3R - <u>134</u>

GENERAL CORRESPONDENCE

YEAR(S): 2001 - 1987

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413 Phone: (505)632-1199 Fax: (505)632-3903

July 26, 2001

OL CONSERVATION DM. CI JUL 27 PM 1:29

Mr. William Olson New Mexico Oil Conservation Div. 1220 St. Francis Drive Santa Fe, New Mexico 87504

Re: XTO Energy Inc. Request for Abandonment of Groundwater Monitor Wells Valdez A 1E, (G) Sec. 24 - T29N - R11W, San Juan County, NM

Dear Mr. Olson:

On behalf of XTO Energy Inc., Blagg Engineering, Inc. (BEI) is requesting NMOCD approval to abandon three (3) groundwater monitor wells at the captioned Valdez A 1E well site. There are presently nine (9) groundwater monitor wells installed at the site (see Figure 1). The surface landowner is planning on expanding his alfalfa crop and removal of certain wells will facilitate this expansion. Abandonment will follow standard NMOCD approved procedures.

The wells included in this request for abandonment are as follows:

Monitor Well MW#2 - Dry since BEI site monitoring beginning May, 1994
Monitor Well MW#4 - Five (5) consecutive sample events with BTEX within standards between February 23, 1993 and June 24, 1994.
Monitor Well MW#5 - Five (5) consecutive sample events with BTEX within standards between June 7, 1993 and June 24, 1994.

A summary of monitoring test results for site wells is attached for your review. BEI does not foresee a need to sample the three wells included in this request for abandonment. Other wells in the monitoring system should be adequate to determine groundwater quality and gradient.

Respectfully submitted, *Blagg Engineering, Inc.*

My C. Slegg

Jeffrey C. Blagg, President NMPE 11607

Attachments: Site Map, lab data summary

cc: Mr. Denny Foust, NMOCD - Aztec Mr. Terry Matthews, Cross Timbers - Farmington Mr. Jeff Greider, Landowner - Bloomfield

File: crosstimbers.closure2.xmt

(q		0	0 Z	1.0	0 Z	Q N	0 Z	0 Z	0.6	11.7	b Z	QZ	2.0	4.3	7.7	1.6	Q	731.0	0.4	1.8	QZ	QN	
8021 (pp	Total	Xylene								-								73					
8020 or 9	Ethyl	Benzene	QN	QN	Q	QN	Q	QZ	Q	Q	Q	QN	7.0	3.2	22.4	DN	2.3	175.0	QN	DN	QN	QN	
A METHOL		Toluene	QN	0.5	Q	QN	Q	g	Q	0.6	QN	g	6.0	3.2	5.9	1.6	3.7	482.0	QN	1.0	g	0.4	the second
BIEX US EPA METHOD 8020 or 8021 (ppb)		Benzene	QN	Q	QN	Q	Q	Q	Q	QN	QN	QN	QN	Q	1.1	QN	Q	1320.0	QN	Q	Q	QN	
	PRODUCT	(in)																					
	TDS COND. PH	(umhos)	3900 6.7	2900 6.7	1750 7.2	3700 6.8	4000 7.1	2600 6.8	1800 7.2	1350 7.1	2800 6.9	2500 7.1	3200 6.7	2100 7.2	1310	3300 6.9	3400 7.1	2300 7.2	1900 7.0	1140 6.6	2500 7.3	2700 7.2	
	TDS C	(mg/L) (I					7													•			
	T.D.	(ft)	20.30	20.88	20.36			22.80	23.00	22.36			20.30	20.83	19.98			17.30	23.71	22.78			
	D.T.W.	(f t)	13.59	12.92	12.06	14.20	12.39	14.02	13.66	13.16	14.54	12.95	15.18	14.80	14.27	15.67	14.10	14.83	13.02	-	13.06	13.81	
	MONITOR D.T.W.	WELL No:	MW #1					. E# MW	`				MW #4					, 3# WM			•		
MI.WK4)	SAMPLE MO	DATE	23-Feb-93	07-Jun-93	08-Sep-93	09-Mar-94	24-Jun-94	23-Feb-93	07-Jun-93	08-Sep-93	09-Mar-94	24-Jun-94	23-Feb-93	07-Jun-93	08-Sep-93	09-Mar-94	24-Jun-94	23-Feb-93	07-Jun-93	08-Sep-93	02-Dec-93	09-Mar-94	
(LAB-SUMI.WK4)	U-S-T-R		G242911																				
KEVISED DALE: JULY 23, 20011	WELL NAME		VALDEZ A #1E																				
KEVISED D	PIT	NO.	C4193																				

BLAGG ENGINEERING, INC.

XTO ENERGY, INC. (CTOC)

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Page 1

CROSS TIMBERS OUNDWATER MONITOR WE LAB. RESULTS SUBMITTED BY BLAGG ENGINEERING, INC.

VALDEZ A #1E UNIT G, SEC. 24, T29N, R11W

REVISED DATE: JUNE 4, 2001

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FILENAME: (VA-2Q-01.WK4) NJV

								BTE	X EPA METI	HOD 8021 (PI	PB)
SAMPLE	MONITOR	D.T.W.	T.D.	TDS	COND.	pН	PRODUCT	Benzene	Toluene	Ethyl	Total
DATE	WELL #	(ft)	(ft)	(mg/L)	(umhos/cm)		(ft)			Benzene	Xylene
23-Feb-93	MW #6	15.06	19.40		2,700	6.9		2090	7800	578	4080
07-Jun-93		14.72	19.50		1,600	7.1		1300	444	293	840
08-Sep-93		14.27	18.35		1,120	7.3		770	980	174	783
02-Dec-93		14.69	10.55		2,900	7.3		540	1140	144	867
02-Dec-93		15.49			3,100	7.2		580	1520	130	888
24-Jun-94		14.05			2,800	7.1		542	1923	130	1172
		13.40			2,600	7.1		484	1696	170	1300
23-Sep-94		14.02			2,800	7.4		593	2242	183	1707
09-Dec-94 10-Jan-95		14.02			3,200	7.4		450	1380	153	1248
						7.4		710	2160	271	2297
09-Feb-95		14.58			3,400						2297
13-Mar-95		14.85			2,500	7.4		19.8	2471	289	2460
10-Apr-95		15.00			2,700	7.3		525	1840	222	1502
19-Jun-95		14.48			2,400	7.2		299.3	998.8	114.5	1045.4
07-Aug-95		14.08			2,400	7.5		593	1650	247	2111
12-Sep-95		13.89			2,200	7.4		412	1390	259	1549
10-Oct-95		13.74			2,200	7.4		176	970	191	1552
15-Nov-95		13.98			2,300	6.9		598	1370	339	2819
07-Dec-95		14.12			2,700	7.1		599	1310	304	2322
07-Mar-96		15.07			1,900	7.1		426	467	234	1876
18-Jun-96		14.40			2,000	7.1		462	773	305	2540
17-Jun-97		14.97			2,400	7.6		110	19.6	37.6	288.9
12-Jun-98		14.92			2,000	7.8		55.6	25.2	45.9	296.1
25-Sep-98		14.36			2,700	7.3		42.7	17.7	68.3	469
26-May-99		15.12			2,000	7.3		78.9	22	51.6	273.9
26-Jun-00		14.53			1,800	7.7		26	2.5	100	670
15-May-01		14.91			2,400	7.3		13	0.5	74	490
23-Feb-93	MW #7	13.37	23.32		2,400	6.9		ND	1	ND	2
07-Jun-93		14.54	19.33		1,700	7.1		640	2270	330	2430
08-Sep-93		14.15	18.85		1,120	7.4		820	1660	306	1780
02-Dec-93		14.56	10.00		2,500	7.3		319	366	35.1	242
09-Mar-94		15.30			2,900	6.9		103	88	10.3	74
24-Jun-94		14.04			2,500	7.1		569	2090	288	3094
23-Sep-94		13.51			2,500	7.1		627	1805	189	1755
09-Dec-94		13.94	18.83		2,000	7.2		707	1220	161	1342
10-Jan-95		14.23	10.05		3,300	7.2		298	394	54.8	365.4
09-Feb-95		14.20			3,000	7.2		465	624	92	582
13-Mar-95		14.73			2,700	7.2		997.8	813.2	168.4	1015.9
10-Apr-95		14.73			2,700	7.3		648	456	100.4	623
19-Jun-95		14.87			2,700			366.7	430	66.1	602.2
		14.39				7.1		869	1000	171	1431
07-Aug-95					2,400	7.4					
12-Sep-95		13.85			2,500	7.4		1725	846	141	1035
10-Oct-95		13.73			2,600	7.2		143	689	93.6	925
15-Nov-95		13.94			2,400	6.9		710	1000	178	1642
07-Dec-95		14.05			2,800	7.2		1050	606	167	996
07-Mar-96		14.94			2,000	6.9	l	101	10.3	8.69	42.27
18-Jun-96		14.34			2,200	6.9		128	65.5	11.5	175.3
17-Jun-97		14.83	10.00		2,700	7.6		360	16.3	16.5	127.5
12-Jun-98	MW #7		18.83				0.88				
25-Sep-98							0.88				
26-May-99							0.05				
25-Aug-99							0.62				
30-Nov-99							0.70				
26-Jun-00		14.46			2,200	7.2		220	63	94	4080
15-May-01		14.87			2,700	7.1		190	ND	76	880

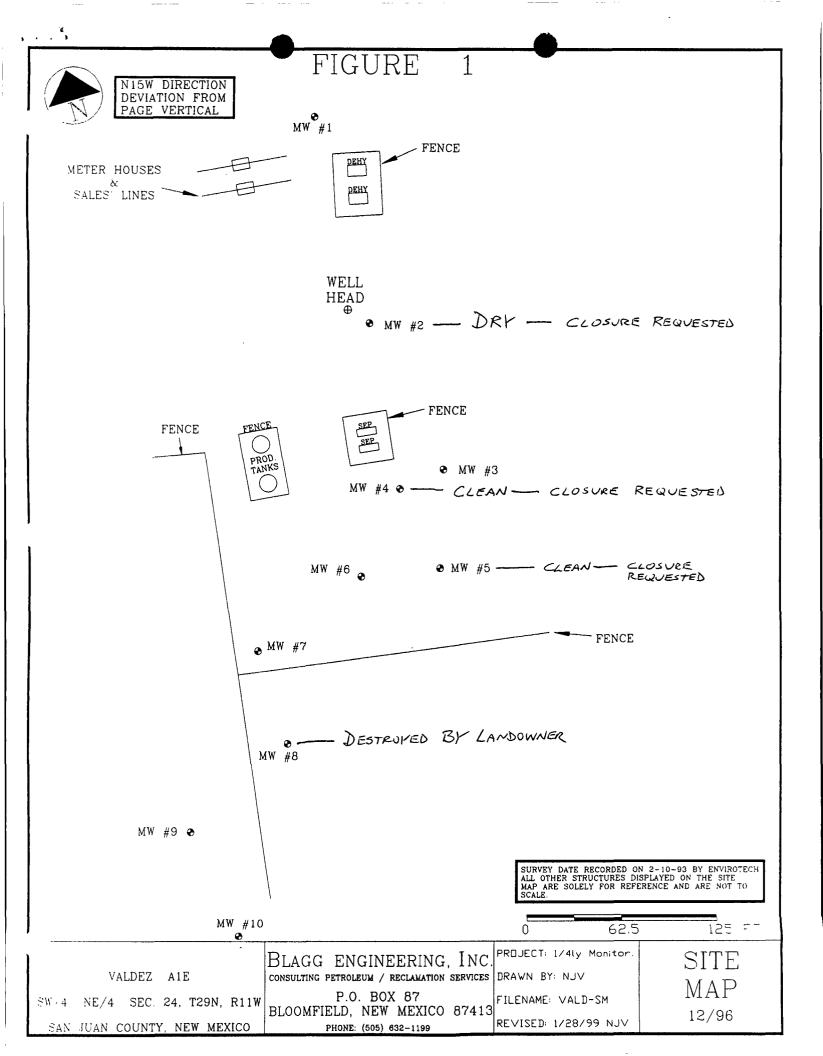
CROSS TIMBERS OUNDWATER MONITOR WE LAB. RESULTS SUBMITTED BY BLAGG ENGINEERING, INC.

VALDEZ A #1E UNIT G, SEC. 24, T29N, R11W

REVISED DATE: JUNE 4, 2001

FILENAME: (VA-2Q-01.WK4) NJV

								BTE	X EPA MET	HOD 8021 (PI	PB)
SAMPLE	MONITOR	D.T.W.	T.D.	TDS	COND.	pН	PRODUCT	Benzene	Toluene	Ethyl	Total
DATE	WELL #	(ft)	(ft)	(mg/L)	(umhos/cm)	•	(ft)			Benzene	Xylene
			()		0.000	74		2820	05500	1680	5430
23-Feb-93	MW #8	15.68 15.36	17.00		3,200 1,300	7.1 6.9		2830 3220	25500 1940	1110	4960
08-Jun-93		15.30	17.01 17.73					245	2040	135	1499
09-Sep-93			17.73		1,070	7.6 7.5		245	2040	135	1388
02-Dec-93		15.44			2,200	7.5		223	340	61	232.9
09-Mar-94 24-Jun-94		15.98 14.86			2,700 2,300	7.1		375	1750	108	1001
		14.00			2,300	7.1		236	1827	90	864
23-Sep-94 09-Dec-94		14.31	18.60		1,900	7.3		307	1608	105	734
10-Jan-95		15.02	10.00		2,800	7.3		320	2410	119	1016
09-Feb-95		15.02			2,000	1.5		183	760	90.9	452
13-Mar-95		15.24			2,400	7.2		415	3943	202	2037
10-Apr-95		15.42			2,400	7.2		239	2780	128	1245
19-Jun-95		15.54			2,300	7.3		148.9	1448.2	72.8	681.2
07-Aug-95		14.86			2,300	7.4		140.9	1590	92.7	893
12-Sep-95		14.00			2,400	7.4		499	1420	74.1	788
12-3ep-95		14.71			2,100	7.3		88.1	817	52.1	614
15-Nov-95		14.00			2,300	6.9		158	2110	150	1488
07-Dec-95		14.78			2,400	7.0		156	1920	135	1400
						6.9		98.1	1320	82.5	778
07-Mar-96		15.60 15.15			1,900	7.1		5.45	2.25	02.5 ND	3.5
18-Jun-96		15.15	18.28		2,100 2,500	7.3		105.0	569	51.0	421
27-Dec-96 17-Jun-97		15.12	10.20		2,500	7.3		45.4	83.0	29.8	88.9
12-Jun-98		14.01			2,000	7.9		45.4 5.4	5.1	29.0	9.1
25-Sep-98		15.03			2,000	7.9		0.3	0.3	0.2	2.4
25-Sep-98	MW #9	8.56	11.00		1,500	7.5		ND	1.0	ND	2.4
08-Jun-93	10100 #3	8.19	11.00		1,900	6.5		ND	2.1	0.3	2.3
09-Sep-93		8.00	10.92		1,300	7.3		0.9	0.6	ND	0.4
09-0ep-93		8.83	10.52		3,000	6.9		ND	2.1	0.7	7.0
24-Jun-94		7.80			2,500	7.1		1.6	5.5	4.1	3.1
25-Sep-98		7.93	11.08		2,900	6.9		0.6	0.2	ND	1.1
26-May-99		8.49	11.00		2,100	7.1		25.1	13.7	4.3	47.0
25-Aug-99		8.12	<u> </u>		2,300	7.1		0.7	2.0	ND	2.7
30-Nov-99		7.99			2,500	7.1		4.2	2.9	0.3	4.6
26-Jun-00		8.07			2,500	7.5		ND	ND	ND	ND
20-Mar-01		8.57			1,800	7.3		ND	ND	ND	ND
23-Feb-93	MW #10	8.65	9.80		3,600	7.4		ND	ND	ND	1.0
08-Jun-93	1111 #10	8.43	9.80		1,800	7.0		ND	0.7	ND	0.9
09-Sep-93		7.76	0.00		1,180	7.3		ND	0.3	ND	1.1
09-Mar-94		8.98				7.0		ND	2.3	ND	0.4
24-Jun-94		8.00	12.15		2,700	7.0		2.2	ND	ND	ND
23-Sep-94		7.56			2,400	7.1		0.7	0.7	ND	ND
09-Dec-94		7.88	12.44		2,000	7.5		ND	0.2	ND	ND
13-Mar-95		8.46		·	2,800	7.1		ND	ND	ND	ND
19-Jun-95		8.22			2,200	7.1		ND	ND	ND	ND
12-Sep-95		7.84			2,200	7.3		ND	ND	ND	ND
07-Dec-95		7.93			2,600	6.9		ND	ND	ND	ND
07-Mar-96	······································	8.62			1,900	6.9		ND	ND	ND	ND
18-Jun-96		8.22			2,200	6.9		ND	ND	ND	ND
25-Aug-99		8.30			2,200	7.3		1.7	0.9	ND	1.2
25-Aug-99		8.30			2,200	7.3		1.7	0.9	ND	1.2



BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413 Phone: (505)632-1199 Fax: (505)632-3903

April 19, 2000

Mr. William C. Olson - Hydrologist State of New Mexico Oil Conservation Division 2040 South Pacheco State Land Office Building Santa Fe, NM 87505

RE: 1999 ANNUAL GROUNDWATER REPORTS SAN JUAN COUNTY, NEW MEXICO

RECEIVED

APR 272000

ENVIRONMENTAL BUREAU OIL CONSERVATION DIVISION

Dear Mr. Olson:

Blagg Engineering, Inc., on behalf of Cross Timbers Oil Company, respectfully submits the attached 1999 annual groundwater reports in which quarterly and/or annual sampling is currently being undertaken. This reporting adheres to the NMOCD's previously approved groundwater management plan.

A total of seven (7) well sites, listed on the following page, are associated with this correspondence. All work performed on the these well sites have been incorporated into individual packets. Pit and/or landfarm closure documentation was included in the previous submitted reports.

The summary, conclusions, and/or recommendations made within these reports are based on information made available from the enclosed material. Any site specific inquiries should be examined within the individual packets.

If you have questions, please call and contact either myself or Jeffrey C. Blagg. Thank you for your cooperation and assistance.

Sincerely, BLAGG ENGINEERING, INC.

show VM

Nelson Velez Staff Geologist

Attachments: Individual Well site packets

Reviewed by:

My C. Slog

Jeffrey C. Blagg, P.E President

cc: Denny Foust, Environmental Geologist, NMOCD District III Office. Aztec. NM Nina Hutton. Environmental & Safety Manager, Cross Timbers Oil Company. Ft. Worth. TX

NV/nv

PREV-99.CVL

Cross Timbers Oil Co. 1999 Annual Groundwater Reports

1. Abrams J # 1

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- 2. Bergin GC # 1E
- 3. Bruington GC # 1
- 4. Rowland GC # 1
- 5. State GC BS # 1
- 6. Sullivan GC D # 1
- 7. Valdez A # 1E

- Unit I, Sec. 29, T29N, R10W Unit F, Sec. 21, T29N, R11W Unit E, Sec. 14, T29N, R11W Unit P, Sec. 25, T30N, R12W Unit F, Sec. 21, T29N, R11W Unit B, Sec. 26, T29N, R11W
- Unit G, Sec. 24, T29N, R11W

NV/nv

PREV-99.CVL

STATE OF NEW MEXICO



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ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION 2040 S. PACHECO SANTA FE. NEW MEXICO 87505 (505) 827-7131

April 21, 1999

CERTIFIED MAIL RETURN RECEIPT NO: Z-274-520-641

Ms. Nina Hutton Cross Timbers Oil Company 810 Houston St., Suite 2000 Fort Worth, Texas 76102-6298

RE: SAN JUAN BASIN GROUND WATER MONITORING REPORTS

Dear Ms. Hutton:

The New Mexico Oil Conservation Division (OCD) has reviewed Cross Timbers Oil Company's (CTOC) February 11, 1999 "CROSS TIMBERS OIL CO. GROUNDWATER MONITORING (AMOCO) 1996-1998 REPORTS, SAN JUAN COUNTY, NEW MEXICO" which was submitted on behalf of CTOC by their consultant Blagg Engineering, Inc. This document contains the results of CTOC's investigation, remediation and monitoring of ground water contamination related to the disposal of oilfield wastes in unlined pits at 7 sites in the San Juan Basin.

Based upon a review of the above referenced documents, the OCD has the following comments and requirements:

1. The downgradient and/or lateral extent of chloride and/or total dissolved solids contamination at the sites listed below has not been completely defined. The OCD requires that CTOC completely define the extent of these contaminants at each site pursuant to the previously approved ground water management plan for these sites.

-	Bergin GC #1E	Unit F, Sec. 21, T29N, R11W
-	Rowland GC #1	Unit P, Sec. 25, T30N, R12W
-	State GC BS #1	Unit F, Sec. 21, T29N, R11W
-	Sullivan GC D#1	Unit B, Sec. 26, T29N, R11W

2. The downgradient and/or lateral extent of benzene, toluene, ethylbenzene, xylene (BTEX), chloride and/or total dissolved solids contamination at the sites listed below has not been completely defined. The OCD requires that CTOC completely define the extent of these contaminants at each site pursuant to the previously approved ground water management plan for these sites.

-	Bruington GC #1	Unit E, Sec. 14, T29N, R11W
-	Valdez A #1E	Unit G, Sec. 24, T29N, R11W

3. A review of the sampling data shows that during some samplings only ground water from the monitor wells at the source is sampled and there is no downgradient monitoring to show that contaminated ground water is contained. In order to effectively monitor contaminant migration, the OCD requires that the ground water monitoring plan be modified to include additional ground water sampling of all monitor wells at each site on an annual basis. During the annual sampling event ground water from all monitor wells will be sampled and analyzed for BTEX, TDS, polynuclear aromatic hydrocarbons (PAH) and New Mexico Water Quality Control Commission (WQCC) cations and anions and metals using EPA approved methods and quality assurance/quality control procedures. Specific analytes may be dropped from the annual sampling event for certain sites if that analyte has not been found to be above WQCC standard in the sites source areas and the reasons for dropping those analytes are included in the annual reports. This sampling requirement will also be added to the ground water monitoring plan for all future ground water sampling at all CTOC sites with contaminated ground water.

4. CTOC recently purchased a number of well sites in the San Juan Basin from Amoco. Some of these sites were found to have ground water contamination which was discovered by Amoco during pit closure activities. The OCD does not have a listing of status of these sites. Please provide the OCD with a listing of all CTOC well sites in the San Juan Basin at which the presence of ground water was discovered during pit assessment or closure activities and the status of each site.

If you have any questions, please contact me at (505) 827-7154.

Sincerely,

William C. Olson Hydrologist Environmental Bureau

xc: Denny Foust, OCD Aztec District Office Nelson Velez, Blagg Engineering, Inc.

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413 Phone: (505) 632-1199 Fax: (505) 632-3903

February 11, 1999

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RECEIVED

FEB 1 5 1999

ENVIRONMENTAL BUREAU OIL CONSERVATION DIVISION

Mr. William C. Olson -Hydrogeologist Environmental Bureau New Mexico Oil Conservation Division 2040 Pacheco State Land Building Santa Fe, New Mexico 87505

RE: Cross Timbers Oil Co. Groundwater Monitoring (Amoco) 1996-1998 Reports San Juan County, New Mexico

Dear Mr. Olson:

The attached reports on groundwater monitoring at eight (8) previously owned Amoco well locations is being submitted for your review. These well sites have been acquired by Cross Timbers Co. as of December, 1997. The well names are listed on the following page of this correspondence. The reports for each individual well site are laid out in the following order;

- 1) Brief description of all activities which occurred during the investigation, sampling procedures, and/or interpretations, conclusions, and possible recommendations.
- 2) A summary spreadsheet contains laboratory BTEX, general chemistry (if applicable), and any other pertinent information.. The latest quarter/annual sampling results are shown along with all previous sampling conducted at the specified locations for comparison purposes.
- 3) Site and groundwater gradient maps, boring logs, and monitor well detail schematics.
- 4) Laboratory reports for each quarter/annual sampling event and a field summary spreadsheet revealing well elevations, water elevations, depth to water information, etc.
- 5) Quality Assurance/Quality Control data.

A copy of this report is also being submitted to Mr. Denny Foust at the Aztec NMOCD office. If you have any questions or comments concerning this report, please contact Blagg Engineering at 632-1199.

Respectfully submitted, Blagg Engineering, Inc.

Nelson Velez.

Staff Geologist

Attachments: Quarter/Annual Monitor Well Sampling Reports

xc: Denny Foust, NMOCD Aztec Office; Nina Hutton, Cross Timbers Oil Co.

NJV/njv

FEB99-WO.COV

Cross Timbers Oil Company Groundwater Monitoring Reports 1996-1998 Well Sites being submitted, February 1999

1)	Abrams J # 1	Unit I, Sec. 29, T29N, R10W
2)	Bergin GC # 1E	Unit F, Sec. 21, T29N, R11W
3)	Bruington GC # 1	Unit E, Sec. 14, T29N, R11W
4)	Rowland GC # 1	Unit P, Sec. 25, T30N, R12W
5)	State GC BS # 1	Unit K, Sec. 23, T29N, R11W
6)	Sullivan GC D # 1	Unit B, Sec. 26, T29N, R11W
7)	Valdez A # 1E	Unit G, Sec. 24, T29N, R11W

NJV/njv

FEB99-WO.COV



NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

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

March 12, 1996

CERTIFIED MAIL RETURN RECEIPT NO. Z-765-962-549

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Mr. B.D. Shaw Amoco Production Company 200 Amoco Court Farmington, New Mexico 87401

RE: GROUND WATER CONTAMINATION VALDEZ A#1E

Dear Mr. Shaw:

The New Mexico Oil Conservation Division (OCD) has completed a review of Amoco Production Company's (Amoco) JANUARY 8, 1996 "REDUCTION OF GROUNDWATER MONITORING REQUIREMENTS FOR AMOCO WELL SITE VALDEZ A-1-E". This document contains Amoco's request to cease ground water monitoring related to contamination from a former unlined production pit at the Valdez A#1E well site.

According to New Mexico Water Quality Control Commission (WQCC) regulations, a responsible party is required to remediate and monitor contaminated ground water until WQCC standards have been achieved. While the data shows that the contaminated ground water plume has decreased in size, ground water within the plume is still approximately 65 times WQCC ground water standards. Since WQCC standards have not been met, the OCD cannot approve a proposal to cease remedial actions and ground water monitoring. Therefore, the above referenced request is denied.

The OCD would like to point out to Amoco that according to WQCC regulation 4103.F. and 4106 Amoco can voluntarily submit an "Abatement Plan" which could petition for approval of alternate abatement standards. The WQCC regulations are enclosed for your reference.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson Hydrogeologist Environmental Bureau

cc: OCD Aztec District Office

Z 765 962 549



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Southern		
Rockies		
Business		
Unit	January 8,	1996

San Juan Operations Center

Mr. William Olsen New Mexico Oil Conservation Division P.O. Box 2088 Santa Fe, NM 87504

RE: REDUCTION OF GROUNDWATER MONITORING REQUIREMENTS FOR AMOCO WELL SITE VALDEZ A-1-E

Dear Bill:

I have asked Geoscience Consultants, Ltd. (GCL) to evaluate the groundwater chemistry of the above-referenced site. The data, which have been collected from 1988 to 1996, are presented in the attached table, figure, and graphs. Amoco believes the data support our request to cease routine groundwater monitoring at this site. The justification and contingency plan presented below demonstrate that the plume is stable, natural biodegradation is occurring at this site, threats to human health and the environment do not exist, and installation of a remedy at this site would best be accomplished after plugging and abandonment of the on-site natural gas production well.

Trends in BTEX Concentrations

The attached concentration/time plots demonstrate the benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations outside the center of mass of the plume have remained low and below Water Quality Control Commission (WQCC) standards since 1992. Concentrations in wells inside the center of mass of the plume (MW-6, MW-7, MW-8, and MW-10) are remaining fairly constant or, in the case of well MW-10, have decreased (if the initial 1988 analysis is valid). Some "spikes" in BTEX concentrations may be due to sampling or analytical error.

No Plume Migration

The attached plume map clearly shows the plume has not migrated over time and, in fact, the plume has actually retracted slightly towards the center of mass. It is our understanding that no new water supply wells have been installed near the site and therefore the plume should not migrate from its present position. It appears to be essentially in a steady state, if not slowly retracting.

A solute transport model simulation conducted by RESPEC in 1992 is superimposed on the plume map. This model predicted the extent of contamination if retardation factors, such as bioremediation, did not occur. Clearly, plume conditions predicted by the model were never borne out by groundwater quality analyses conducted since 1992. Natural bioremediation of BTEX constituents is a well-documented process in the literature and is probably responsible for the static





Mr. William Olsen January 8, 1996 Page 2

plume observed at this site. Irrigation return water provides nutrients and oxygen to the system, and the petroleum hydrocarbons sorbed to the subsurface soils and dissolved in groundwater provide a carbon source. The rate of petroleum hydrocarbon transport from the source soils is completely offset by the metabolism of these hydrocarbons by indigenous microbes. Amoco strongly believes this process is operating effectively at this site, based upon the eight years of groundwater data.

Human Health and Environment Adequately Protected

The land use in the area is agricultural/pastureland, and we believe it will likely remain so for the lifetime of the gas production well. Provided current conditions do not change, the plume will remain stable or slowly degrade, and not impact a human or ecological receptor. If conditions change, Amoco will implement the contingency plan outlined below.

- If a domestic water well is installed within 200 feet (the length of the plume) of the edge of the plume, or if an irrigation well is installed within 400 feet of the edge of the plume, Amoco will commence semi-annual monitoring of MW-10 and any other monitoring well that lies between the plume's center of mass and the production well.
- If a spill of natural gas liquids occurs, Amoco will commence quarterly monitoring of MW-10 and the monitoring well nearest the spill location.
- If groundwater pumping or spillage causes plume migration, as demonstrated by monitoring, Amoco will commence active remediation of groundwater through a soil venting program and, if required, an air sparging program to arrest the plume and prevent more extensive degradation of groundwater quality.
- One year prior to plugging and abandonment of the natural gas production well, Amoco will collect one year of quarterly monitoring data from all monitoring wells. If contamination remains to the extent that WQCC standards would be exceeded at a place of reasonably foreseeable future use, as determined by the NMOCD, Amoco will install an appropriate groundwater remedy or institutional controls to ensure that all regulatory requirements are met.

Based upon the stability of the plume and the lack of risk it poses to human health and the environment, Amoco believes that continuation of groundwater monitoring is unnecessary. Amoco will commit to remediation of the plume or institutional controls to fully protect usable groundwater (1) if and when site conditions change, (2) the well is plugged, or (3) Amoco or any subsequent operator loses control of the site. Based on the above information, we urge you to approve this request to cease groundwater monitoring at this site.

Mr. William Olsen January 8, 1996 Page 3

If you have any questions on the information I have provided you, please feel free to give me a call.

Sincerely,

Amoco udly Shand

Buddy Shaw

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cc: Roger Anderson, NMOCD Randall Hicks, GCL

	D.T.W.	T.D.	Conductivity	pН	BTEX Concentration (ppb)						
							Ethyl	Total	Total		
	(feet)	(feet)	(umhos)		Benzene	Toluene	Benzene	Xylene	BTEX		
MW-1											
01-Jul-88					ND	ND	ND	ND	ND		
31-Aug-88					ND	ND	ND	ND	ND		
5-Mar-92				<u> </u>	ND	ND	ND	ND	0.5		
23-Feb-93	13.59	20.30	3900	6.7	ND	ND	ND	ND	ND		
07-Jun-93	12.92	20.88	2900	6.7	ND	0.5	ND	1.0	1.5		
08-Sep-93	12.06	20.36	1750	7.2	ND	ND	ND	ND	ND		
09-Mar-94	14.20		3700	6.8	ND	ND	ND	ND	ND		
24-Jun-94	12.39		4000	7.1	ND	ND	ND	ND	ND		
23-Sep-94	11.35		3600	7.3	0.9	0.2	ND	3.8	4.9		
09-Dec-94	12.34	20.64	2600	7.4	0.8	ND	ND	ND	0.8		
13-Mar-95	13.71	<u>,</u>	4800	7.3	ND	ND	ND	ND	ND		
MW#2											
02-Jul-88					ND	ND	ND	ND	ND		
31-Aug-88					ND	ND	ND	ND	ND		
5-Mar-92					ND	ND	ND	ND	ND		
MW-3											
03-Jul-88					ND	ND	ND	ND	ND		
31-Aug-88					ND	ND	ND	ND	ND		
5-Mar-92	44.00	00.00	0000		3.0	6.9	0.3	7.8	18.0		
23-Feb-93	14.02	22.80	2600	6.8	ND	ND	ND	ND	ND		
07-Jun-93	13.66	23.00	1800	7.2	ND	ND	ND	0.6	0.6		
08-Sep-93	13.16	22.36	1350	7.1	ND	0.6	ND	11.7	12.3		
09-Mar-94	14.54		2800	6.9	ND	ND	ND	ND	ND		
24-Jun-94	12.95		2500	7.1	ND	ND	ND	ND	ND		
23-Sep-94	12.24	00.04	2500	7.2	ND	ND	ND	ND	ND		
09-Dec-94	12.94	23.24	2100	7.5	ND	ND	ND	ND	ND		
13-Mar-95	13.88		2500	7.4	ND	ND	ND	ND	ND		
MW-4					NA	NA	NA	NA	NA		
04-Jul-88					110.00			NA	1560.00		
31-Aug-88					0.4	730.00 5.3	230 0.6	3.1	9.4		
5-Mar-92	15 10	20.20	3200	6.7	0.4 ND	5.3 6.0	0.8 7.0		9.4 15.0		
23-Feb-93	15.18	20.30			ND		7.0 3.2	2.0	10.7		
07-Jun-93	14.80	20.83	2100	7.2	1.1	3.2		4.3			
08-Sep-93	14.27 15.67	19.98	1310	60		5.9	22.4	7.7	37.1		
09-Mar-94	15.67		3300 3400	6.9 7.1	ND ND	1.6	ND 2.3	1.6 ND	3.2 6.0		
24-Jun-94	14.10 13.29		3400 3300	7.1	ND 0.7	3.7 ND	2.3 0.5	ND ND	6.0 1.2		
23-Sep-94 09-Dec-94	13.38 14.10		2600	7.1	0.7	2.7	0.5 ND	ND	3.4		
13-Mar-95	14.10 15.04		3500	7.5 7.1	0.7 ND	ND	ND	ND	3.4 ND		
MW-5	13.04			1.1							
05-Jul-88					ND	0.50	ND		0.30		
31-Aug-88					ND	0.40	ND		ND		
5-Mar-92					ND	0.5	ND	1.0	1.5		
J-11101-92						0.0		1.0	1.0		

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Page 1 of 3

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	D.T.W.	T.D.	Conductivity	pН		BTE	Concentra	ation (ppb)	
			-	•			Ethyl	Total	Total
	(feet)	(feet)	(umhos)		Benzene	Toluene	Benzene	Xylene	BTEX
23-Feb-93	14.83	17.30	2300	7.2	1320.0	482.0	175.0	731.0	2708.0
07-Jun-93	13.02	23.71	1900	7.0	ND	ND	ND	0.4	0.4
08-Sep-93	12.68	22.78	1140	6.6	ND	1.0	ND	1.8	2.8
02-Dec-93	13.06		2500	7.3	ND	ND	ND	ND	ND
09-Mar-94	13.81		2700	7.2	ND	0.4	ND	ND	0.4
24-Jun-94	12.30		2200	7.1	ND	ND	ND	ND	ND
23-Sep-94	11.66		2200	7.2	ND	ND	ND	ND	ND
09-Dec-94	12.28		2000	7.5	ND	ND	ND	ND	ND
13-Mar-95	13.10		2000	7.3	ND	ND	ND	ND	ND
MW-6					4 500		550		4 500
06-Jul-88					1,500	3,300	550		4,560
31-Aug-88					1,700	1,600	340	00.7	1,300
5-Mar-92	45.00	40.40	0700	~ ~	65.0	44.1	20.3 578.0	82.7	212.1
23-Feb-93 07-Jun-93	15.06 14.72	19.40 19.50	2700 1600	6.9 7.1	2090.0 1300.0	7800.0 444.0	293.0	4080.0 840.0	14548.0 2877.0
	14.72	19.50	1120	7.1	770.0	980.0	293.0 174.0	783.0	2707.0
08-Sep-93 02-Dec-93	14.27	10.55	2900	7.3 7.3	540.0	1140.0	174.0	867.0	2691.0
02-Dec-93 09-Mar-94	14.09 15.49		2900 3100	7.3 7.2	580.0	1520.0	130.0	888.0	3118.0
24-Jun-94	14.05		2800	7.1	542.0	1923.0	164.0	1172.0	3801.0
23-Sep-94	13.40		2600	7.2	484.0	1696.0	170.0	1300.0	3650.0
09-Dec-94	14.02		2300	7.4	593.0	2242.0	183.0	1707.0	4725.0
10-Jan-95	14.28		3200	7.4	450.0	1380.0	153.0	1248.0	3231.0
09-Feb-95	14.58		3400	7.4	710.0	2160.0	271.0	2297.0	5438.0
13-Mar-95	14.85		2500	7.4	19.8	2471.0	289.0	2460.0	5239.8
10-Apr-95	15.00		2700	7.3	525.0	1840.0	222.0	1502.0	4089.0
MW-7									
5-Mar-92					1160.0	1110.0	302.0	1972.0	4544.0
23-Feb-93	13.37	23.32	2400	6.9	ND	1.0	ND	2.0	3.0
07-Jun-93	14.54	19.33	1700	7.1	640.0	2270.0	330.0	2430.0	5670.0
08-Sep-93	14.15	18.85	1120	7.4	820.0	1660.0	306.0	1780.0	4566.0
02-Dec-93	14.56		2500	7.3	319.0	366.0	35.1	242.0	962.1
09-Mar-94	15.30		2900	6.9	103.0	88.0	10.3	74.0	275.3
24-Jun-94	14.04		2500	7.1	569.0	2090.0	288.0	3094.0	6041.0
23-Sep-94	13.51		2500	7.1	627.0	1805.0	189.0	1755.0	4376.0
09-Dec-94	13.94	18.83	2000	7.2	707.0	1220.0	161.0	1342.0	3430.0
10-Jan-95	14.23		3300	7.2	298.0	394.0	54.8	365.4	1112.2
09-Feb-95	14.50		3000	7.2	465.0	624.0	92.0	582.0	1763.0
13-Mar-95	14.73		2700	7.2	997.8	813.2	168.4	1015.9	2995.3
10-Apr-95	14.87		2700	7.3	648.0	456.0	104.0	623.0	1831.0
MW-8					0400.0	4770 0	000.0	2020.0	7600 0
5-Mar-92	45.00	47.00	2000	7 4	2160.0	1770.0	830.0	2920.0	7680.0
23-Feb-93	15.68	17.00	3200	7.1	2830.0	25500.0	1680.0	5430.0	35440.0
08-Jun-93	15.36	17.01	1300	6.9 7.6	3220.0	1940.0	1110.0	4960.0	11230.0 3919.0
09-Sep-93	15.16	17.73	1070	7.6	245.0	2040.0	135.0	1499.0	0919.0

	D.T.W.	T.D.	Conductivity	pН		ΒΤΕλ	(Concentra	ation (ppb)	
							Ethyl	Total	Total
	(feet)	(feet)	(umhos)		Benzene	Toluene	Benzene	Xylene	BTEX
02-Dec-93	15.44		2200	7.5	307.0	2520.0	119.0	1388.0	4334.0
09-Mar-94	15.98		2700	7.1	223.0	340.0	61.0	232.9	856.9
24-Jun-94	14.86		2300	7.1	375.0	1750.0	108.0	1001.0	3234.0
23-Sep-94	14.31		2400	7.1	236.0	1827.0	90.0	864.0	3017.0
09-Dec-94	14.78	18.60	1900	7.3	307.0	1608.0	105.0	734.0	2754.0
10-Jan-95	15.02		2800	7.3	320.0	2410.0	119.0	1016.0	3865.0
09-Feb-95	15.24				183.0	760.0	90.9	452.0	1485.9
13-Mar-95	15.42		2400	7.2	415.0	3943.0	202.0	2037.0	6597.0
10-Apr-95	15.54		2600	7.3	239.0	2780.0	128.0	1245.0	4392.0
MW-9									
24-Mar-92					1.3	ND	0.3	0.9	2.5
23-Feb-93	8.56	11.00	1500	7.5	ND	1.0	ND	2.0	3.0
08-Jun-93	8.19	11.00	1900	6.5	ND	2.1	0.3	2.3	4.7
09-Sep-93	8.00	10.92	1200	7.3	0.9	0.6	ND	0.4	1.9
09-Mar-94	8.83		3000	6.9	ND	2.1	0.7	7.0	9.8
24-Jun-94	7.80		2500	7.1	1.6	5.5	4.1	3.1	14.3
23-Sep-94	7.30		2600	7.1	0.8	2.5	3.1	1.2	7.6
09-Dec-94	7.70	11.08	2100	7.4	0.8	1.6	ND	ND	2.4
13-Mar-95	8.31		2600	7.2	ND	ND	ND	ND	ND
MW-10									
24-Mar-92					1380.0	1490.0	690.0	2550.0	6110.0
23-Feb-93	8.65	9.80	3600	7.4	ND	ND	ND	1.0	1.0
08-Jun-93	8.43	9.80	1800	7.0	ND	0.7	ND	0.9	1.6
09-Sep-93	7.76		1180	7.3	ND	0.3	ND	1.1	1.4
09-Mar-94	8.98		2900	7.0	ND	2.3	ND	0.4	2.7
24-Jun-94	8.00	12.15	2700	7.0	2.2	ND	ND	ND	2.2
23-Sep-94	7.56		2400	7.1	0.7	0.7	ND	ND	1.4
09-Dec-94	7.88	12.44	2000	7.5	ND	0.2	ND	ND	0.2
13-Mar-95	8.46		2800	7.1	ND	ND	ND	ND	ND
MW#11									
24-Mar-92	<u>_</u>								0.30

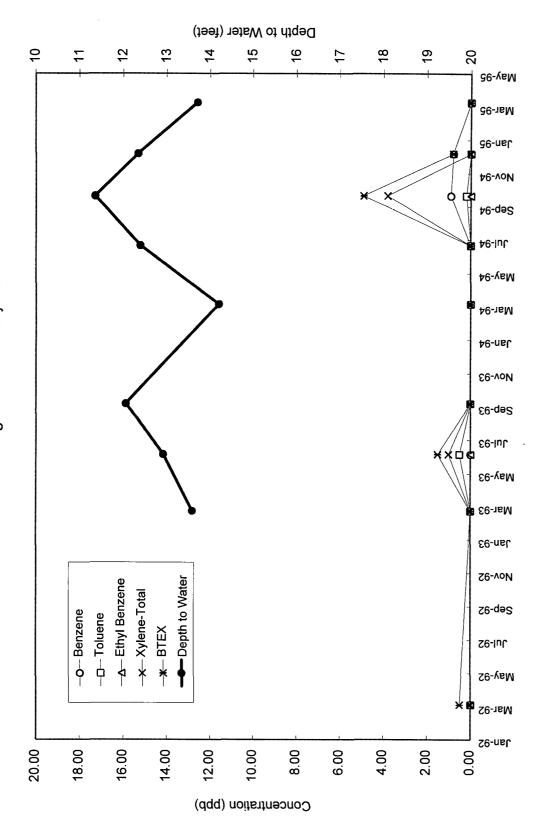
Notes: D.T.W. = depth to water.

T.D. = total depth.

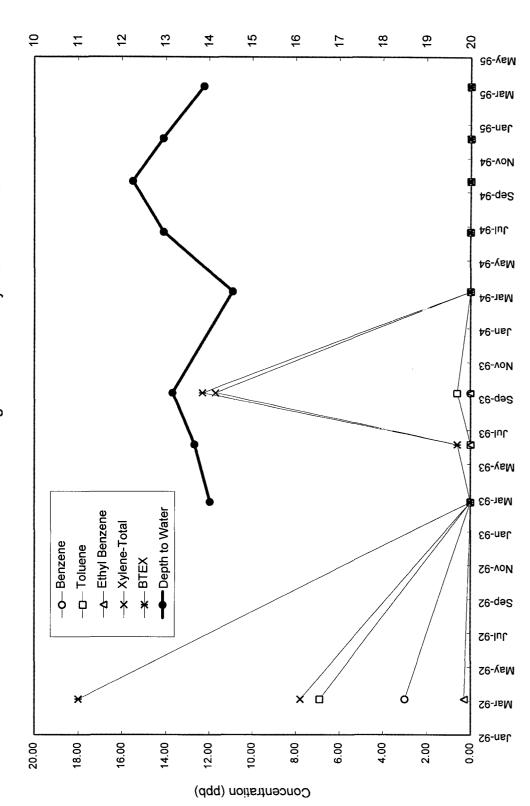
umhos = micromhos.

ppb = part per billion.

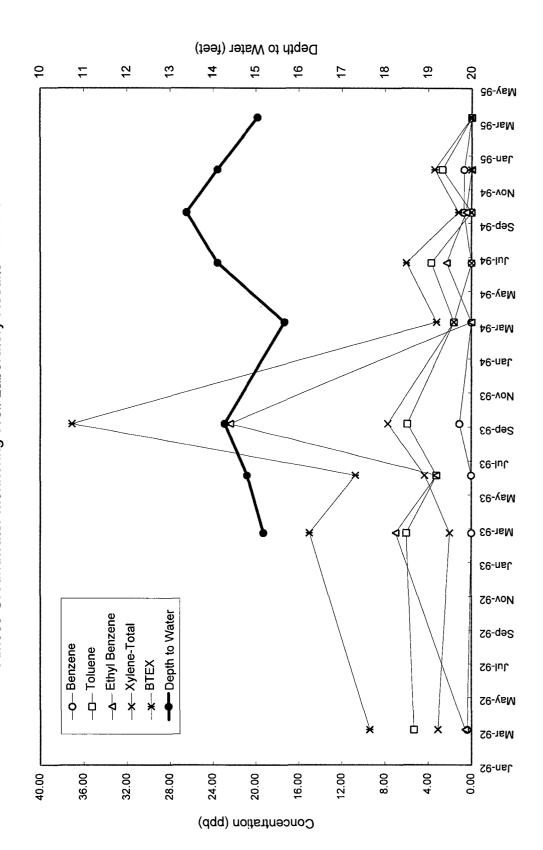
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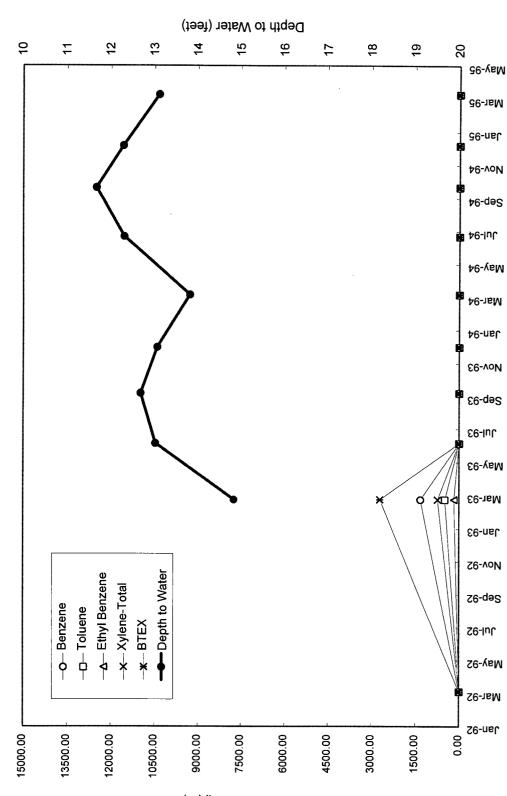
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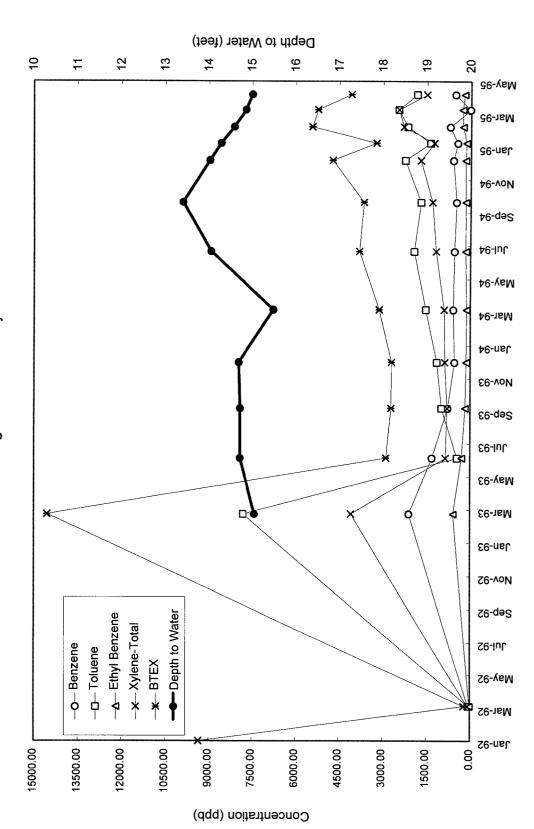
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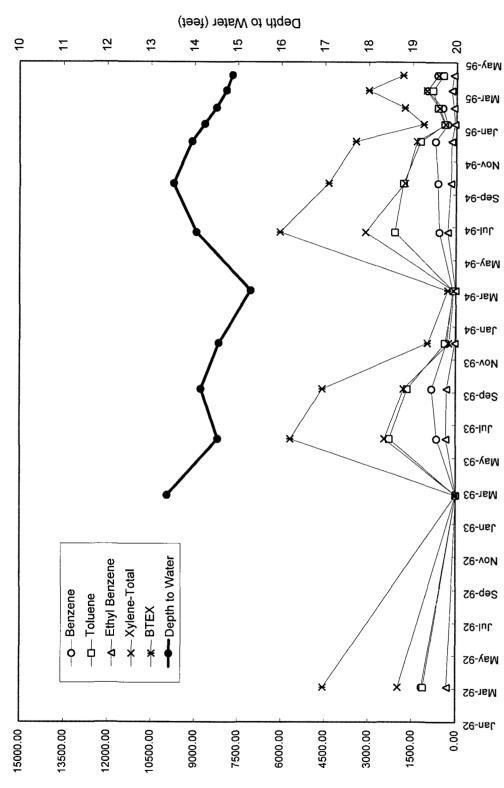
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Concentration (ppb)

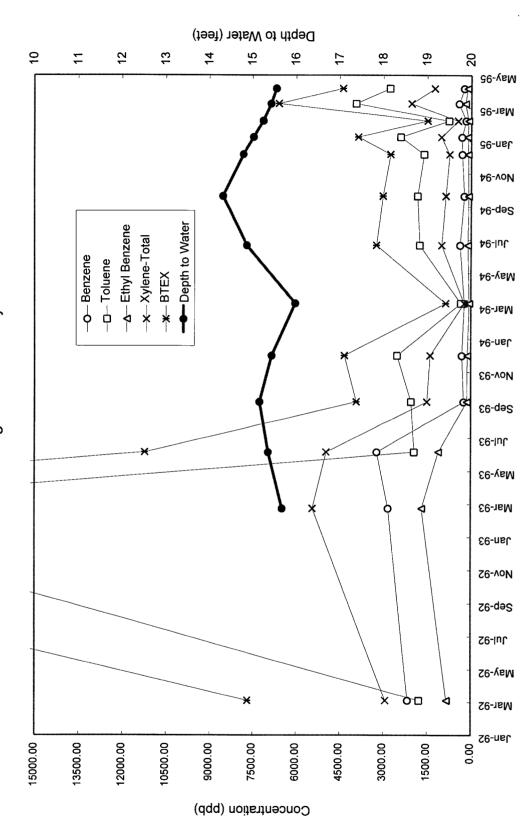


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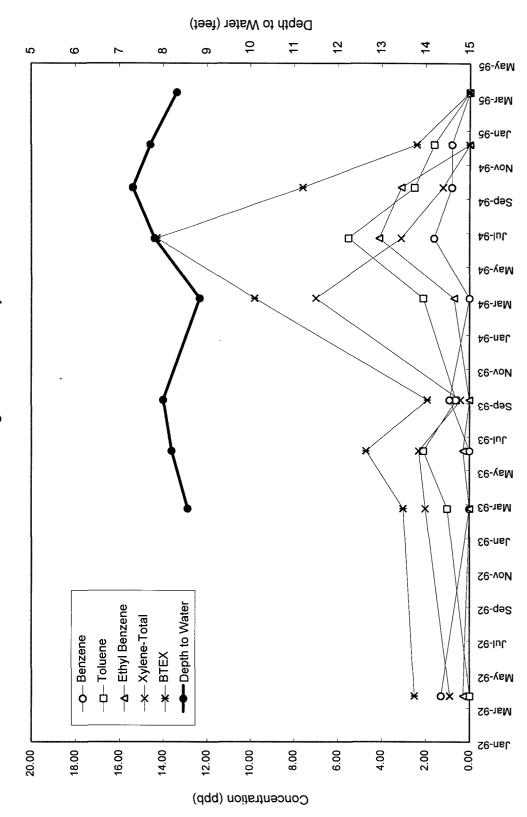


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Concentration (ppb)

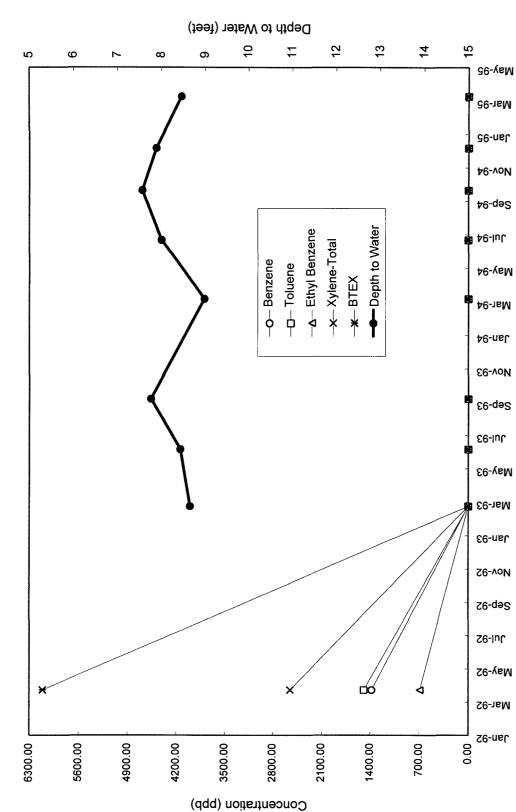


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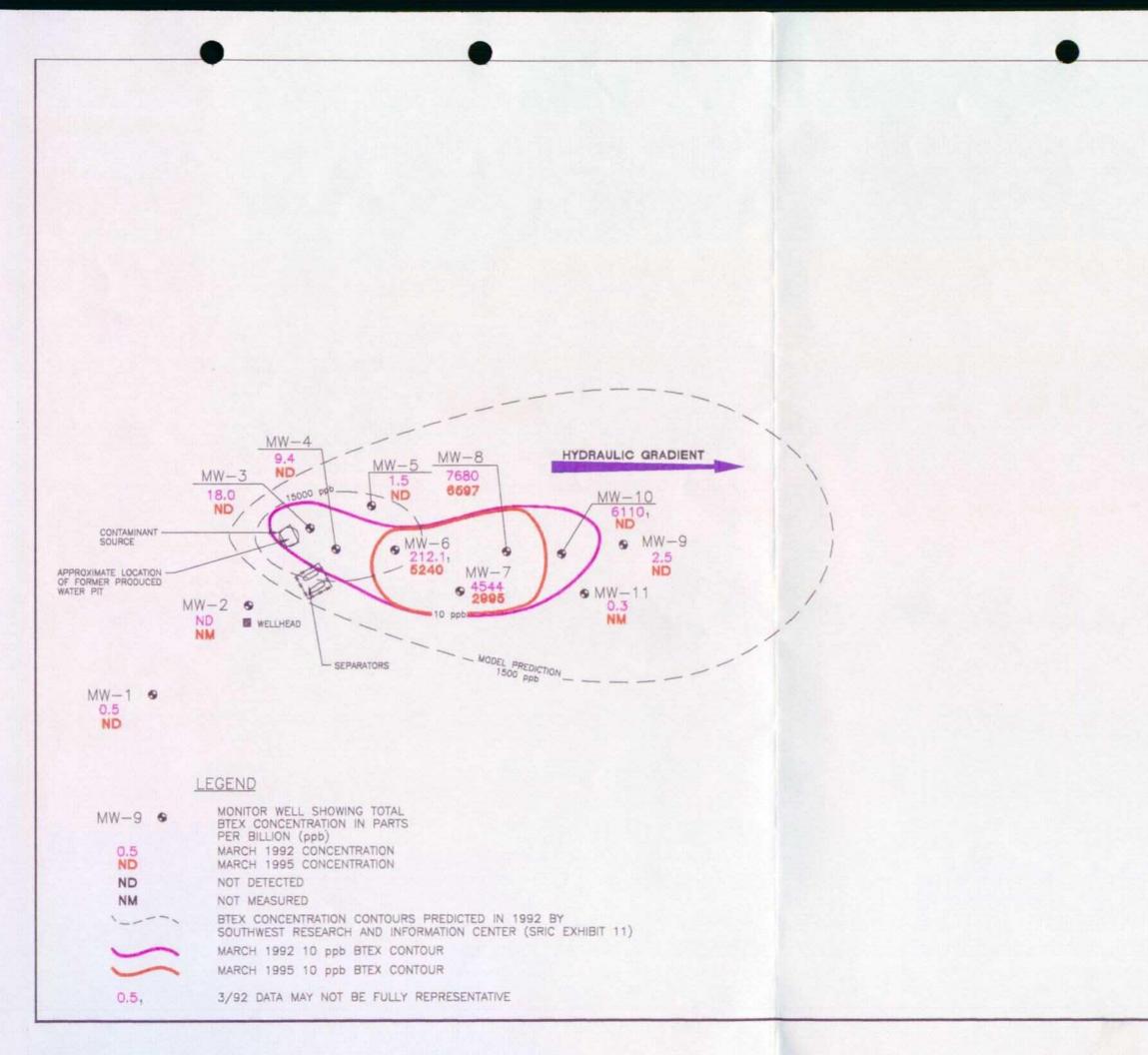


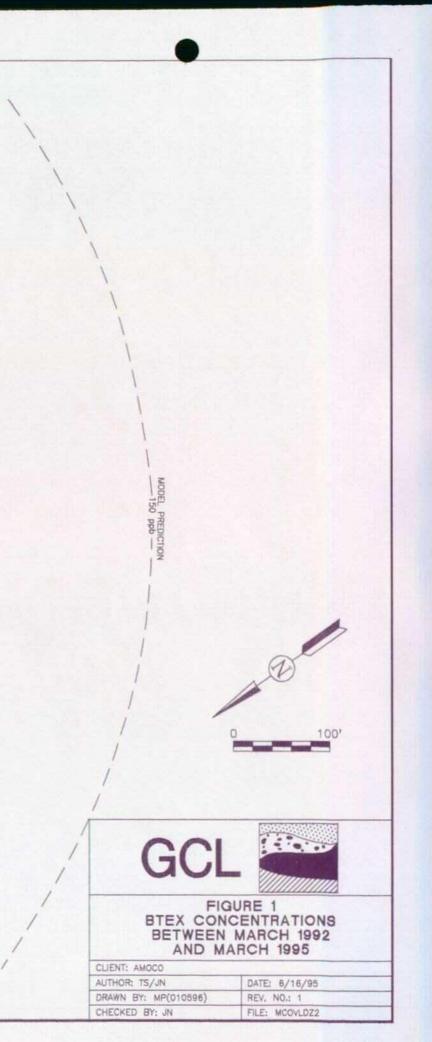
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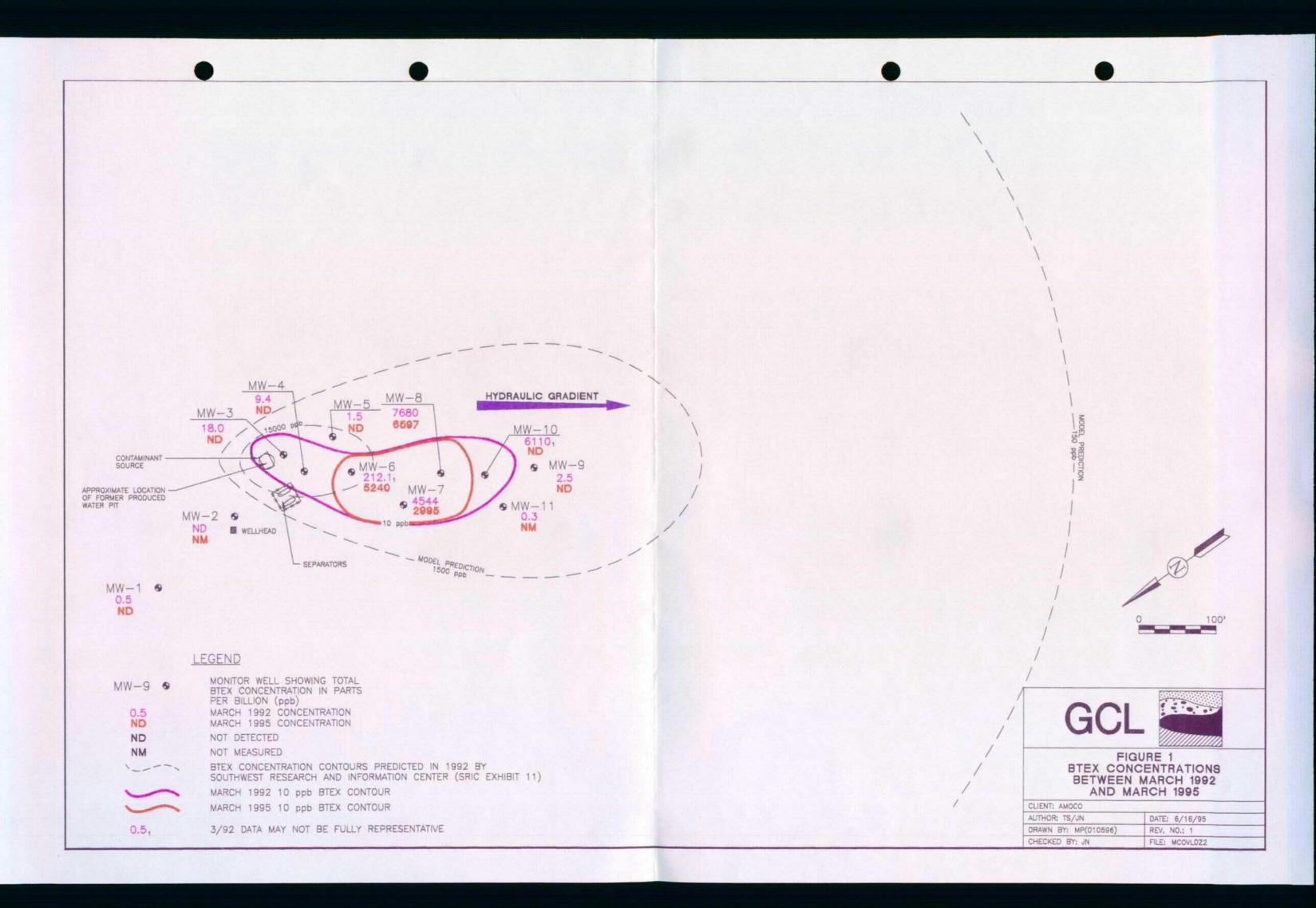
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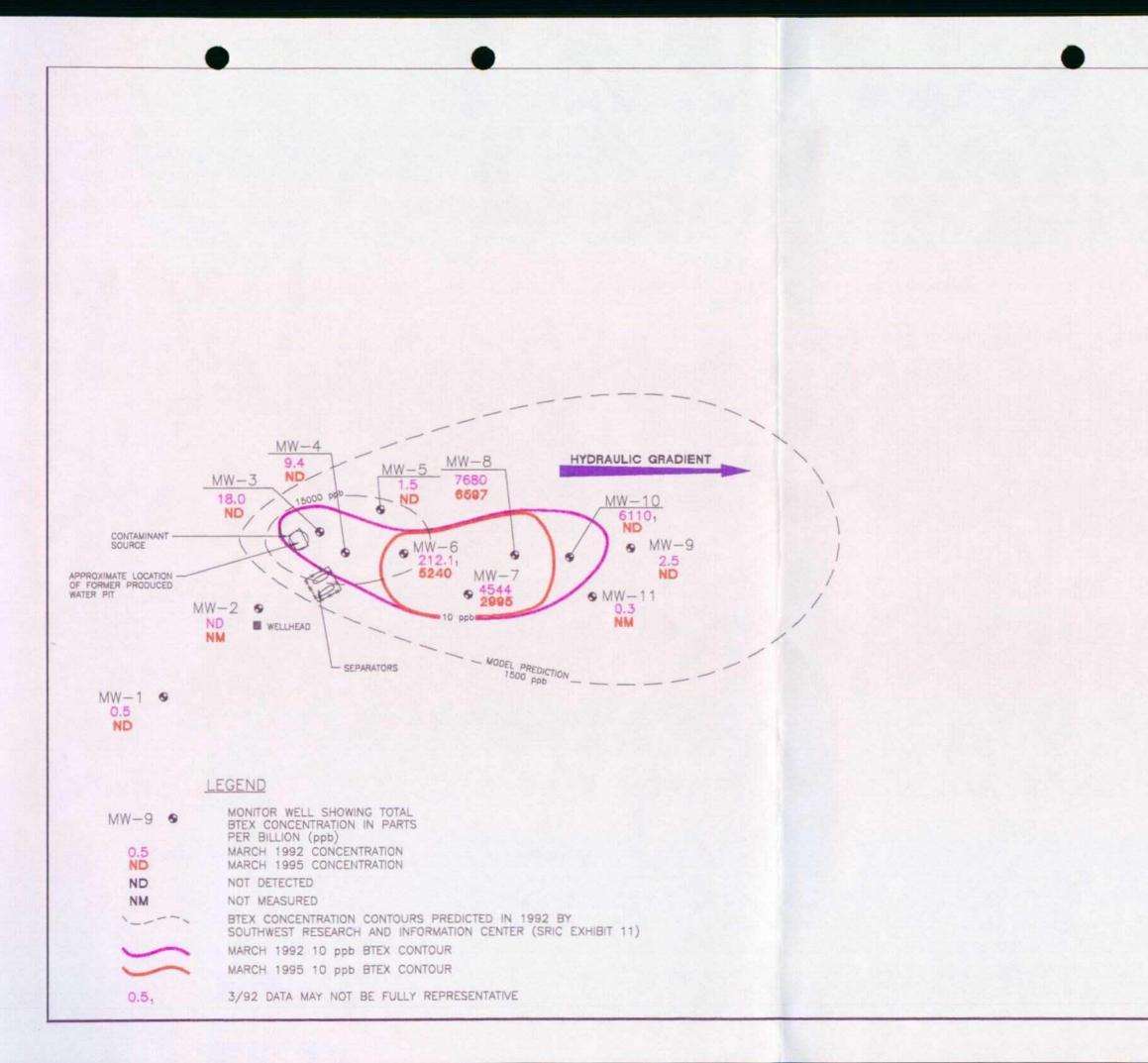


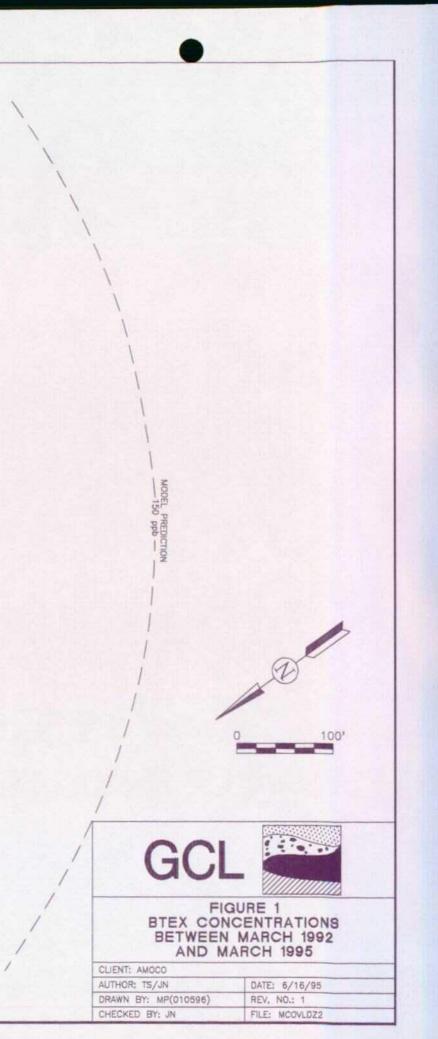
Amoco Groundwater Monitoring Well Laboratory Results - MW#10











STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING GOVERNOR

ANITA LOCKWOOD CABINET SECRETARY June 16, 1992

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

The Honorable Bill Richardson United States Representative 411 Paseo De Peralta Santa Fe, New Mexico 87501

Re: Antonio Valdez

Dear Representative Richardson:

Your letter of May 26, 1992 to Secretary Lockwood, concerning Mr. Antonio Valdez, has been forwarded to me for reply. The Oil Conservation Division (OCD) of the Energy, Minerals and Natural Resources Department is the state agency that has jurisdiction over the site discussed in Mr. Valdez's letter.

The OCD required Tenneco to install the monitor wells in question after discovering a small amount of hydrocarbons had entered the ground water. These monitor wells are sampled on an OCD required schedule with the results submitted to this office. The monitor wells will not be removed by Amoco without the express written consent of the OCD. As long as there is any detectable contamination in the ground water the sampling schedule for the wells will remain in effect. To date, there has been no request from Amoco to this office requesting removal of the monitor wells.

The remainder of the complaints concern housekeeping and spill prevention at the location. It is OCD policy to prevent spills and leaks, however, in the event one should occur, it is OCD policy to contain and remediate immediately. A copy of your letter and my response will be forwarded to the Aztec District Office for site investigation and action if necessary.

The Honorable Bill Richardson June 16, 1992 Page -2-

Amoco has been fully cooperative in the past in the OCD effort to protect the environment and I do not believe this attitude will change in the future.

If I can be of any further assistance, please do not hesitate to contact me at the above address or telephone number.

Sincerely,

William J. LeMay Director

xc: Anita Lockwood, Secretary, EMNRD OCD Aztec Office BILL RICHARDSON 30 DISTRICT, NEW MEXICO

COMMITTEES: ENERGY AND COMMERCE INTERIOR AND INSULAR AFFAIRS SELECT COMMITTEE ON INTELLIGENCE



WASHINGTON: 204 CANNON HOUSE OFFICE BUILDING WASHINGTON, DC 20515-3103 (202) 225-6190

SANTA FE: 411 PASEO DE PERALTA SANTA FE, NM 87501 (505) 988–7230

GALLUP: GALLUP CITY HALL GALLUP, NM 87301 (505) 722-8522

LAS VEGAS: AN MIGUEL COUNTY COURTHOUSE P.O. BOX 1805 LAS VEGAS, NM 87701 (505) 425-7270

Select Committee on Aging Helsinki Commission on Human Rights Whip At-Lorge Whip At-Lorge White At-Lorge Nation Nation

May 26, 1992

Ms. Anita Lockwood Secretary NM Energy & Minerals Department 240 South Pacheco Santa Fe, NM 87505

Re: Antonio Valdez,

Dear Ms. Lockwood:

One of my constituents, Antonio Valdez, has contacted me for assistance on a problem with which the NM Energy & Minerals Department might be able to help. I have enclosed all the information which we have been given on this particular case for your perusal and review.

Antonio, and I are anxious to resolve this problem as soon as possible. Because of this, your prompt consideration would be most appreciated. If you have any questions, please contact Joseph L. Sandoval in my Santa Fe office.

Sincerely yours,

BILL RICHARDSON Member of Congress

BR/j

BILL RICHARDSON 3D DISTRICT, NEW MEXICO

COMMITTEES. ENERGY AND COMMERCE INTERIOR AND INSULAR AFFAIRS SELECT COMMITTEE ON INTELLIGENCE SELECT COMMITTEE ON AGING HELSIIKKI COMMISSION ON HUMAN RIGHTS

WHIP AT-LARGE



WASHINGTON 204 CANNON MOUSE OFFICE BL . ING WASHINGTON DC 20515-3103 (202) 225-8190

Santa Fe 411 Paseo de Peralta Santa Fe NM 87501 (505) 988-7230

GALLUP GALLUP CITY HALL GALLUP, NM 87301 (505) 722-8522

LAS VEGAS SAN MIGUEL COUNTY COURTHOUSE PO Box 1805 LAS VEGAS NM 87701 (505) 425 · 727()

Congress of the United States House of Representatives Washington, DC 20515-3103

WE MOVED

Listed below are the current addresses and telephone numbers of all offices:

204 Cannon House Office Building Washington, DC 20515 (202) 225-6190

411 Paseo De Peralta Santa Fe, NM 87501 (505) 988-7230

Gallup City Hall Gallup, NM 87301 (505) 722-6522

San Miguel County Courthouse P.O. Box 1805 Las Vegas, NM 87701 (505) 425-7270

AMOCO PROD CO. J.D. HAMRICK VicePres.

IN RESPONSE TO A WEITER RECIEVED FROM YOUR OFFICE DATED Dec 9. 19. CONCERNING ABOUT FRUR SMALL MONITORING WELLS OF WHICH PAYS ME ANNUALLY \$10000 AS PER CONTRACT STARTED BY TENECO TO BEGIN WITH This is AN ARCA CLOSE TO THE SAN JUAN RIVER VERY VULFABLE FOR CONTAMINATION AS you WELL KNOW -THERE'S UNDER GROUND PIPES, TWO DRIPTANKS THAT HAVE BEEN THERE 34 JEARS THEY WERE WHEN TENECO BROUGHT THEM THERE, I HAVE PICTURES OF THE WINTER OF 1990-1991 TANK #65006 FROSEN VALLE BROKEN GASOLINE WRAKING HEAVY ON THE GROUND, THOSE SO CALLED REBUILT DIRES DONT KEEP RAW DRIP FROM SOAKING RIGHTINTO THE GROUND, JUST A FEW FEET AWAY WHERE My LIVESTOCK FIRE COULD DRINK CONTAMINATED WATER

APRIL 29-1992

I WANT THEM MONITORING WELLS TO STAY THERE ENCLOSED YOU WILL FIND NOTES I MADE AFTER I RECIEVED YOUR WELTER I WILL SEND COPY OF THIS' WEITER TO GOVERMENT POPLE IN SANTAFE, N.M. HOPING TO HEAR FROM YOU SOON WILL BURG

AMOCO ABUSES [Dec. 1991] 1) IVE (IACIGHT DRIP HAVILERS DRAINING WAREF GAS MIXED ON TO THE GROAND HUNSDED of GALLONS 2) WINTER OF 1990 ONE OF TWO A VALUE FROSE & BUSTED, GAS LOAKING ON GROUND FOR DAYS, I CAlled BUDPY SHAW ABOUT it - They Connector IT AFTER WORDS ALRIGAT-3) THERE'S BURIED PIPE OK THE GROUND MADT COULD HIAK ALSO NARGE TANK SETTING ON TOP GEOUND Those TANK COULD VERY LIKELY WEAK ESPECIALLY with Some WATER Thots IN WITH THE DRIFEAS- They ARE OVER 30 MAN. OLD 3. TANK 4) The DIKE AROUND THE TANKS ARE Suppressedly To Contain the Diauro IF They do RAN WER, RIGHTON TO THE GROOMS - THE COMPLETE 1 you AMOGO USED ABOUT 350ft OF MY WAND TO PLACE Elic, WIN INGA Meter Pole to Your Well Electrified Sustem THAT AMONG OTHER TOD.

WINTER 1990-1991 AMOCO A.E.V FARM 65006 15-0 1-0 . * WINTER 1990-1991 AMOLO A.E.N FARM

STATE OF NEW MEXICO



ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS

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

June 6, 1988

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Martin W. Buys Tenneco Oil Company P. O. Box 3249 Englewood, Colorado 80155

RE: Ground Water Contamination Sites: Tenneco Valdez A1E Tenneco Riddle F LS 3A

Dear Mr. Buys:

On September 17, 1987, the Oil Conservation Division (OCD) personnel augered four $10\frac{1}{2}$ '-18' holes at the Valdez AlE well site and discovered ground water contamination in the vicinity of the produced water tank and the separator. You have been sent laboratory analyses and a field map of the well site.

On October 27, 1987, the OCD augered five 13'-16' holes at the Riddle F LS #3A well site and discovered ground water contamination in the vicinity of the dehydrator and tank drain pit. Copies of the laboratory analysis of fluids found in Auger Hole #2 and a field map locating the auger holes in relation to the well site are enclosed.

Because ground water contamination has been found at these well sites, Tenneco is required to install a series of monitor wells at the sites to define the contamination plume and to monitor contaminant concentration levels. At this time remedial action is not being required. The need for such action will be reevaluated after review of information and data collected at these sites.

OCD staff will be available the week of June 27 to supervise installation of the monitor wells and to split samples of fluids found in the wells. Monitor well installation requirements have been discussed with you by phone. Mr. Martin W. Bu June 6, 1988 Page -2-

If you have any questions, please contact me at (505) 827-5812 or Jami Bailey at (505) 827-5884.

Sincerely, av 2 David G. Boyer Environmental Bureau Chief

DGB:JB:sl

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1 . .

Enclosure

cc: OCD - Aztec

REPORT TO:	David Boyer	
	N.M. Oil Conservation Divisio	DATE REC. $10.30-87$
1707-C	P. 0. Box 2088	
	Santa Fe, N.M. 87504-2088	PRIORITY
PHONE(S):	327-5812	USER CODE: 3 2 2 3 5
UBMITTER:	David Boyer	CODE: 12 6 0
AMPLE COLLE	CTION CODE: (YYMMDDHHMMIII)	71/10/219101915101 10181
AMPLE TYPE:	WATER [], SOIL [], FOOD [], OTH	ER: CODE:
COUNTY: <u>54</u>	UJUAN ; CITY: BLOOM	<u>rfield</u> code:
	E: (Township-Range-Section-Tracts)	
	•	(es) below to indicate the type of analytical screens
•	er possible list specific compounds suspected	
	PURGEABLE SCREENS tic Purgeables (1-3 Carbons)	EXTRACTABLE SCREENS (751) Aliphatic Hydrocarbons
(754) Aroma	tic & Halogenated Purgeables	(760) Organochlorine Pesticides
	Spectrometer. Purgeables	(755) Base/Neutral Extractables
(766) Trihald Other	omethanes Specific Compounds or Classes	(758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines
		(760) Organochlorine Pesticides
3		(761) Organophosphate Pesticides
<u> </u>	· · · · · · · · · · · · · · · · · · ·	(767) Polychlorinated Biphenyls (PCB's)
╡ ──	<u></u>	(764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides
 Remarks:	TENNECO VALOEZ A	
	SEPARATOR PIPE	· · · · · · · · · · · · · · · · · · ·
HELD DATA:		
	onductivity=umho/cm atC	Chlorine Residuel - mg/l
	=mg/l; Alkalinity=mg/l; Flo	
	ft.; Depth of wellft.; Perfor	ation Intervalft.; Casing:
	n, Methods and Remarks (i.e. odors, etc.)	· · · · · · · · · · · · · · · · · · ·
	Ship from pipe ag	the discharge to tank
		-
certify that th	e results in this block accurately reflect th	e results of my field analyses, observations and
ctivities.(signatur	re collector):Waubey	Jugs, and/or
amples were pro-	panies Septum Vials, Glass . eserved as follows:	Juge, and/or
	No Preservation; Sample stored at room t	emperature.
	Complemental in the last (N.A. D.)	a).
P-Na S O	Sample Preserved with Sodium Thiosulfate	to remove chlorine residual.
JUNIN OF CUS		to remove chlorine residual.
certify that th	is sample was transferred from	to to
it (location)		to remove chlorine residual.

. 0

L.

ANALYSES PERFORMED

LAB.	No.: OR	- 170	7

THIS PAGE FOR LABORATORY RESULTS ONLY This sample was tested using the analytical screening method(s) checked below: EXTRACTABLE SCREENS PURGEABLE SCREENS (751) Aliphatic Hydrocarbons [] (753) Aliphatic Purgeables (1-3 Carbons) (754) Aromatic & Halogenated Purgeables (760) Organochlorine Pesticides (755) Base/Neutral Extractables (765) Mass Spectrometer Purgeables (758) Herbicides, Chlorophenoxy acid (766) Trihalomethanes (759) Herbicides, Triazines Other Specific Compounds or Classes (760) Organochlorine Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons] (762) SDWA Pesticides & Herbicides ANALYTICAL RESULTS CONC. COMPOUND(S) DETECTED CONC. COMPOUND(S) DETECTED [PPB] PPB SEL reman 1700 materi V_{\cdot} ж 100 491 * DETECTION LIMIT * + 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: wnus CERTIFICATE OF ANALYTICAL PERSONNEL Seal(s) Intact: Yes No L. Seal(s) broken by: _ sol Alakon 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: 11/2/87 ___. Analyst's signature:_____ Jan L. I certify that I have reviesed and concur with the analytical results for this sample and with the statements in this block. neul K Reviewers signature: her

REPORT TO:	David Boyer	S.L.D. No. OR- 1706
	N.M. Oil Conservation Division	
	P. 0. Box 2088	
	Santa Fe, N.M. 87504-2088	PRIORITY S
PHONE(S):	327-5812	USER CODE: 3 2 3 5
SUBMITTER:	David Boyer	CODE: 2 6 0
SAMPLE COLLE	CTION CODE: (YYMMDDHHMMIII) <u>8</u> 7	110290945
SAMPLE TYPE:	WATER X, SOIL , FOOD , OTHER	R: CODE:
COUNTY: JAN	JUAN ; CITY: BLOOM ;	FIELD CODE:
LOCATION COD	E: (Township-Range-Section-Tracts)	+++(10N06E24342)
		s) below to indicate the type of analytical screens
	er possible list specific compounds suspected o PURGEABLE SCREENS	EXTRACTABLE SCREENS
	tic Purgeables (1-3 Carbons)	(751) Aliphatic Hydrocarbons
	tic & Halogenated Purgeables Spectrometer Purgeables	(760) Organochlorine Pesticides (755) Base/Neutral Extractables
[(766) Trihalo		(758) Herbicides, Chlorophenoxy acid
	Specific Compounds or Classes	(759) Herbicides, Triasines
	· · · · · · · · · · · · · · · · · · ·	(760) Organochlorine Pesticides
<u> </u>		(761) Organophosphate Pesticides
<u> </u>	·	(767) Polychlorinated Biphenyls (PCB's)
H		(764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides \u03c4
·	TENNECO VALDEZ A	
Remarks:	-	
	SEPARATOR TANK	
FIELD DATA:		
	nductivity= $\frac{3000}{100}$ umbo/cm at $\frac{11}{0}$ °C; (
	=mg/l; Alkalinity=mg/l; Flow	
Depth to water	ft.; Depth of wellft.; Perforati	ion Intervalft.; Casing:
Sampling Location	n, Methods and Remarks (i.e. odors, etc.)	
•	FLUID STANDING	IN TANK
	e results in this block accurately reflect the s	
This form accomm	panies Septum Vials, Glass Jug	Method of Shipment to the Lab: Hand carrier
	eserved as follows:	
NP:	No Preservation; Sample stored at room tem	iperature.
	Sample stored in an ice bath (Not Frosen).	
P-Na SO	Sample Preserved with Sodium Thiosulfate to	o remove chlorine residual.
CTIAIN OF CUS		
CHAIN $\overrightarrow{OP}^2 \overrightarrow{CUS}$ I certify that thi	is sample was transferred from	"

ANALYSES PERFORMED

LAB. No.: OR- 1706

THIS PAGE FOR LABORATORY RESULTS ONLY

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

PURGEABLE SCREENS	EXTRACTABLE SCREENS
(753) Aliphatic Purgeables (1-3 Carbons)	(751) Aliphatic Hydrocarbons
🔀 (754) Aromatic & Halogenated Purgeables	(760) Organochlorine Pesticides
(765) Mass Spectrometer Purgeables	(755) Base/Neutral Extractables
(766) Trihalomethanes	(758) Herbicides, Chlorophenoxy acid
Other Specific Compounds or Classes	(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]
aromatic surgiches	serector		
Jemehe 1	6350		
tolung	21800		
ethulbengene	425		
strythe	1050		
m-Jayling	3950		
0- xulini	850		
halorenated suscalles	N.D.		
• DETECTION LIMIT • X	5079/L	+ 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 lan and rioniz CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes No D. 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 on this page accurately reflect the analytical results for this sample.	
Date(s) of analysis: 11/2/27 Analyst's signature:	
I certify that I have reviewed and concur with the analytical results for this sample and with the sta	stements in this block.
Reviewers signature: Kmene hein	

700 Camir	co Health and Environment FIC LABORATORY LOGIC no de Salud NE que, NM 87106 — (505) 841	N	859 WNN 0		VATER CHEMISTRY OGEN ANALYSIS	
ATE NED 10 30 8	7 No. WC 4938		o 🗆 59600 🕅	OTHER: 82	235	
10189187	SITE	Sample location	ENNECO VA	LDEZ	AIE.	
CAT45	ATION	Collection site description	SEPARATO	R maa	K	
OLSON BP	ILEY IOCD		38119110			
NM OIL	MENTAL BUREAU CONSERVATION_DI	VISION	-			
NAL State I PORT Santa	Land Office Bldg Fe, NM 87504-208	j, PO Box 208 88	8		4 <u></u>	
Attn:David						
	-			Station/		
Phone: 82 AMPLING CONDITION				well code Owner		
Bailed Pump			Discharge		Sample type	
C Dipped ☐ Tap DH (00400)	Conductivity (Unc	orrected)	Water Temp. (00010)		Conductivity at 25°C (00094)	
·····		ormy ord		// •C		μ mho
NA: No acid added		LiA: Units Date analyze		······································	: 4ml fuming HNO ₃ a : Date <u>Analyzed</u> mg/l c2/15	adde
Total non-filterable residue (suspended) (00530)		_ mg/l	Potassium3	7.4		
Other: Other:		•	KITZ Magaagina	19.5		
			_ 🛛 Magnesium _		mg/1 12/15	
Other:		·	Sodium	438	8 mg/1 12/18	
A-H ₂ SO ₄			- Sodium Bicarbonat	4/38 e_340	8 mg/1 /2/18 mg/1 /2/14	
A-H ₂ SO ₄ Nitrate-N + , Nitrate-N			- D Sodium D Bicarbonat D Chloride _	4/38 e <u>3-10</u> 5950	8 mg/1 /2//8 mg/1 /2//4 mg/1 /2/4	
A-H ₂ SO4			- Sodium Bicarbonat	4/38 e 3-10 5950	8 mg/1 /2/18 mg/1 2/14 mg/1 12/14 /2 mg/1 12/4	
A-H ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610)		mg/l	Sodium Bicarbonat Chloride Sulfate	4/38 e 3-10 5950	8 mg/1 12/18 mg/1 12/14 mg/1 12/14 H2 mg/1 11	
A-H ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen		_ mg/l	Sodium Bicarbonat Chloride Sulfate	4/38 e 3-10 5950	8 mg/1 12/18 mg/1 12/14 mg/1 12/14 H2 mg/1 11	
A-H ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340)		_ mg/l _ mg/l _ mg/l	Sodium Bicarbonat Chloride Sulfate Total Soli	4/38 e 340 5950 ds 10,9	8 mg/1 12/18 mg/1 12/14 mg/1 12/14 H2 mg/1 11 18 mg/1 12/75	
A-H ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total KjeldahI-N () Chemical oxygen demand (00340) Total organic carbon ()		_ mg/l	Sodium Bicarbonat Chloride Sulfate Total Soli	438 e 340 SISD ds 109	8 mg/1 /2/18 mg/1 /2/14 mg/1 /2/14 /2 mg/1 /1 /8 mg/1 /2/75	
 Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340) Total organic carbon () 		_ mg/l _ mg/l _ mg/l	Sodium Bicarbonat Chloride Sulfate Total Soli	4/38 e 340 SISD ds 109 anion Ba	8 mg/1 /2/18 mg/1 /2/14 mg/1 /2/14 /2 mg/1 /1 /8 mg/1 /12/75 Lance	
A-H ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total KjeidahI-N () Chemical oxygen demand (00340) Total organic carbon () Other:		_ mg/l _ mg/l _ mg/l	Sodium Bicarbonat Chloride Sulfate Total Soli	4/38 e 340 SISD ds 109 anion Ba	8 mg/1 12/18 mg/1 12/14 mg/1 12/14 12 mg/1 12/4 18 mg/1 12/75 Lance	
A-H ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340) Total organic carbon () Other: Other:		_ mg/l _ mg/l _ mg/l	Sodium Bicarbonat Chloride Sulfate Total Soli	4/38 e 340 SISD ds 109 anion Ba	8 mg/1 /2/18 mg/1 /2/14 mg/1 /2/14 /2 mg/1 /1 /8 mg/1 /12/75 Lance	

	CATIONS		DET.		ANIONS		DET.
ANALY	re meq.	PPM	LIMIT	ANALYT	E MEQ.	PPM	LIMIT
Ca Mg Na K	5.99 1.60 190.87 0.96	120.00 19.50 4388.00 37.40	<3.0 <0.3 <10.0 <0.3	HC03 SO4 CL	5.57 0.88 167.84	340.00 42.00 5950.0	<1.0 <10.0 <5.0
Mn Fe	0.00 0.00	0.00 0.00		NO3 C03 NH3 PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	< 0. < 1. < 0. < 0.
SUMS	199.41	4564.90	÷		174.29	6332.00	
	Dissolved alance =	Solids= 114.41%	10918		C No. = out/By	= 8704938 12/27 Cc	

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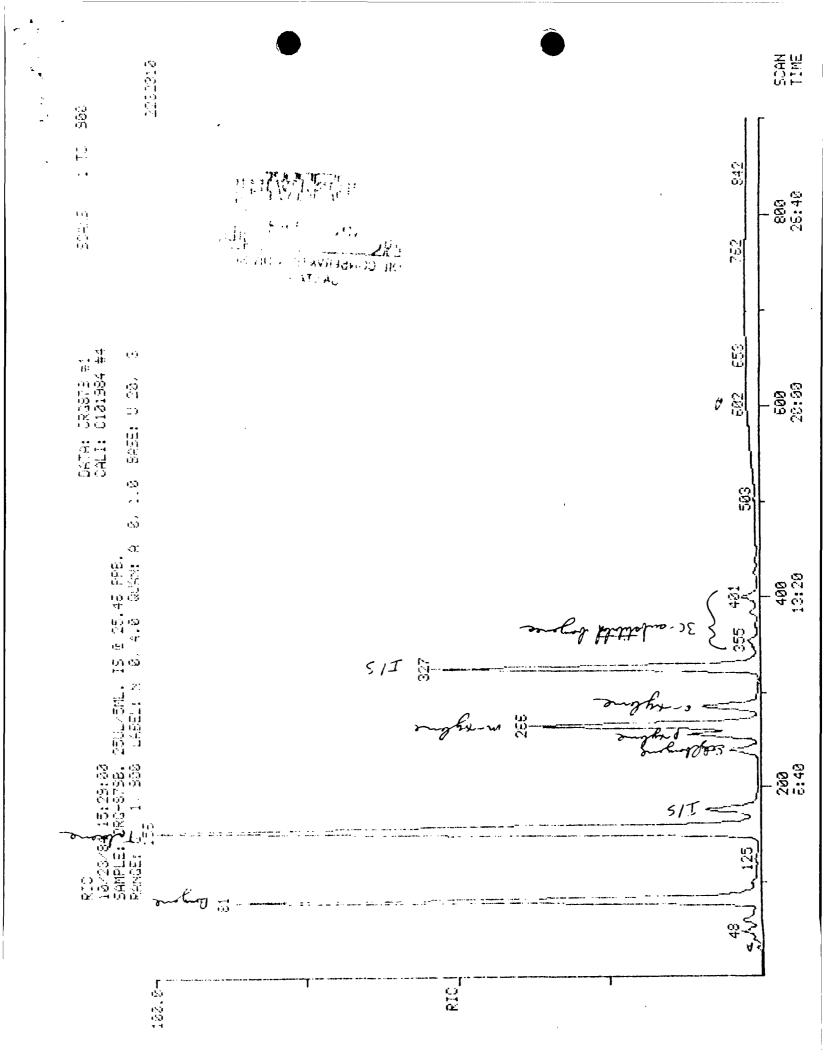
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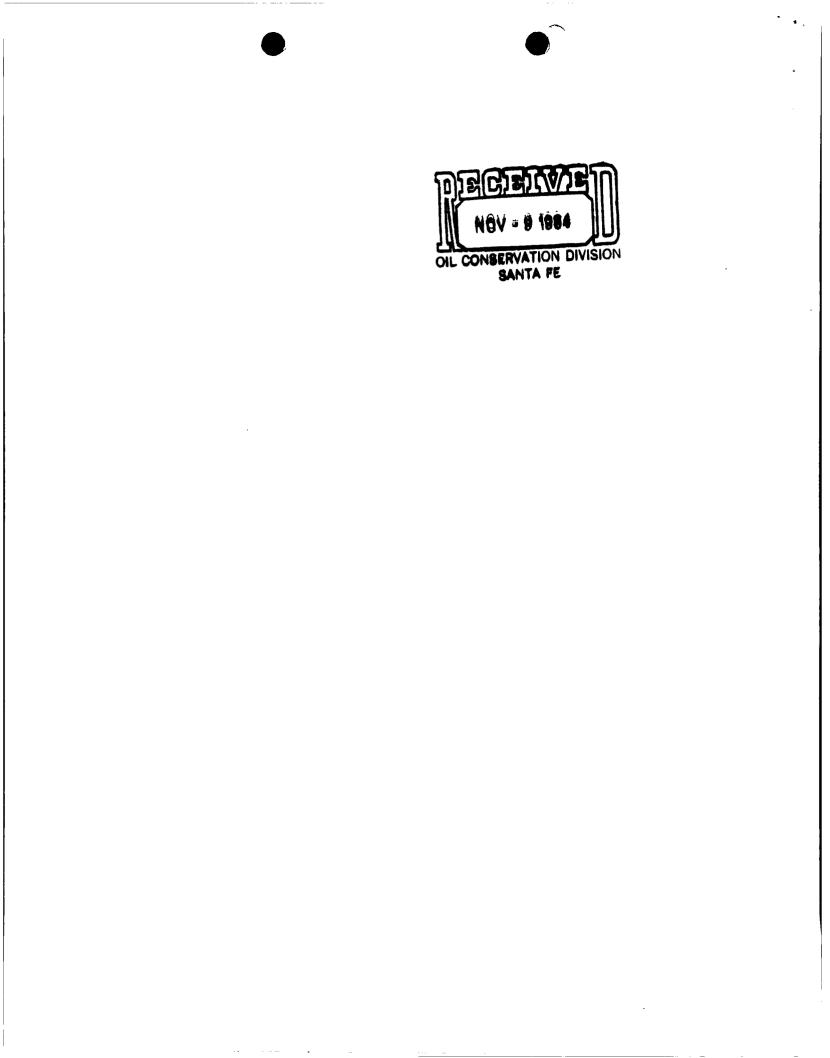
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LABOP ORY 1/11/84 REPORT TO: **ID G. BOYER** LAB NUMBER ON TARA, B. drogeologist P.O. BOX 2008 EXCOD 875M SLD Users Code No. 57680 CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE". CERTIFICATE OF FIELD PERSONNEL Sample Type: Water 💢 Soil 🔲 Other Water Supply and/or Code No. VaLDEZ A-I-E (Da Kota) Tenned City & County San Juan CT4 Sec 24 39N K Collected (date & time) 840986 1605 By (name) BO (KR Dissolved Oxygen= mg/1; Alkalinity= ; Flow Rate= Sampling Location, Methods & Remarks (i.e. odors etc.) Produced water from Dakota Collected From Separator prints pit. pH=___; Conductivity=____umho/cm at____°C; Chlorine Residual=___ I certify that the statements in this block accurately refrect the results of my field analyses, observations and activities. Signed **ACTION AND ACTIONS and activities and concur** with the statements in this block. Signed Method of Shipment to Laboratory Honk Corry THIS FORM ACCOMPANIES 2 septum vials with teflon-loned discs identified as: specimen____; duplicate____; triplicate____; blank(s)____ and____amber glass jug(s) with teflon-lined cap(s) identified as_____ and____other container(s) (describe)______identified as______ Containers are marked as follows to indicate preservation (circle): No preservation; sample stored at room temperature (~20°C). P-ICE P-Na20352: Sample stored in an ice bath. Sample preserved with 3 mg $Na_2O_3S_2/40$ ml and stored at room temperature. No No 0252 CERTIFICATE(S) OF SAMPLE RECEIPT I (we) certify that this sample was transferred from to ______at (location)_____ on (date & time) _____ and that the statements in this block are correct. Disposition of Sample______. Seal(s) Intact: Yes No 🔲 . Signature(s) -----I (we) certify that this sample was transferred from _____ to _____at (location)_____ 01 (date & time)_____ and that the statements in this block are correct. Disposition of Sample_____. Seal(s) Intact: Yes No 🔲 🔒 Signature(s) NOV = 8 199: OIL CONSERVATION DIVISION SANTA FE

ANALYSES REQU				B. N	•
PLEASE CHECK THE APPROPR WHENEVER POSSIELE LIST S	LATE BOXES BELOW TO IN PECIFIC COMPOUNDS SUST	NDIC. PECT	ATE ED (THE TYPE OF ANALYTICAL SCR DR REQUIRED.	
				04-8	/ 7
	EABLE	OUALTTATTVE	QUANTATIVE	EXTRACTAB	LES
SCRE	EN	IVNČ	NVN	SCREEN	
ALIPHATIC HYDROCAR			Ŭ	ALIPHATIC HYDROCARBONS	
AROMATIC HYDROCARB				CHLORINATED HYDROCAPBON P	and the second
HALOGENATED HYDROC				CHLOROPHENOXY ACID EERBIC	IDES
GAS CHROMATOGRAPH/	MASS SPECTROMETER			HYDROCARBON FUEL SCREEN	
	•			ORGANOPHOSPHATE PESTICIDE	
				POLYCHLORINATED BIPEENYLS POLYNUCLEAR AROMATIC HYDR	
			·	FOLINDCLEAR AROMALIC HIDR	UCARBONS
Prokun	K Wala Spec Ki	45			
	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	
SPECIFIC COMPOL	JNDS			SPECIFIC COMPCUNDS	
XX Bengene	Wine, ar	μ			
		₩		· · · · · · · · · · · · · · · · · · ·	
		╂┼──			<u></u>
REMARKS:		<u> </u>	<u> </u>		· ·
REPARKS:					
	·				
	YTICAL RE	-	11	TC	
					CONC-
COMPOUND	ENTRATION	ll c	10:	1POUND	ENTRATION
0		╫╴			
Banyane	21900 mg/l				
Toluene	47600 mg/l	<u> </u>			
Extrylbengene	960 mg/l				
	2400 11	Π			· · · · · · · · · · · · · · · · · · ·
p-igues					· · · · · · · · · · · · · · · · · · ·
m-rylene	9700 mg/l			······································	
o-ryplane	2000-11			•	
V	. 10:		*	DETECTION LIMIT	200ma /8
REMARKS: Some 3C-a	abstituted bangenes de	tector	7	Article Constants	1000
			- 1		
		· · ·			
Seal(s) Intact: Yes No I certify that I followed	. Seal(s) Broken by			TTICAL PERSONNEL date tres on handling and inalys:	is of this
sample unless otherwise n	oted and that the sta	teme	ents	in this block and the anal	lytical data
on this page accurately r Date(s) of analysis <u>10/2</u>					•
Icertify that I have roud	aved and concurr with	+h -		June - 10 - aug - 6 - 6 - 10	ample and
with the statements in the	is block. Reviewers	Sigt	natu	ire: & Meyerherr	-





<i>15</i>)	
	NUMBER W.C - 4686
Ground Nater & Hazardous Maste	e Bureau
Environmental ImprovementiDivi Health & Environment Departmer	nt
P.O. Box 968 - Crown Building Santa FC, NM 87504-0968-	DATE REPORTED 10/5/81
	SLD USER CODE NUMBER 59600
DAVID BOYCE NM CCD, MO	. BOY 2088 S.F. USER CODE NUMBER 59600
Well Location Address VALDEZ A	- 1- E (DAKOTA) Sec 24 RASPU, VA AW
Point of Collection	
Well Owner/User TENNECD	001121504
	GROUND WATER/HAZARDOUS WAS
Number of People Drinking Water from Well	BUREAU
Collected B4 0906 1605	By Koyek CCS
Well Depth	рН
Water Level	Conductivity
	(Uncorrected)umho/cm
Taste? Odor? Color? Collectors Remarks	TemperatureOC
Produced water grom	Conductivity at
Nakola.	25°Cumho/cm
PROJECT:	
From , A-H ₂ SO ₄ Sample:	From NF, NA Sample: Date
	Analyzed
Nitrate-N ⁺ mg/1	Calcium <u>24.0 mg/1 9/27</u>
Nitrite-N	Potassium 5.07 mg/1 9/25
Ammonia-N mg/1	Magnesium 7.3 mg/1 9/27
Chemicalmg/1	Sodium 426 mg/1 9/25
oxygen demand	Bicarbonate <u>59.1 mg/1 10/4</u>
]	Chloride <u>641.4</u> mg/1 <u>9/24</u>
	Sulfate Mg/1 9/18
	Total Solids <u>1238</u> mg/1 <u>9/28</u>
ICAP Scan	E 0.06 9/13
Metals by AA (Specify)	10, <u>0.0</u> <u>10/4</u>
This form accompaniessample(s) (MF) Whole sample (no filtration)	marked as follows to indicate field treatment:
F: Filtered in field with 0.45u	membrane filter
A-H ₂ SO4: Acidified with 2 ml conc H ₂ SO A-HNO3: Acidified with 5ml conc HNO3,	
NA: No acid added	Basin babota 25N/110 24 6
	1983 WIN: Obb/s ATB 3/14/8
	in area

Ground Water	V Hazardous Vas	sta Bureau	UUNDER AM- 1019
:: Environmenta	l Improvement Di ironment Departm	vision DATE	RECEIVED 4/11/14
P.O. Box 968	- rown Buildin		REPORTED 11 5784 MJ
Santa Ve, N	87504-0968	SLD I	USER CODE NUMBER 59600
UNVIL DOYCK N	M CCB, NI	507 2008 5.5	USER CODE NUMBER
Well Location Address	VALDEZ	A-1-E (BAKOTA	J Sec 79, 291, R/
Point of	Collection Se	oaraton	
Well Owner/User		•	
Number of People Drinkin		1	
		5	· ~ ^
Collected 94 0704 Date	Time	ByName	Agency
Well Depth		рН	•••.
later Level		Conductivity (Uncorrected)	umho/cm
Taste? Odor? Color? Colle	atone Bomanke	Temperature	0 _C
Produced un	12 Krom	Conductivity at 25°C	umho/cm
- Da Kola			
PROJECT:			
			Data
<u> </u>	e:	From, NA Sample	e: Date Analyzed
rom, A-H ₂ SO ₄ Samp1			Analyzed
rom, A-H ₂ SO4 Samp1	e: g/1	Calcium	<u>Analyzed</u> mg/l
rom, A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N			<u>Analyzed</u> mg/l mg/l
rom, A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N Ammonia-N Chemical	g/1	Calcium Potassium	<u>Analyzed</u> mg/1 mg/1 mg/1
rom, A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N Ammonia-N	mg/1	Calcium Potassium Magnesium Sodium Bicarbonate	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1
From, A-H ₂ SO ₄ Samp1] Nitrate-N ⁺ m Nitrite-N] Ammonia-N] Chemical	mg/1	Calcium Potassium Magnesium Sodium Bicarbonate Chloride	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1
From, A-H ₂ SO ₄ Samp1] Nitrate-N ⁺ m Nitrite-N] Ammonia-N] Chemical demand	ng/1 mg/1 mg/1	Calcium Potassium Magnesium Sodium Bicarbonate Chloride Sulfate	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1 mg/1
From, A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N Ammonia-N Chemical oxygen demand From <u>MF</u> , A-HNO ₃ Samp	ng/1 mg/1 mg/1	Calcium Potassium Magnesium Sodium Bicarbonate Chloride Sulfate Total Solids	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1
rom, A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N Ammonia-N Chemical oxygen demand From <u>MF</u> , A-HNO3 Samp [*] ICAP Scan	ng/1 mg/1 mg/1	Calcium Potassium Magnesium Sodium Bicarbonate Chloride Sulfate Total Solids	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1 mg/1
From, A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N Ammonia-N Chemical oxygen demand From MF, A-HNO3 Samp ICAP Scan Metals by AA (Specify)	ng/1 mg/1 mg/1 le:	Calcium Potassium Magnesium Sodium Bicarbonate Chloride Sulfate Total Solids	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1
Nitrite-N Ammonia-N Chemical oxygen demand From <u>MF</u> , A-HNO3 Samp ICAP Scan Metals by AA (Specify) AS SE his form accompanies	ng/1 mg/1 ng/1 le: sample(s)	Calcium Potassium Magnesium Sodium Bicarbonate Chloride Sulfate Total Solids marked as follows to_in	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1 mg/1
From, A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N Ammonia-N Chemical oxygen demand Chemical oxygen demand From MF, A-HNO ₃ Samp ICAP Scan Metals by AA (Specify) AS his form accompanies Whole samp	<pre>/] mg/] mg/] le: le: sample(s) e (no filtration</pre>	Calcium Potassium Magnesium Sodium Bicarbonate Chloride Sulfate Total Solids marked as follows to in	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1 mg/1
From <u>MF</u> , A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N Ammonia-N Chemical oxygen demand Chemical oxygen demand From <u>MF</u> , A-HNO3 Samp ICAP Scan Metals by AA (Specify) <u>As</u> NF Whole samp1 F: Filtered in AH ₂ SO ₄ : Acidified w	ng/l mg/l ng/l le: le: le: le (no filtration of field with 0.45 with 2 ml conc H2	Calcium Potassium Magnesium Sodium Bicarbonate Chloride Sulfate Total Solids marked as follows to in umembrane filter	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1 dicate field treatment:
From <u>MF</u> , A-H ₂ SO ₄ Samp1 Nitrate-N ⁺ m Nitrite-N Ammonia-N Chemical oxygen demand Chemical oxygen demand From <u>MF</u> , A-HNO3 Samp ICAP Scan Metals by AA (Specify) <u>As</u> NF Whole samp1 F: Filtered in AH ₂ SO ₄ : Acidified w	ng/l mg/l ng/l le: le: le: le: le: le: le: le: le: le:	Calcium Potassium Magnesium Sodium Bicarbonate Chloride Sulfate Total Solids Total Solids marked as follows to in u membrane filter SO4/1 3/1	<u>Analyzed</u> mg/1 mg/1 mg/1 mg/1 mg/1 mg/1

1CAP SCREEN

Lab Number: HM 1079 184 9/1 Date Submitted:_ BOUER By:

Sample Code:	ENNECO
Date Reported 1	15784
By: mJ	
· · · · · · · · · · · · · · · · · · ·	

Determination

Aluminum

Barium

Beryllium

Boron

Cadmium

Calcium Chromium

Cobalt

Copper

Iron

Lead.

Magnesium

Manganese

Nolybdenum

Nickel

Silicon

Silver

Strontium

Tin

Vanadium

Yttrium

Zine

 < 0.1
 < 0, 1
<0./

Concentration (Ug/ml)

	0,20	
		<0,i
	25.	
•		<0.1
		<0.1
		<0.1
		<0,1
	3.7	
	0.55	
		<0.1
		<0,(
	3.1	
		<0.1

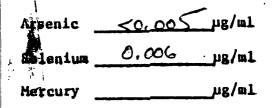
1.2 <0.1 <u><0.1</u> <<u>0.</u>1 <u><0.</u>1

	Arsenic	<0,005	_µg/ш1
ķ	a lenium	0,006	_µg/m1
÷	Mercury		_µg/ml

. *'*

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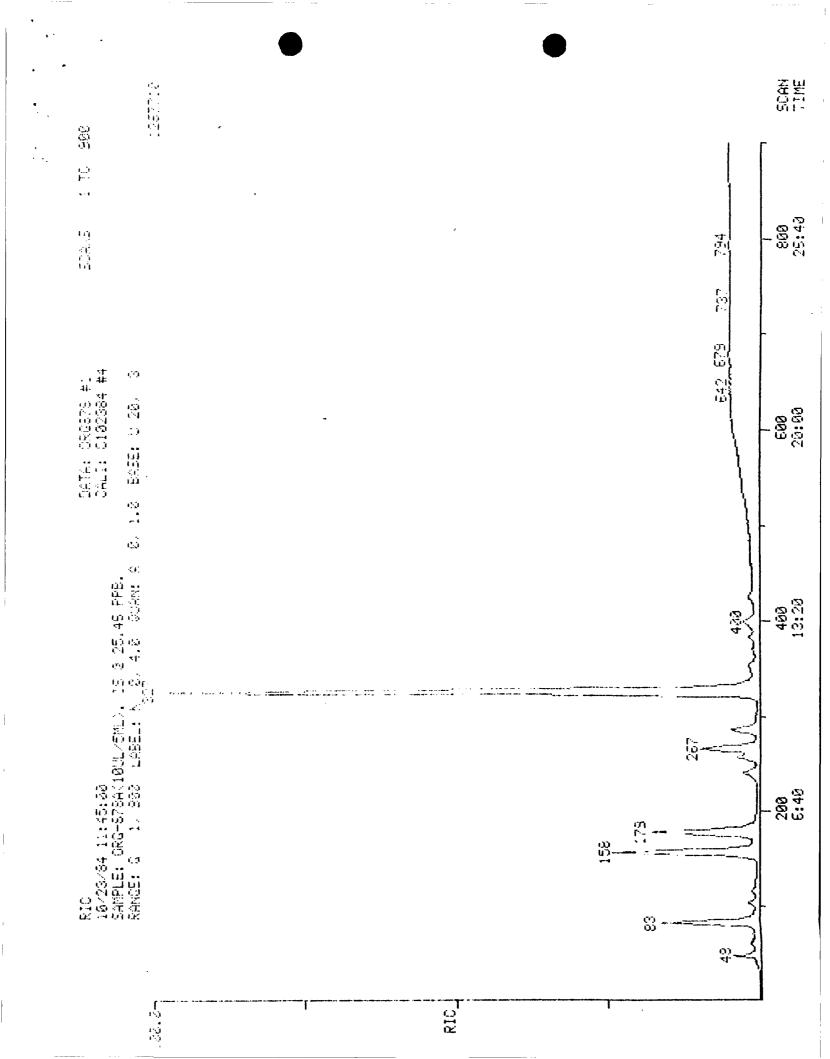
.

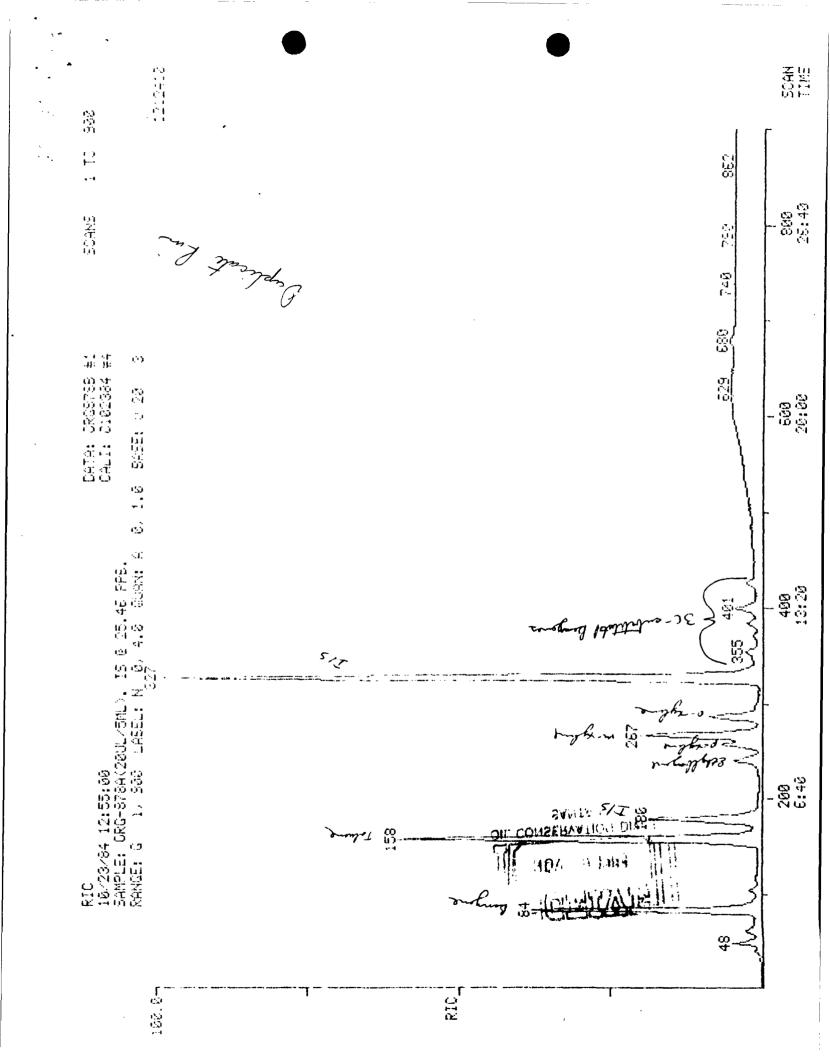
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LABOSTORY 7/ ID G. BOYER NR 878 A.B. lydrogeologiet LAB NUMBER PO. BOX 2085 ND OFFICE BUILDING NFE, NEW MEXICO 875/1 505-827-6812 CONSERVATION SLD Users Code No. 57680 CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE". CERTIFICATE OF FIELD PERSONNEL Sample Type: Water 🕱 Soil Other Water Supply and/or Code No. Valdez A-1-6 Tennec d City & County Son Juan CTY Sec 28729N, RILL Collected (date & time) 84 09 08 1615 By (name) Royer och pH=___; Conductivity=____umho/cm at____°C; Chlorine Residual=___ Dissolved Oxygen=____mg/l; Alkalinity=____; Flow Rate=____; Flow Rate=____; Dissolved Oxygen= mg/l; Alkalinity= Sampling Location, Methods & Remarks (i.e. odors etc.) Sampling Location, Methods & Remarks (i.e. odors etc.) Pholoce wales from Chacks Taken from Sector prints for (Duel Completion Well) I certify that the statements in this block occur tely reflect the results of my field analyses, observations and activities. Signed I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed with the statements in this block. Signed Method of Shipment to Laboratory Convey THIS FORM ACCOMPANIES septum vials with tetion-lived discs identified as: specimen ____; duplicate ____; triplicate ____; blank(s)_____ and ____amber glass jug(s) with teflon-lined cap(s) identified as _____ and other container(s) (describe) identified as Containers are marked as follows to indicate preservation (circle): No preservation; sample stored at room temperature (~20°C). NP: Sample stored in an ice bath. Sample preserved with 3 mg $Na_2O_3S_2/40$ ml and stored at room temperature. O No.O. CERTIFICATE(S) OF SAMPLE RECEIPT I (we) certify that this sample was transferred from _____ to _____ at (location)_____ on (date & time) _____ and that the statements in this block are correct. Disposition of Sample______. Seal(s) Intact: Yes No 🔲 . Signature(s) I (we) certify that this sample was transferred from _____ to _____at (location)_____ on (date & time) _____ and that the statements in this block are correct. Disposition of Sample_____. Seal(s) Intact: Yes No 🗖 🔒 nije Araro Sicnature(s) NÖV = 8 1984 OIL CONSERVATION DIVISION SANTA FE

ANALYSES REQUES				B. NO	
PLEASE CHECK THE APPROPRIATE WHENEVER POSSIELE LIST SPECIF					
ANTIVITAL PURGER	ABLE	QUALITATIVE	QUANTAT'IVE	EXTRACTABI	LES
SCREEN	J	IVN	NNN	SCREEN	
ALIPHATIC HYDROCARBON S				ALIPHATIC HYDROCAFBONS	
AROMATIC HYDROCARBON SC				CHLORINATED HYDROCAFSON P	
HALOGENATED HYDROCARBON				CHLOROPHENOXY ACID EERBIC	IDES
GAS CHROMATOGRAPH/MASS	SPECIROMETER			HYDROCARBON FUEL SCREEN ORGANOPHOSPHATE PESTICIDE	<u> </u>
				POLYCHLORINATED BIPEENYLS	·
Sat halow F	on Produce	0		POLYNUCLEAR AROMATIC HYDR	
Liter Speci	Cit s				
•					
SPECIFIC COMPOUNDS				SPECIFIC COMPCUNDS	
MA Renjene, Tol	une, el				
		μ	<u> </u>		
		╂┨──	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
REMARKS:		11	<u> </u>		
					
ANALYT	TCAL RE	-51		TS	
	CONC-	Π^{-}	•		-CONC-
COMPOUND	ENTRATION	C	<u>10:</u>	MPOUND	ENTRATION
Benne	5400mg/l				
		11-			
- Istuane	7400-12				
Ethylbengene	490 mg/l	₽	_		
p-ryline	650 mg/l	11			
m- raylance	2400,0/1				•
0 - aulung	.990 12			·	
	10012		*	DETECTION LIMIT	1260 10
RETARKS: gome 3C-aulstitut	H have bet it	4			
ALLER SC STORE	No price deries				
Seal(s) Intact: Tes No . S	Seal(s) Broken by	,	-	XTICAL PERSONNEL	·
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/84 Analysts signature					
Icertify that I have reviewed	and concur with	the	ana	lytical results of this sa	ample and
with the statements in this bl	lock. Reviewers	Sig	nati	ire: & meyerhen	•







	VID G. BOYER hydrogeologist 0UI 1 2 1984 PO BOX 2005 DATE RI	ECEIVED 4087 ECEIVED 4454
CONSERVATION SANTA I	GROUND WA'I ER/HAZARDOUS WASTE SLD USI BUREAU	
Well Location Address VAL		Sec 24 JON, RUL
Well Owner/User Jenneco		
Number of People Drinking Wager fr	om Well	
Collected 8409061615 Date	By Name	Agency
Well Depth	рН	
Water Level	Conductivity (Uncorrected)	umho/cm
Taste? Odor? Color? Collectors Rem	arks Temperature	OC
- Produce wales for CHacka	Conductivity at 25°C	umho/cm
PROJECT:	······	
From, A-H ₂ SO ₄ Sample:	From NP , NA Sample:	Date Analyzed
]Nitrate-N ⁺ mg/1 Nitrite-N	Calcium 196.0 Potassium 83.9	_mg/1 <u>9/27</u> mg/1 <u>9/25</u>
Ammonia-Nmg/1	Magnesium <u>50.3</u>	• · ·/
Chemicalmg/1	Sodium 890/	_mg/1 <u>9/25</u>
oxygen demand	Bicarbonate <u>766,4</u>	· · · · · · · · · · · · · · · · · · ·
_J	Chloride	_mg/1 <u>9/24</u>
	Sulfate <u>NoNE DETECTE</u>	
From, A-HNO3 Sample:	Total Solids 246/3	
] ICAP Scan] Metals by AA (Specify)	<u>F</u> 0,7	
	E C3 0.0	10/4
NF. Whole sample (no fil	th 0.45u membrane filter	cate field treatment: A. Valden A-1E as, 29N11W 24G ; 1583 WT-7066/S

ne:		DAVID G. B Hydrogeok P.O. BOX 22 LAND OFFICE B	Dgist D68	LAD NUMBER De Receiv Date Report	- Files
-	CONSERVATION DIVISION			SLD USER CO	DE NUMBER S9101
Well Locatio		-	A-1-E (C.	HackA) se	~ 27, 29N, 114
		ollection S	Daka 787	<u></u>	
	ser 1097	Water from Wel	۹		
	<u>840906</u>	·	By	Royes	
Vell Depth _			рН		
Water Level	<u> </u>			tivity rected)	umho/cm
Taste? Odor?	Color? Collec	tors Remarks	Temper	ature	0 _C
Pad	Que l'	ly from		tivity at	
CHe	rcka		25°C		umho/cm
PROJECT:			•		
	A-H ₂ SO4 Sample	: .	From,	NA Sample:	Date Analyzed
]Nitrate-N ⁺	mg	ו/	🗌 Calcium	mg/	1
Nitrite-N			🔲 Potassium _	mg/	1
Ammonia-N		g/1			1
Chemical oxygen dem	m	g/1			1
oxygen den					1
]
					1
	A-HNO3 Sample	e: ·	🔲 Total Solid	dsmg/	1
ICAP Scan					•
	A (Specify)				
Metals by A	SE _				

SAMIRES

1CAP SCREEN

Lab Number: HAI 1078 84 9 Date Submitted: ĸ By:

Sample Code: TENN ECO
Date Reported: 11/5784
By: mJ

Determination

Aluminum

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Molybdenum

Nickel

Silicon

Silver Strontium

Tin

Vanadium

Yttrium

Zinc

Concentration (µg/ml)

10
<u>∠0.</u>
/0.
<u> </u>
< 0.1
180.
<u> </u>
< 0.1
/6.
48
<u> </u>
< 0,1
7.5
<0.1
22.
<0,1
< 0, 1
< 0,1
0.23

Arsenic _	0,13	µg/m1
Selenium _	0.038	µg/m1
Mercury _		µg/m1

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Arsenic _	0.13	µg/m1
Selenium _	0.038	µg/m1
Mercury _		µg/ml

	Albuquerque, NM 8710	16 841-2570 87-1557-C 101 754 upu
REPORT TO:	David Boyer	S.L.D. No. OR- 1557 A4B
REFORT TO.	N.M. Oil Conservation Division	DATE REC. 9-15-87
	P. O. Box 2088	
	Santa Fe, N.M. 87504-2088	PRIORITY by 10/1/27
PHONE(S):	327-5812	USER CODE: 13 2 2 3 5
SUBMITTER:	David Boyer	CODE: 12 6 0
SAMPLE COLLE	CTION CODE: (YYMMDDHHMMIII)	291171345
	WATER , SOIL , FOOD , OTHER:	
	TUAL ; CITY: BEDONIFIE	
		+ 1 1 1 1 1 1 1 2 1 4 + 1 1 (10N06E24342)
	<u>UESTED:</u> Please check the appropriate box(es) be er possible list specific compounds suspected or re	
-	PURGEABLE SCREENS	EXTRACTABLE SCREENS
	tic Purgeables (1-3 Carbons)	(751) Aliphatic Hydrocarbons
	tic & Halogenated Purgeables Spectrometer Purgeables	(760) Organochlorine Pesticides (755) Base/Neutral Extractables
(766) Trihalo		(758) Herbicides, Chlorophenoxy scid
	Specific Compounds or Classes	(759) Herbicides, Triasines
		(760) Organochlorine Pesticides
		(761) Organophosphate Pesticides
		(767) Polychlorinated Biphenyls (PCB's) (764) Polynuciear Aromatic Hydrocarbons
		(762) SDWA Pesticides & Herbicides
Remarks:		
FIELD DATA:		
pH=; Co	nductivity= <u>3650</u> umho/cm at <u>17.5</u> °C; Chlor	rine Residual=mg/l
	=mg/l; Alkalinity=mg/l; Flow Rat	
	12.5 ft.; Depth of wellft.; Perforation	
Sampling Location	n, Methods and Remarks (i.e. odors, etc.)	<i>.</i>
TELNE	CU VALDEZ AIR - AU	when Hours #
I certify that the	e results in this block scurately reflect the resul	ts of my field analyses, observations and ,
activities.(signatur	e collector): K, Clanderson	Method of Shipment to the Lab: HAND
	panies Septum Vials, Glass Jugs, a	nd/or
	aserved as follows: No Preservation; Sample stored at room tempera	A
	Sample stored in an ice bath (Not Frozen).	itura.
f P-Na,S,O,	Sample Preserved with Sodium Thiosulfate to res	move chlorine residual.
CELAIN OF CUS	is sample was transferred from <u>R.C. AUDEL</u>	I. I GA
	TATE HAB-ALB	
	this block are correct. Evidentiary Seals: Not Se	saled Seals intact: Yes [V] No []
Signatures	6 ender	
For OCD Us	se: Date Owner Notified	Phone or Letter? Initials

THIS PAG	E FOR LABO	RATORY RESETS ONLY	·				
This sample was tested using the alytical scree	ning method(s)	checked below:	4				
PURGEABLE SCREENS (753) Aliphatic Purgeables (1-3 Carbons) (754) Aromatic & Halogenated Purgeables (765) Mass Spectrometer Purgeables (766) Trihalomethanes Other Specific Compounds or Classes		EXTRACTABLE SCREENS					
COMPOUND(S) DETECTED	CONC.	COMPOUND(S) DETECTED	CONC.				
no no	[PPB]	[]	[PPB]				
aromation susqualles	N.D.						
Malogenatera pusquaklis	Alipa						
	-						
· · · · · · · · · · · · · · · · · · ·							
	+						
							
	 						
• DETECTION LIMIT • *	11/1	+ DETECTION LIMIT +					
T R = DETECTED AT A LEVEL BELOW	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						
CERTIFICA	TE OF ANALS	TICAL PERSONNEL					
Seal(s) Intact: Yes No . Seal(s) broken by I certify that I followed standard laboratory procedu that the statements on this page accurately reflect t	ires on handhing the analytical r	g and analysis of this sample unless otherwise noted esults for this sample.	and				
•		Young 1 Allen					
I certify that I have reviewed and concur with the Reviewers signature: <u>Meyerhem</u>	analytical resul	Its Hor this sample and with the statements in this	block.				
<i>q</i>							

LAD. NO .: UR- 1557

700 Camino de S	BORATORY DIVISION alud NE # 87106 — (505) 841-2555	459 G	ENERAL V and NITR	NATER C OGEN A	HEMISTRY NALYSIS
RECEIVED A MARTIN	5930	o 🗆 59600 🕅	OTHER: 82	235	
Collection DATE		ENNECO VALO	52 1	AIE_	•
Collection TIME	ATION Collection site description	· Auger	2 How	c #1	
Collected by - Person/Agency	/0CD	<u> </u>			· <u>····································</u>
FINAL State Land	SERVATION DIVISION Office Bldg, PO Box 208 NM 87504-2088 /er	8 	Station/ well code		
SAMPLING CONDITIONS			Owner		· · · · · · · · · · · · · · · · · · ·
Bailed Dump	Water level 12, 8	Discharge		Sample typ	
pH (00400) 7	Conductivity (Uncorrected) -3657 µmho	Water Temp. (00010)	17.5 °C		ly at 25°C (00094) μmh
Field comments	3030		·// 5 - C	L	<u>P</u>
No. of samples submitted 1 INF NA: No acid added I O ANALYTICAL RESULTS from NA Conductivity (Corrected) 25°C (00095)	(Non-filtered) /) 0.45 µme Other-specify: □A:	mbrane filter A: 2 5ml conc. HNO ₃ ad		A: 4m1 f	Date Analyzed
Total non-filterable residue (suspended) (00530)	mg/i	Potassium_			10/30
□ Other:		_ 🔼 Magnesium _ - 🕅 Sodium			10/8
Other:		- N Bicarbonate			10/23
A-H ₂ SO4		Chloride	75.6	· · ·	10/22
Nitrate-N +, Nitrate-N total (00630)		Sulfate		2.5 mg/1	1.3
Ammonia-N total (00610)	mg/l mg/l	- K Total Solid			10/27
Total Kjeldahl-N ()	mg/l	Â.		• •	,
Chemical oxygen demand (00340)	•				
Cernano (00340) Constant (00340) Total organic carbon () Constant ()	mg/l	- Cation/A	nion Ba	Lance	
Other: Other:		Analyst	Date R	borted	Reviewed by
	$\overline{}$			U 77	it ,
Laboratory remarks	rom R. aluters "	To Chin	than		m9/18/87
Seal					
	anatact				

	CATIONS				ANIONS		
			DET.				DET.
ANALY	TE MEQ.	PPM	LIMIT	ANALY	re meq.	PPM	LIMIT
Ca Mg	21.96 5.01	440.00 61.00	<3.0 <0.3	HC03 SO4	7.74 52.60	472.00 2525.00	<1.0 <10.0
Na	34.23	787.00	<10.0	CL	2.13	75.60	<5.0
K	0.13	5.07	<0.3				
Mn	0.00	0.00	İ	NO3	0.00	0.00	< 0.
Fe	0.00	0.00	İ	C03	0.00	0.00	< 1.
			1	NH3	0.00	0.00	< 0.
			1	PO4	0.00	0.00	< 0.
SUMS	61.33	1293.07			62.47	3072.60	
Total	Dissolved	Solids=	4098			,	
Ion Ba	alance =	98.17%			WC No.	= 87042 0 9	
				Date	out/By _	Q 11/5/87	_

Mon Nov 2 11:06:49 1987

XX	XXXX		XX XX			
Х	Х	Х	Х	Х		
	Х	Х	Х	Х		
	Х	Х	Х	Х		
Х	Х	Х	Х	Х		
XX	xxxx		Х	Х		

	Albuquerque, NM 87106 841-25 87-1555-C VIRONMENT 754
REPORT TO:	David Boyer
	N.M. Oil Conservation Division DATE REC. 9-18-37
•	P. O. Box 2088 must be purged
	Santa Fe, N.M. 87504-2088 PRIORITY by 10/1/87
PHONE(S):	327-5812 USER CODE: 3 2 3 5
SUBMITTER:	David Boyer CODE: 12 6 0
SAMPLE COLLE	ECTION CODE: (YYMMDDHHMMIII) 871091171440
	WATER , SOIL , FOOD , OTHER: CODE:
	NJUAN; CITY: BLOOMFIELD CODE:
LOCATION COD	DE: (Township-Range-Section-Tracts) $ 2 2 2 $
required. Whenev (753) Alipha (753) Aroma (754) Aroma (765) Mass (766) Trihald Other Remarks: PIELD DATA:	QUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens PURGEABLE SCREENS Stic Purgeables (1-3 Carbons) atic & Halogenated Purgeables Spectrometer Purgeables (760) Organochlorine Pesticides specific Compounds or Classes (760) Organochlorine Pesticides (753) Herbicides, Chlorophenoxy acid r Specific Compounds or Classes (760) Organochlorine Pesticides (760) Organochlorine Pesticides (759) Herbicides, Triasines (761) Organophosphate Pesticides (762) SDWA Pesticides & Herbicides
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	onductivity= $\frac{2206}{\text{umho}/\text{cm}}$ at $\frac{1855}{\text{C}}$; Chlorine Residual=mg/l
Dissolved Oxygen	n=mg/l; Alkalinity=mg/l; Flow Rate/
Dissolved Oxygen Depth to water	n=mg/l; Alkalinity=mg/l; Flow Rate/ <u>10, 13</u> ft.; Depth of weilft.; Perforation Intervalft.; Casing:
Dissolved Oxygen Depth to water Sampling Locatio	m=mg/l; Alkalinity=mg/l; Flow Rate/ <u>10, 13</u> ft.; Depth of wellft.; Perforation Intervalft.; Casing: on, Methods and Remarks (i.e. odors, etc.)
Dissolved Oxygen Depth to water Sampling Locatio	mg/l; Alkalinity=mg/l; Flow Rate/ <u>10, /}</u> ft.; Depth of wellft.; Perforation Intervalft.; Casing: on, Methods and Remarks (i.e. odors, etc.)
Dissolved Oxygen Depth to water Sampling Locatio <u>TENNEC</u> I certify that th activities.(signatur This form accom Samples were pro NP: NP: P-Ice	a=mg/l; Alkalinity=mg/l; Flow Rate/ <u>/0,/X</u> ft.; Depth of weilft.; Perforation Intervalft.; Casing: on, Methods and Remarks (i.e. odors, etc.) D <u>ALDEZ AIE</u> <u>AUGER; HOLE</u> <u>Z</u> are results in this block accurately reflect the results of my field analyses, observations and j re collector): <u>K</u> <u>Manual Manual</u> Method of Shipment to the Lab: <u>MAND</u> apanies <u>2</u> Septum Vials, <u>Glass Jugs. and/or</u> reserved as follows: No Preservation; Sample stored at room temperature. Sample stored in an ice bath (Not Frozen).
Dissolved Oxygen Depth to water Sampling Locatio <u>TENNEC</u> I certify that th activities.(signatur This form accom Samples were pro NP: NP: P-Ice P-Na_SO CILAIN OP CUS	mg/l; Alkalinity=mg/l; Flow Rate <u>10,15</u> ft.; Depth of wellft.; Perforation Intervalft.; Casing: on, Methods and Remarks (i.e. odors, etc.) <u>0</u> <u>ALDEZAIE</u> <u>AUGER</u> ; <u>HOLE</u> <u>±</u> <u>10</u> the results in this block accurately reflect the results of my field analyses, observations and j re collector): <u>Mumeran</u> Method of Shipment to the Lab; <u>AUGER</u> panies <u>2</u> Septum Vials, <u>Glass Jugs, and/or</u> reserved as follows: No Preservation; Sample stored at room temperature. Sample Stored in an ice bath (Not Frozen). Sample Preserved with Sodium Thiosulfate to remove chlorine residual. STOD Y
Dissolved Oxygen Depth to water Sampling Locatio <u>TENNEC</u> I certify that th activities.(signatur This form accom Samples were pro NP: NP: P-Ice P-Na_SO CILAIN OP CUS	mg/l; Alkalinity=mg/l; Flow Rate <u>10,15</u> ft.; Depth of wellft.; Perforation Intervalft.; Casing: on, Methods and Remarks (i.e. odors, etc.) <u>0</u> <u>ALDEZAIE</u> <u>AUGER</u> ; <u>HOLE</u> <u>±</u> <u>10</u> the results in this block accurately reflect the results of my field analyses, observations and j re collector): <u>Mumeran</u> Method of Shipment to the Lab; <u>AUGER</u> panies <u>2</u> Septum Vials, <u>Glass Jugs, and/or</u> reserved as follows: No Preservation; Sample stored at room temperature. Sample Stored in an ice bath (Not Frozen). Sample Preserved with Sodium Thiosulfate to remove chlorine residual. STOD Y
Dissolved Oxygen Depth to water Sampling Locatio <u>TENNEC</u> I certify that th activities.(signatur This form accom Samples were pro NP: NP: P-Ice P-Na_SO CILAIN OP CUS	mg/l; Alkalinity=mg/l; Flow Rate <u>10,18</u> ft.; Depth of wellft.; Perforation Intervalft.; Casing: on, Methods and Remarks (i.e. odors, etc.) <u>10,18</u> ft.; Depth of wellft.; Perforation Intervalft.; Casing: on, Methods and Remarks (i.e. odors, etc.) <u>10,18</u> ft.; Depth of wellft.; Perforation Intervalft.; Casing: <u>10,18</u> ft.; Casing:ft.; Casing: <u>10,18</u> ft.; Depth of wellft.; Perforation Intervalft.; Casing: <u>10,18</u> ft.; Casing:ft.;
Dissolved Oxygen Depth to water Sampling Locatio <u>TENNEC</u> I certify that th activities.(signatur This form accom Samples were pro NP: P-Ice P-Na S O CILAIN OP CUS I certify that th at (location) the statements in	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
Dissolved Oxygen Depth to water Sampling Locatio <u>TENDEC</u> I certify that th activities.(signatur This form accom Samples were pro NP: NP: P-Ice P-Ice P-Ice CILAIN OF CUS I certify that th at (location)	$ \begin{array}{c} \label{eq:mg/l} \mbox{is} \m$

		LAB. No.: OR- 1555	· ·
THIS PAG	E FOR LAB	ORATORY RESIDES ONLY	
This sample was tested using the analytical scree	ening method(s) checked below:	
PURGEABLE SCREENS (753) Aliphatic Purgeables (1-3 Carbons) (754) Aromatic & Halogenated Purgeables (755) Mass Spectrometer Purgeables (766) Trihalomethanes Other Specific Compounds or Classes		EXTRACTABLE SCREENS (751) Aliphatic Hydrocarbons (760) Organochlorine Pesticides (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (761) Organophosphate Pesticides (762) SDWA Pesticides & Herbicides	
		AL RESULTS	
COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND (S) DETECTED	CONC.
aromatic surgeakles *			
Saletune 17 +	T.R.		
halogenated surgentlin *	11.12.		
- Margenaria In grania *			11
· · · · ·			
	+		
	+	l	·
			<u> </u>
• DETECTION LIMIT • *	1.49/2	+ DETECTION LIMIT +	100 49/L
	THE STATE	ED DETECTION LIMIT ED DETECTION LIMIT (NOT CONFIRMED) D/OR WITH APPROXIMATE QUANTITATION	
LABORATORY REMARKS:	•		
· · · · · · · · · · · · · · · · · · ·			•
			•
Seal(s) Intact: Yes No . Seal(s) broken b I certify that I followed standard laboratory procedu that the statements on this page accurately reflect	y: <u>Jary</u> ares on handlis the analytical	ng and analysis of this sample unless otherwise not results for this sample.	ed and
Date(s) of analysis: 9/23/8-)			
I certify that I have reviewed and concur with the Reviewers signature: K Meyerhein			is block.
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	SCIENTIFIC 700 Camino	LABORATORY DIVISION		WPN	SENERAL V and NITR	WATER CH	EMISTRY ALYSIS
	1818	Kawcyzn	USER CODE 🗌 5930	o <u> </u>	OTHER: 82	235	
Collection DATE 87 09 17		SITE	Sample location		DEZ.	AIE	
Collection TIME]	ATION	Collection site description		.1 #	^	
Collected by - Person/A	NOGRSON	ل /0CD	• <u> </u>	AUGOR /	tors	<u> </u>	
SEND FINAL REPORT TO ► - Attn:	NM OIL C State La	•	, PO Box 208	8	Station/ well code		
SAMPLING CO					Owner		
Bailed Dipped	Pump Tap	Water level		Discharge		Sample type	
pH (00400)		Conductivity (Unco		Water Temp. (00010)	\$.5 °C		2_> at 25°C (00094) μmho
Field comments							
r	TREATME	ENT Check prope	······				
No. of samples submitted	1 0	NF: Whole sample (Non-filtered)	F: Filtered in 0.45 μme	mbrane filter	2 ml H ₂ SO ₄ /	L added	
X NA: No aci	d added	Other-specify:		5ml conc. HNO3 a	dded 🗖	A: 4ml fu	ming HNO ₃ added
	ESULTS fr	تقصي ومحرجة الكمتحصونين المعتمدي	Units Date analyzed				·
Conductivity (C 25°C (00095)	Corrected)		umho	From <u>F</u> ,	NA Sample	:	Date Analyzed
 Total non-filtera residue (susper (00530) Other: Other: Other: Other: 			mg/l	Calcium V Potassium Magnesium Sodium	1.5 32 3 80	mg/1	10/30 10/3 10/30 10/3
				Bicarbonat			10/23
A-H ₂ SO ₄	trate-N			- Chloride _	6.13		10/22
total (00630)			mg/i	Sulfate		mg/1	10/22
 Ammonia-N tot Total Kjeldahl-N 	· · —		mg/l	Total Soli		<u>mg/1</u>	1417-
() Chemical oxyge	en —	<u></u>	mg/l	- `			·
demand (00340	D)		mg/l	- ∶└┛		<u> </u>	
()			mg/l	- Cation/A	nion Ba	lance _	-
Other: Other: Other:				Analyst	Date R	Ported R	eviewed by
Laboratory remarks	P	Q las	RNI	en 15	hin) con	- 9/x/2-
	Beals	intert	, cane +	<u> </u>			
FOR OCD USE	Date	Owner Notifie	d	Phone or Lett	er?	Ini	tals

	CATIONS				ANIONS		
			DET.				DET.
ANALY	TE MEQ.	PPM	LIMIT	ANALYI	E MEQ.	PPM	LIMIT
Ca	17.96	360.00	<3.0	HC03	5.67	346.00	<1.0
Mg	2.63	32.00	<0.3	SO4	30.10	1445.00	<10.0
Na	16.53	380.00	<10.0	\mathtt{CL}	0.17	6.15	<5.0
K	1.48	57.80	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
			1	NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	38.60	829.80			35.95	1797.15	
Total	Dissolved	Solids=	2556				
Ion Ba	alance =	107.38%			VC No.	= 8704272	
				Date	out/By _	00 11/4/87	-

	Albuquerque, NM 871	
EPORT TO:	David Boyer	S.L.D. No. OR- 1553 A4B
	N.M. Oil Conservation Division	DATE REC. <u>9-18-87</u>
	P. 0. Box 2088	must be suged
	Santa Fe, N.M. 87504-2088	PRIORITY lug 10/1/87
HONE(S):	327-5812	USER CODE: 13 2 2 3 5
UBMITTER:	David Boyer	CODE: 12 6 0
AMPLE COLLE	CTION CODE: (YYMMDDHHMMIII) 18171	09117115110
	WATER X, SOIL , FOOD , OTHER:	
	N JUAN ; CITY: BLOOMF	
	E: (Township-Range-Section-Tracts) 121911	
		below to indicate the type of analytical screens
	er possible list specific compounds suspected or	
	PURGEABLE SCREENS	EXTRACTABLE SCREENS
	tic Purgeables (1-3 Carbons)	(751) Aliphatic Hydrocarbons
	tic & Halogenated Purgeables Spectrometer Purgeables	(760) Organochlorine Pesticides (755) Base/Neutral Extractables
(766) Tribalo		(758) Herbicides, Chlorophenoxy acid
	Specific Compounds or Classes	(739) Herbicides, Triasines
]		(760) Organochlorine Pesticides
7		(791) Operandra Destricts
		(761) Organophosphate Pesticides
		(767) Polychlorinated Biphenyls (PCB's)
		 (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons
		(767) Polychlorinated Biphenyls (PCB's)
		 (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons
		 (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons
IELD DATA:		 (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides
IELD DATA:	nductivity= $\frac{2200}{2200}$ umbo/cm at $\frac{17}{2}$ °C; Chl	 (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides
IELD DATA: H=7; Co		<pre>(767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides lorine Residual=mg/1</pre>
HELD DATA:	=mg/l; Alkalinity=mg/l; Flow R	<pre>[] (767) Polychlorinated Biphenyls (PCB's) [] (764) Polynuclear Aromatic Hydrocarbons [] (762) SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides</pre>
H=; Co issolved Oxygen: epth to water	=mg/l; Alkalinity=mg/l; Flow R 10.62_ft.; Depth of wellft.; Perforation	<pre>[] (767) Polychlorinated Biphenyls (PCB's) [] (764) Polynuclear Aromatic Hydrocarbons [] (762) SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides</pre>
H=; Co issolved Oxygen: epth to water ampling Location	mg/l; Alkalinity=mg/l; Flow R <u>10.62</u> ft.; Depth of wellft.; Perforation h, Methods and Remarks (i.e. odors, etc.)	<pre>[] (767) Polychlorinated Biphenyls (PCB's) [] (764) Polynuclear Aromatic Hydrocarbons [] (762) SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides [] [762] [] [] [] [] [] [] [] [] [] [] [] [] []</pre>
H=; Co issolved Oxygen: epth to water ampling Location	=mg/l; Alkalinity=mg/l; Flow R 10.62_ft.; Depth of wellft.; Perforation	<pre>[] (767) Polychlorinated Biphenyls (PCB's) [] (764) Polynuclear Aromatic Hydrocarbons [] (762) SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides [] [762] [] [] [] [] [] [] [] [] [] [] [] [] []</pre>
IELD DATA: H=7; Co issolved Oxygen: epth to water ampling Location	mg/l; Alkalinity=mg/l; Flow R <u>10.62</u> ft.; Depth of wellft.; Perforation h, Methods and Remarks (i.e. odors, etc.)	<pre>[] (767) Polychlorinated Biphenyls (PCB's) [] (764) Polynuclear Aromatic Hydrocarbons [] (762) SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides [] [762] [] [] [] [] [] [] [] [] [] [] [] [] []</pre>
IELD DATA: H=7; Co issolved Oxygen: epth to water ampling Location 	$=mg/l; Alkalinity=mg/l; Flow R$ $=mg/l; Flow R$ $=ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = ECO VALDC = AIE \qquad -$	<pre>[] (767) Polychlorinated Biphenyls (PCB's) [] (764) Polynuclear Aromatic Hydrocarbons [] (762) SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] SDWA Pesticides & Herbicides [] [762] Interval</pre>
IELD DATA: H=7; Co issolved Oxygen: epth to water ampling Location <u>T(GA)</u> certify that th	$=mg/l; Alkalinity=mg/l; Flow R$ $=mg/l; Flow R$ $=ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = 1 \in Ch \forall A \vdash D \in \mathbb{R} A \mid f.$	[] (767) Polychlorinated Biphenyls (PCB's) [] (764) Polynuclear Aromatic Hydrocarbons [] (762) 3DWA Pesticides & Herbicides Borine Residual=mg/l Intervalft.; Casing: Augent Hors Market Hors
(ELD DATA: H=7; Co issolved Oxygen: epth to water mpling Location 	=mg/l; Alkalinity=mg/l; Flow R $=mg/l; Flow R$ $=ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = CO VALDC = AIE - C = collector): E = Collector courses of the results is the collector of the courses of the collector of the courses of the collector of the courses of the collector of the courses of the collector of the courses of the collector of the courses of the course$	[☐ (767) Polychlorinated Biphenyls (PCB's) [☐ (764) Polynuciear Aromatic Hydrocarbons [☐ (762) SDWA Pesticides & Herbicides lorine Residual=mg/l lateft.; Casing: Augric Hors #3 ults of my field analyses, observations and // Method of Shipment to the Lab: // #000
(ELD DATA: I=7; Co issolved Oxygen: epth to water mpling Location <u>T</u> certify that the tivities.(signatur his form accomp	$=mg/l; Alkalinity=mg/l; Flow R$ $=mg/l; Flow R$ $=ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = 1 \in Ch \forall A \vdash D \in \mathbb{R} A \mid f.$	☐ (767) Polychlorinated Biphenyls (PCB's) ☐ (764) Polynuciear Aromatic Hydrocarbons ☐ (762) SDWA Pesticides & Herbicides Iorine Residual=mg/l Intervalft.; Casing: Augric Hors #3 ults of my field analyses, observations and // Method of Shipment to the Lab: // #2000
(ELD DATA: I=7; Co ssolved Oxygen: epth to water mpling Location <u>T_EAU</u> certify that the tivities.(signatur his form accomp mples were pre] NP:	$=mg/l; Alkalinity=mg/l; Flow R$ $=mg/l; Alkalinity=mg/l; Flow R$ $= \frac{10.62}{ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = \frac{16CO}{VALDCP} + \frac{16C}{AIE} - \frac{16CO}{AIE} + $	☐ (767) Polychlorinated Biphenyls (PCB's) ☐ (764) Polynuclear Aromatic Hydrocarbons ☐ (762) 3DWA Pesticides & Herbicides Horine Residual=mg/l Intervalft.; Casing: Augent Hores #3 ults of my field analyses, observations and //Method of Shipment to the Lab: ////////////////////////////////////
(ELD DATA: I=7; Co issolved Oxygen: epth to water mpling Location <u>[[6]]</u> certify that the tivities.(signatur his form accomp mples were pre] NP:	$=mg/l; Alkalinity=mg/l; Flow R$ $=mg/l; Alkalinity=mg/l; Flow R$ $= \frac{10.62}{ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = \frac{16CO}{VALDCP} + \frac{16C}{AIE} - \frac{16CO}{AIE} + $	☐ (767) Polychlorinated Biphenyls (PCB's) ☐ (764) Polynuclear Aromatic Hydrocarbons ☐ (762) 3DWA Pesticides & Herbicides Horine Residual=mg/l Intervalft.; Casing: Augent Hores #3 ults of my field analyses, observations and //Method of Shipment to the Lab: ////////////////////////////////////
IELD DATA: H=7; Co issolved Oxygen: epth to water ampling Location 	=mg/l; Alkalinity=mg/l; Flow R <u>10.62</u> ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) <u>16C0</u> <u>VALDE</u> <u>AIF</u> e results in this block accurately reflect the result e collector): <u>C</u> panies <u>J</u> Septum Vials, Glass Jugs, isserved as follows: No Preservation; Sample stored at room temper Sample stored in an ice bath (Not Frosen). Sample Preserved with Sodium Thiosulfate to p	☐ (767) Polychlorinated Biphenyls (PCB's) ☐ (764) Polynuclear Aromatic Hydrocarbons ☐ (762) 3DWA Pesticides & Herbicides Horine Residual=mg/l Intervalft.; Casing: Augent Hores #3 ults of my field analyses, observations and //Method of Shipment to the Lab: PROC and/or rature.
IELD DATA: H=7; Co issolved Oxygen: epth to water , ampling Location 	=mg/l; Alkalinity=mg/l; Flow R <u>10.6%</u> ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) <u>16C0</u> <u>VALDE</u> <u>AIF</u> e results in this block accurately reflect the result e collector): <u>C</u> panies <u></u> Septum Vials, Glass Jugs, iserved as follows: No Preservation; Sample stored at room temper Sample stored in an ice bath (Not Frosen). Sample Preserved with Sodium Thiosulfate to property and the store of the	☐ (767) Polychlorinated Biphenyls (PCB's) ☐ (764) Polynuclear Aromatic Hydrocarbons ☐ (762) SDWA Pesticides & Herbicides Horine Residual=mg/l Intervalft.; Casing: Augent Hore #3 ults of my field analyses, observations and // Method of Shipment to the Lab; ////// and/or rature.
IELD DATA: H=_7; Co issolved Oxygen: epth to water ampling Location <i>[</i>	$=mg/l; Alkalinity=mg/l; Flow R$ $=mg/l; Alkalinity=mg/l; Flow R$ $= \frac{10.6X}{ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = \frac{16Cn}{146067} + \frac{16}{166} + \frac{16}{$	[] (767) Polychlorinated Biphenyls (PCB's) [] (764) Polynuclear Aromatic Hydrocarbons [] (762) SDWA Pesticides & Herbicides Horine Residual=mg/l Intervalft.; Casing: Auger Hors_ #3 ults of my field analyses, observations and // Method of Shipment to the Lab: // #2000 and/or rature. remove chlorine residual.
IELD DATA: H=_7; Co issolved Oxygen: epth to water ampling Location <i>[</i>	$=mg/l; Alkalinity=mg/l; Flow R$ $=mg/l; Alkalinity=mg/l; Flow R$ $= \frac{10.6X}{ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = \frac{16Cn}{146067} + \frac{16}{166} + \frac{16}{$	☐ (767) Polychiorinated Biphenyls (PCB's) ☐ (764) Polynuclear Aromatic Hydrocarbons ☐ (762) SDWA Pesticides & Herbicides Horine Residual=mg/l Intervalft.; Casing: Augent Hores #3 ults of my field analyses, observations and // Method of Shipment to the Lab: ////// and/or rature.
IELD DATA: H=7; Co issolved Oxygen: epth to water ampling Location 	$=mg/l; Alkalinity=mg/l; Flow R$ $=mg/l; Alkalinity=mg/l; Flow R$ $= \frac{10.62}{ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) = \frac{16CO}{16CO} + \frac$	(767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides lorine Residual=mg/l intervalft.; Casing: AUGER HOLES #3 ults of my field analyses, observations and ff Method of Shipment to the Lab: FROM and/or rature. remove chlorine residual. Momto Method that
IELD DATA: H=7; Co issolved Oxygen: epth to water ampling Location 	$=mg/l; Alkalinity=mg/l; Flow R 10.6% ft.; Depth of wellft.; Perforation a, Methods and Remarks (i.e. odors, etc.) 16C0 VALDEZ AIF = results is this block accurately reflect the result = collector): X panies 2 Septum Vials, Glass Jugs, served as follows: No Preservation; Sample stored at room temper Sample stored in an ice bath (Not Frozen). Sample Preserved with Sodium Thiosulfate to a TODY is sample was transferred from R.C.u.l. TATE_LAB AUB$	(767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides lorine Residual=mg/l intervalft.; Casing: AUGER HOLES #3 ults of my field analyses, observations and ff Method of Shipment to the Lab: FROM and/or rature. remove chlorine residual. Momto Method that

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		LAB. No.: UR- 1553	
THIS PAG	E FOR LAB	ORATORY RESULTS ONLY	
This sample was tested using the analytical scree	ning method(s) checked below:	<u></u>
PURGEABLE SCREENS	•	EXTRACTABLE SCREENS	
(753) Aliphatic Purgeables (1-3 Carbons)		(751) Aliphatic Hydrocarbons	
(754) Aromatic & Halogenated Purgeables		(760) Organochlorine Pesticides	
(765) Mass Spectrometer Purgeables		(755) Base/Neutral Extractables	
(766) Trihalomethanes		(758) Herbicides, Chlorophenoxy scid	
Other Specific Compounds or Classes		(759) Herbicides, Triasines	
		(760) Organochlorine Pesticides (761) Organophosphate Pesticides	
	<u> </u>	(767) Polychlorinated Biphenyis (PCB's)	
		(764) Polynuclear Aromatic Hydrocarbons	
		(762) SDWA Pesticides & Herbicides	
AN	ALYTIC	AL RESULTS	
COMPOUND(S) DETECTED	Conc. [PPB]	COMPOUND(S) DETECTED	CONC.
aromatic surgeables	N.D.		
Aslonenation surgerfler	N.D.		
	ļ		
· DETECTION LIMIT · *	1-11/1		
ABBREVIATIONS USED:		+ DETECTION LIMIT + 1	l
N D = NONE DETECTED AT OR ABOVE T R = DETECTED AT A LEVEL BELOW [RESULTS IN BRACKETS] ARE UNCONF 	THE STATE		
CERTIFICA	TE OF ANAL	YTICAL PERSONNEL	
Seal(s) Intact: Yes No . Seal(s) broken by I certify that I followed standard laboratory procedu that the statements on this page accurately reflect t	res on handli	g and analysis of this sample unless otherwise noted	2 and
Date(s) of analysis: 9/23/87 Analyst's sig	gnature:	Kein la Alen	
	analytical res	ults for this sample and with the statements in this	block.
·		•	

		300 🗆 59600 🕅 ОТН	HER: 82235	
7 09 /7 liection TiME		ENDECO VALDE		
1510 lected by - Person/Agency LSON/ANDERSON	/OCD	AUGER	Hours #	3
	- NTAL BUREAU	· · · · · · · · · · · · · · · · · · ·		······
NM OIL CO	NSERVATION DIVISION			
State Lan Santa Fe,	d Office Bldg, PO Box 20 NM 87504-2088			
Attn: David B	oyer			
Phone: 827-	5812		tation/ ell code	
PLING CONDITIONS		o	wher	
Bailed 🗆 Pump Dipped 🗆 Tap	Water level 10.68	Discharge	Sample ty	RAB
(00400)	Conductivity (Uncorrected)	Water Temp. (00010)		ty at 25°C (00094) μm
d comments	2200 µmh	<u> </u>		- pini
b. of samples bmitted 1 NA: No acid added	Other-specify: Δ · · · 0.45 μr		nl H ₂ SO₄/L added ed □A: 4ml	fuming HNO ₃ add
o. of samples ubmitted 1 NA: No acid added ALYTICAL RESULTS from NA	Whole sample (Non-filtered) K F: Filtered 0.45 μr Other-specify: □ A:	5ml conc. HNO ₃ adde		Date
o. of samples ubmitted 1 NA: No acid added ALYTICAL RESULTS from NA	Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: □ A: om SAMPLES	5ml conc. HNO ₃ adde	ed []A: 4ml Sample:	Date Analyzed
o. of samples ubmitted 1 I NA: No acid added I ALYTICAL RESULTS from NA Conductivity (Corrected) 25°C (00095) Total non-filterable	Whole sample (Non-filtered) K F: Filtered 0.45 μr Other-specify: Δ A: m SAMPLES Units Date analy	membrane filter A. 211 5ml conc. HNO ₃ adde	ed []A: 4m1 Sample: <u>392 mg</u> /1	Date Analyzed 10/30
o. of samples ubmitted 1 I NA: No acid added I ALYTICAL RESULTS from NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530)	Whole sample (Non-filtered) K F: Filtered 0.45 μr Other-specify: Δ A: m SAMPLES Units Date analy	Sml conc. HNO3 adde From, NA	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>3,51</u> mg/1	Date Analyzed 10/30 10/8
o. of samples ubmitted 1 1 NA: No acid added 1 ALYTICAL RESULTS from NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other:	NF: Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: ΔA: m SAMPLES Units Date analy	membrane filter A. 2 m 5ml conc. HNO3 adde Zed From, NA X Calcium Potassium	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>3,51</u> mg/1	Date <u>Analyzed</u> /0/30 /0/8 /0/30
o. of samples ubmitted 1 1 NA: No acid added 1 ALYTICAL RESULTS from NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other:	NF: Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: ΔA: m SAMPLES Units Date analy	membrane filter A. 2 minipage Sml conc. HNO3 adde Zed From, NA X Calcium Potassium Magnesium Sodium Bicarbonate	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>393</u> mg/1 <u>384</u> mg/1 <u>351</u> mg/1	Date <u>Analyzed</u> 10/30 10/30 10/30
o. of samples abmitted 1 1 NA: No acid added 1 ALYTICAL RESULTS from NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: A-H ₂ SO ₄	NF: Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: ΔA: m SAMPLES Units Date analy	membrane filter A. 2 m 5ml conc. HNO ₃ adde From, NA Calcium Calcium Potassium Magnesium Sodium Bicarbonate Chloride	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>392</u> mg/1 <u>384</u> mg/1 <u>351</u> mg/1 <u>21.5</u> mg/1	Date <u>Analyzed</u> 10/30 10/30 10/30 10/23 10/22
o. of samples ubmitted 1 1 ALYTICAL RESULTS from NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: A-H ₃ SO ₄ Nitrate-N + , Nitrate-N total (00630)	NF: Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: I A: Im SAMPLES Units Date analy	membrane filter A. 2 minipage Sml conc. HNO3 adde Zed From, NA Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium Q Calcium Q Sodium Sodium Q Chloride	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>392</u> mg/1 <u>384</u> mg/1 <u>351</u> mg/1 <u>21.5</u> mg/1 3 mg/1	Date <u>Analyzed</u> 10/30 10/30 10/30 10/23 10/22
o. of samples ubmitted / I NA: No acid added ALYTICAL RESULTS from NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: Other: AH ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610)	NF: Whole sample (Non-filtered) X F: Filtered 0.45 μr Other-specify: I A: Im SAMPLES Units Date analy	membrane filter A. 2 m 5ml conc. HNO ₃ adde From, NA Calcium Calcium Potassium Magnesium Sodium Bicarbonate Chloride	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>392</u> mg/1 <u>384</u> mg/1 <u>351</u> mg/1 <u>21.5</u> mg/1 3 mg/1	Date <u>Analyzed</u> 10/30 10/30 10/30 10/23 10/22
o. of samples ubmitted / I NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: A-H ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen	NF: Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: I A: Im SAMPLES Units Date analy μmho	membrane filter A. 2 minipage Sml conc. HNO3 adde Zed From, NA Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium, NA Q Calcium Q Calcium Q Sodium Sodium Q Chloride	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>392</u> mg/1 <u>384</u> mg/1 <u>351</u> mg/1 <u>21.5</u> mg/1 3 mg/1	Date <u>Analyzed</u> 10/30 10/30 10/30 10/23 10/22
o. of samples ubmitted / / / / / / / / / / / / / / / / / / /	NF: Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: □ A: Im SAMPLES Units Date analy mho	membrane filter A. 2 m Sml conc. HNO ₃ adde From, NA Calcium Potassium Magnesium Sodium Sodium Bicarbonate Chloride Total Solids	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>392</u> mg/1 <u>384</u> mg/1 <u>351</u> mg/1 <u>21.5</u> mg/1 <u>2634</u> mg/1	Date <u>Analyzed</u> 10/30 10/30 10/30 10/23 10/22
o. of samples ubmitted / ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: Other: A-H ₂ SO ₄ Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340) Total organic carbon ()	NF: Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: I A: Im SAMPLES Units Date analy μmho	Sml conc. HNO3 adde Sml conc. HNO3 adde Zed From X Calcium X Potassium X Potassium X Sodium X Sodium X Sodium X Solium X X Sodium X X Solium X	ed □A: 4ml Sample: <u>392</u> mg/l <u>392</u> mg/l <u>384</u> mg/l <u>384</u> mg/l <u>351</u> mg/l <u>2634</u> mg/l <u>2634</u> mg/l .00 Balance	Date <u>Analyzed</u> 10/30 10/30 10/30 10/30 10/30 10/23 10/22 10/22
o. of samples ubmitted / I NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other:	NF: Whole sample (Non-filtered) F: Filtered 0.45 μr Other-specify: □ A: Im SAMPLES Units Date analy mho	membrane filter A. 2 m Sml conc. HNO ₃ adde From, NA Calcium Potassium Magnesium Sodium Sodium Bicarbonate Chloride Total Solids	ed □A: 4m1 Sample: <u>392</u> mg/1 <u>392</u> mg/1 <u>384</u> mg/1 <u>351</u> mg/1 <u>21.5</u> mg/1 <u>2634</u> mg/1	Date <u>Analyzed</u> 10/30 10/30 10/30 10/23 10/22

	CATIONS		DET.		ANIONS		DET.
ANALY	TE MEQ.	PPM	LIMIT	ANALYT	E MEQ.	PPM	LIMIT
Ca Mg Na K	19.56 1.97 16.70 8.98	392.00 24.00 384.00 351.00	<3.0 <0.3 <10.0 <0.3	HC03 SO4 CL	5.75 30.48 0.61	351.00 1463.00 21.50	<1.0 <10.0 <5.0
Mn Fe	0.00 0.00	0.00 0.00		NO3 CO3 NH3 PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	< 0. < 1. < 0. < 0.
SUMS	47.21	1151.00			36.84	1835.50	
	Dissolved alance =	Solids= 128.16%	2634		C No. out/By _	= 8704271 ///2 v	_

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	Albuquerque, NM	87106 841-2570 87-1552-C
REPORT TO:	David Boyer	S.L.D. No. OR- 1552 A+B
	M.M. Oil Conservation Division	
	. P. O. Box 2088	must be purged
	Santa Fe, N.M. 87504-2088	PRIORITY by 10/1/87
PHONE(S):	327-5812	USER CODE: 3 2 3 5
UBMITTER:	David Boyer	CODE: 12 6 0
SAMPLE COLLE	CTION CODE: (YYMMDDHHMMIII)	7091171415
	WATER X, SOIL , FOOD , OTHE	
COUNTY: SA	NJUAN; CITY: BLOOM	1F1510 CODE:
	E: (T mship-Range-Section-Tracts)	A .
required. Whenev	UESTED: Please check the appropriate box(er possible list specific compounds suspected <u>PURGEABLE SCREENS</u> tic Purgeables (1-3 Carbons)	es) below to indicate the type of analytical screens or required. <u>EXTRACTABLE SCREENS</u> (751) Aliphatic Hydrocarbons
	tic & Halogenated Purgeables	(760) Organochlorine Pessicides
(765) Mass ((766) Trihaid	Spectrometer Purgeables	(755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid
	Specific Compounds or Classes	(759) Herbicides, Triasines
⊒ —		(760) Organochlorine Pesticides
╡ ──		(761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's)
		(764) Polynuciear Aromatic Hydrocarbons
1 _	· · · · · · · · · · · · · · · · · · ·	(762) SDWA Pesticides & Herbicides
Remarks: <u>0 20</u>	ANIC ODOR -	
	unductivity= <u>3150</u> umbo/cm at <u>18.5°C;</u>	Chlorine Residual=mg/l
	=mg/l; Alkalinity=mg/l; Flow	w Rate
Dissolved Oxygen	=mg/l; Alkalinity=mg/l; Flow 10,97 ft.; Depth of wellft.; Perform	
Dissolved Oxygen Depth to water Sampling Locatio	<u>10,97</u> ft.; Depth of wellft.; Perfora n, Methods and Remarks (i.e. odors, etc.)	
Dissolved Oxygen Depth to water Sampling Locatio	10,97 ft.; Depth of wellft.; Perfora n, Methods and Remarks (i.e. odors, etc.) NNBCD VALDEZ A/E e results' in this block securately reflect the re collector): <u>A</u> . <u>Constant</u> Glass Ju- panies <u>2</u> Septum Vials, <u>Glass Ju-</u>	results of my field analyses, observations and free the constant of the consta
Dissolved Oxygen Depth to water Sampling Locatio	10,77 ft.; Depth of wellft.; Perfora n, Methods and Remarks (i.e. odors, etc.) MIECO ALDER AIE e results' in this block occurately reflect the re collector): K. Concern panies 2 Septum Vials, Glass Ju eserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frosen) Sample Preserved with Sodium Thiosulfate	results of my field analyses, observations and Method of Shipment to the Lab: <u>HANN</u> mperature.
Dissolved Oxygen Depth to water Sampling Locatio I certify that th activities.(signatur This form accom Samples were pro NP: NP: P-Ice P-Na SO CULAIN OF CUS I certify that th	10,97 ft.; Depth of wellft.; Perfora n, Methods and Remarks (i.e. odors, etc.) MDECD VALDET AIF e results' in this block occurately reflect the re collector): <u>K. Waller</u> panies <u>2</u> Septum Vials, <u>Glass Ju</u> eserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frozen) Sample Preserved with Sodium Thiosulfate STOD Y is sample was transferred from <u>ROAUD</u>	results of my field analyses, observations and Method of Shipment to the Lab: MANN ugs. and/or
Dissolved Oxygen Depth to water Sampling Locatio I certify that th activities.(signatur This form accom Samples were pro NP: NP: P-Ice P-Na SO CILAIN OF CUS I certify that th	10,97 ft.; Depth of wellft.; Perfora n, Methods and Remarks (i.e. odors, etc.) MDECD VALDET AIF e results' in this block occurately reflect the re collector): <u>K. Waller</u> panies <u>2</u> Septum Vials, <u>Glass Ju</u> eserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frozen) Sample Preserved with Sodium Thiosulfate STOD Y is sample was transferred from <u>ROAUD</u>	results of my field analyses, observations and Method of Shipment to the Lab: <u>HANN</u> ugs. and/or
Dissolved Oxygen Depth to water Sampling Locatio I certify that th activities.(signatur This form accom Samples were provided NP: P-Ice P-Na S O CILAIN OF CUS I certify that th at (location)	10,97 ft.; Depth of weilft.; Perform n, Methods and Remarks (i.e. odors, etc.) NUBCO VALDET AIR e results' in this block occurately reflect the re collector): <u>A. A. B. A. B. Class</u> panies <u>2</u> Septum Vials,Glass Ju- eserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frozen) Sample Preserved with Sodium Thiosulfate STODY is sample was transferred from <u>R. CAUD</u> <u>STATE LAB ALB</u>	tion Intervalft.; Casing: = Augkk Hock #44. results of my field analyses, observations and M_{ethod} of Shipment to the Lab: M_{ethod} ugs. and/or ugs. and/or to remove chlorine residual. $EMSON$ to M_{ethod} M_{ethod} to M_{ethod} $M_{$

	. –	LAB. No .: UK- 1552	 .
THIS PAGE	FOR LABO	DRATORY BESUTES ONLY	
This sample was tested using the analytical screen	ing method(s) checked below:	•
PURGEABLE SCREENS (753) Aliphatic Purgeables (1-3 Carbons) X (754) Aromatic & Halogenated Purgeables (755) Mass Spectrometer Purgeables (766) Trihalomethanes Other Specific Compounds or Classes		EXTRACTABLE SCREENS (751) Aliphatic Hydrocarbons (760) Organochlorine Pesticides (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (761) Organophosphate Pesticides (762) SDWA Pesticides & Herbicides	
COMPOUND (S) DETECTED	CONC.	COMPOUND(S) DETECTED	CONC.
anomatic surgerfler *	ell remarks		
landa purgerica	2400		
The first and	TOB		
ethallensen	920		
- induced	2400		
m-ruline	4300		
0- Muleal	1050		
	<u>Inso</u>	·	
halogenated purgeables *	N.P.	· · · · · · · · · · · · · · · · · · ·	
· DETECTION LIMIT · ×	199/2	+ DETECTION LIMIT + +	
ABBREVIATIONS USED: N D = NONE DETECTED AT OR ABOVE T R = DETECTED AT A LEVEL BELOW [RESULTS IN BRACKETS] ARE UNCONFI 	THE STATE RMED AND	D DETECTION LIMIT (NOT CONFIRMED) OR WITH APPROXIMATE QUANTITATION	
CERTIFICAT Seal(s) Intact: Yes \Box No \Box . Seal(s) broken by: I certify that I followed standard laboratory procedur that the statements on this page accurately reflect th Date(s) of analysis: $q/\partial_3/2$. Analyst's sign	es on handig es analytical	results for this sample.) and
I certify that I have reviewed and concur with the : Reviewers signature: <u>Meyerner</u>	analytical resu	alts for this sample and with the statements in this	block.

SCIENTIFIC LAE 700 Camino de S	and Environment E SORATORY DISION Salud NE A 87106 — (505) 841-25		war 859	GENZRAL V and NITR	VATER CHEMISTRY OGEN ANALYSIS
	WL4115	USER CODE 🗌 5930) 🗌 59600 🕅	X OTHER: 82	235
Collection DATE 97109177		Sample location		ALDER	AIE
Collection TIME		Collection site description	Au	JER HO	LE 4
CLOON ANADESON	/0CD				
FINAL State Land	SERVATION DIV Office Bldg, NM 87504-2088 Ver	PO Box 208	3	Station/ well code	
Bailed 🗆 Pump	Water level]	Discharge		Sample type
Dipped Tap pH (00400) 7	<u>10.97</u> Conductivity (Uncorr 3);	rected)	Water Temp. (00010)	18,5 °C	GRAB Conductivity at 25°C (00094) µmho
ANALYTICAL RESULTS from NA	SAMPLES	A:		added A	added
25 °C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: Other: Other: Other: Other: Other: Other:		nho	X Calcium X Potassium X Magnesium X Sodium X Bicarbona	<u>49</u> <u>54/</u> te <u>57</u>	mg/1 <u>/0/30</u> b mg/1 <u>/0/30</u> mg/1 <u>/0/30</u> mg/1 <u>/0/3</u> mg/1 <u>/0/23</u>
A-H2SO4 Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N (Chemical oxygen demand (00340) Total organic carbon		ng/l ng/l ng/l ng/l	Chloride Sulfate Total Sol	605	mg/1i/3
() Other: Other: Laboratory commarks'	from K	ng/1	Analyst	Anion Bal	
FOR OCD USE Date O	wner Notified	Tact	Phone or Let	ter?	Initals

ANALYI	CATIONS TE MEQ.	PPM	DET. LIMIT	ANALYI	ANIONS TE MEQ.	PPM	DET. LIMIT
Ca Mg Na K	13.97 4.02 23.53 0.04	280.00 49.00 541.00 1.56	<3.0 <0.3 <10.0 <0.3	HC03 SO4 CL	9.36 12.60 19.61	571.00 605.00 695.00	<1.0 <10.0 <5.0
Mn Fe	0.00 0.00	0.00 0.00		NO3 C03 NH3 PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	< 0. < 1. < 0. < 0.
SUMS	41.57	871.56			41.57	1871.00	
	Dissolved alance =	Solids= 100.00%	2572		IC No. out/By _	= 8704273	_