINERY - BLOOMFIELD	
Collection TIME	1215		Collection site description	IN ARROYO 100' EAST OF WEST PROPERTY FENCE	
Collected by — Person/Agency	1304ER /OCD		Station/well code		
			Owner		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5312

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
				GRAB
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)	
	3250 μ mho	27 °C		
Field comments DUG HOLE APPX 1FT DEEP IN ARROYO. STAINED SOIL PRODUCT FLOATING ON SURFACE				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

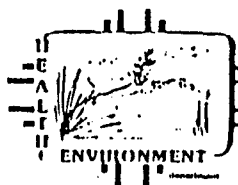
ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	NF, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	
☐ Other:			☒ Sodium (00930)	mg/l	
☐ Other:			☒ Potassium (00935)	mg/l	
☐ Other:			☒ Bicarbonate (00440)	mg/l	
			☒ Chloride (00940)	mg/l	
			☒ Sulfate (00945)	mg/l	
			☒ Total filterable residue (dissolved) (70300)	mg/l	
			☒ Other: CO ₃	0	6/24
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					

Analyst _____ Date Reported 6/24/86 Reviewed by _____

Laboratory remarks To Lab: You may filter first, if you wish. AFB OCA 6/9/86

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initials _____



STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570754
86-0688-C

REPORT TO:

DAVID G. BOYER

PLEASE PRINT

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR-688-17 B

DATE REC.: 06/09/86

SLD PRIORITY #:

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: DAVID BOYER

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☒ , SOIL ☐ , OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 6 / 6 / 86 - 12:35 BY DGB

CODE: 8 6 0 6 0 6 1 2 3 5 D G B

SOURCE: 10 ARROYO - NEAR WEST FENCE

CODE: | | | | | | | | | |

NEAREST CITY: BLOOMFIELD

CODE: | | | | |

LOCATION: TARIFFWAY REFINERY

CODE: 2 9 N 1 1 W 3 2 4 4 4

pH= ; Conductivity= 3420 umho/cm at 22 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Dug hole APPX 1 FT DEEP IN ARROYO NORTH OF WEST
PROPERTY FENCE. WATER AND PRODUCT EMULSION IN HOLEI certify that the statements in this block accurately reflect the results
of my field analyses, observations and activities. *David G. Boyer*Method of shipment to the Laboratory *Hand Carried*This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from *David G. Boyer*
to at (location) *SLD* on

and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures *David G. Boyer*(we) certify that this sample was transferred from
to at (location) on

and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 688

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
<i>benzene</i>	5800	<i>1,1-dichloroethane</i>	<i>trace < 5 ppb</i>
<i>toluene</i>	9	<i>1,2-dichloroethane</i>	10
<i>ethylbenzene</i>	420	<i>trichloroethene</i>	<i>trace < 5 ppb</i>
<i>p-xylene</i>	730	<i>tetrachloroethene</i>	<i>possible trace < 5 ppb</i>
<i>m-xylene</i>	<i>none detected</i>		
<i>o-xylene</i>	5		
<i>1,2-dichloroethane</i>	8		
		* DETECTION LIMIT	5 $\mu\text{g}/\text{mL}$

REMARKS:

Twenty other compounds were also detected by the aromatic screen that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

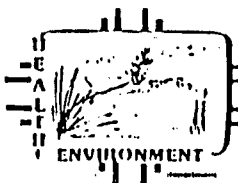
Seal(s) Intact: Yes ☐ NO ☒ Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: *6-13-86* *6-24-86* *7-1-86* Analyst's signature: *St. J. J. J.*

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *R. Meyer*

FOR OCD USE -- Date Owner Notified _____ Phone or letter? _____ Initials _____



STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

86-0687-C

REPORT TO:

DAVID G. BOYER

PLEASE PRINT

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.:

OR-687-17B

DATE REC.:

6/09/86

SLD PRIORITY #:

PHONE(S):

827-5812

USER CODE: 8|2|2|3|5|

SUBMITTER:

DAVID BOYER

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☒ , SOIL ☐ , OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 6/6/86-13:00 BY RCA

DATE

TIME

INITIALS

CODE: 8|6|0|6|0|6|1|3|0|0|R|C|A|

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SOURCE: MAIN CHANNEL - KUTZ

CODE: | | | | | | | | | |

AQUIFER

DEPTH

NEAREST CITY: Bloomfield

CODE: | | | | |

LOCATION: THRIFTWAY REFINERY

CODE: 2|9|N|1|1|W|3|2|4|4|4|

TOWNSHIP

RANGE

SECTION

TRACTS

pH= ; Conductivity= 12000 umho/cm at 27 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

MAIN CHANNEL OF ARROYO. STAINED SOIL 2 1/2 ft deep
CLEAR WATER 1 ft from SURFACEI certify that the statements in this block accurately reflect the results
of my field analyses, observations and activities. *David Boyer*

Method of shipment to the Laboratory

Hand carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from *David Boyer*to at (location) *SLD* on

DATE AND TIME: and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures *David Boyer*

(we) certify that this sample was transferred from

to at (location) on

DATE AND TIME: and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 687

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
aromatic purgeables	none detected		
halogenated purgeables	none detected		
		* DETECTION LIMIT	5 µg/m ³

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 June 86. Analyst's signature: [Signature]I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]

FOR OCD USE -- Date Owner Notified _____ Phone or letter? _____ Initials _____