

3R - 79

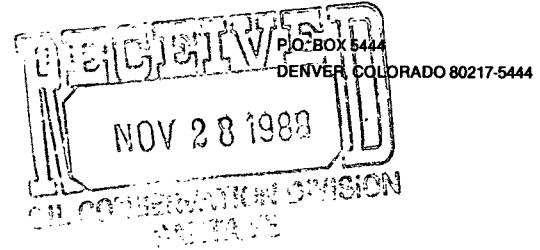
REPORTS

DATE:

11/17/1988

Mobil Exploration & Producing U.S. Inc.

November 17, 1988



State of New Mexico
Energy and Minerals Department
Oil Conservation Division
310 Old Santa Fe Trail, Rm 206
Santa Fe, NM 87503

ATTN: Mr David Boyer

7.58.3.6.4 GROUNDWATER
INVESTIGATION PLAN
THOMAS #1 WELLSITE
SAN JUAN COUNTY, NM


Dear Mr. Boyer:

As you requested, we have prepared a groundwater monitoring plan for the Thomas #1 wellsite. The proposed plan is attached for your consideration.

To date we have used the technical services of Mobil Research and Development Corporation, Research Services Division. These folks have considerable experience in geohydrologic investigations similar to this one. In particular, Mr. Chuck Glore has worked with you and I on other groundwater and surface water investigations in northwestern New Mexico. At this point, we plan to continue to use their services and to supplement this support with local consultants or contractors as necessary.

After the Oil Conservation Division has reviewed the proposed plan, please contact me to discuss implementation. For your convenience I can be reached at (303) 298 2805 and am only a one hour plane ride away from face to face discussions.

dw4/nm/thom1dft.plnp2/gac


G.A. "Greg" Cresswell

cc: E.T. Barber -Bloomfield
E.F. Glass -9D
C.R. Glore -Paulsboro

**GROUND WATER INVESTIGATION PLAN FOR THE THOMAS WELL NO. 1
BLOOMFIELD, NEW MEXICO**

From the observations made during the field investigation performed on October 18, 1988 it appears that the ground water gradient is generally southwest, following the prehistoric channel of the San Juan River. The transmissivity of the sediments in alluvium of this type is generally quite high, allowing the movement of large volumes of water through the site area. Any contamination in or on the ground water migrating outward from the gas well site would follow the same flow path as the water. The dilution capacity of this hydrogeologic regime is very high. The test pits already excavated indicate that there is probably no significant soil contamination above the water table in the area of the well. However, the dark gray, approximately 1 foot thick layer that is found just below the water table indicates that there has been hydrocarbon contamination at that level for some time. The full, areal extent of this layer is not known at this time, but it is a potential source of dissolved hydrocarbons in the ground water.

Determination of the extent of contaminated soil could be done by a soil gas survey. However, at this site the fact that the majority of the contamination appears to be below the water table could lead to false readings.

Based on these observations and discussions of the requirements of the New Mexico Oil and Gas Conservation Division's (NMOGCD) for ground water quality investigations at this site, the following investigation plan is recommend:

1. Install two monitoring wells approximately 300 yards southwest (downgradient) of the condensate collection tank as shown on the enclosed topographic map (Figure 1).
2. Install one monitoring well upgradient of the condensate collection tank approximately 120 feet eastsoutheast (between pits 6 and 7) as shown on the enclosed well location plan (Figure 2).

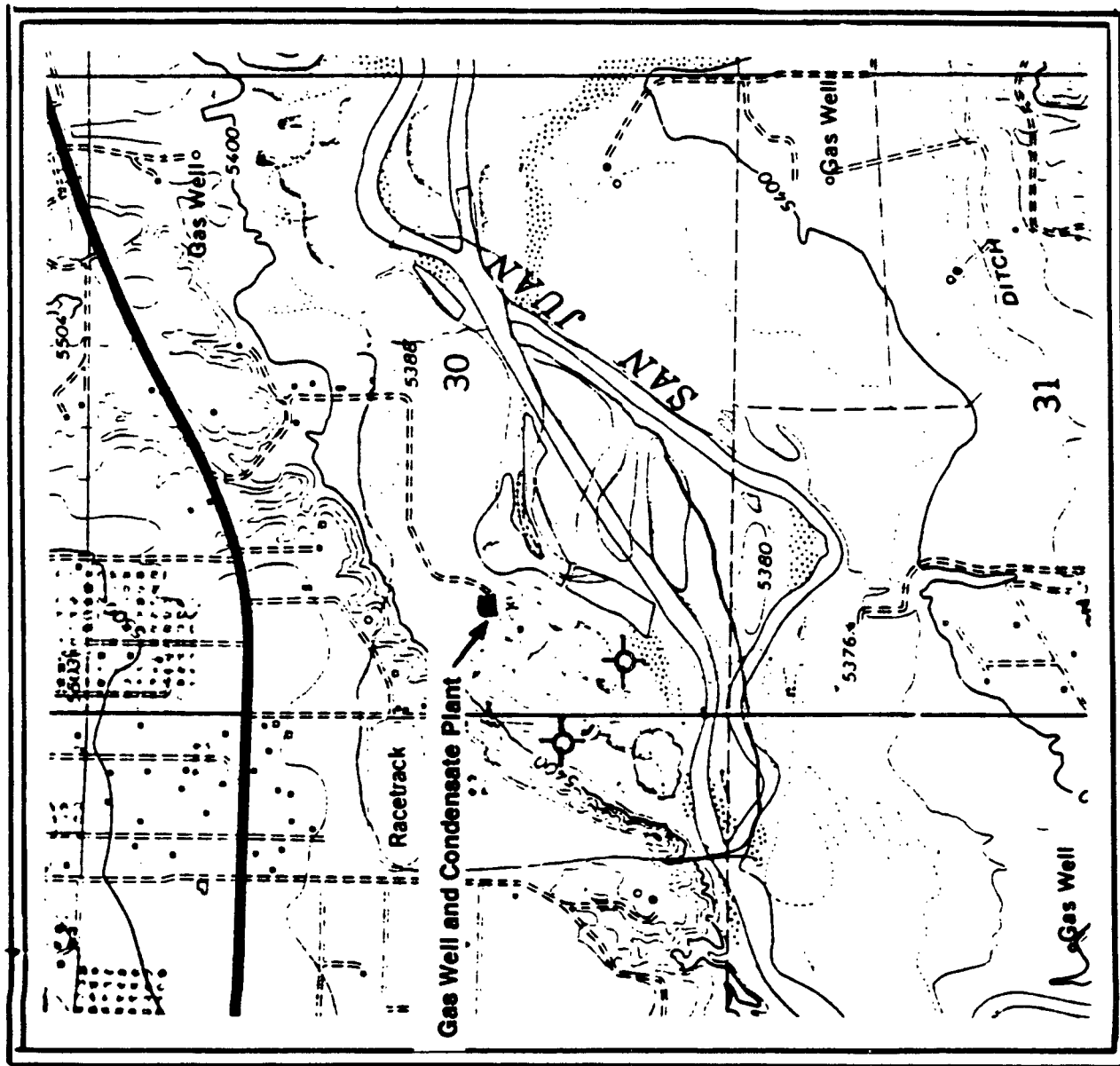
Each of these wells should be set such that the well screen extends from about 1 foot above the water table to a depth of approximately 5 feet below it. The wells can be installed using a backhoe for excavation of the well if the alluvium will stay open in the pit long enough for well installation. Otherwise it will probably be necessary to install them using a cable tool or air-hammer drilling rig. Normally an auger rig is used for well installation, but the numerous cobbles and boulders observed in the existing pits will render an auger ineffective. After

installation each well should be fully developed and the development water should be contained onsite and tested for the dissolved hydrocarbon components benzene, toluene, xylene and ethylbenzene (BTXE), prior to disposal. If these components are not present in concentrations greater than the allowable limits it can be disposed of locally. Otherwise, it must be disposed of according to existing regulations. After development, the wells should be allowed to stabilize prior to sampling.

It is our understanding that the NMOGCD's concern is that BTXE dissolved in the ground water at the well site may be entering the nearby surface waters in concentrations that exceed their standards. The investigation program that we have recommended will determine if this is the case. If BTXE concentrations above acceptable limits are found in any of these wells, other investigations, monitoring and/or remediation measures may have to be implemented.

C. R. Glore
Associate

October 28, 1988



LEGEND



Proposed Monitoring Well Location

Figure 1. WELL LOCATION PLAN

Thomas No. 1 Gas Well, Bloomfield, New Mexico

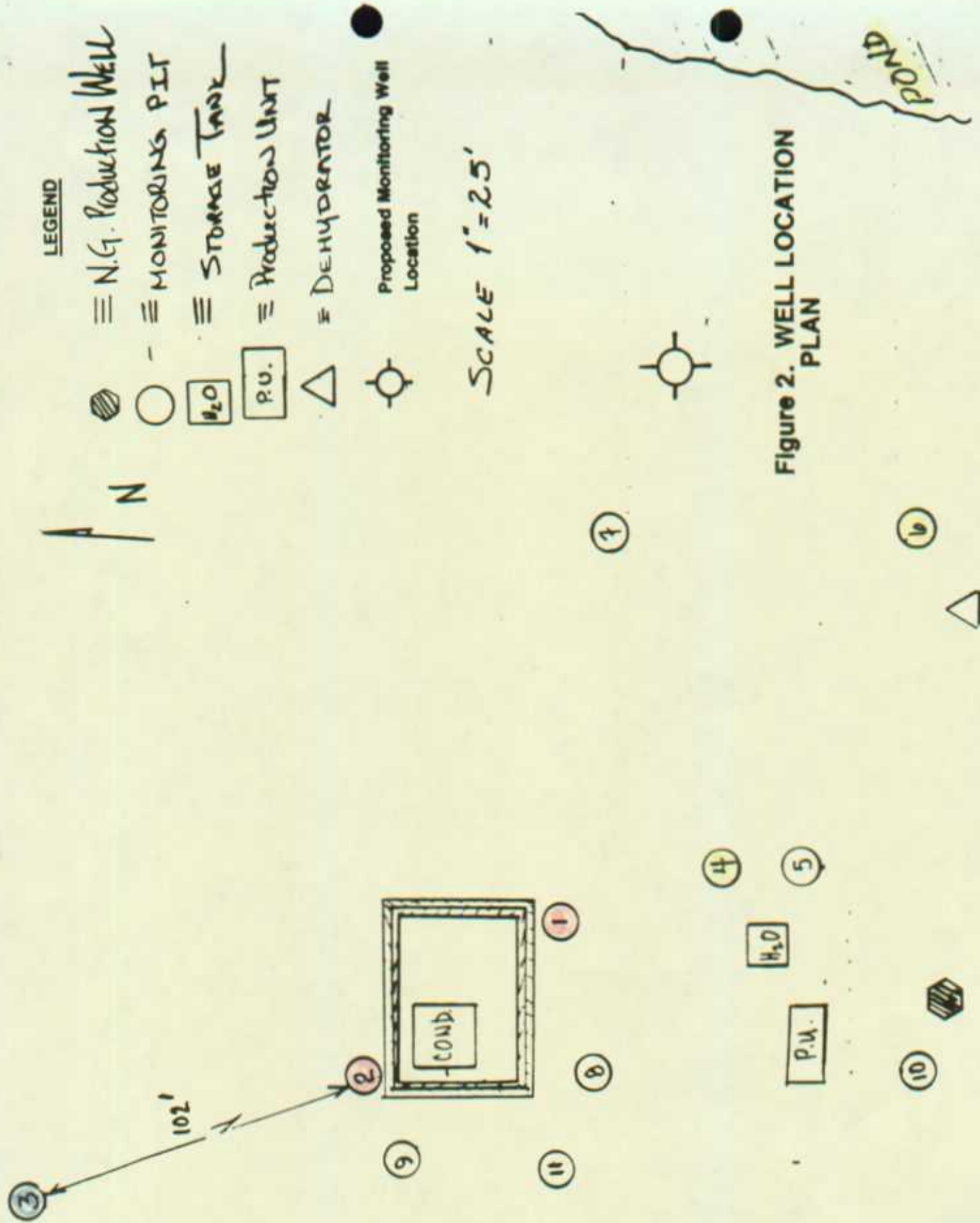


Figure 2. WELL LOCATION PLAN

Thomas No. 1 Gas Well, Bloomfield, New Mexico



SCIENTIFIC LABORATORY DIVISION
ORGANIC ANALYSIS REQUEST FORM
Organic Section - Phone: 841-2570

88-1141-C

REPORT TO: DAVID BOYER S.L.D. No. OR-
N.M. OIL CONSERVATION DIVISION DATE REC. 7/18/88
P.O. Box 2088 PRIORITY 3
Santa Fe, NM 87504-2088 PHONE(S): 827-5812
COLLECTION CITY: Bloomfield; COUNTY: San Juan
COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 8807131140
LOCATION CODE: (Township-Range-Section-Tracts) 29N+11W+30+310 (10N06E24342)
USER CODE: 82235 SUBMITTER: David Boyer CODE: 2610
SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____
Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual.
☒ P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
Other Specific Compounds or Classes _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks: _____

FIELD DATA:

pH= 7; Conductivity= 2550 umho/cm at 18 °C; Chlorine Residual= _____ mg/l
Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____
Depth to water 23 ft.; Depth of well _____ ft.; Perforation Interval _____ ft.; Casing: _____

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

Mobil/Thomas #1, Pit #1, Black film on surface, spic
smell, slight H/C odor

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): D. Boyer Method of Shipment to the Lab: State Car

CHAIN OF CUSTODY

I certify that this sample was transferred from D. Boyer to JUD. R. HILL
at (location) SLD-ALB on 7/18/88 - 13:00 and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ OR Seals Intact: Yes ☒ No ☐

Signatures D. Boyer Jud. R. Hill

For OCD use: Date owner notified: _____ Phone or Letter? Initials _____

ANALYSES PERFORMED

LAB. No.: OR-

1141

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☒ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
☐ Other Specific Compounds or Classes
☐
☐

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
<i>aromatic purgeables</i>		<i>aromatic purgeables</i>	
<i>benzene</i>	<i>1830</i>	<i>benzene</i>	<i>920</i>
<i>toluene</i>	<i>315</i>	<i>toluene</i>	<i>5590</i>
<i>ethylbenzene</i>	<i>210</i>	<i>ethylbenzene</i>	<i>570</i>
<i>p+m-xylene</i>	<i>800</i>	<i>p+m-xylene</i>	<i>5140</i>
<i>o-xylene</i>	<i>145</i>	<i>o-xylene</i>	<i>490</i>
		<i>halogenated purgeables</i>	<i>N.D.</i>
* DETECTION LIMIT *	<i>5049/L</i>	+ DETECTION LIMIT +	<i>549/L</i>

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Not Sealed ☐ Intact: Yes ☒ No ☐ Seal(s) broken by: *Mary C. Glen* date: _____

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

Date(s) of analysis: *7/22/88* Analyst's signature: *Mary C. Glen*

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. Meyerhen*



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

459
WNN

**GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS**

DATE RECEIVED	7/18/88	LAB NO.	WC-2697	USER CODE	<input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE	8/10/88	SITE INFORMATION	Sample location		
Collection TIME	1140		Pit #1, Mobil Thomas #1		
Collected by — Person/Agency			Collection site description		
Boys / 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

Station/
well code 25N/11W, 30.31
Owner

SAMPLING CONDITIONS

<input type="checkbox"/> Bailed <input checked="" type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type
				Grab
pH (00400)	—	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
		2550 µmho	18 °C	µmho
Field comments				
Black film on surface. Septic smell and slight H/C odor				

SAMPLE FIELD TREATMENT — Check proper boxes

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

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed	From NF, NA Sample:	Date Analyzed
<input checked="" type="checkbox"/> Conductivity (Corrected) 25°C (00095)	3353 µmho	8/12	<input checked="" type="checkbox"/> Calcium	416 mg/l 8/02
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)			<input checked="" type="checkbox"/> Potassium	5 mg/l 7/29
<input checked="" type="checkbox"/> Other: lab pH	7.84	8/15	<input checked="" type="checkbox"/> Magnesium	118.3 mg/l 8/02
<input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Sodium	300 mg/l 7/29
<input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Bicarbonate	450 mg/l 8/15
A-H₂SO₄			<input checked="" type="checkbox"/> Chloride	183 mg/l 8/3
<input type="checkbox"/> Nitrate-N +, Nitrate-N total (00630)			<input checked="" type="checkbox"/> Sulfate	1390 mg/l 8/3
<input type="checkbox"/> Ammonia-N total (00610)			<input checked="" type="checkbox"/> Total Solids	2920 mg/l 8/9
<input type="checkbox"/> Total Kjeldahl-N ()			<input checked="" type="checkbox"/> B ₅	2.89 mg/l 8/24
<input type="checkbox"/> Chemical oxygen demand (00340)			<input type="checkbox"/>	
<input type="checkbox"/> Total organic carbon ()			<input checked="" type="checkbox"/> Cation/Anion Balance	
<input type="checkbox"/> Other:			Analyst	Date Reported
<input type="checkbox"/> Other:				8/30/88
Reviewed by				
CJ				
Laboratory remarks				
184				

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

CATIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	20.76	416.00	<3.0
Mg	9.69	118.00	<0.3
Na	16.88	388.00	<10.0
K	0.13	5.00	<0.3
Mn	0.00	0.00	
Fe	0.00	0.00	
SUMS	47.46	927.00	
Total Dissolved Solids=			2920
Ion Balance =			114.36%

ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
HC03	7.37	450.00	<1.0
SO4	28.96	1390.00	<10.0
CL	5.16	183.00	<5.0
NO3	0.00	0.00	< 0.
C03	0.00	0.00	< 1.
NH3	0.00	0.00	< 0.
PO4	0.00	0.00	< 0.
	41.50	2023.00	

WC No. = 8802697
Date out/By CS 8/30/88



SCIENTIFIC LABORATORY DIVISION
ORGANIC ANALYSIS REQUEST FORM
Organic Section - Phone: 841-2570

88-1144-C

REPORT TO: DAVID BOYER

S.L.D. No. OR-

N.M. OIL CONSERVATION DIVISION

DATE REC. 7/18/88

P.O. Box 2088

PRIORITY 3

Santa Fe, NM 87504-2088

PHONE(S): 827-5812

COLLECTION CITY: Bloomfield

COUNTY: San Juan

COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 8/8/07/13/11/55

LOCATION CODE: (Township-Range-Section-Tracts) 129N+11W+310+3110 (10N06E24342)

USER CODE: 82235 SUBMITTER: David Boyer

CODE: 2610

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: ☐

This form accompanies 2 Septum Vials, Glass Jugs, and/or

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual.
☒ P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
Other Specific Compounds or Classes

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks:

FIELD DATA:

pH= 7; Conductivity= 5500 umho/cm at 20°C; Chlorine Residual= mg/l

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

Depth to water 23 ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

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

Mobil Thomas #1, Pit #2 Brown water, covered by film, slight H/C odor

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): D. Boyer

Method of Shipment to the Lab: State Car

CHAIN OF CUSTODY

I certify that this sample was transferred from D. Boyer

to JUDI R-HILL

at (location) SLB-ALB on 7/18/88 - 13:00 and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ OR Seals Intact: Yes ☒ No ☐

Signatures

For OCD use: Date owner notified: Phone or Letter? Initials

1144

Reviewers signature: *K Meyerhen*



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

459
WNN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	7/18/88	LAB NO.	WC-2696	USER CODE	<input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE	8/10/88	SITE INFORMATION	Sample location		
Collection TIME	1135		Pit #2, Mobil Thomas #1		
Collected by — Person/Agency		Collection site description			
Boyer / 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

Station/
well code 29N, 11W, 30.31
Owner

SAMPLING CONDITIONS

<input type="checkbox"/> Bailed <input checked="" type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type
pH (00400)	7	Conductivity (Uncorrected)	5500 μ mho	20 °C
Field comments		Brown water covered by film, slight H/C odor		

SAMPLE FIELD TREATMENT — Check proper boxes

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

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed
<input checked="" type="checkbox"/> Conductivity (Corrected) 25°C (00095)	6866 μ mho	8/12
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)		
<input checked="" type="checkbox"/> Other: Lab pH	7.88	8/9
<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:		
A-H₂SO₄		
<input type="checkbox"/> Nitrate-N +, Nitrate-N total (00630)		
<input type="checkbox"/> Ammonia-N total (00610)		
<input type="checkbox"/> Total Kjeldahl-N ()		
<input type="checkbox"/> Chemical oxygen demand (00340)		
<input type="checkbox"/> Total organic carbon ()		
<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:		
Laboratory remarks		
6/11		

From	NA Sample:	Date Analyzed
<input checked="" type="checkbox"/> Calcium	560 mg/l	8/02
<input checked="" type="checkbox"/> Potassium	13 mg/l	7/29
<input checked="" type="checkbox"/> Magnesium	176 mg/l	8/02
<input checked="" type="checkbox"/> Sodium	1175 mg/l	7/29
<input checked="" type="checkbox"/> Bicarbonate	839 mg/l	8/9
<input checked="" type="checkbox"/> Chloride	222 mg/l	8/3
<input checked="" type="checkbox"/> Sulfate	2800 mg/l	8/4
<input checked="" type="checkbox"/> Total Solids	6150 mg/l	8/9
<input checked="" type="checkbox"/> B_3	4.98 mg/l	8/24
<input type="checkbox"/>		
<input checked="" type="checkbox"/> Cation/Anion Balance		
Analyst	Date Reported	Reviewed by
	8/30/88	

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

CATIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	27.94	560.00	<3.0
Mg	14.54	177.00	<0.3
Na	51.11	1175.00	<10.0
K	0.33	13.00	<0.3
Mn	0.00	0.00	
Fe	0.00	0.00	
SUMS	93.92	1925.00	
Total Dissolved Solids=			6150
Ion Balance =			119.88%

ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
HCO3	13.75	839.00	<1.0
SO4	58.33	2800.00	<10.0
CL	6.26	222.00	<5.0
NO3	0.00	0.00	< 0.
CO3	0.00	0.00	< 1.
NH3	0.00	0.00	< 0.
PO4	0.00	0.00	< 0.
	78.35	3861.00	

WC No. = 8802696
Date out/By *[Signature]* 8/2/00



SCIENTIFIC LABORATORY DIVISION
ORGANIC ANALYSIS REQUEST FORM
Organic Section - Phone: 841-2570

88-1148-C

REPORT TO: DAVID BOYER

S.L.D. No. OR-

N.M. OIL CONSERVATION DIVISION

DATE REC. 7/18/88

P.O. Box 2088

PRIORITY 3

Santa Fe, NM 87504-2088

PHONE(S): 827-5812

COLLECTION CITY: Bloomfield

COUNTY: San Juan

COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 8/8/07/13/12/15

LOCATION CODE: (Township-Range-Section-Tracts) 29N+11W+30+3110 (10N06E24342)

USER CODE: 82235 SUBMITTER: David Boyer CODE: 21610

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: ☐

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Samples were preserved as follows:

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☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual.
☒ P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
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☐ (775) SDWA VOC's II (EDB & DBCP)
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☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks:

FIELD DATA:

pH= 7; Conductivity= 4650 umho/cm at 22°C; Chlorine Residual= mg/l

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

Depth to water 13 ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

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

Mobil Thomas #1 Pit #3 Deep Pit in field
Clear, No odor

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): D. Boyer Method of Shipment to the Lab: State Car

CHAIN OF CUSTODY

I certify that this sample was transferred from D. Boyer to JODI R-HILL
at (location) SLD-ALR on 7/18/88 - 13:00 and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ OR Seals Intact: Yes ☒ No ☐

Signatures D. Boyer

For OCD use: Date owner notified: Phone or Letter? Initials

ANALYSES PERFORMED

LAB. No.: OR- 1148

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
 Other Specific Compounds or Classes _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
<i>aromatic purgeables</i>	<i>N.D.</i>		
<i>halogenated purgeables</i>	<i>N.D.</i>		
* DETECTION LIMIT *	<i>.5 ug/L</i>	+ DETECTION LIMIT +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Not Sealed ☐ Intact: Yes ☒ No ☐ Seal(s) broken by: *Harry C. Ellis* date: _____

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

Date(s) of analysis: *7/22/88* Analyst's signature: *Harry C. Ellis*

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*



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

859
WNN

**GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS**

DATE RECEIVED	7/18/88	LAB NO.	WC-2692	USER CODE	<input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE	8/10/88	SITE INFORMATION	Sample location		
Collection TIME	12:15		PIT #3, Mobil Thomas #1		
Collected by — Person/Agency		Boyer /OCD			
Collection site description					

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

Station/
well code 29N 11W 30.31
Owner

SAMPLING CONDITIONS

<input type="checkbox"/> Bailed <input checked="" type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type
pH (00400)		Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
7		4650 55 µmho	22 °C	µmho
Field comments				
Pit in field, clear no odor				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	<input checked="" type="checkbox"/> NF: Whole sample (Non-filtered)	<input type="checkbox"/> F: Filtered in field with 0.45 µm membrane filter	<input type="checkbox"/> A: 2 ml H ₂ SO ₄ /L added
<input checked="" type="checkbox"/> NA: No acid added		<input type="checkbox"/> Other-specify:	<input type="checkbox"/> A: 5ml conc. HNO ₃ added	<input type="checkbox"/> A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed	From	NA Sample:	Date Analyzed
<input checked="" type="checkbox"/> Conductivity (Corrected) 25°C (00095)	µmho	8/12	5817		
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)	mg/l				
<input checked="" type="checkbox"/> Other: Lab pH		8/9	8.14		
<input type="checkbox"/> Other:					
<input type="checkbox"/> Other:					
A-H₂SO₄					
<input type="checkbox"/> Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l			<input checked="" type="checkbox"/> Calcium	432 mg/l 8/02
<input type="checkbox"/> Ammonia-N total (00610)	mg/l			<input checked="" type="checkbox"/> Potassium	15 mg/l 7/29
<input type="checkbox"/> Total Kjeldahl-N ()	mg/l			<input checked="" type="checkbox"/> Magnesium	206 mg/l 8/02
<input type="checkbox"/> Chemical oxygen demand (00340)	mg/l			<input checked="" type="checkbox"/> Sodium	981 mg/l 7/29
<input type="checkbox"/> Total organic carbon ()	mg/l			<input checked="" type="checkbox"/> Bicarbonate	485 mg/l 8/9
<input type="checkbox"/> Other:				<input checked="" type="checkbox"/> Chloride	41.3 mg/l 8/1
<input type="checkbox"/> Other:				<input checked="" type="checkbox"/> Sulfate	3350 mg/l 8/3
				<input checked="" type="checkbox"/> Total Solids	5540 mg/l 8/9
				<input checked="" type="checkbox"/> B ₇	1.91 µg/l 8/24
				<input type="checkbox"/>	
				<input checked="" type="checkbox"/> Cation/Anion Balance	
Laboratory remarks			Analyst	Date Reported	Reviewed by
55				8/30/88	

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

CATIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	21.56	432.00	<3.0
Mg	16.94	206.20	<0.3
Na	42.67	981.00	<10.0
K	4.04	158.00	<0.3
Mn	0.00	0.00	
Fe	0.00	0.00	
SUMS	85.20	1777.20	
Total Dissolved Solids=			5540
Ion Balance =			90.79%

ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
HCO3	7.95	485.00	<1.0
SO4	69.79	3350.00	<10.0
CL	16.11	571.00	<5.0
NO3	0.00	0.00	< 0.
CO3	0.00	0.00	< 1.
NH3	0.00	0.00	< 0.
PO4	0.00	0.00	< 0.
	93.85	4406.00	

WC No. = 8802692
Date out/By 5/30/83



SCIENTIFIC LABORATORY DIVISION
ORGANIC ANALYSIS REQUEST FORM
Organic Section - Phone: 841-2570

88-1143-C

REPORT TO: DAVID BOYER
N.M. OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

S.L.D. No. OR-
DATE REC. 10/20/88
PRIORITY 3
PHONE(S): 827-5812

COLLECTION CITY: Bloomfield; COUNTY: San Juan

COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 881021131110

LOCATION CODE: (Township-Range-Section-Tracts) 29N+11W+310+3110 (10N06E24342)

USER CODE: 82235 SUBMITTER: David Boyer CODE: 260

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual.
☒ P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
Other Specific Compounds or Classes _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks: _____

FIELD DATA:

pH= 7; Conductivity= 1450 umho/cm at 17.5°C; Chlorine Residual= _____ mg/l

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

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____ ft.; Casing: _____

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

Pit #4, Mobil Thomas #1 Sup Pit grayish H₂O, strong
septic odor, seepage on water surface

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): D. Boyer Method of Shipment to the Lab: State Car

CHAIN OF CUSTODY

I certify that this sample was transferred from D. Boyer to JUDI R-HILL
at (location) SLB - ALB on 7/18/88 - 13:00 and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ OR Seals Intact: Yes ☐ No ☐

Signatures D. Boyer Judi R-Hill

For OCD use: Date owner notified: _____ Phone or Letter? Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 7743

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
☐ Other Specific Compounds or Classes
☐
☐

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
<i>aromatic purgeables</i>			
<i>benzene</i>	<i>T.R.</i>		
<i>toluene</i>	<i>50</i>		
<i>p + m - xylene</i>	<i>295</i>		
<i>o - xylene</i>	<i>40</i>		
<i>ethyl benzene</i>	<i>N.D.</i>		
<i>halogenated purgeables</i>	<i>N.D.</i>		
* DETECTION LIMIT *	<i>25 µg/L</i>	+ DETECTION LIMIT +	<i>†</i>

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Not Sealed ☐ Intact: Yes ☒ No ☐ Seal(s) broken by: *Mary C. Glass* date: _____

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

Date(s) of analysis: *7/22/88* Analyst's signature: *Mary C. Glass*

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*



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

459
WNA

**GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS**

DATE RECEIVED	7/18/88	LAB NO.	WC-2698	USER CODE	<input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE	8/10/88	SITE INFORMATION	Sample location		
Collection TIME	1110		Pit #4, Mobil Thomas #1		
Collected by — Person/Agency		Collection site description			
Boyer /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

Station/
well code 29W, 11W, 30.31
Owner

SAMPLING CONDITIONS

<input type="checkbox"/> Bailed <input checked="" type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type
pH (00400)	—	Conductivity (Uncorrected) 1450 μ mho	Water Temp. (00010) 17.5 °C	Conductivity at 25°C (00094) μ mho
Field comments Dig Pit, 3' to water, grayish H ₂ O, strong septic odor, scum on surface				

SAMPLE FIELD TREATMENT — Check proper boxes

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

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed	From NF, NA Sample:	Date Analyzed
<input checked="" type="checkbox"/> Conductivity (Corrected) 25°C (00095)	1932 μ mho	8/12	<input checked="" type="checkbox"/> Calcium	296 mg/l 8/02
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)			<input checked="" type="checkbox"/> Potassium	5 mg/l 7/29
<input checked="" type="checkbox"/> Other: Lab pH	8.01	8/15	<input checked="" type="checkbox"/> Magnesium	50.0 mg/l 8/02
<input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Sodium	140 mg/l 7/29
<input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Bicarbonate	394 mg/l 8/15
A-H₂SO₄			<input checked="" type="checkbox"/> Chloride	17.5 mg/l 8/3
<input type="checkbox"/> Nitrate-N +, Nitrate-N total (00630)			<input checked="" type="checkbox"/> Sulfate	780 mg/l 8/3
<input type="checkbox"/> Ammonia-N total (00610)			<input checked="" type="checkbox"/> Total Solids	1612 mg/l 8/9
<input type="checkbox"/> Total Kjeldahl-N			<input checked="" type="checkbox"/> B ₅	1.88 mg/l 8/24
<input type="checkbox"/> Chemical oxygen demand (00340)			<input type="checkbox"/>	
<input type="checkbox"/> Total organic carbon			<input checked="" type="checkbox"/> Cation/Anion Balance	
<input type="checkbox"/> Other:			Analyst	Date Reported
<input type="checkbox"/> Other:				8/30/88
Laboratory remarks			Reviewed by	
22			CS	

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

CATIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	14.77	296.00	<3.0
Mg	4.11	50.00	<0.3
Na	6.09	140.00	<10.0
K	0.13	5.00	<0.3
Mn	0.00	0.00	
Fe	0.00	0.00	
SUMS	25.09	491.00	
Total Dissolved Solids=			1612
Ion Balance =			108.16%

ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
HC03	6.46	394.00	<1.0
SO4	16.25	780.00	<10.0
CL	0.49	17.50	<5.0
NO3	0.00	0.00	< 0.
C03	0.00	0.00	< 1.
NH3	0.00	0.00	< 0.
PO4	0.00	0.00	< 0.
	23.20	1191.50	

WC No. 8802498
Date out/By 8/30/68



SCIENTIFIC LABORATORY DIVISION
ORGANIC ANALYSIS REQUEST FORM
Organic Section - Phone: 841-2570

88-1146-C

REPORT TO: DAVID BOYER

S.L.D. No. OR-

N.M. OIL CONSERVATION DIVISION

DATE REC. 7/18/88

P.O. Box 2088

PRIORITY 3

Santa Fe, NM 87504-2088

PHONE(S): 827-5812

COLLECTION CITY: Bloomfield; COUNTY: San Juan

COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 8/8/07/13/1035

LOCATION CODE: (Township-Range-Section-Tracts) 29N+11W+30+310 (10N06E24342)

USER CODE: 82235 SUBMITTER: David Boyer CODE: 260

SAMPLE TYPE: WATER ☒ SOIL ☐ FOOD ☐ OTHER: ☐

This form accompanies 2 Septum Vials, Glass Jugs, and/or

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual.
☒ P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
Other Specific Compounds or Classes

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks:

FIELD DATA:

pH= 7; Conductivity= 1020 umho/cm at 16.5°C; Chlorine Residual= mg/l

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

Depth to water 23 ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

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

Mobil Thomas #1, P.T. #6 Dug Pit, Clear Water

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): D.A. Boyer Method of Shipment to the Lab: State Car

CHAIN OF CUSTODY

I certify that this sample was transferred from D. Boyer to JUDY R-HILL at (location) SLA-ALB on 7/18/88 - 13:00 and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ OR Seals Intact: Yes ☒ No ☐

Signatures D.A. Boyer Judy R-Hill

For OCD use: Date owner notified: Phone or Letter? Initials

1146

Reviewers signature: *R. Meyershen*



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

859
WNN

**GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS**

DATE RECEIVED	7/18/88	LAB NO.	WC-2694	USER CODE	<input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE	8/10/88	SITE INFORMATION	Sample location		
Collection TIME	1035		PIT #6, Mobil Thomas #1		
Collected by — Person/Agency		/OCD		Collection site description	

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

Station/
well code 29W, 11W, Sec 30
Owner

SAMPLING CONDITIONS

<input type="checkbox"/> Bailed <input checked="" type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type
pH (00400)	7	Conductivity (Uncorrected)	1020 μ mho	16.5°C
Field comments		Dig Pit, ~3 FT to water, clear water		

SAMPLE FIELD TREATMENT — Check proper boxes

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

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed
<input checked="" type="checkbox"/> Conductivity (Corrected) 25°C (00095)	1371 μ mho	8/12
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)		
<input checked="" type="checkbox"/> Other: Lab pH	8.25	8/9
<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:		
A-H₂SO₄		
<input type="checkbox"/> Nitrate-N +, Nitrate-N total (00630)		
<input type="checkbox"/> Ammonia-N total (00610)		
<input type="checkbox"/> Total Kjeldahl-N ()		
<input type="checkbox"/> Chemical oxygen demand (00340)		
<input type="checkbox"/> Total organic carbon ()		
<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:		
From <u>NE</u> , NA Sample:		
<input checked="" type="checkbox"/> Calcium	140 208 mg/l	8/02
<input checked="" type="checkbox"/> Potassium	4 mg/l	7/29
<input checked="" type="checkbox"/> Magnesium	54.9 mg/l	8/02
<input checked="" type="checkbox"/> Sodium	87 mg/l	7/29
<input checked="" type="checkbox"/> Bicarbonate	465 mg/l	8/9
<input checked="" type="checkbox"/> Chloride	12.8 mg/l	8/4
<input checked="" type="checkbox"/> Sulfate	338 mg/l	8/3
<input checked="" type="checkbox"/> Total Solids	950 mg/l	9/2
<input checked="" type="checkbox"/> CO₂ / H₂O		
<input checked="" type="checkbox"/> B ₂	1.13 μ g/l	8/24
<input checked="" type="checkbox"/> Cation/Anion Balance		
Analyst	Date Reported	Reviewed by
	8/30/88	CS
Laboratory remarks		
20		

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

CATIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	6.99	140.00	<3.0
Mg	4.01	48.80	<0.3
Na	3.78	87.00	<10.0
K	0.10	4.00	<0.3
Mn	0.00	0.00	
Fe	0.00	0.00	
SUMS	14.88	279.80	
Total Dissolved Solids=			950
Ion Balance =			99.05%

ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
HC03	7.62	465.00	<1.0
SO4	7.04	338.00	<10.0
CL	0.36	12.80	<5.0
NO3	0.00	0.00	< 0.
C03	0.00	0.00	< 1.
NH3	0.00	0.00	< 0.
PO4	0.00	0.00	< 0.
	15.02	815.80	

WC No. = 8801679
 Date out/By 7/12/43

2674 e.9



SCIENTIFIC LABORATORY DIVISION
ORGANIC ANALYSIS REQUEST FORM
Organic Section - Phone: 841-2570

88-1145-C

REPORT TO: DAVID BOYER
N.M. OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

S.L.D. No. OR-
DATE REC. 7/18/88
PRIORITY 3
PHONE(S): 827-5812

COLLECTION CITY: Bloomfield; COUNTY: San Juan

COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 881021131230

LOCATION CODE: (Township-Range-Section-Tracts) 29N+11W+30+3110 (10N06E24342)

USER CODE: 82235 SUBMITTER: David Boyer CODE: 21610

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: ☐

This form accompanies 2 Septum Vials, Glass Jugs, and/or

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual.
☒ P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
Other Specific Compounds or Classes

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks:

FIELD DATA:

pH= 7; Conductivity= 820 umho/cm at 28°C; Chlorine Residual= mg/l

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

Depth to water ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

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

Mobi/Thomas #1, Fish pond at log opposite
dehydrator

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): A Boyer Method of Shipment to the Lab: State Car

CHAIN OF CUSTODY

I certify that this sample was transferred from A Boyer to JUDY R-HILL
at (location) SLA-AES on 7/18/88-13:00 and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ OR Seals Intact: Yes ☒ No ☐

Signatures A Boyer JUDY R-HILL

For OCD use: Date owner notified: Phone or Letter? Initials

ANALYSES PERFORMED

LAB. No.: OR- 1145

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
 Other Specific Compounds or Classes
☐ _____
☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
<i>aromatic purgeables</i>			
<i>benzene</i>	<i>.8</i>		
<i>toluene</i>	<i>20.2</i>		
<i>ethylbenzene</i>	<i>NrD.</i>		
<i>p+m-xylene</i>	<i>1.5</i>		
<i>o-xylene</i>	<i>NrD.</i>		
<i>halogenated purgeables</i>	<i>NrD.</i>		
* DETECTION LIMIT *	<i>.548/L</i>	+ DETECTION LIMIT +	<i>†</i>

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Not Sealed ☐ Intact: Yes ☒ No ☐ Seal(s) broken by: *Mary C. Elden* date: _____

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

Date(s) of analysis: *7/22/08* Analyst's signature: *Mary C. Elden*

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 Meyerhen*



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

459
WNN

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	7/18/88	LAB NO. NC-2695	USER CODE <input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE	7/13	SITE INFORMATION	Sample location
Collection TIME	1230		Fish pond at Mobil Thomas #1
Collected by — Person/Agency	Boyer / OCD	Collection site description	

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

Station/
well code 29N, 11W, 30.31
Owner

SAMPLING CONDITIONS

<input type="checkbox"/> Bailed <input checked="" type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type
pH (00400)	7	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
		820 µmho	28 °C	µmho
Field comments				
Sample from log opposite dehydrator				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	<input checked="" type="checkbox"/> NF: Whole sample (Non-filtered)	<input type="checkbox"/> F: Filtered in field with 0.45 µm membrane filter	<input type="checkbox"/> A: 2 ml H ₂ SO ₄ /L added
<input checked="" type="checkbox"/> NA: No acid added		<input type="checkbox"/> Other-specify:	<input type="checkbox"/> A: 5ml conc. HNO ₃ added	<input type="checkbox"/> A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed
<input checked="" type="checkbox"/> Conductivity (Corrected) 25°C (00095)	876 µmho	8/12
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)		
<input checked="" type="checkbox"/> Other: Lab pH	8.12	8/9
<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:		
A-H ₂ SO ₄		
<input type="checkbox"/> Nitrate-N +, Nitrate-N total (00630)		
<input type="checkbox"/> Ammonia-N total (00610)		
<input type="checkbox"/> Total Kjeldahl-N ()		
<input type="checkbox"/> Chemical oxygen demand (00340)		
<input type="checkbox"/> Total organic carbon ()		
<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:		
From NS, NA Sample:		
<input checked="" type="checkbox"/> Calcium	124 mg/l	8/02
<input checked="" type="checkbox"/> Potassium	2 mg/l	7/29
<input checked="" type="checkbox"/> Magnesium	37.8 mg/l	8/02
<input checked="" type="checkbox"/> Sodium	40 mg/l	7/29
<input checked="" type="checkbox"/> Bicarbonate	166 mg/l	8/9
<input checked="" type="checkbox"/> Chloride	<5 mg/l	8/3
<input checked="" type="checkbox"/> Sulfate	313 mg/l	8/3
<input checked="" type="checkbox"/> Total Solids	640 mg/l	8/9
<input checked="" type="checkbox"/> RD	0.64 mg/l	8/24
<input type="checkbox"/>		
<input checked="" type="checkbox"/> Cation/Anion Balance		
Analyst	Date Reported	Reviewed by
	8/30/88	CO
Laboratory remarks		

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

CATIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	6.19	124.00	<3.0
Mg	3.10	37.80	<0.3
Na	2.09	48.00	<10.0
K	0.05	2.00	<0.3
Mn	0.00	0.00	
Fe	0.00	0.00	
SUMS	11.43	211.80	
Total Dissolved Solids=			640
Ion Balance =			121.84%

ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
HCO3	2.72	166.00	<1.0
SO4	6.52	313.00	<10.0
CL	0.14	5.00	<5.0
NO3	0.00	0.00	< 0.
CO3	0.00	0.00	< 1.
NH3	0.00	0.00	< 0.
PO4	0.00	0.00	< 0.
	9.38	484.00	

WC No. = 8802695
Date out/By 08/30/88



SCIENTIFIC LABORATORY DIVISION
ORGANIC ANALYSIS REQUEST FORM
Organic Section - Phone: 841-2570

88-1140-C

REPORT TO: DAVID BOYER

S.L.D. No. OR

N.M. OIL CONSERVATION DIVISION

DATE REC. 7/18/88

P.O. Box 2088

PRIORITY

Santa Fe, NM 87504-2088

PHONE(S): 827-5812

COLLECTION CITY: Bloomfield; COUNTY: San Juan

COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 8810211311245

LOCATION CODE: (Township-Range-Section-Tracts) 29W+11W+30+311D(10N06E24342)

USER CODE: 82235 SUBMITTER: David Boyer CODE: 21610

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: ☐

This form accompanies 2 Septum Vials, Glass Jugs, and/or

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual.
☒ P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
Other Specific Compounds or Classes

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks:

FIELD DATA:

pH=; Conductivity= umho/cm at °C; Chlorine Residual= mg/l

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

Depth to water ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

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

Field Blank - Mobil Thomas #1

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D Boyer Method of Shipment to the Lab: State Car

CHAIN OF CUSTODY

I certify that this sample was transferred from D. Boyer to SUD, R-HILL at (location) SLB - ALB on 7/18/88 13:00 and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ OR Seals Intact: Yes ☒ No ☐

Signatures

For OCD use: Date owner notified: Phone or Letter? Initials

ANALYSES PERFORMED

LAB. No.: OR- 1140

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
☐ (774) SDWA VOC's I (8 Regulated +)
☐ (775) SDWA VOC's II (EDB & DBCP)
☐ Other Specific Compounds or Classes
☐ _____
☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
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☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
<i>aromatic purgeables</i>	<i>N.D.</i>		
<i>halogenated purgeables</i>	<i>N.D.</i>		
* DETECTION LIMIT *	<i>549K</i>	+ DETECTION LIMIT +	<i>†</i>

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Not Sealed ☐ Intact: Yes ☒ No ☐ Seal(s) broken by: Mary C. Elmer date: _____

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

Date(s) of analysis: 7/22/88 Analyst's signature: Mary C. Elmer

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. Meyerherin

NEW MEXICO OIL CONSERVATION DIVISION
FIELD TRIP REPORT

INSPECTION
CLASSIFICATION
QUARTER
DATE
HOURS

Name Charles Gholson Date 7-1-88 Miles 45 District 3
Time of Departure 11:00 AM Time of Return 2:00 PM Car No. 8776

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature Charles Gholson

W O P 3

One well - 29N-11W -

Responded to a report of possible contaminated ground water at the Mobil Producing, Thomas #1. A back hoe digging a ditch discovered condensate on the ground water. It appears to cover a fairly large area. They were still digging and have not outlined the perimeters. The condensate apparently came from a hole in the drip tank. They will empty it, turn it over and check for a hole.

<u>Mileage</u>	<u>Per Diem</u>	<u>Hours</u>
UIC _____	UIC _____	UIC _____
RFA _____	RFA _____	RFA _____
Other <u>45</u>	Other <u>-</u>	Other <u>3</u>

WELL IDENTIFICATION NUMBER	IDENTIFICATION CLASSIFICATION	NATURE OF SPECIFIC WELL OR FACILITY IDENTIFIED
B - Backhoe/pipe	U - Underground Injection Control - any injection of or related to injection project, facility, or well or resulting from injection into any well. (SMO, 2ndry injection and production wells, water flows, or pressure tests, surface injection equipment, plugging, etc.)	D - Drilling
P - Plugging	R - Inspections relating to Reclamation Fund Activity	P - Production
C - Plugging Cleanup	O - Other - Inspections not related to injection or the reclamation fund	I - Injection
T - Well Test	E - Indicates some form of enforcement action in the field (check immediately below the letter U, R, or O.)	C - Combined production/injection operations
R - Repair/Workover		S - SMO
F - Waterflow		U - Underground Storage
N - Blowup or Spill		G - General Operation
W - Water Contamination		F - Facility or Location
O - Other		H - Hesting
		O - Other

**NEW MEXICO OIL CONSERVATION DIVISION
FIELD TRIP REPORT**

**I
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Name Charles Gholson Date 7-13-88 Miles 88 District 3
Time of Departure 8:30 AM Time of Return 4:00 PM Car No. 8776

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature Charles Gholson

W O P 4

One well - 29N-11W -

I met Dave Boyer in Bloomfield and took him to the Mobil Producing, Thomas #1 to check possible contamination of ground water and to get samples of same.

H O P 3 2

22 wells - 29N-11&12W -

Field inspection west of Bloomfield. All ok.

<u>Mileage</u>	<u>Per Diem</u>	<u>Hours</u>
<u>UIC</u>	<u>UIC</u>	<u>UIC</u>
RFA	RFA	RFA
Other <u>88</u>	Other <u>6.00</u>	Other <u>7.5</u>

**TYPE INSPECTION
RECORDED**

**INSPECTION
CLASSIFICATION**

**NATURE OF SPECIFIC WELL
OR FACILITY INSPECTED**

B - Backhoeing
P - Plugging
C - Plugging Cleanup
T - Well Test
R - Repair/Makeover
F - Waterflow
H - Hushup or Spill
W - Water Contamination
O - Other

U - Underground Injection Control - any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SM, 2ndry injection and production wells, water flow, or pressure tests, surface injection equipment, plugging, etc.)
R - Inspections relating to Reclamation Fund Activity
O - Other - Inspections not related to injection or the reclamation fund
E - Indicates some form of enforcement action in the field (show immediately below the letter U, R, or O)

D - Drilling
P - Production
I - Injection
C - Combined production/ injection operations
S - SM
U - Underground Storage
G - General Operation
F - Facility or Location
H - Hooking
O - Other