BW - \_\_\_\_\_

## GENERAL CORRESPONDENCE

YEAR(S):

2006-1996

#### Price, Wayne, EMNRD

From:

Price, Wayne, EMNRD

Sent:

Tuesday, July 25, 2006 3:18 PM

To:

'eugene@plateautel.net'

Cc:

Gum, Tim, EMNRD

Subject:

Brine well Permit BW 06 has expired

Attachments: DP\_BEF.rtf

Dear Mr. Irby:

Please complete the attached form and submit with a \$100 filing fee made out to the Water Quality Management fund. In addition, please make arrangements to pressure test your brine well and cavern using nitrogen during the week of August 14, 2006. Sufficient nitrogen shall be placed in the well to displace all of the water to below the casing shoe. The test pressure shall be 300 psig held for 4 hours. The nitrogen shall be injected at approximately formation temperature i.e. 60 F. A pressure gauge and recently calibrated pressure recording chart shall be provided on the casing. The pressure recorder shall be calibrated for a maximum range of 500 psig and a 500 psig chart shall be used. The clock on the recorder shall be set at 8 or 12 hours.

Please note, it is the responsibility of the operator to make sure test pressures will not fracture or damage the salt formation. OCD used a conservative frac gradient of .7 psi/ft x 456 feet = 319 psi. If the operator is concerned about the proposed test pressure please notify OCD immediately.

Please submit the brine well renewal application within 10 days and notify this office 3 working days in advance of the test so OCD may witness.

#### Price, Wayne, EMNRD

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Sent:

Tuesday, July 25, 2006 3:18 PM

To:

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Cc:

Gum, Tim, EMNRD

Subject:

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Attachments: DP\_BEF.rtf

Dear Mr. Irby:

Please complete the attached form and submit with a \$100 filing fee made out to the Water Quality Management fund. In addition, please make arrangements to pressure test your brine well and cavern using nitrogen during the week of August 14, 2006. Sufficient nitrogen shall be placed in the well to displace all of the water to below the casing shoe. The test pressure shall be 300 psig held for 4 hours. The nitrogen shall be injected at approximately formation temperature i.e. 60 F. A pressure gauge and recently calibrated pressure recording chart shall be provided on the casing. The pressure recorder shall be calibrated for a maximum range of 500 psig and a 500 psig chart shall be used. The clock on the recorder shall be set at 8 or 12 hours.

Please note, it is the responsibility of the operator to make sure test pressures will not fracture or damage the salt formation. OCD used a conservative frac gradient of .7 psi/ft x 456 feet = 319 psi. If the operator is concerned about the proposed test pressure please notify OCD immediately.

Please submit the brine well renewal application within 10 days and notify this office 3 working days in advance of the test so OCD may witness.

## ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

	I hereby acknowledge receipt of chec	$\mathbb{R}$ No dated $\frac{\sqrt{a/ao/o}}{\sqrt{a/ao/o}}$
	or cash received on	in the amount of \$ 100
	from IAW IAC.	
	for EUGENIE # 1 ORIVE WELL	BW-06 - Data: 1/11/07
	Submitted by: WAYNE PRICE	. Data: 1/11/07
	Submitted to ASD by:	Data:
	Recaived in ASD by:	Data:
	Filing Fee X New Facility	Renewal
	ModificationOther	
	Organization Code <u>521.07</u> To be deposited in the Water Qualit  Full Payment or Annual	y Management Fund.
Western Bank ARTESIA, NEW MEXICO 88210	PAY TO THE ORDER OF Oil Conservation Commission    Renewal Application   Eugenie #1   BW-06	DATE December 20, 95-198/1122  \$**100.00**  DOLLARS 1 Security Functions

District I
1625 N. French Dr., 110bbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Sauta Fe, NM 87505

#### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Submit Original
Plus 1 Copy
to Santa Pe
1 Copy to Appropriate
District Office

Revised March 17, 1999

## DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS. REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

CAS PLANTS. REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIC (Refer to the OCD Guidelines for assistance in completing the application)

| New | Renewal | Modification |

	New Renewal Modification
١.	Type: Discharge Application
2.	Operator: I & W, Inc.
	Address: P.O. Box 98 Loco Hills, NM 88255
	Contact Person: Bayless E. Irby Phone: (505) 885-6663
3.	LocationSW /4 SW /4 Section 17 Township 22S Range 27E  Submit large scale topographic map showing exact location.
4.	Attach the name, telephone number and address of the landowner of the facility site.
5.	Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6.	Attach a description of all materials stored or used at the facility.
7.	Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8.	Attach a description of current liquid and solid waste collection/treatment/disposal procedures.
9.	Attach a description of current liquid and solid waste collection/treatment/disposal procedures.  Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10.	Attach a description of proposed modifications to existing collection/treatment/disposal systems.  Attach a routine inspection and maintenance plan to ensure permit compliance.  Attach a contingency plan for reporting and clean-up of spills or releases.
11.	Attach a contingency plan for reporting and clean-up of spills or releases.
12.	Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13.	Attach'a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14.	CERTIFICATION
ilio (v.)	I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	Name: Bayless E. Irby Title: Manager
	Signature: Baylen Z July Date: December 20, 2001
	DO WHY DIA THEY
	- 1/18 A1, 7

#### OWNER & LAND OWNER OF BRINE EXTRACTION FACILITY

#### **EUGENIE #1**

LOWELL IRBY 505-746-6681 P.O. BOX 98 LOCO HILLS, NM 88255

Fort 58C SE. Tre 570 New (.0) Berg TRUCK PARKING PBRINEWE # 1 **Dod** 9MKA N 88° 51 34"W

# THALLIBURTON

CENTRAL OPERATIONS LABORATORY WATER ANALYSIS REPORT HOBBS, NEW MEXICO

COMPANY	I &W F/W & Carlsba	ď					REPOR DATE DISTRI		W01-121 Decem Hobbs	nber 4, 200°	   
SUBMITTED BY				·							
WELL Carls	bad		DEPTH FIELD				_FORMA _SOURC				
SAMPLE							····				
Sample Temp. RESISTIVITY SPECIFIC GR.	70 15.8 1.001 7.79	°F 			°F 			  °F			*p.
pH CALCIUM	450	mpl	<del></del>		mpi			 mpl			mot
MAGNESIUM	390	mpl			mpl			mpl	<del></del>		nigi
CHLORIDE	101	mpl	<del></del>		mpi			mpl			mpl
SULFATES	0	mpl			mpl			mpl			uibi -
BICARBONATES	30	mpl			mbl			mpl			n.bt
SOLUBLE IRON	0	mpl			mpl	`		mpl			n.bi
Sodium	-1177	mpl		0	mpl	•	0	mpl		0	mpi
TDS	-206	mpl		0	mpl		0	mpl		0	mpl
OIL GRAVITY	@	o.t		@	°F		_ @ _	°F		@	
REMARKS											
									·		

MPL = Milligrams per litter
Resitivity measured in Ohm/m2/m

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Co.

ANALYST: James Bonner, Mike Armstrong



CENTRAL OPERATIONS LABORATORY WATER ANALYSIS REPORT HOBBS, NEW MEXICO

COMPANY	1 & W				REPORT	VVU1-1	22		
	Brine				DATE	Dec	December 4, 2001		
	Euenie # 1 Ext	raction Facility	S. # 17 T.S. 2	25R27E	DISTRICT	Hobbs	Hobbs		
SUBMITTED B	Υ						A A A B B B B B B B B B B B B B B B B B	~ 4m co s	
WELL Euc	qenie # 1	DEPT	- H		FORMATIC	N			
COUNTY	·	FIELD	)		SOURCE				
SAMPLE						_			
Comple Torre	70	°F		°F		°F		o <sub>i</sub>	
Sample Temp.				F		_			
RESISTIVITY SPECIFIC GR.	1.201			<del></del>		-			
pH	6.49					_			
CALCIUM	2,100	mpl		mpl		mpl		igi	
MAGNESIUM	1,050	mpl		mpl		mpl		iden iden	
CHLORIDE	281,385	mpl		mpi		mpl .		mipi	
SULFATES	0	mpl		mpl		mpi		mpl	
BICARBONATES	30	mpl		mpl		mpl –		mpl	
SOLUBLE IRON	0	mpl		mpl		mpl		mpl	
0 11	170.100								
Sodium	178122	mpi	0	mpl	0	mpi _	0	mpi	
TDS	462,687	mpl	0	mpl	0	mpl –	0	nipl	
OIL GRAVITY		°F		°F		°F 			
REMARKS									
				w					

MPL = Milligrams per litter
Resitivity measured in: Ohm/m2/m

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ANALYST: James Bonner, Mike Armstrong

#### **QUANTITIES**

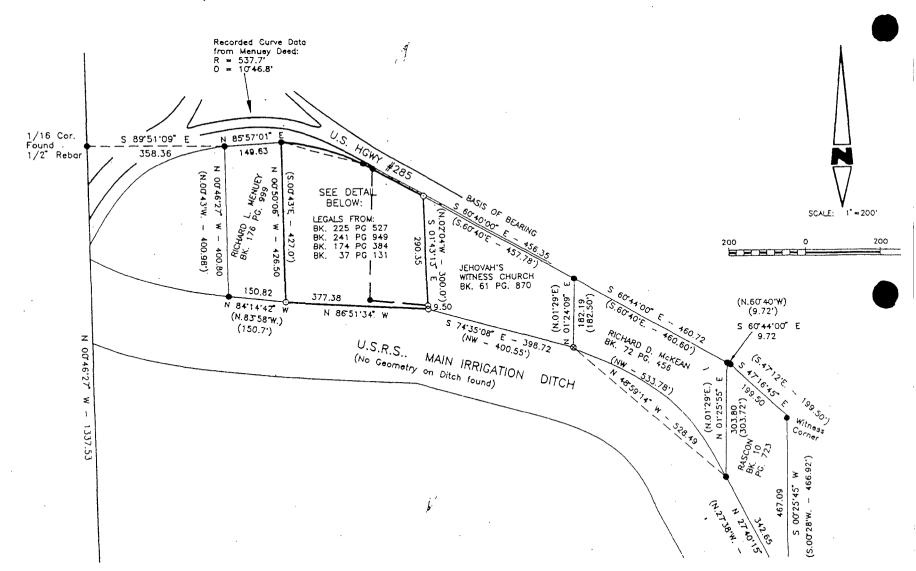
SOURCE: EUGENIE #1 EXTRACTION FACILITY

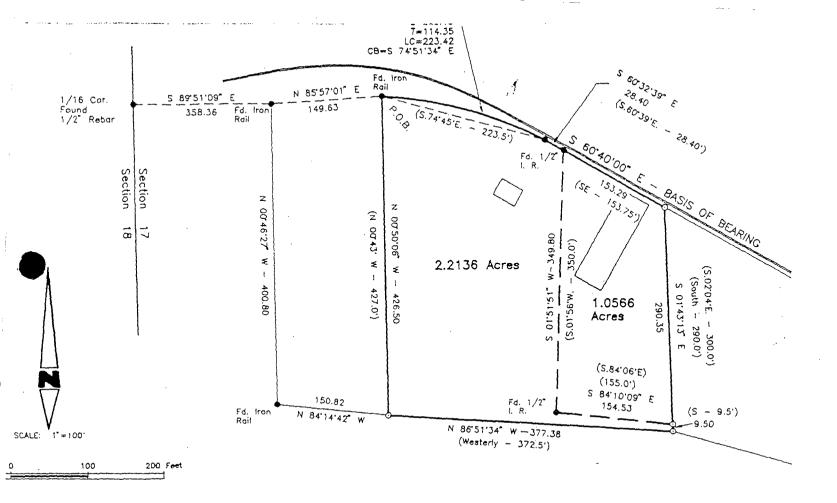
AVERAGE DAILY VOLUME PRODUCED: 200 BBLS/DAY

ESTIMATED VOLUME STORED: 4000 BBLS

TYPE OF CONTAINERS: 4 X 1000 BBL-STEEL TANKS

SECTION 17, TOWNSHIP 22 SOUTH, RANGE 27 EAST, N.M.P.I. EDDY COUNTY.





#### LEGAL DESCRIPTION:

A tract of land located in the Southwest quarter of the Southwest quarter of Section 17, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico and being more particularly described as follows:

Beginning at the Northwest corner of this tract, a point being an the South Right of Way line of State Highway No. 285 and a point being S.89'51'09'E., 358.36 feet and N.85'57'01"E., 149.63 feet from a half inch rebar accepted as the Northwest corner of

#### LEGEND:

- ⊗ Colculated Corner (Nat found or set)
- Found Corner

District J 1625 N. French Dr., Hobbs, NM 88240 District II 811 South First, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 2040 South Pacheco, Santa Fe, NM 87505

#### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Submit Original
Plus I Copy
to Santa Fe
1 Copy to Appropriate
District Office

Revised March 17, 1999

## DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS. REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

	☐ New 🙀 Renewal ☐ Modification
1.	Type: Discharge Application
2.	Operator: I & W, Inc.
	Address: P.O. Box 98 Loco Hills, NM 88255
	Contact Person: Bayless E. Irby Phone: (505) 885-6663
3.	Location SW /4 Sw /4 Section 17 Township 22S Range 27E  Submit large scale topographic map showing exact location.
4.	Attach the name, telephone number and address of the landowner of the facility site.
5.	Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility
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12.	Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13.	Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14.	CERTIFICATION
	I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	Name: Bayless E. Irby Title: Manager
	Signature: Buylen & July Date: December 20, 2001

#### OWNER & LAND OWNER OF BRINE EXTRACTION FACILITY

#### **EUGENIE #1**

LOWELL IRBY 505-746-6681 P.O. BOX 98 LOCO HILLS, NM 88255



## CENTRAL OPERATIONS LABORATORY WATER ANALYSIS REPORT HOBBS, NEW MEXICO

COMPANY	1 &W					REF	PORT	W01-121			
	F/W & Carlsba	ıd	······································			DA	ΓE	Decembe	r 4, 2001		
			·····			DIS	TRICT	Hobbs			
SUBMITTED BY	Y										
300WITTE0 0									·		
WELL Car.	Isbad		DEPTH			FOR	RMATION				
COUNTY			FIELD		· · · · · · · · · · · · · · · · · · ·		JRCE				
			-								
SAMPLE											
					<del></del>						
Sample Temp.	70	°F			°F		°F		·	el.	
RESISTIVITY	15.8								<u>-</u>		
SPECIFIC GR.	1.001										
рН	7.79	·				·					
CALCIUM	450	mpl		<del> </del>	mpl		mpl			_mpl	
MAGNESIUM	390	mpl			mpl		mpl			_ nipt	
CHLORIDE	101	mpl			mpl		mpl			lqın	
SULFATES	0	mpl			mpl		mpl			ומימו	
BICARBONATES	30	mpl			mpl		mpl			nipl	
SOLUBLE IRON	0	mpl			mpl		. mpl			unbt	
Sodium	-1177	mpl		0	 mpl	0	mpl		0	 nipl	
TDS	-206	mpl		0	mpi	0	mpl	<del></del>	0	mpl	
OIL GRAVITY	@	°F	<del></del>	<del>_</del>	°F	@			<del>_</del>	51	
, , , , , , , , , , , , , , , , , , ,		<del></del>		_			· · ·				
REMARKS											
							<del></del>				

MPL = Milligrams per litter Resitivity measured in: Ohm/m2/m

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ANALYST: James Bonner, Mike Armstrong



CENTRAL OPERATIONS LABORATORY
WATER ANALYSIS REPORT
HOBBS, NEW MEXICO

COMPANY	1 & W				REPORT	W0	W01-122				
	Brine	<del></del>		-	DATE		December 4, 2001				
	Euenie # 1 Ext	raction Facili	ity S. # 17 T.S. 2	25R27E	DISTRICT						
								<del></del> -			
				-							
SUBMITTED B	Υ	_									
		0.5	074		500117	0.11					
*****	qenie # 1		PTH		FORMATI	ON					
COUNTY		FIE			SOURCE						
SAMPLE											
						_					
Sample Temp.	70	°F		°F		°F		٥þ			
RESISTIVITY		<del></del>		<del></del>		<del></del>					
SPECIFIC GR.	1.201					_					
рН	6.49										
CALCIUM	2,100	mpl		mpl		mpl		mpl			
MAGNESIUM	1,050	mpl		mpl		mpl		mpl			
CHLORIDE	281,385	mpl		mpl		_ mpl		lqrn			
SULFATES	0	mpl	W-why.	mpl mpl		mpl		mpl			
BICARBONATES	30	mpl		mpl		_ mpl		mpl			
SOLUBLE IRON	0	mpl		mpl		_ mpl		mpl			
Sodium	178122	mpt	0	mp!	0	 mpl	0	nnp <del>l</del>			
TDS	462,687	mpl	0	mpl	0	— · mpl	0	mpl			
OIL GRAVITY	@	~F	@	°F	@	-°F	@ _	"1			
REMARKS											
					, , , , , , , , , , , , , , , , , , , ,						

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Resitivity measured in: Ohm/m2/m

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ANALYST: James Bonner, Mike Armstrong

11

#### **QUANTITIES**

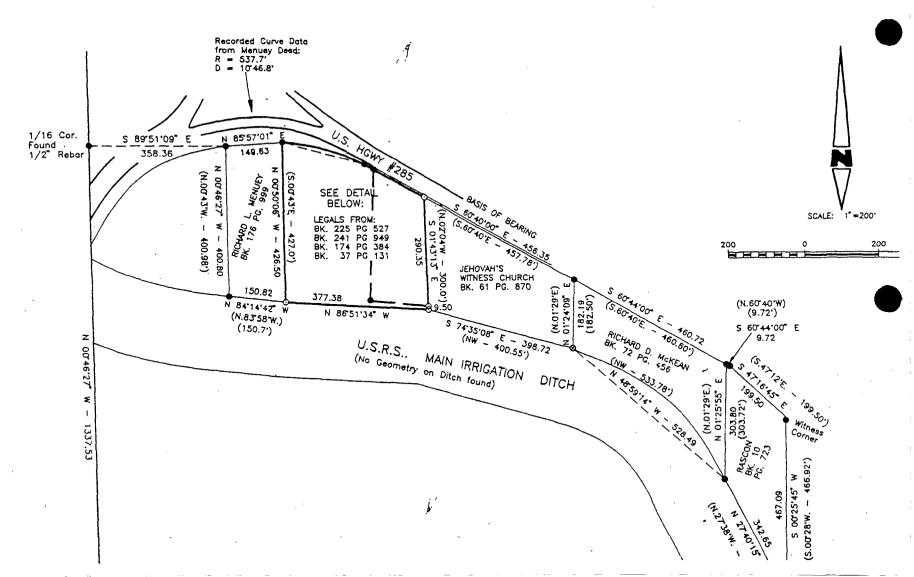
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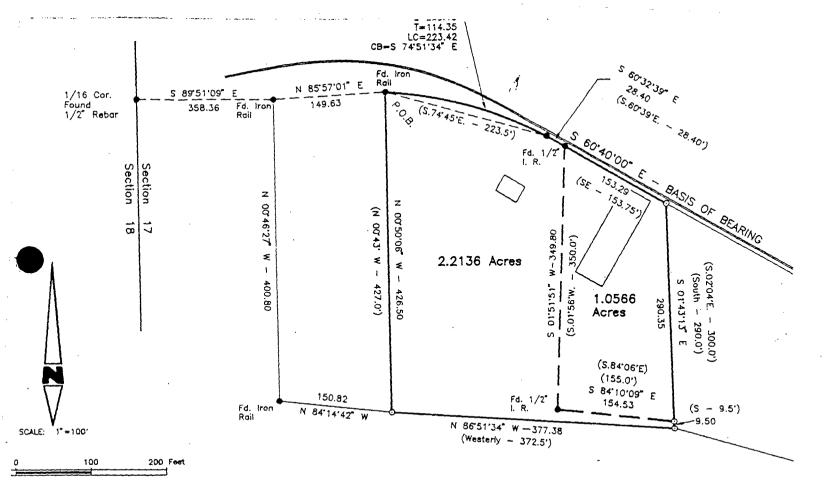
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#### LEGEND:

- Calculated Corner (Not found or set)
- Found Corner



CARLSBAD (505) 885-6663 1 (800) 658-2739



P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255

LOCO HILLS (505) 677-2111 1 (800) 748-1972

LOVINGTON (505) 396-3331 1 (800) 748-2084

Mailed 10/3/01 To SANTA Fe

October 2, 2001

Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, NM 87504

ATTN: Wayne Price

Dear Mr. Price:

Enclosed you will find a city map of Carlsbad, with the location of four (4) wells around the I & W, Inc's Eugenie. Also, there is the test results of the samples from the two (2) monitor wells at the Eugenie. These samples were taken after the wells were purged.

The OCD representative present was Mike Stubblefiled. Samples were taken September 20, 2001.

rias 5 hellfield

Witness:

Mike Stubblefield

Larry Dade

George Parchman

Respectfully,

George Parchman

General Manager



PHONE (915) 673-7001 · 2111 BEECHWOOD · ABILENE, TX 79603

PHONE (505) 393-2326 · 101 E. MARLAND · HOBBS, NM 88240

ANALYTICAL RESULTS FOR

I&W INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220

FAX TO: (505) 885-8477

Receiving Date: 08/22/00 Reporting Date: 08/25/00 Project Number: NOT GIVEN

Project Name: NOT GIVEN

Project Location: NOT GIVEN

Sampling Date: 08/22/00

Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT

Sample Received By: AH

Analyzed By: AH

	Na	Ça	Mg	. <b>K</b>	Conductivity	T-Alkalinity
LAB NUMBER SAMPLE ID	. (mg/L)	(mg/L)	(mg/L)	(mg/L)	(u S/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS DATE: DEPTH	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00
H5117-1 L STREET 92	192	363	91	4.40	3458	156
H5117-2 TIDWELL 70'	496	484	308	4.44	6690	240
H5117-3 CALVANI 203'	0	292	303	4.52	3896	102
H5117-4 WHITES ZOO 42	0	500	253	6.94	4330	195
						<del></del>
Quality Control	NR	42.0	45.0	5.05	1368	NR
True Value QC	NR	50.0	50.0	5.00	1413	NR
% Recovery	NR	84.0	90.9	101	96.7	NR
Relative Percent Difference	NR NR	0	2.4	0	0.1	NR
	· ·				····	
METHODS:	SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1
٠	-					
v	Cl	.SO₄	CO <sub>3</sub>	HCO₃	рН	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00
H5117-1 L STREET	621	648	0	190	7.01	2778
H5117-2 TIDWELL	1770	796	0	293	6.98	5878
H5117-3 CALVANI	640	807	0	102	7.22	3238
H5117-4 WHITES ZOO	691	655	0	195	7.22	3300
Quality Control	1070	51.51	NR	1088	6.99	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	107	103	NR	109	99.9	NR
Relative Percent Difference	6.4	1.5	NR	8.1	0	NR
		<u>.</u>				
METHODS;	SM4500-CI-B	375.4	310.1	319.1	150.1	160.1

Amy Hill Chemisty

8/25/00

ARTESIA (505) 746-4214 1 (800) 748-1972

CARLSBAD (505) 885-6663 1 (800) 658-2739



P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084

Water Samples taken from existing water wells in the surrounding area of the Eugenie water well.

- L Street: NE ¼ SW ¼ NW ¼ Sec.19, T22S, R27E
   a. 92' Deep & 50 years old
- 2. Tidwell: NE ¼ NE ¼ NE ¼ NE ¼ Sec. 27, T22S, R27E a. 57' Dccp & 3 1/2 years old
- 3. Calvani: N ¼ NE ¼ NW ¼ SW ¼ Sec. 20, T22S, R27E a. 200' Deep & 40 Years old
- 4. Whites Zoo: SW ¼ NW ¼ SW ¼ NW ¼ Sec.8 T22S, R27E a. 42' Deep & 2 Years old

These samples where witnessed & pulled at 10:00 am on August 22, 2000.

Mike Stublefield of Artesia OCD

Clint Taylor of Taylor Well Service

Lawrence Dade of I & W, Inc.



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

ANALYTICAL RESULTS FOR I & W, INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 09/21/01 Reporting Date: 09/25/01 Project Owner: I & W, INC.

Project Name: EUGENIE SHALLOW MONITOR WELL

Project Location: CARLSBAD, NM

Sampling Date: 09/20/01

Sample Type: GROUNDWATER Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: AH

						•
	Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBER SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(u S/cm)	(mgCaCO <sub>3</sub> /L)
		00104104	001041041	00/04/04	00/04/04	00/04/04
ANALYSIS DATE:	09/25/01	09/24/01	09/24/01	09/24/01	09/24/01	09/24/01
H6170-1 MONITOR WELL #1	840	902	620	12	12277	274
					1100	
Quality Control	NR	55	46	5.29	1489	NR
True Value QC	NR	50	50	5.00		NR
% Recovery	NR	110	92.0	106	105	NR
Relative Percent Difference	NR	1.6	4.0	0.4	0.3	NR
METHODS:	SM	3500 <b>-</b> Ca-D	3500-Mg E	8049	120.1	310.1
·	CI <sup>-</sup>	SO <sub>4</sub>	CO <sub>3</sub>	HCO₃	рН	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:	09/24/01	09/24/01	09/24/01	09/24/01	09/24/01	09/24/01
H6170-1 MONITOR WELL #1	4100	575	0	334	6.87	9580
Quality Control	950	50.95	NR	944	7.02	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	95.0	102	NR	94.4	100	NR
Relative Percent Difference	3.0	2.7	NR	5.9	0.1	NR
METHODS:	SM4500-CI-B	375.4	310.1	310,1	150.1	160.1

Gayle A. Potter, Chemist

09/26/2001 Date

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

#### ARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240

(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS. NM 88240

ANALYTICAL RESULTS FOR

1 & W, INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 09/21/01 Reporting Date: 09/27/01

Project Owner: 1 & W, INC.

Project Name: EUGENIE DEEP MONITOR WELL #2

Project Location: CARLSBAD, NM

Sampling Date: 09/21/01

Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: AH

		Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	( <i>u</i> S/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS DA	TE:	09/25/01	09/26/01	09/26/01	09/26/01	09/24/01	09/24/01
H6171-1	MONITOR WELL #2	208	551	24	201	3656	119
							· .
Quality Contro		2.209	55	46	5.29	1489	NR NR
True Value QC		2.000	50	50	5.00	1413	NR
% Recovery	•	110	110	92.0	106		NR NR
Relative Percei	nt Difference	9.5	1.6	4.0	0.4	0.3	NR
METHODS:	*	CI (mg/L)	SO <sub>4</sub> (mg/L)	3500-Mg E OH (mg/L)	8049 CO <sub>3</sub> , HCO <sub>3</sub> (mg/L)	рН	310.1 TDS (mg/L)
ANALYSIS DA	TE:	09/24/01	09/24/01	09/24/01	09/24/01		09/24/01
H6171-1	MONITOR WELL #2	152	621	55.6	0	11.58	2460
				1 12 1		ÿ.e.	
Quality Control		950	50.95	NR	944	7.02	NR
True Value QC		1000	50.00	NR	1000		NR
% Recovery		95.0	102	NR	94.4		NR
Relative Percer		3.0	2.7	NR	5.9		NR
METHODO:		014500 01 01	.075 41	040.4	040.4	450.4	400 (
METHODS:		SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

09/27/200/

## D

SARDINAL LABORATORIES, INC.

#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240

(915) 673-7	$\frac{6001 \text{ Fax} (915) 673-7020}{6001 \text{ Fax} (915) 673-7020}$	5) 393-2326 Fax (505) 393-2476	Page of
Company Name: I & W, Inc			ANALYSIS REQUEST
Project Manager: George Pai	cchman	BILL TO PO#3854	
Address: Box 1685 or 30	03 S. Canal	Company: I & W, Inc.	
City: Carlsbad Sta	te: NM Zip: 88220	Attn George Parch MAN	
Phone #: (505)885-6663		Address: Box 98	
Fax#: (505)885-8477	_	Clty: Loco Hills	
Project #: Deep #2 Proj	ect Owner: I & W, Inc		
Project Name: Eugenie Dee	p Monitor Well #2	Phone #:(505)677-2111	
Project Location: Carlsbad,	NM	Fax #: (505)677-2240	
LAB I.D. Sample  4617-) Monitor We	G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL	PRES. SAMPLING  OLIHER: OLIHER: OLIHER: OLIHER: OP/2/01 1/0/	2 Cation
		++++	
analyses, At comms, including those for negativence and any of service. In no event shall Cardinal be table for incidental or or	Date:  Date:  Date:  Received By  Time:  Received By	Fax Result REMARKS: (Lab Staff)	notetion of the applicable 30 days past due at the rate of 24% per annum from the original date of tinvolce, and at costs of collections, including attorney's fees, or of otherwise.    Sult   Yes   No Additional Fax #:
Sampler - UPS - Bus - Other:	Sample Cor Cool Igla V Yes V	t (Initials)	

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.



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

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

ANALYTICAL RESULTS FOR

I&W INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 08/22/00 Reporting Date: 08/25/00 Project Number: NOT GIVEN Project Name: NOT GIVEN

Project Location: NOT GIVEN

Sample Type: GROUNDWATER Sample Condition: COOL & INTACT

Sample Received By: AH

Sampling Date: 08/22/00

Analyzed By: AH

		_						
•	Na	Ca	Mg	K	Conductivity	T-Alkalinity		
LAB NUMBER SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	( <i>u</i> S/cm)	(mgCaCO <sub>3</sub> /L)		
ANALYSIS DATE:	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00		
H5117-1 L STREET	192	363	91	4.40	3458	156		
H5117-2 TIDWELL	496	484	308	4.44	6690	240		
H5117-3 CALVANI	0	292	303	4.52	3896	102		
H5117-4 WHITES ZOO	0	500	253	6.94	4330	195		
Quality Control	NR NR	42.0	45.0	5.05	1368	NR		
True Value QC	NR	50.0	50.0	5.00	1413	NR		
% Recovery	NR	84.0	90.9	101	96.7	NR		
Relative Percent Difference	NR	. 0	2.4	0	0.1	NR		
					120.1	310.1		
METHODS:	「HODS: SM3500-Ca-D β500-Mg							
		;						
	CI <sup>-</sup>	SO <sub>4</sub>	CO <sub>3</sub>	HCO₃	pН	TDS		
·	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)		
ANALYSIS DATE:	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00		
H5117-1 L STREET	621	648	0	1:90	7.01	2778		
H5117-2 TIDWELL	17.70	796	0	293	6.98	5878		
H5117-3 CALVANI	640	807	0	102	7.22	3238		
H5117-4 WHITES ZOO	691	655	0	195	7.22	3300		
113117-4 WITH LS 200		.000}			1.22	3300		
713177-4 W7117E3 200					1.22	3300		
Quality Control	1070	51.51	NR	1088	6.99	NR		
Quality Control True Value QC								
Quality Control True Value QC % Recovery	1070	51.51	NR	1088	6.99	NR		
Quality Control True Value QC	1070 1000	51.51 50.00	NR NR	1088 1000	6.99 7.00	NR NR		
Quality Control True Value QC % Recovery	1070 1000 107	51.51 50.00 103	NR NR NR	1088 1000 109	6.99 7.00 99.9	NR NR NR		

#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES, INC. 2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240

	(915) 673-7001 Fax (915) 673-7020	) (5U:	<del>5) 393</del>	-232	o ra	x (o	JO) J	93-2	4/6									rayo_				
Company Name:	7 500 Typ.							B	ILL TO			_			ANAL	YSIS.	RE	QUES	ST.			
Project Manager	: George Parchr	nan			P.O. #:																	
Address:	50 x 1685					Co	mpaı	ny: _	ΓEW:	Inc	$\sim$									ĺ		ŀ
City: (100)	IShad State: NM	1zip: 88220			Attn:					U											- 1	
Phone #:	5)885-64800 Fax #: (505)	885.	-84	77	,	Add	dress	s: 1	30x 9	8	iC							}		ŀ		i
Project #:	Ulul Project Owner:					Сн	v: /	100	n Hi	113	Anion											
Project Name:	•					Sta	te: /	$\gamma \gamma \gamma$	Zip: 8	3255	H											
Project Location						1	one #	Tom.			3	_				İ				i		
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FOR LAB USE ONLY				MATI	RIX				SAMPL	NG	D.											1
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP # CONTAINERS		SOIL	CRUDE OIL SLUDGE	OTHER:	ACID/BASE:	ICE / COOL OTHER:	DATE	TIME	I CATI											
H5117-1	L Street		4						8/22/00	10:00	~	ļ <u>.</u>						ļ				
-2	TIDWELL		4		1			_			1						ļ					
-3	CAIVANI		4	1	_		4		<u> </u>		V	<u></u>			ļ		<b> </b>					
-4	WHITES ZOO		14	-	4	1		_	V	P	7			<u> </u>	ļ	ļ	<b> </b>	ļ	<b> </b>			
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inalyses. All claims: including service. In no event shall Cap	Darrages. Cardinal's liability and clear's exclusive recreedy for any of those for negligence and any other course whatecover shall be deen dark to liabilit to-tecjdental or consequental darrages, including with out of or related to this performance of services hereunder by Card	red waived a out limitation	rios med , business	in writing magnuptic	and rec	alved by of use, o	Cerdin or loss o	el within f profits	30 days after comp incurred by client, i	leton of the applic a subsidiaries,	abio		!		30 d	leys post d	lue at the n	ade of 24%		from the or	iunia impre Iginal data (	
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ARTESIA (505) 746-4214 1 (800) 748-1972 CARLSBAD (505) 885-6663 1 (800) 658-2739



P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972

LOVINGTON (505) 396-3331 1 (800) 748-2084

Oil Commission Department 1220 S. Frances Dr. Santa Fe, New Mexico 87504 November 26, 2002

Attn: Wayne Price

In regards to our conversation concerning the monitor wells for I & W , Inc.. I have been in contact with Mr. Clint Taylor of Taylor Water Well Services. He was able to locate a producing fresh water well just to the north, northwest of I & W approximately ½ to ¾ miles up from our facility. This well is located at Emmitt Smith Elementary School. Enclosed is a map of the area with the previously sampled wells marked in blue. The red marked well would be the well proposed for your consideration. In regards to this matter we are hopeful that this will satisfy the needs of your department. We will be waiting to hear from you.

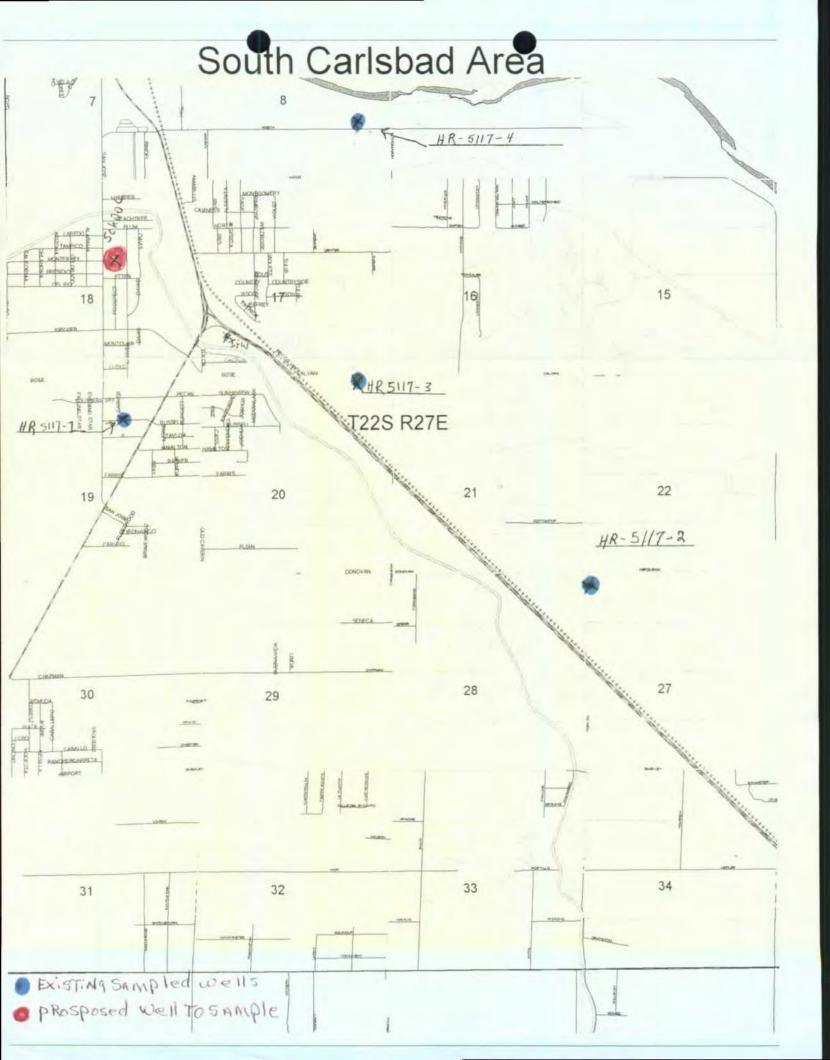
Legals: Sec.18, T22S, R27E

Sincerely

George E. Parchman

GP/lr

12/4/02 To colled OR To SAMPUS W.P.









P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084

Water samples taken from existing water wells in the surrounding area of the Eugenie water well.

- L Street: NE <sup>1</sup>/<sub>4</sub> SW <sup>1</sup>/<sub>4</sub> NW <sup>1</sup>/<sub>4</sub> Sec. 19, T22S, R27E
   a. 92' Deep & 50 years old
- 2. Tidwell: NE ¼ NE ¼ NE ¼ NE ¼ Sec. 27, T22S, R27E a. 57' Deep & 3 ½ years old
- 3. Calvani: N1/4 NE ¼ NW ¼ SW ¼ Sec. 20, T22S, R27E a. 200' Deep & 40 years old
- 4. Whites Zoo: SW ¼ NW ¼ SW ¼ NW ¼ Sec. 8, T22s, R27E a. 42' Deep & 2 years old
- 5. Dr. Emmitt Smith Elementary School: Sec.18, T22S, R27E a. 200' Deep and appr. 30 years old

These samples 1-4 where witnessed & pulled at 10:00 am August 22, 2000.
Witnesses: Mike Stublefield of Artesia OCD
Clint Taylor of Taylor Water Well Services
Lawrence Dade of I & W, Inc.
Sample 5 was witnessed & pulled at 1:30 pm December 19, 2002
Witnesses: Mike Stublefield of Artesia OCD
George Parchman of I & W, Inc. Degree donch
Gene Pruitt of I & W, Inc. Jene fruits



PHONE (915) 673-7001 ● 2111 BEECHWOOD ● ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS. NM 88240

ANALYTICAL RESULTS FOR I&W, INC. ATTN: GEORGE PARCHMAN P.O. BOX 98 LOCO HILLS, NM 88255 FAX TO:

Receiving Date: 01/02/03 Reporting Date: 01/06/03

Project Number: 5

Project Name: DR. EMMITT SMITH SCHOOL

Project Location: SE18 T22S R27E

Sampling Date: NOT GIVEN
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT

Sample Received By: BC Analyzed By: AH

	Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBER SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mS/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:	01/03/03	01/03/03	01/03/03	01/03/03	01/03/03	01/03/03
H7366-1 -	507	316	100	3.27	3215	140
	1					
Quality Control	NR	42	41	4.67	1322	NR
True Value QC	NR	50	50	5.00	1413	NR
% Recovery	NR	84.0	82.0	93.4	93.6	NR
Relative Percent Difference	NR	0.8	1.4	1.0	0.7	NR
METHODS:	SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1

	CI	SO <sub>4</sub>	CO <sub>3</sub>	HCO <sub>3</sub>	рН	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:	01/03/03	01/03/03	01/03/03	01/03/03	01/03/03	01/06/03
H7366-1 -	708	1123	0	171	7.13	2876
						-F + P
Quality Control	1000	50.20	NR	1068	6.98	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	100.0	100	NR	107	99.7	NR
Relative Percent Difference	3.0	0.7	NR	7.7	0.1	0.4
METHODS:	SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Chemist /

1-6-C

Date 1





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

ANALYTICAL RESULTS FOR I&W, INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 12/23/02

Reporting Date: 12/26/02 Project Number: DEEP #2

Project Name: EUGENIE DEEP MONITOR WELL #1 & #2

Project Location: CARLSBAD, NM

Sampling Date: 12/20/02

Sample Type: GROUNDWATER Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: AH

		Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBE	ER SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mS/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS E	DATE:	12/23/02	12/23/02	12/23/02	12/23/02	12/23/02	12/23/02
H7351-1	MW #1	1953	481	314	4.92	7519	265
H7351-2	MW #2	209	346	157	4.42	3113	80
Quality Cont	rol	NR	42	41	4.67	1322	NR
True Value (		NR	50	ļ	5.00		NR
% Recovery		NR	84.0	-	93.4		NR
Relative Per	cent Difference	NR	0.8	1.4	1.0	0.7	NR
METHODS:	made , region, r	SM3	3500-Ca-D	3500-Mg E	8049	120.1	310.1

		CI <sup>-</sup>	SO₄	CO <sub>3</sub>	HCO <sub>3</sub>	рН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:		12/23/02	12/23/02	12/23/02	12/23/02	12/23/02	12/26/02
H7351-1 MW #1		3599	1357	0	323	6.81	7376
H7351-2 MW #2		148	1615	0	98	7.88	2920
Quality Control	· · ·	1000	50.20	NR	1068	6.76	NR
True Value QC		1000	50.00		1000	7.00	
% Recovery		100.0	100	NR	107	96.6	· NR
Relative Percent Differe	nce	3.0	0.7	NR	7.7	0.4	0.4
METHODS:		SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Chemist

Date



3





P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972

February 26, 2002

LOVINGTON (505) 396-3331 1 (800) 748-2084

Oil Conservation Division 1220 S. St. Francis Dr. Santa Fe, NM 87504

Attn: Wayne Price

I & W Inc. has come up with a proposal that we hope will meet with your approval on the Eugenie brine water station located at our Carlsbad yard.

In going with a version of the picture you sent on February 4<sup>th</sup> 2002 we will be installing a similar version. This packet will include a drawing, as well as the location of the installation. 220' being the best we can do in accordance with the lot and still maintain a safe distance from highway 285. Encountering the 1<sup>st</sup> ground water in the monitor wells was at 62'. So in using this method, we would need to use some type of oil, such as peanut oil into the PVC pipe. We feel this should work fine.

As I will be away until the month of April, I ask that you send your reply to Eugene Irby Manager/Owner, or Kevin Wilson Operation Manager.

We appreciate your time and concern in this matter and will waiting to hear from you. Thank you.

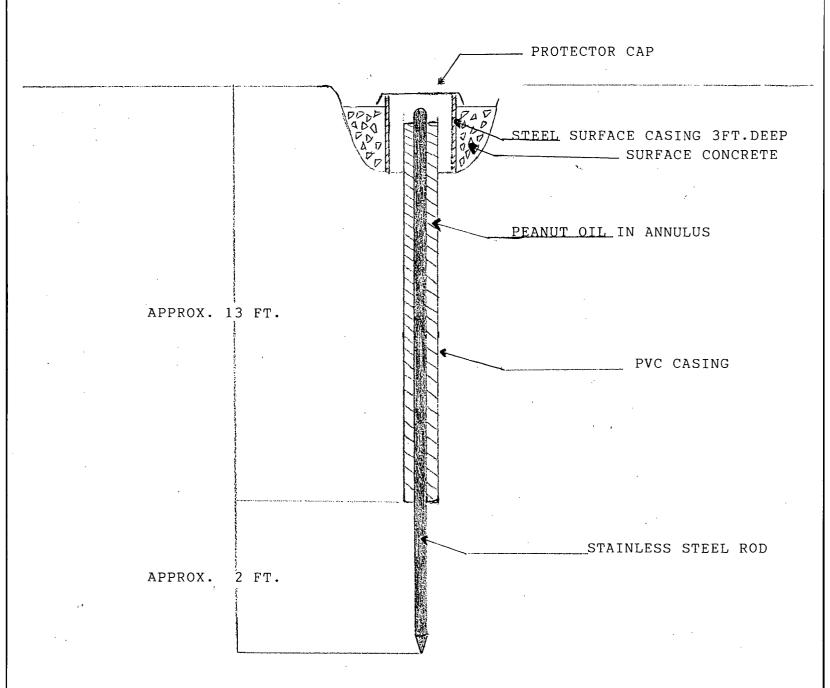
Sincerely,

George E. Parchman

Decrye E. Farehman

GEP/lr

#### MARKER INSTALLATION

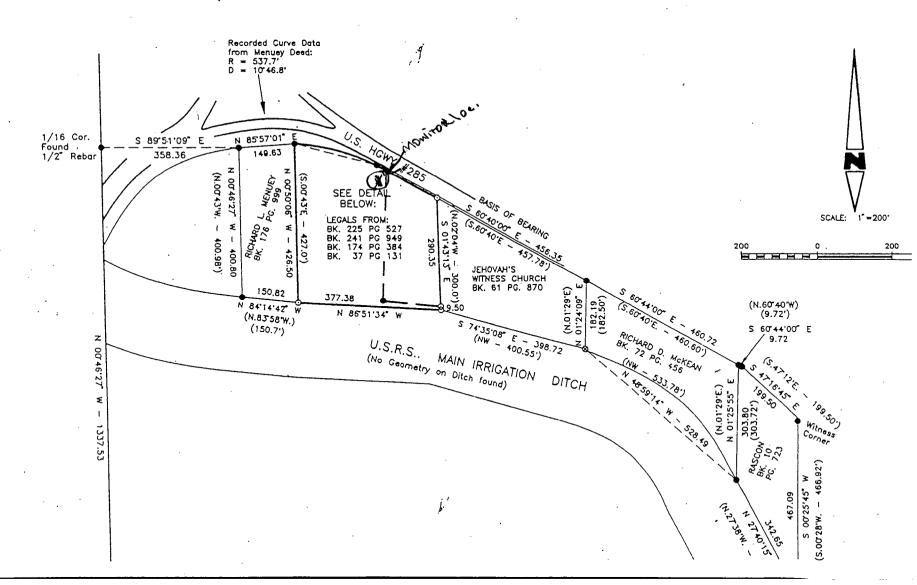


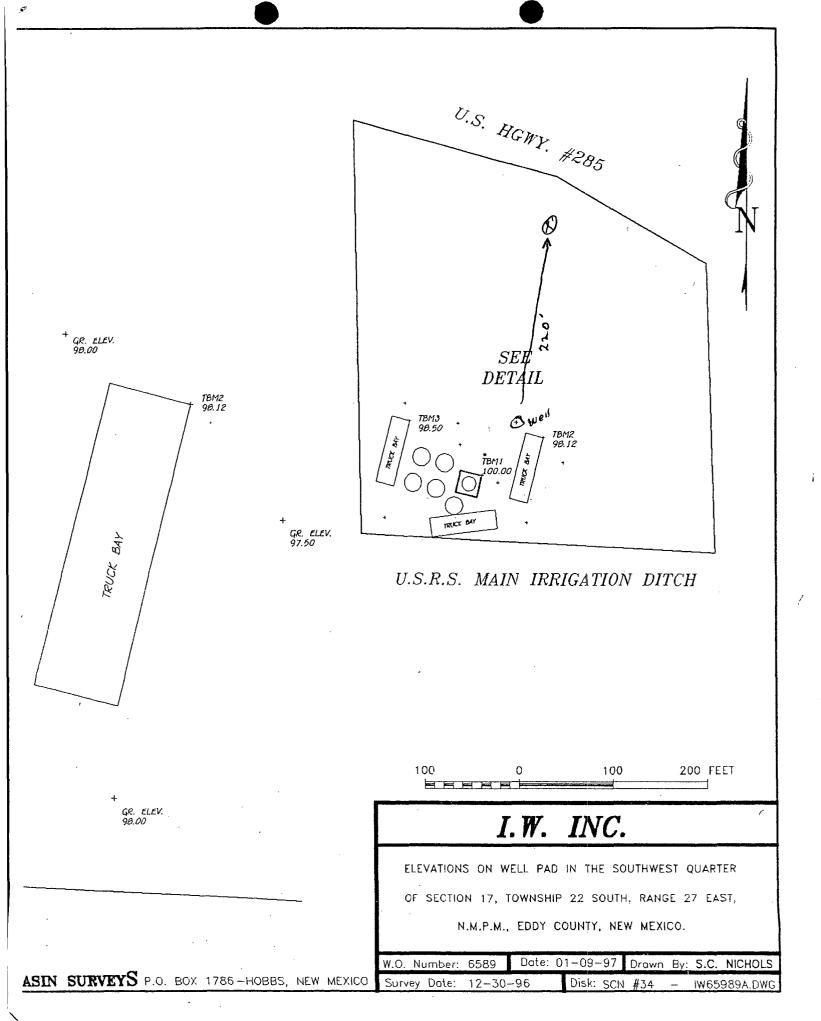
I & W, INC. CARLSBAD, NM. EUGENIE BRINE STATION

14wy 281 MONHOR DE LOCATION office TRuck ! PARKING **DETAIL** NOT TO SCALE GR. ELEV. 97.80 TBM3 98.50 <sup>+</sup>GR. ELEV. 97.80 + GR. ELEV. 98.10 99.37 WELL 99.80 99.39 TANK TANK 99.29 99.38 TBM1 100.00 F/G + GR. 9B.1 TANK 99.29 99.13 TANK TANK 99.2299.31 TANK 98.70 99.03 + GR. ELEV. 97.60 TRUCK BAY

U.S.R.S. MAIN IRRIGATION DITCH

SECTION 17, TOWNSHIP 22 SOUTH, RANGE 27 EAST, N.M.P.I EDDY COUNTY, NEW MEXIC







CARLSBAD (505) 885-6663 1 (800) 658-2739



P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084

## RECEIVED

OCT 5 - 2001

OIL CONSERVATION DIVISION

October 2, 2001

Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, NM 87504

ATTN: Wayne Price

Dear Mr. Price:

Enclosed you will find a city map of Carlsbad, with the location of four (4) wells around the I & W, Inc's Eugenie. Also, there is the test results of the samples from the two (2) monitor wells at the Eugenie. These samples were taken after the wells were purged.

The OCD representative present was Mike Stubblefiled. Samples were taken September 20, 2001.

miles Welletrell

Witness:

Mike Stubblefield

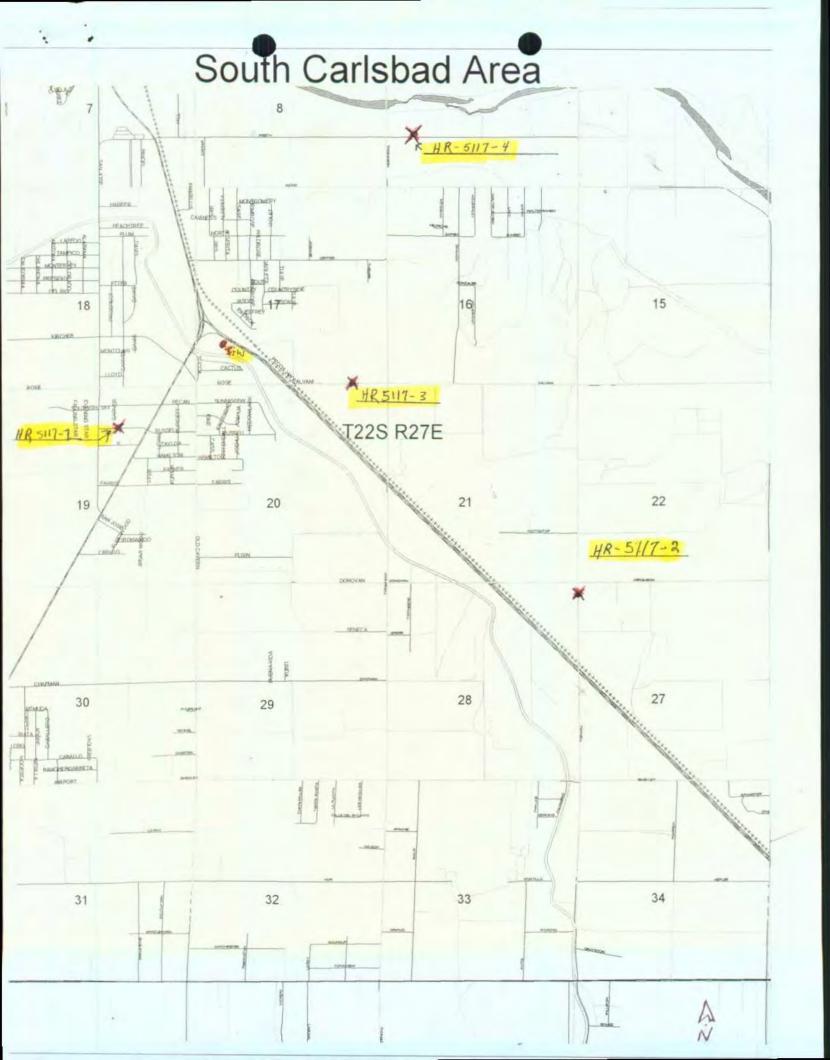
Larry Dade

losal Jacomes George Parchman

Respectfully,

George Parchman

General Manager







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

ANALYTICAL RESULTS FOR I&W INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 08/22/00
Reporting Date: 08/25/00
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 08/22/00

Sample Type: GROUNDWATER Sample Condition: COOL & INTACT

Sample Received By: AH

Analyzed By: AH

	Na	Ca	Mg	.K	Conductivity	T-Alkalinity
LAB NUMBER SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	( <i>u</i> S/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS DATE: Depth	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00
H5117-1 L STREET 92	192	363	91	4.40	3458	156
H5117-2 TIDWELL 70'	496	484	308	4.44	6690	240
H5117-3 CALVANI 203	0	292	303	4.52	3896	102
H5117-4 WHITES ZOO 42'	0	500	253	6.94	4330	195
Quality Control	NR	42.0	45.0	5.05	1368	NR
True Value QC	NR	50.0	50.0	5.00	1413	NR
% Recovery	NR	84.0	90.9	101	96.7	NR
Relative Percent Difference	t <sub>F</sub> NR	0	2.4	0	0.1	NR
METHODS:	SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1
	cl <sup>-</sup>	SO <sub>4</sub>	CO <sub>3</sub>	HCO₃	pН	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00
H5117-1 L STREET	621	648	0	190	7.01	2778
H5117-2 TIDWELL	1770	796	0	293	6.98	5878
H5117-3 CALVANI	640	807	0	102	7.22	3238
H5117-4 WHITES ZOO	691	655	0	195	7.22	3300
Quality Control	1070	51,51	NR	1088	6.99	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	107	103	NR	109	99.9	NR
Relative Percent Difference	6.4	1.5	NR	8.1	0	NR
METHODS:	SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Amy Hill Chemisty

8/35/00



CARLSBAD (505) 885-6663 1 (800) 658-2739



P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084

Water Samples taken from existing water wells in the surrounding area of the Eugenie water well.

- L Street: NE ¼ SW ¼ NW ¼ Sec.19, T22S, R27E
   a. 92' Deep & 50 years old
- 2. Tidwell: NE ¼ NE ¼ NE ¼ NE ¼ Sec. 27, T22S, R27E a. 57' Dccp & 3 1/2 years old
- 3. Calvani: N ¼ NE ¼ NW ¼ SW ¼ Sec. 20, T22S, R27E a. 200' Deep & 40 Years old
- 4. Whites Zoo: SW ¼ NW ¼ SW ¼ NW ¼ Sec.8 T22S, R27E a. 42' Deep & 2 Years old

These samples where witnessed & pulled at 10:00 am on August 22, 2000.

Mike Stublefield of Artesia OCD

Clint Taylor of Taylor Well Service

Lawrence Dade of I & W, Inc.



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

ANALYTICAL RESULTS FOR I & W, INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 09/21/01 Reporting Date: 09/25/01 Project Owner: I & W, INC.

Project Name: EUGENIE SHALLOW MONITOR WELL

Project Location: CARLSBAD, NM

Sampling Date: 09/20/01

Sample Type: GROUNDWATER Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: AH

							• • •
		Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBE	R SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(u S/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS D	PATE:	09/25/01	09/24/01	09/24/01	09/24/01	09/24/01	09/24/01
H6170-1	MONITOR WELL #1	840	902	620	12	12277	274
		10			F 00	4400	
Quality Cont		NR	55	46	5.29		NR
True Value C	ÍC .	NR	50	50	5.00		NR
% Recovery	· ·	NR	110	92.0	106		NR
Relative Per	cent Difference	NR	1.6	4.0	0.4	0.3	NR
METHODS:	· ·	SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1
		CI <sup>-</sup>	SO <sub>4</sub>	CO <sub>3</sub>	HCO <sub>3</sub>	pН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	•	(mg/L)
ANALYSIS D	ATE:	09/24/01	09/24/01	09/24/01	09/24/01	09/24/01	09/24/01
H6170-1	MONITOR WELL #1	4100	575	0	334	6.87	9580
Quality Conti	rol	950	50.95	NR	944	7.02	NR
True Value C		1000	50.93	NR	1000		NR
% Recovery		95.0	102	NR	94.4	100	NR
	cent Difference	3.0	2.7	NR	5.9	1	NR
METHODS:		SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

09/26/2001 Date



ARDINAL LABORATORIES, INC.
2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240 (915) 673-7001 Fay (915) 673-7020 (505) 393-2326 Fay (505) 202-2476

(915) 673-7001 Fax (915) 673-7020 (3	5) 393-2326 Fax (505) 393-24/6	Page of
Company Name: I & W, Inc.		ANALYSIS REQUEST
Project Manager: George Parchman	BILL TO PO+3854	
Address: Box 1685 or 3003 S. Canal	Company: I & W, Inc.	
City: Carlsbad State: NMZip: 88220	Attn: George Parchmon	
Phone #: (505)885-6683	Address:Box 98	
Fax#: (505)885-8477	City: Loco Hills	
Project #: Shallow #1 Project Owner: I & W, In		[ ]
Project Name: Eugenie Shallow Monitor Wel		-3
Project Location: Carlsbad, NM	Fax#: (505)677-2240	$ \mathcal{Z} $
FOR LAB USE ONLY MATE		4
(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL	SLUDGE OTHER: ACID: ICE / COOL OTHER:	calism
MG/70+ monitor well #1	9/20 pt 1100	
110101 100108324 1 1 1	1/20 7. 1100	
PU OTE: Liability and Damagee, Cardinal's Eability and client's exclusive remedy for any claim arising whe	r based in contract or tort, shall be limited to the amount paid by	he client for the Terms and Conditions: Interest will be charged on all accounts more than
and any other cause whatsoever shall be deemed walved unler service, in no event shall be deemed walved unler service, in no event shall Cardinal be liable for incidental or consequental damages, including without limitation, but	nade in writing and received by Cardinal within 30 days after corr less interruptions, loss of use, or loss of rendes incomed by elicity	pletion of the applicable 30 days past due at the rate of 24% per annum from the original date of invoice,
affitates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless Sampler Relinquished:  Date: Received	whether such claim is based upon any of the above stated reason	is or otherwise.
Time:	Fax Result REMARKS	∷ □ Yes □ No
Relinquished By:	/: (Lab Staff)	
Time	assila late	
Delivered By: (Circle One) Sample © Cool	ndition/ CHECKED BY:	
Sampler - UPS - Bus - Other:		

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.



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

ANALYTICAL RESULTS FOR I & W, INC. ATTN: GEORGE PARCHMAN P.O. BOX 1685 CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 09/21/01 Reporting Date: 09/27/01 Project Owner: I & W, INC.

Project Name: EUGENIE DEEP MONITOR WELL #2

Project Location: CARLSBAD, NM

Sampling Date: 09/21/01

Sample Type: GROUNDWATER Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: AH

	•	Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(u S/cm)	(mgCaCO <sub>3</sub> /L)
DAB NOMBER	OAMI EL ID	(1119/11)	(IIIg/L)	(1119/11)	(mg/L)	(a G/c/ii)	(mgcaccyc)
ANALYSIS DAT	ΓE:	09/25/01	09/26/01	09/26/01	09/26/01	09/24/01	09/24/01
H6171-1	MONITOR WELL #2	208	551	24	201	3656	119
Quality Control		2.209	55	46	5.29	1489	NR
True Value QC		2.000	50	50	5.00	1413	NR
% Recovery		110	110	92.0	106	105	NR
Relative Percer	t Difference	9.5	1.6	4.0	0.4	0.3	NR
METHODS:		SM3	3500-Ca-D	3500-Mg E	8049	120.1	310.1
		CI	SO <sub>4</sub>	он (	CO <sub>3</sub> , HCO <sub>3</sub>	pН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DA	<u></u>	09/24/01	09/24/01	09/24/01	09/24/01	09/24/01	09/24/01
H6171-1	MONITOR WELL #2	152	621	55.6	0	11.58	2460
Quality Control		950	50.95	NR	944	7.02	NR
True Value QC	· /	1000	50.00	NR	1000	<del></del>	NR_
% Recovery		95.0	102	NR	94.4	100	NR
Relative Percer	nt Difference	3.0	2.7	NR	5.9	0.1	NR

Gayle A. Potter, Chemist

09/27/200/

# ARDINAL LABORATORIES, INC.

#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240 (915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Company Name: I & W, Inc. ANALYSIS REQUEST Project Manager: George Parchman BHILTO PO #= 2854 Address: Box 1685 or 3003 S. Canal Company: I & W, Inc. City: Carlsbad Attn: George Parch MAN State: NM Zip: 88220 Phone #: (505)885-6663 Address: Box 98 Fax #: (505)885-8477 City: Loco Hills Project #: Deep #2 Project Owner: I & W, Inc. Zip: 88255 State: NM Project Name: Eugenie Deep Monitor Well #2 Phone #: (505)677-2111 Fax #: (505)677-2240 Project Location: Carlsbad, NM AB USE ONLY MATRIX PRES. SAMPLING (G)RAB OR (C)OMP NASTEWATER LAB I.D. Sample I.D. ICE / COOL SLUDGE OTHER ACID: SOIL DATE TIME W6171-1 monitor Well #2 110 Terms and Conditions: Interest will be charged on all accounts more than me including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable 30 days past due at the rate of 24% per annum from the original date of invoice. ent shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiance, and all costs of collections, including attorney's fees effliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the arhpier Relinguished: Date: Received By: Phone Result D Yes D No Additional Fax #: Fax Result: D Yes REMARKS: Relinguished By: Delivered By: (Circle One) (Initials) Sampler - UPS - Bus - Other:

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

# ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. day	ted <u>8/20/0(</u>
or cash received on in the amount of \$	1700 20
from Itw, INC.	
for EUGENIE BRINE WELL BW-00	6
for EUGENIE BRINE WELL BW-00  Submitted by: WAYNE RICE . Data:	8/30/01
Submitted to ASD by:Date:	
Recaived in ASD by:Date:	
Filing Fee New Facility Renewal	÷
McdificationOther	
Organization Code <u>521.07</u> Applicable FY <u>20</u>	200
To be deposited in the Water Quality Management Fund.  Full Payment or Annual Increment	
	(1)
I. & W, INC. P.O. BOX 98 505-677-2111 LOCO HILLS, NM 88255	
PAY DATE 8/20/01	95-198/1122
ORDER OF Water Quality Management Fund	L700.00**
Eugenie Permit Dollars and 00/100	RS 🛈
THIS CHECK IS DELIVERED FOR PAYMENT ON THE ACCOUNTS LISTED.	
One Thousand Seven Hundred Dollars and 00/100	L700.00**

Western Bank

## ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of che	ck No. dated 8/22/
or cash received on	
from It W IVC	
for EUGENIE BRING St	BW-006
Submitted by: WAYNE ARKE	Data: 8/30/6/
Submitted to ASD by:	Date:
Received in ASD by:	Data:
Filing Fee New Facility	Renewal
ModificationOther	
Organization Code <u>521.07</u> To be deposited in the Water Qualit	
Full Payment or Annual	
I. & W, INC. P.O. BOX 98 505-677-2111 LOCO HILLS, NM 88255	DATE 8/22/0/
FAY TO THE ORDER OF Water Quality Manageme Fully and Ollo	
THIS CHECK IS DELIVERED FOR PAYMENT ON THE ACCOUNTS LISTED	al Deans



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury

Cabinet Secretary

August 17, 2001

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7645

George Parchman I&W, Inc. P.O. Box 98 Loco Hills, New Mexico, 88255

Re:

**Ground Subsidence Monitors** 

Discharge Plan BW-006 Brine Well

Carlsbad Eugenie Brine Extraction Facility

Eddy County, New Mexico

Dear Mr. Parchman:

The Discharge Plan BW-006 condition #25 required I&W, Inc. to submit for OCD approval a plan to detect long-term subsidence. Since OCD presently does not have a standard for such installations, OCD is hereby extending your deadline for plan submittal until January 31, 2002 when your first annual report is due. Please make sure I&W, Inc. addresses all of the deadlines mentioned in the approval conditions. In order to assist you, OCD has enclosed technical information pertaining to Ground Subsidence Monitors.

Please be advised that NMOCD granting of this extension does not relieve I&W, Inc. of responsibility should their operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve I&W, Inc. of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions please do not hesitate to contact me at 505-476-3487 or E-mail at WPRICE@state.nm.us.

Sincerely,

Wayne Price-Pet. Engr. Spec.

cc:

OCD Artesia Office

Attachments-2

### **Affidavit of Publication**

State of New Mexico, County of Eddy, ss.

Dawn Higgins	
being first duly sworn, on oath says:	
That she is Business of the Carlsbad Current-Argus, a newsp daily at the City of Carlsbad, in said count of New Mexico and of general paid circulative; that the same is a duly qualified newsplaws of the State wherein legal notices and may be published; that the printed notice was published in the regular and entire newspaper and not in supplement thereof follows, to wit:	paper published by of Eddy, state on in said coun- paper under the advertisements attached hereto edition of said
June 15	2001
	2001
	2001
	2001
	2001
	2001
That the cost of publication is \$\frac{61.19}{and that payment thereof has been made a assessed as court costs.  Subscribed and sworn to day of \text{Aury 1}  My commission expires \text{5/25/Notary 1}	before me this  2001  0049114

June 15, 2001

NOTICE OF PUBLICATION

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

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(BW-006) - I&W Incorporated, George Parchman, P.O. Box 98, Loco Hills, New Mexico 88255, has submitted a discharge plan renewal application for their Carlsbad Eugenie Brine Extraction Facility located in the SW/4SW/4 of Section 17, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico. Fresh water is injected down annulas of the No. 1 well to an approximate depth of 550 feet and brine is produced through the tubing. The brine has an average total dissolved solids: content of 300,000 mg/l. Groundwater most likely to be affected by any accidental discharge is at a depth of 50 feet with a total dissolved solids concentration of about 1,000 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conversation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:30 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing should be held. A hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a

Nº 21760



Appear 16/01

Appear 1/6/01

of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county-of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

, 2001
,2001
, 2001
, 2001
2001

That the cost of publication is \$ 61.19 and that payment thereof has been made and will be assessed as court costs.

Subscribed and sworn to before me this

\_\_ day of

My commission expires \_\_\_\_\_\_ 5/25/03

Matana Buh

Notary Public

Mexico. Water Quanty Control Commission Regulations, the following discharge plan applications has been submitted to Director of the conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(BW-006) - I&W Incor-George porated, Parchman, Hills, New 98, Loco Hills, New Mexico 88255, has submitted a discharge plan renewal application for their Carlsbad Eugenie Brine Extraction Facility located in the SW/4SW/4 of Section 17, Township 22 South, Range 27 East, NMPM, Eddy County, New Mex-lco. Fresh water is injected down annulas of the No. 1 well to an ap-proximate depth of 550 feet and brine is produced through the tub-ing. The brine has an average total dissolved solids content of 300,000 mg/l. Groundwater most likely to be affected by any accidental discharge is at a depth of 50 feet with a total dissolved solids concentration of about 1,000 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conversation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above adviewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shell alleries to be a significant of the conservation Division and the significant of the conservation between the conservation of the oil conservation of the conserva sion shall allow at least thirty (30) days after the date of publication of this notice during which com-ments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is signif-icant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 7th day of June 2001.

STATE OF NEW MEXICO OIL CONSERVATION DIVISION

LORI WROTENBERY

Appear 7(6/01)

L COMSERVATION DIVIN

#### NOTICE OF PUBLICATION

3

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

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(BW-004) - Gandy Corporation., Larry Gandy, Vice-President, P.O. Box 827, Tatum, New Mexico, 88267 has submitted an application for renewal of its previously approved discharge plan for its brine well facility. The brine extraction facility is located in the SW/4 SW/4 of Section 31, Township 16 South, Range 35 East, NMPM, Lea County, New Mexico. Fresh water is injected to an approximate depth of 2,000 feet and brine is extracted with an average total dissolved solids concentration of 313,000 mg/l. Groundwater most likely to be affected by any accidental discharge is at a depth of approximately 120 feet and has a total dissolved solids content of approximately 325 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(BW-006) - I&W Incorporated, George Parchman, P.O. Box 98, Loco Hills, New Mexico 88255, has submitted a discharge plan renewal application for their Carlsbad Eugenie Brine Extraction Facility located in the SW/4 SW/4 of Section 17, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico. Fresh water is injected down annulas of the the No. 1 well to an approximate depth of 550 feet and brine is produced through the tubing. The brine has an average total dissolved solids content of 300,000 mg/l. Groundwater most likely to be affected by any accidental discharge is at a depth of 50 feet with a total dissolved solids concentration of about 1,000 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

(BW-028) - Gold Star SWD Ltd. Co., Royce Crowell, Manager/Partner, P.O. Box 1480, Eunice, New Mexico, 88231 has submitted an application for their proposed Eunice Brine Station, located in the NW/4 NW/4 of Section 15, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. Fresh water will be injected to an approximate depth of 2,000 feet. Approximately 1,000 barrels per day of brine water will be extracted with an average total dissolved solids concentration of 300,000 mg/l. The brine water will be stored in three 500 barrel aboveground closed top fiberglass tanks. Ground water most likely to be affected by any accidental discharge is at a depth of approximately 80 feet and has a total dissolved solids content of approximately 1,200 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain the information from the Oil Conservation ivision and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 7 Th. day of June 2001.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

SEAL

LORI WROTENBERY, Director

#### ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. 200 dated //2///
I hereby acknowledge receipt of check No dated
from I+W INC.
for EUGENIG - CARISBAD BRING WELL BW-006  Submitted by: WAYNE PRICE . Date: 2/16/01
Submitted to ASD by: \[ \lambda \lambda \text{Nav } \lambda \] Date: \[ \alpha \lambda
Received in ASD by:Date:
Filing Fee X New Facility Renewal
ModificationOther
Organization Code <u>521.07</u> Applicable FY <u>2001</u>
To be deposited in the Water Quality Management Fund.
Full Payment or Annual Increment
I & W INC. P.O. BOX 98 (505) 677-2111 LOCO HILLS, NM 88255  WESTERN BANK ARTESIA, NEW MEXICO 88210



01/30/01 OCD

PAY

FIFTY AND 00/100 DOLLARS\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CHECK AMOUNT

\$\*\*\*\*\*\*\*\*50.00

TO THE OIL CONSERVATION DIVISION ORDER 1220 S. ST. FRANCIS DRIVE OF

SANTA FE

NM 87504

USA

ACCOUNT NO.			VENDOROCD OIL CONSI	RVATION DIVISION	CHECK NO. 029869	CHECK D	CHECK DATE 1/30/01	
VOUCHER	INVOICE NUMBER	INV. DATE	REFERENCE	INVOICE AMOUNT	AMOUNT PAID	DISCOUNT TAKEN	NET CHECK	
58042	FILING PEB	1/30/01	DISCHARGE PLAN APPL	50.00	50.00	.00	50.	
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District 1
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

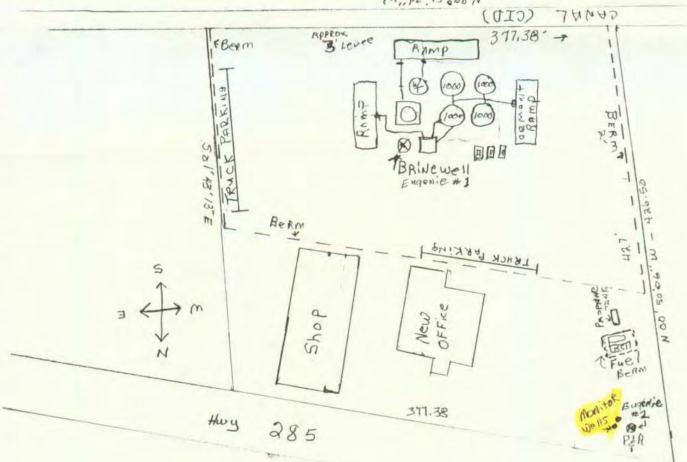
#### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Revised March 17, 1999

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

# DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS. REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS (Refer to the OCD Guidelines for assistance in completing the application)

☐ New Renewal I. Type: <u>Brine Water Discharge</u> 2. Operator: I & W, Inc. Address: P.O. Box 98 Loco Hills, New Mexico Contact Person: <u>Eugene Irby/George Parchman</u> Phone: (505) 748-1138 /4 Section <u>17</u> Township <u>22</u> Range <u>27</u> Submit large scale topographic map showing exact location. Attach the name, telephone number and address of the landowner of the facility site. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility. Attach a description of all materials stored or used at the facility. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included. Attach a description of current liquid and solid waste collection/treatment/disposal procedures. Attach a description of proposed modifications to existing collection/treatment/disposal systems. 10. Attach a routine inspection and maintenance plan to ensure permit compliance. Attach a contingency plan for reporting and clean-up of spills or releases. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included. 13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders. 14. CERTIFICATION I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief. Title: \_\_ Manager Date: \_\_\_\_ January 29, 2001 Signature:

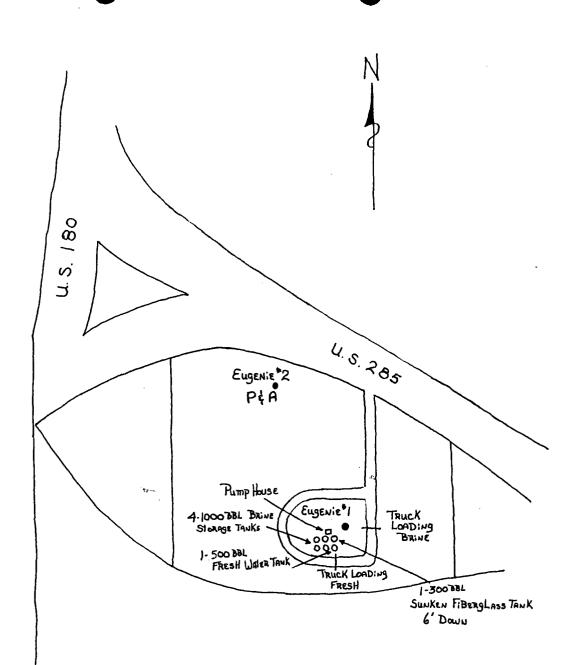


New

FXISTING Plot

4-1000 BBL BRINE Storage Tauks Eugenie 1 Eugenie2 Plugged? DiscHarge Brine To Storage tanks GROUND SURFACE 1 well 8% Casing Cevrented Top to Batton Injection EXTRACTION 220' 55" Creans 2% TuBing 27/8 TUBING 456 Top of SALT. 456 SALT FORMATION 663' SUB-SURFACE SCHEMATIC DRAWING Depth, Diameter Casing & Tubing Specs 

South Y CARLSBAD N.T. 88220

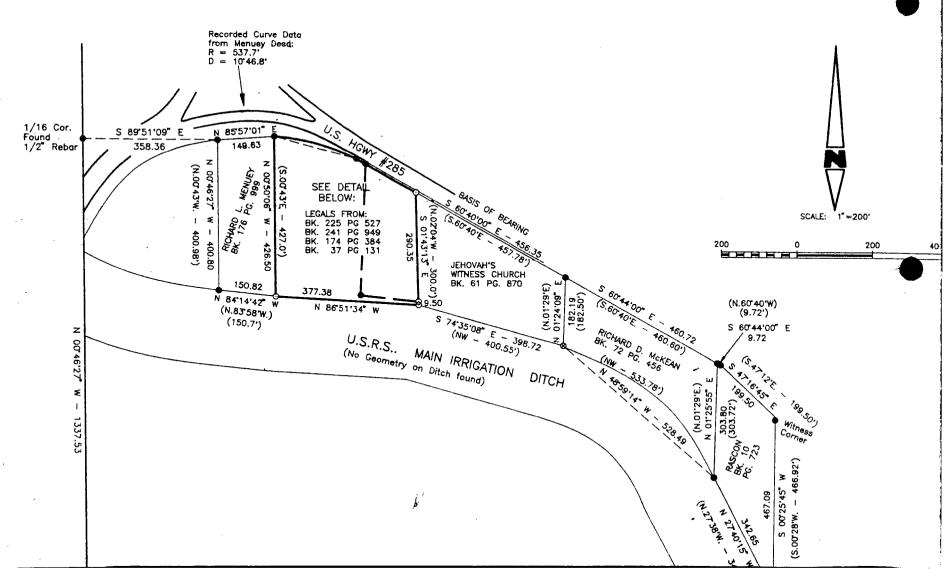


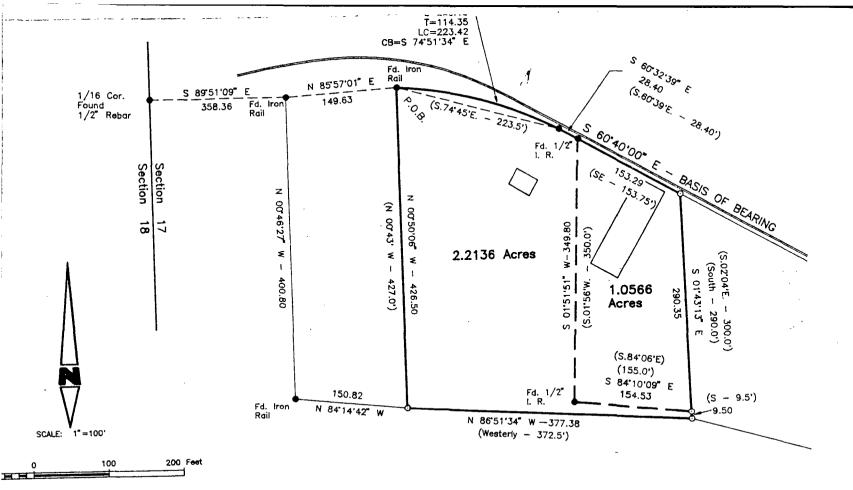
1

Facility Flot Flan Map A

, , ,		
Eugenie* 1	INC, -Eugenie*2 Brine Station	-
SW/4 - SW/4		
DATE 1/29/01	GENE PRUIT	ReviseD Drawing

SECTION 17, TOWNSHIP 22 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO





#### LEGAL DESCRIPTION:

A tract of land located in the Southwest quarter of the Southwest quarter of Section 17, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico and being more particularly described as follows:

Beginning at the Northwest corner of this tract, a point being on the South Right of Way line of State Highway No. 285 and a point being S.89'51'09"E., 358.36 feet and N.85'57'01"E., 149.63 feet from a half inch rebar accepted as the Northwest corner of

#### LEGEND:

- - Found Corner



## CENTRAL OPERATIONS LABORATORY WATER ANALYSIS REPORT HOBBS, NEW MEXICO

COMPANY	I & W Incorpo	orated			REPOR	T ·	W01-010		
	··				DATE		January 2	24, 2001	
		****			DISTRI	CT	Artesia		
SUBMITTED B	Υ		i i i i i i i i i i i i i i i i i i i	****					• • • • • • • • • • • • • • • • • • • •
WELL Eug	enie	Di	EPTH		FORMA	TION			
COUNTY	CITIC		ELD		SOURC				
						_	-	-	
SAMPLE	Carlsbad Fre	esh	Eugenie Salt						
Sample Temp.	68	°F	68	°F		°F			٥ŧ:
RESISTIVITY			<u> </u>	···			-		
SPECIFIC GR.	1.001	<del></del>	1.210						
рН	8.17		6.79	_					
CALCIUM	400	mpl	1,550	mpl		mpl	·		mpi
MAGNESIUM	570	mpl	1,230	mpl		mpl			mpl
CHLORIDE	131	mpl	223,000	mpl		mpl			mpl
SULFATES	light	mpl	Moderate	mpl		mpl			mpl
BICARBONATES	264	mpl	103	mpl		mp!			mpl
SOLUBLE IRON	0	mpl	0	mpl		mpl			mpl
Sodium	-	mpl		— mpl	0	mpl		0	mpł
TDS	-	mpl	_	mpl	0	mpi		0	mpl
OIL GRAVITY	@	°F		°F	@	°F		@	oŁ:
REMARKS	Salt Water W	eight of 10.1	ppg						
							= Milligrams per l		
		_				Resiti	vity measured in:	Ohm/m2	/m
			ny and neither it nor a	-					
part thereof nor a	copy thereof is to	be published of	or disclosed without firs	t					

securing the express written approval of laboratory management: it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Co.

ANALYST:

## **QUANTITIES**

SOURCE: EUGENIE #1 EXTRACTION FACILITY

AVERAGE DAILY VOLUME PRODUCED: 200 BBLS/DAY

ESTIMATED VOLUME STORED: 4000 BBLS

TYPE OF CONTAINERS: 4 X 1000 BBL-STEEL TANKS



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

ANALYTICAL RESULTS FOR I & W, INC. ATTN: GEORGE PARCHMAN P.O. BOX 1685 CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 04/14/00 Reporting Date: 04/20/00 Project Number: SHALLOW #1

Project Name: EUGENIE SHALLOW MONITER WELL

Project Location: CARLSBAD, NM

Sampling Date: 04/14/00

Sample Type: GROUNDWATER Sample Condition: COOL & INTACT

Sample Received By: GP

Analyzed By: AH

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:	04/20/00	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00
H4796-1 125' WELL #1	880	573	243	12	8020	468
Quality Control	NR	44	58	5.19	1392	NR
True Value QC	NR	50	50	5.00	1413	NR
% Accuracy	NR	88	116	103.8	98.5	NR
Relative Percent Difference	NR	1.8	8.6	3.1	0.2	NR
METHODS:	SM3	3500-Ca-D	3500-Mg E	8049	120.1	310.1
	cı <sup>-</sup>	SO <sub>4</sub>	CO <sub>3</sub>	HCO₃	pН	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00
H4796-1 125' WELL #1	1947	1096	226	0	7.19	5890
Quality Control	1001	47.47	112	971	6.96	NR
True Value QC	1000	50.00	124	1000	7.00	NR
% Accuracy	100	94.9	90.3	97.1	99.4	NR
Relative Percent Difference	2.4	4.0	-	-	0	-
METHODS:	SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Chemist

Date

PLEASE NOTE: Llability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidentel or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates 14756015 profits incurred by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

### I+W #1

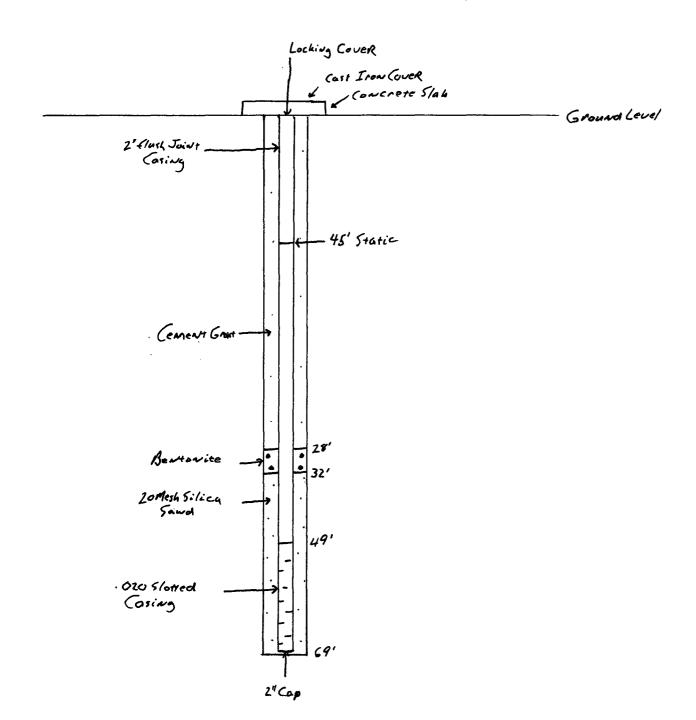
### DRILL RATE (MIN/FT)

#### SAMPLE DESCRIPTION

Drill 3' conductor hole and set 8 5/8" hole collar. Rig up flow line and steel mud pit. Mix bentonite mud and begin drilling 6 1/2" hole.

4 2- 0-4' Rocky Soil 6 1- 4-8' Clay:gry-brn,stky 8 1- 8-17' Caliche 10 1 2 1 4 2 6 2 8 4 17-29' Conglomerate: wht,pnk,yel brn,off wht,sme crs sand 20 9- Note: Lost about 100 gallons of mud when pulled off of bottom to make connection. Probably due to mud ring. 4 6- 6 13 8 13 3/28/00 30 13 29-36' Layers of rd.clay and conglomerate: pnk,th,gry,yel brn,sndy,calc 2 3 4 7 6 13 36-45' Conglomerate: wht,pnk,brk rd,yel brn,vry sndy,calc 8 13 40 5- 2 8 4 5 6 8 45-58' Clay:rd,sndy,sme fn gravel 8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate: yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 6 Gravel: fn (1/16"-1/8") limestone,chert,yel brn,prn,pnk,off wht,water zone 6 19- 62-67' Conglomerate: wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	0-2	3	3/27/00
6 1- 4-8' Clay:gry-brn,stky 8 1- 8-17' Caliche  10 1 2 1 4 2 6 2 8 4 17-29' Conglomerate:wht,pnk,yel brn,off wht,sme crs sand 20 9- Note:Lost about 100 gallons of mud when pulled off of bottom to make connection. Probably due to mud ring. 4 6- 6 13 8 13 3/28/00 30 13 29-36' Layers of rd.clay and conglomerate:pnk,th,gry,yel brn,sndy,calc 2 3 4 7 6 13 36-45' Conglomerate:wht,pnk,brk rd,yel brn,vry sndy,calc 8 13 40 5- 2 8 4 5-58' Clay:rd,sndy,sme fn gravel 8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 6 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	4	2-	0-4' Rocky Soil
8 1- 8-17' Caliche  10 1 2 1 4 2 6 2 8 4 17-29' Conglomerate:wht,pnk,yel brn,off wht,sme crs sand  20 9- Note:Lost about 100 gallons of mud when pulled off of bottom to make connection. Probably due to mud ring.  4 6- 6 13 8 13 3/28/00 30 13 29-36' Layers of rd.clay and conglomerate:pnk,th,gry,yel brn,sndy,calc  2 3 4 7 6 13 36-45' Conglomerate:wht,pnk,brk rd,yel brn,vry sndy,calc  8 13 40 5- 2 8 4 5 6 8 45-58' Clay:rd,sndy,sme fn gravel  8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy  60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone  6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd  8 17 67-69' Clay:rd,smth	6	1-	· · · · · · · · · · · · · · · · · · ·
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30 13 29-36' Layers of rd.clay and conglomerate:pnk,th,gry,yel brn,sndy,calc 2 3 4 7 6 13 36-45' Conglomerate:wht,pnk,brk rd,yel brn,vry sndy,calc 8 13 40 5- 2 8 4 5 6 8 45-58' Clay:rd,sndy,sme fn gravel 8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 6 19- 6 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	6	13	
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2 3 4 7 6 13 36-45' Conglomerate:wht,pnk,brk rd,yel brn,vry sndy,calc 8 13 40 5- 2 8 4 5 6 8 45-58' Clay:rd,sndy,sme fn gravel 8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	30	13	29-36' Layers of rd-clay and conglomerate:pnk,th,gry,yel brn,sndy,calc
6 13 36-45' Conglomerate:wht,pnk,brk rd,yel brn,vry sndy,calc 8 13 40 5- 2 8 4 5 6 8 45-58' Clay:rd,sndy,sme fn gravel 8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 6 19- 6 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	2	3	
8 13 40 5- 2 8 4 5 6 8 45-58' Clay:rd,sndy,sme fn gravel 8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 6 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	4	7	
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2 8 4 5 6 8 45-58' Clay:rd,sndy,sme fn gravel 8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	8	13	
4 5 6 8 45-58' Clay:rd,sndy,sme fn gravel 8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 6 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,prn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	40	5-	
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8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	4	5	
8 1- 50 2 2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	6	8	45-58' Clay:rd,sndy,sme fn gravel
2 1- 4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	8	1-	
4 1 6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	50	2	
6 6- 8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	2	1-	
8 5- 55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy 60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	4	1	
60 4- 2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	6	6-	
2 3 59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd 4 15 Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	8	5-	55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy
Gravel:fn (1/16"-1/8") limestone,chert,yel brn,brn,pnk,off wht,water zone 6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	60	4-	
6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	2	3	59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd
6 19- 62-67' Conglomerate:wht,pnk,yel brn,sndy,lmy,vry hrd 8 17 67-69' Clay:rd,smth	4	15	
8 17 67-69' Clay:rd,smth	6	19-	
	8	17	
70 1	70	1	•

Trip out of hole. Run in with test pump. Pump until mud thins. Trip pump out and run 2" casing. Place sand pack and cement with 1" tremie pipe. Develop well with air for 1 ½ hours.





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

ANALYTICAL RESULTS FOR 1 & W, INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 04/14/00 Reporting Date: 04/20/00 Project Number: DEEP #2

Project Name: EUGENIE DEEP MONITER WELL #2

Project Location: CARLSBAD, NM

Sampling Date: 04/14/00

Sample Type: GROUNDWATER Sample Condition: COOL & INTACT

Sample Received By: GP

Analyzed By: AH

		Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mS/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS DA	 TE:	04/20/00	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00
H4796-2	225' WELL #2	242	457	24	754	6420	832
<b>Quality Control</b>		NR	44	58	5.19	1392	NR
True Value QC		NR	50	50	5.00	1413	NR
% Accuracy		NR	88	116	103.8	98.5	NR
Relative Percer	nt Difference	NR	1.8	8.6	3.1	0.2	NR
METHODS:		SM3	3500-Ca-D	3500-Mg E	8049	120.1	310.1
		cı <sup>-</sup>	SO <sub>4</sub>	CO <sub>3</sub>	HCO <sub>3</sub>	pН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DA	TE:	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00
H4796-2	225' WELL #2	402	1282	0	0	11.54	2760
Quality Control		1001	47.47	112	971	6.96	NR
True Value QC		1001	50.00	124	1000	7.00	NR
% Accuracy		100	94.9	90.3	97.1	99.4	NR.
Relative Percen	t Difference	2.4	4.0	-	-	0	-

NOTE: Sample also contains 283 mg/L Hydroxide (OH) ion.

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinat within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliate:

#### I+W #2

#### DRILL RATE (MIN/FT)

#### SAMPLE DESCRIPTION

Drill 3' conductor hole and set 8 5/8" hole collar. Rig up flow line and steel mud pit. Mix bentonite mud and begin drilling 6 1/2" hole.

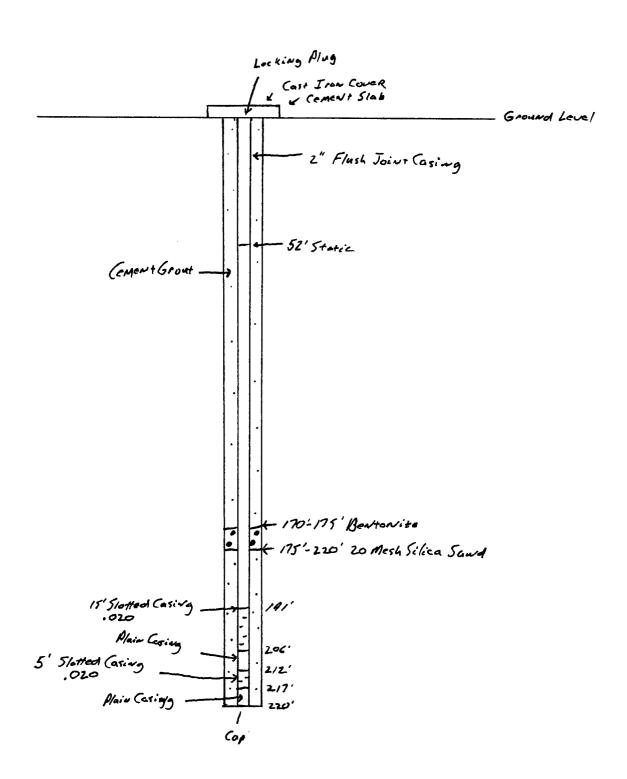
```
0-2 2
             4/5/00
 4 2
          0-4' Rocky Soil
          4-8' Clay:gry-brn,stky
 8 2
          8-17' Caliche
10 1-
 2 5
 4 3
 6 8
 8 10
          17-29' Conglomerate: wht, pnk, yel brn, off wht, sme crs sand
20 15
 2 14
 4 12
 6 16
 8 16-
              4/6/00
30 11
          29-36' Layers of rd clay and conglomerate:pnk,th,gry,yel brn,sndy,calc
 2 2
 4 17-
 6 17-
           36-45' Conglomerate: wht, pnk, brk rd, yel brn, vry sndy, calc
 8 16
40 9-
 2 8-
 4 7
  6 1-
           45-58' Clay:rd,sndy,sme fn gravel
 8 1-
50 1-
 2 1-
  4 1-
 6 1
  8 4
          58-59' Conglomerate: yel brn, gry, off wht, lmy, sndy
             4/7/00
60 7-
 2 1-
          59-62'
                  Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd
 4 19
                  Gravel:fn (1/16"-1/8") limestone, chert, yel brn, brn, pnk, off wht, water zone
 6 24
          62-67' Conglomerate: wht, pnk, yel brn, sndy, lmy, vry hrd
 8 8-
          67-130' Clay:rd,sndy
70 1-
```

```
70-2 1/2
  4 1/2
  6 1/2
  8 1/2
 80 1/2
  2 1/2
  4 1/2
  6 1/2
  8 1-
 90 4
            Note:sme gravel mixed with rd sndy clay
   2 3
    4
    6
   8 1-
100 1
   2 1
    1/2
    1/2
  10 1
     2
   6
    2-
   8 3
 20 4
           4/8/00 CHANGE TO 6" DRAG BIT
   2 1/2
   4 1/2
   6 1/2
   8 1/2
           4/9/00 CHANGE TO 6" TRICONE BIT
  30 4
           130-148' Conglomerate:pnk,rd,yel,brn,off wht,lmy,chrt,sme med crs sand,
                                 sme lsly consl sand+gravel,possible water zone
   4
     2-
   8
    3-
 40 6-
   2
   4
   6
    3-
          148-156' Clay:rd,smth,sft
 50 1-
   2 1-
    2
   4
   6 2
          156-170' Clay:rd,sndy,sme fn grvl
   8 1-
 60 1
```

```
160-2 1-
   4 1
   6 1-
   8 1
   70 1
          170-188' Clay: It yel-lt gn gry, smth
   2 3
    4 3
    6 4-
           188-200' Clay: It gry grn, sme yel, smth, sme fn gravel
    8 4-
   80 5
    2 3-
    4 4
      4-
    8 5-
   90 5
    2 7
    4 9
    6 9
    8 8-
 200 8
             4/11/00
    2 10
           200-203' Limestone: yel brn, vfn-micxln, drilled smoothly, no obv. fractures,
                                micro sucro, possible water zone
    4 4
    6 3-
           203-215' Clay:rd,smth-slty
    8 10
   10 7
    2 1
    4 1
                     Anhy:wht,pnk,plty,vfn xln,sme gyp
           215-217'
    6 4
    8 4-
           217-220' Clay:rd,smth,stky
 220 7
```

Trip out of hole. Run casing. Sand pack with 1 1/4" tremie pipe. Cement through 1 1/4" tremie. Trip into 2" casing with 1" pipe and develop well with air for 4 hours. Static water level: 52'

Pull samples from #1+#2 well.







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ANALYTICAL RESULTS FOR

I&W INC.

ATTN: GEORGE PARCHMAN

P.O. BOX 1685

CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 08/22/00 Reporting Date: 08/25/00 Project Number: NOT GIVEN

Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 08/22/00

Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT

Sample Received By: AH

Analyzed By: AH

		Na	Ca	Mg	. <b>K</b>	Conductivity	T-Alkalinity
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	( <i>u</i> S/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS DAT	E:	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00
H5117-1	L STREET	192	363	91	4.40	3458	156
H5117-2	TIDWELL	496	484	308	4.44	6690	240
H5117-3	CALVANI	0	292	303	4.52	3896	102
H5117-4	WHITES ZOO	0	500	253	6.94	4330	195
Quality Control		NR	42.0	45.0	5.05	1368	NR
True Value QC		NR	50.0	50.0	5.00	1413	NR
% Recovery	<u></u>	NR	84.0	90.9	101	96.7	NR
Relative Percen	t Difference	· sp NR	0	2.4	0	0.1	NR
METHODS:		SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1
		,CI	SO <sub>4</sub>	CO <sub>3</sub>	HCO₃	. рН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DAT		08/24/00	08/24/00	08/24/00	08/24/00	08/24/00	08/24/00
H5117-1	L STREET	621	648	0	190	7.01	2778
H5117-2	TIDWELL	1770	796	0	293	6.98	5878
H5117-3	CALVANI	640	807	. 0	102	7.22	3238
H5117-4	WHITES ZOO	691	655	0	195	7.22	3300
Quality Control		1070	51.51	NR	1088	6.99	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		107	103	NR	109	99.9	NR
Relative Percent	t Difference	6.4	1.5	NR	8.1	0	NR
METHODS:		SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Amy Hill Chemisty

8/25/00

PLEASE NOTE: Untility and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

ARTESIA (505) 746-4214 1 (800) 748-1972 CARLSBAD (505) 885-6663 1 (800) 658-2739



P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084

Water Samples taken from existing water wells in the surrounding area of the Eugenie water well.

- L Street: NE ¼ SW ¼ NW ¼ Sec.19, T22S, R27E
   a. 92' Deep & 50 years old
- 2. Tidwell: NE ¼ NE ¼ NE ¼ NE ¼ Sec. 27, T22S, R27E a. 57' Deep & 3 1/2 years old
- 3. Calvani: N ¼ NE ¼ NW ¼ SW ¼ Sec. 20, T22S, R27E a. 200' Deep & 40 Years old
- 4. Whites Zoo: SW ¼ NW ¼ SW ¼ NW ¼ Sec.8 T22S, R27E a. 42' Deep & 2 Years old

These samples where witnessed & pulled at 10:00 am on August 22, 2000.

Mike Stublefield of Artesia OCD

Clint Taylor of Taylor Well Service

Lawrence Dade of I & W, Inc.



# NEW MEXIC ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

Jennifer A. Salisbury

Oil Conservation Div. Environmental Bureau 2040 S. Pacheco Santa Fe, NM 87505

## **Memorandum of Meeting or Conversation**

Telephone Personal E-Mail FAX:	
12/21/00 2:59	PM
Originating P	Party: Wayne Price-OCD
Other Parties	s: George Parchman- I&W
Subject:	Discharge Plan Renewal Notice for the following Facilities:
BW- 006 GW	I&W Carlsbad Brine St. expires 6/19/01 Name expires
least 120 days be plan on the date of until the applicate remains fully effort address all of the	If the holder of an approved discharge plan submits an application for discharge plan renewal at efore the discharge plan expires, and the discharger is not in violation of the approved discharge of its expiration, then the existing approved discharge plan for the same activity shall not expire ion for renewal has been approved or disapproved. A discharge plan continued under this provision ective and enforceable. An application for discharge plan renewal must include and adequately a information necessary for evaluation of a new discharge plan. Previously submitted materials may reference provided they are current, readily available to the secretary and sufficiently identified to be provided they are current, readily available to the secretary and sufficiently identified to be provided they are current, readily available to the secretary and sufficiently identified to be provided they are current.
	Discussed WQCC 3106F and gave notice to submit Discharge Plan renewal th \$50.00 filing fee for the above listed facilities.  or Agreements:
I&W brine w earlier in the	rell test has been waived during the December schedule since they had tested year.
Signed:	- with the same of
CC:	

OIL CONSERVATION DIVISION - DISTRICT I Hobbs - P.O. Box 1980 - Hobbs, NM 88241-1980 - (505) 393-6161 FAX (505) 393 - 0720







P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS LOVINGTON (505) 677-2117 (505) 396-3331 1 (800) 748-3972 | 1 (800) 748-2084

NOV 1 7 2000

FEMALINE CHOICHE

New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505 November 15, 2000

Attn: Wayne Price

Re: Eugenie Brine Extraction Facility
Discharge Plan BW-006
SW/4 SW/4 Section 17, T22S, R27E
Eddy County, New Mexico

Upon receipt of a letter from the NMOCD on October 20, 2000 I & W was informed of a requirement for brine well operators to perform a mechanical integrity test on the brine extraction facilities. I & W, Inc. brine facility Eugenie was included in the group to be tested on December 13, 2000.

However I&W had problems with the facility in December of 1999, which had delayed the original cavern test until May 31, 2000 which was then completed.

I & W is requesting an exemption to a later date due to the time frame only being 5 months between the dates at this point. I appreciate your assistance in this matter, if you have any further questions please contact us at (505)885-6663 or (505)677-2111.

Sincerely,

Bayless E. Irby

Manager

BI/Ir





P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084

AUL 27 2000

Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505

CARLSBAD (505) 885-6663

1 (800) 658-2739

July 25, 2000

Attn: Wayne Price

Re: Eugenie Brine Extraction Facility
Discharge Plan BW-006
SW/4 SW/4 Section 17, T22S, R27E
Eddy County, New Mexico

I & W received a letter from Mr. Anderson dated June 22, 2000 with conditions for operating the Eugenie brine supply well.

- (1.) I & W, Inc. will comply with an investigation plan to monitor the two wells that we have drilled for the purpose of checking migration out of the zone. We will also sample some of the surrounding area water wells, up dip & down dip to find what area water will test.
- (2.) I & W, Inc. has never had to operate at any time with pressure over 100 PSI. I & W will not operate over the 238 PSI guidelines set. We also recovered approximately 12,000 bbls. of brine before resuming pump operations.

As of July 1<sup>st</sup> 2000, Eugene Irby will be the manager of the I & W Carlsbad & Lovington yards. However I will be available if I am needed.

Sincerely,

George E. Parchman

GP/lr

## Submit 3 Copies to Appropriate District Office

State of New Mexico Minerals and Natural Resources Department

Form C	-103
Revised	1-1-89

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

OIL CONSERVATION DIVISION P.O. Box 2088

Revised	1-1-89

DATE May

TELEPHONE NO.

(505)885-6663

WELL API NO.

DISTRICT II	Santa Fe, New N	Aexico	87504-2088	30-015-23031
P.O. Drawer DD, Artesia, NM 88210	Janua I C, 14CW IV		<u> </u>	5. Indicate Type of Lease STATE FEE
DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410				6. State Oil & Gas Lease No.
	The Carlot of th			 
	S AND REPORTS C			<u> </u>
( DO NOT USE THIS FORM FOR PROPO	ISALS TO DHILL OH TO I			7. Lease Name or Unit Agreement Name
, (FORM C-101	) FOR SUCH PROPOSAL		• (14)	
1. Type of Well:				
WELL WELL WELL	, oner	rine	Well	Eugenie g
2. Name of Operator				8. Well No.
I & W , Inc.  3. Address of Operator	<del></del>			9. Pool partie or Wildcat
P.O. Box 1685 Ca	rishad. NM 88	220	•	y. Pool name or wildcar
4. Well Location	,			L
Unit Letter : 1288	Feet From The SL		Line and497	Feet From The WL Line
				المانية المانية المانية المواجعة المانية المستقد المواجعة المانية المستقد المانية المانية المانية المانية الم
Section 17	Township 22S	Ra	nge 27	NMPM Eddy County
	10. Elevation (Show	wneiner	DF, RKB, RT, GR, etc.)	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
II. Check App	yropriate Roy to Ind	licate l	Nature of Notice, Re	anart or Other Data
NOTICE OF INTEN	_	ucate 1		•
NOTICE OF INTEN	TION TO:		SUBS	SEQUENT REPORT OF:
PERFORM REMEDIAL WORK	PLUG AND ABANDON		REMEDIAL WORK	ALTERING CASING
EMPORARILY ABANDON	CHANGE PLANS		COMMENCE DRILLING	OPNS. PLUG AND ABANDONMENT
PULL OR ALTER CASING		لــا	CASING TEST AND CE	—·
OTHER: Resume Brine Produ	ction	X		MENT JOB
THER. REBUME BITTLE TIGGE		(A)	OTHER:	
<ol> <li>Describe Proposed or Completed Operations ( work) SEE RULE 1103.</li> </ol>	(Clearly state all pertinent d	etails, an	d give pertinent dates, include	ing estimated date of starting any proposed
	njection well	has	been plugged	& abandoned as directed
by the OCD, EPA.		_		
2.) Two monitor wells water migrating i				ith no indication of brine
				well #1, in order to star
producing brine w				. ,
_				
				·
			8	

Manager

TILE .

TYPE OR PRINT NAME

(This space for State Use)

George Parchman

#### DRILL RATE (MIN/FT)

#### SAMPLE DESCRIPTION

Drill 3' conductor hole and set 8 5/8" hole collar. Rig up flow line and steel mud pit. Mix bentonite mud and begin drilling 6 1/2" hole.

```
0-2 2
              4/5/00
 4 2
          0-4' Rocky Soil
 6 2
          4-8' Clay:gry-brn,stky
          8-17' Caliche
 8 2
10 1-
 4 3
 6 8
           17-29' Conglomerate: wht, pnk, yel brn, off wht, sme crs sand
 8 10
20 15
 2 14
 4 12
 6 16
              4/6/00
 8 16-
30 11
           29-36' Layers of rd clay and conglomerate:pnk,th,gry,yel brn,sndy,calc
 2 2
  4 17-
    17-
           36-45' Conglomerate: wht, pnk, brk rd, yel brn, vry sndy, calc
  8 16
 40 9-
 2 8-
  4 7
           45-58' Clay:rd,sndy,sme fn gravel
  8 1-
 50 1-
  2 1-
    1-
  6 1
    4
           58-59' Conglomerate: yel brn, gry, off wht, lmy, sndy
60 7-
             4/7/00
  2 1-
          59-62' Sand:clr,frstd,med-crs grn,lsly consl,mod wl srtd,sb rnd,rnd
                   Gravel:fn (1/16"-1/8") limestone, chert, yel brn, brn, pnk, off wht, water zone
    19
  6 24
           62-67' Conglomerate: wht, pnk, yel brn, sndy, lmy, vry hrd
  8 8-
          67-130' Clay:rd,sndy
 70 1-
```

```
70-2 1/2
  4 1/2
  6 1/2
  8 1/2
 80 1/2
  2 1/2
  4 1/2
  6 1/2
  8 1-
 90 4
           Note:sme gravel mixed with rd sndy clay
  2 3
  4
  6
    6
  8 1-
100 1
  2 1
  4 1/2
  6 1/2
  8 1
  10 1
  2 2
     1-
    2-
  6
  8 3
 20 4
           4/8/00 CHANGE TO 6" DRAG BIT
  2 1/2
  4 1/2
  6 1/2
   8 1/2
           4/9/00 CHANGE TO 6" TRICONE BIT
 30 4
  2 4
           130-148' Conglomerate:pnk,rd,yel,brn,off wht,lmy,chrt,sme med crs sand,
                                 sme Isly consl sand+gravel, possible water zone
    2-
   8 3-
 40 6-
   2 4-
   4 4-
   6 3-
   8 2-
          148-156' Clay:rd,smth,sft
  50 1-
   2 1-
   4 2
          156-170' Clay:rd,sndy,sme fn grvl
   6 2
   8 1-
  60 1
```

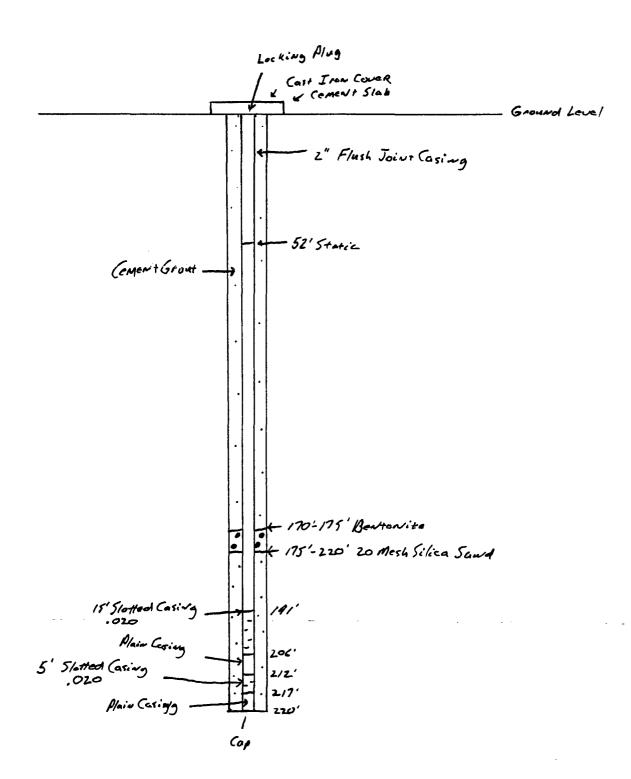
تو

```
160-2 1-
   4 1
   6 1-
   8 1
  70 1
          170-188' Clay:lt yel-lt gn gry,smth
   2 3
   4
      3
   6 4-
    8 4-
          188-200' Clay: It gry grn, sme yel, smth, sme fn gravel
   80 5
   2 3-
   4 4
    6 4-
   8 5-
   90 5
    2 7
    4 9
   6 9
    8 8-
 200 8
            4/11/00
   2 10
           200-203'
                     Limestone:yel brn,vfn-micxln,drilled smoothly,no obv. fractures,
   4 4
                               micro sucro, possible water zone
   6 3-
           203-215' Clay:rd,smth-slty
    8 10
   10 7
    2 1
    4 1
                     Anhy:wht,pnk,plty,vfn xln,sme gyp
           215-217'
   6 4
    8 4-
           217-220' Clay:rd,smth,stky
 220 7
```

Trip out of hole. Run casing. Sand pack with 1 1/4" tremie pipe. Cement through 1 1/4" tremie. Trip into 2" casing with 1" pipe and develop well with air for 4 hours.

Static water level: 52'

Pull samples from #1+#2 well.



#### I+W #1

#### DRILL RATE (MIN/FT)

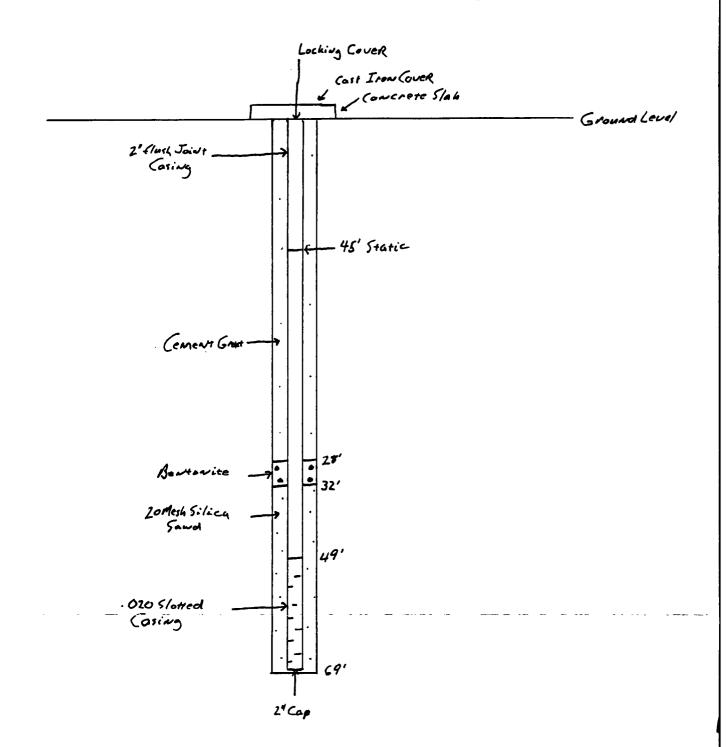
#### SAMPLE DESCRIPTION

Drill 3' conductor hole and set 8 5/8" hole collar. Rig up flow line and steel mud pit. Mix bentonite mud and begin drilling 6 1/2" hole.

0-2	3	3/27/00
4	2-	0-4' Rocky Soil
6	1-	4-8' Clay:gry-brn,stky
8	1-	8-17' Caliche
10	1	
2	1	
4	2	
6	2	
8	4	17-29' Conglomerate: wht, pnk, yel brn, off wht, sme crs sand
	9-	Note:Lost about 100 gallons of mud when pulled off of bottom to make
2	8	connection. Probably due to mud ring.
4	6-	
	13	
8	13	3/28/00
	13	29-36' Layers of rd clay and conglomerate:pnk,th,gry,yel brn,sndy,calc
2	3	25 35 Layoro of the oray and congronicate.pink,m,gry,yor orn,snay,care
4	7	
6	13	36-45' Conglomerate: wht, pnk, brk rd, yel brn, vry sndy, calc
8	13	50 15 Congromorate. witt, pink, ork 14, yor orit, vi y snay, eare
40		
2	8	
4	5	
6	8	45-58' Clay:rd,sndy,sme fn gravel
8	3 1-	43-36 Clay.rd, sindy, since in graver
50°	2	
	1-	
4	1	
	6-	
	5-	55-59' Conglomerate:yel brn,gry,off wht,lmy,sndy
60	_	55-59 Congionierate.yer orn,gry,orr whi,mry,snuy
	3	59-62' Sand:clr.frstd.med-crs grn.lsly consl.mod wl srtd.sb rnd.rnd
2		
	15	Gravel:fn (1/16"-1/8") limestone, chert, yel brn, brn, pnk, off wht, water zone
	19-	62-67' Conglomerate: wht,pnk,yel brn,sndy,lmy,vry hrd
8	17	67-69' Clay:rd,smth
70	1	

Trip out of hole. Run in with test pump. Pump until mud thins. Trip pump out and run 2" casing. Place sand pack and cement with 1" tremie pipe. Develop well with air for 1 ½ hours.

1 -







PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS-NM-88240

MAY - 8 2003

MICERNATION DIVERSES A

ANALYTICAL RESULTS FOR I & W, INC. ATTN: GEORGE PARCHMAN P.O. BOX 1685 CARLSBAD, NM 88220 FAX TO: (505) 885-8477

Receiving Date: 04/14/00 Reporting Date: 04/20/00

Project Number: DEEP #2
Project Name: EUGENIE DEEP MONITER WELL #2

Project Location: CARLSBAD, NM

Sampling Date: 04/14/00

Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT

Sample Received By: GP

Analyzed By: AH

		Na	Ca	Mg	К	Conductivity	T-Alkalinity
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	-	(mgCaCO <sub>3</sub> /L)
ANALYSIS DAT		04/20/00	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00
H4796-2	225' WELL #2	242	457	24	754	6420	832
Ovality Caster		ND	4.4	50	E 40	4200	ND
Quality Control		NR	<b>44</b> 50	58 50	5.19 5.00	1392	NR
True Value QC		NR NR					NR
% Accuracy Relative Percer	4 Diff	NR.	88	116 8.6	103.8		NR
Relative Percer	11 Dillerence	INK	1.8	8.0	3.1	0.2	NR_
METHODS:		SM	SM3500-Ca-D 3500-Mg E			120.1	310.1
		CI	SO <sub>4</sub>	CO <sub>3</sub>	HCO <sub>3</sub>	pН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DAT	TE:	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00
H4796-2	225' WELL #2	402	1282	0	. 0		2760
Quality Control		1001	47.47	112	971	6.96	NR
True Value QC		1000	50.00	124	1000	7.00	NR.
% Accuracy		100	94.9	90.3	97.1	99.4	NR
Relative Percer	nt Difference	2.4	4.0	-	-	0	-
METHODS:		SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

NOTE: Sample also contains 283 mg/L Hydroxide (OH) ion.

Chemist /

4/70/00 Date

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliated the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



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ANALYTICAL RESULTS FOR I & W, INC. ATTN: GEORGE PARCHMAN P.O. BOX 1685 CARLSBAD, NM 88220

FAX TO: (505) 885-8477

Receiving Date: 04/14/00 Reporting Date: 04/20/00 Project Number: SHALLOW #1

Project Name: EUGENIE SHALLOW MONITER WELL

Project Location: CARLSBAD, NM

Sampling Date: 04/14/00

Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT

Sample Received By: GP

Analyzed By: AH

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	<b>M</b> g (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:	04/20/00	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00
H4796-1 125' WELL #1	880	573	243	12	8020	468
Quality Control	NR	44	58	5.19	1392	NR
True Value QC	NR	50	50	5.00	1413	NR
% Accuracy	NR	88	116	103.8	98.5	NR
Relative Percent Difference	NR	1.8	8.6	3.1	0.2	NR
METHODS:	SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1
	cı <sup>-</sup>	SO <sub>4</sub>	CO <sub>3</sub>	HCO₃	рН	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00	04/17/00
H4796-1 125' WELL #1	1947	1096	226	0	7.19	5890
1						
Quality Control	1001	47.47	112	971	6.96	NR
True Value QC	1000	50.00	124	1000	7.00	NR
% Accuracy	100	94.9	90.3	97.1	99.4	NR
Relative Percent Difference	2.4	4.0	-	_	0	-
METHODS:	SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

NOTE: Sample also contains 34 mg/L Hydroxide (OH) ion.

Chemist

4/20/00 Date

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates of the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A

Lubbock, Texas 79424 800 • 378 • 1296 El Paso, Texas 79922. 888 • 588 • 3443 806 • 794 • 1296 915 • 585 • 3443

FAX 915 • 585 • 4944

E-Mail: lab@traceanalysis.com

## Analytical and Quality Control Report

Mike Stubblefield

OCD

811 S. First Street

Artesia, NM 88210

Report Date:

June 26, 2000

Order ID Number: A00061311

Project Number:

Water Sample Irrigation Canal

Project Name:

I & W Inc.

Project Location: Due South Brine Storage Tanks/Carlbad

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
147972	Water Sample	Water	6/7/00	10:45	6/13/00

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. t

This report consists of a total of 10 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Order Number: A00061311 I & W Inc. Page Number: 2 of 10 Due South Brine Storage Tanks/Carlbad

### Analytical and Quality Control Report

Sample: 147972 - Water Sample

QC Batch: QC03240 Date Analyzed: Analytical Method: E 310.1 6/16/00 Analysis: Alkalinity Prep Batch: PB02794 Analyst: LD Preparation Method: N/A Date Prepared: 6/16/00

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		86	mg/L as CaCo3	1	1
Total Alkalinity		86	mg/L as CaCo3	1	1

Sample: 147972 - Water Sample

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC03223 Date Analyzed: 6/15/00 Analyst: JS Preparation Method: N/A Prep Batch: PB02775 Date Prepared: 6/15/00

ParamFlagResultUnitsDilutionRDLSpecific Conductance4500uMHOS/cm1

Sample: 147972 - Water Sample

Analysis: Dissolved Metals Analytical Method: E 200.7 QC Batch: QC03397 Date Analyzed: 6/20/00 Analyst: RR Preparation Method: E 3005A Prep Batch: PB02761 Date Prepared: 6/15/00

Param	Flag	Result	Units	Dilution	$\mathtt{RDL}$
Dissolved Calcium		458	mg/L	1	0.50
Dissolved Magnesium		102	${ m mg/L}$	1	0.50
Dissolved Potassium		6.3	${\sf mg/L}$	1	0.50
Dissolved Sodium		359	mg/L	1	0.50

Sample: 147972 - Water Sample

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC03219 Date Analyzed: 6/14/00 Analyst: JS Preparation Method: N/A Prep Batch: PB02771 Date Prepared: 6/14/00

Param Units Dilution Flag Result RDL $\overline{\mathrm{CL}}$ 760 mg/L 1 0.50Fluoride 1.6 mg/L 1 0.20Nitrate-N <1.0 mg/L 1 0.20Sulfate 1400 mg/L 1 0.50

Sample: 147972 - Water Sample

TDS QC Batch: Analysis: Analytical Method: E 160.1 QC03220 Date Analyzed: 6/14/00 Date Prepared: Analyst: JS Preparation Method: N/A Prep Batch: PB02772 6/13/00

<sup>&</sup>lt;sup>1</sup>Sample came in already out of holding time for NO3.

Order Number: A00061311 I & W Inc.

Page Number: 3 of 10 Due South Brine Storage Tanks/Carlbad

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		3100	mg/L	1	10

Sample: 147972 - Water Sample

pН Analysis: Analyst: RS

Analytical Method:

Preparation Method: N/A

E 150.1 QC Batch: Prep Batch:

QC03269 PB02822 Date Analyzed: Date Prepared:

6/13/00 6/13/00

Result Units Dilution Param RDL $\overline{pH}$ 8.0 s.u. 1

<sup>&</sup>lt;sup>2</sup>Out of holding time.

Order Number: A00061311 I & W Inc. Page Number: 4 of 10 Due South Brine Storage Tanks/Carlbad

### Quality Control Report Method Blank

Sample: Method Blank

QCBatch:

QC03219

				Reporting
Param	Flag	Results	Units	Limit
CL		< 0.5	mg/L	0.50
Fluoride		< 0.2	${ m mg/L}$	0.20
Nitrate-N		< 0.2	mg/L	0.20
Sulfate		< 0.5	mg/L	0.50

Sample: Method Blank

QCBatch:

QC03220

				Reporting
Param	Flag	Results	Units	Limit
Total Dissolved Solids		<10	mg/L	10

Sample: Method Blank

QCBatch:

QC03223

				Reporting
Param	Flag	 Results	Units	Limit
Specific Conductance		2.0	uMHOS/cm	₹.

Sample: Method Blank

QCBatch:

QC03240

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1
Bicarbonate Alkalinity		< 2.0	mg/L as CaCo3	1
Total Alkalinity		< 2.0	mg/L as CaCo3	1 .

Sample: Method Blank

QCBatch:

QC03397

Param	Flag	Results	Units	Reporting Limit
Dissolved Calcium		< 0.50	mg/L	0.50
Dissolved Magnesium		< 0.50	mg/L	0.50
Dissolved Potassium		< 0.50	mg/L	0.50
Dissolved Sodium		< 0.50	$_{ m mg/L}$	0.50

Order Number: A00061311 I & W Inc. Page Number: 5 of 10 Due South Brine Storage Tanks/Carlbad

## Quality Control Report Lab Control Spikes and Duplicate Spikes

Sample: LCS

QC Batch: QC03397

Param	Flag	Result	Units	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec.	RPD Limit
Dissolved Calcium		1078	mg/L	1	1000	< 0.50	107		75 - 125	20
Dissolved Magnesium		1010	mg/L	1	1000	< 0.50	101		75 - 125	20
Dissolved Potassium		927	mg/L	1	1000	< 0.50	92		75 - 125	20
Dissolved Sodium		926	mg/L	1	1000	< 0.50	92		75 - 125	20

Sample: LCSD

Param	Flag	Result	Units	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Dissolved Calcium		1072	mg/L	1	1000	< 0.50	107	0.55	75 - 125	<del></del>
Dissolved Magnesium		1006	mg/L	1	1000	< 0.50	100	0.39	75 - 125	20
Dissolved Potassium		921	mg/L	1	1000	< 0.50	92	0.64	75 - 125	20
Dissolved Sodium		879	mg/L	1	1000	< 0.50	87	5.20	75 - 125	20

Order Number: A00061311 I & W Inc. Page Number: 6 of 10 Due South Brine Storage Tanks/Carlbad

## Quality Control Report Matrix Spikes and Duplicate Spikes

Sample: MS

QC Batch: QC03219

Param	Flag	Result	Units	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit
$\overline{ ext{CL}}$		135.14	mg/L	1	125	18	93		80 - 120	20
Fluoride		25.21	mg/L	1	25	1.8	93		80 - 120	20
Nitrate-N	•	49.85	mg/L	1	50	<1.0	99		80 - 120	20
Sulfate		160.33	mg/L	11	125	40	96		80 - 120	20

Sample: MSD

QC Batch: QC03219

Param	Flag	Result	Units	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit
CL		133.56	mg/L	1	125	18	92	1.35	80 - 120	<del>2</del> 0
Fluoride		24.62	${\sf mg/L}$	1	25	1.8	91	2.55	80 - 120	20
Nitrate-N		49.46	mg/L	1	50	<1.0	98	0.78	80 - 120	20
Sulfate		158.51	mg/L	11	125	40	94	1.52	80 - 120	20

Sample: MS

QC Batch: QC03397

Param	Flag	Result	Units	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Dissolved Calcium		1653	mg/L	1 .	1000	458	119		75 - 125	20
Dissolved Magnesium		1132	mg/L	1	1000	102	103		75 - 125	20
Dissolved Potassium		964	mg/L	1	1000	6.3	95		75 - 125	20
Dissolved Sodium		1228	mg/L	1	1000	359	86		75 - 125	20

Sample: MSD

Param	Flag	Result	Units	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Dissolved Calcium		1690	mg/L	1	1000	458	123	3.04	75 - 125	20
Dissolved Magnesium		1143	mg/L	1	1000	102	104	1.06	75 - 125	20
Dissolved Potassium		1012	mg/L	1	1000	6.3	100	4.88	75 - 125	<b>20</b> ·
Dissolved Sodium		1308	mg/L	1	1000	359	94	8.80	75 - 125	20

Order Number: A00061311 I & W Inc. Page Number: 7 of 10 Due South Brine Storage Tanks/Carlbad

## Quality Control Report Duplicate Samples

Sample: Duplicate

QC Batch: QC03220

		Duplicate	Sample				RPD	
Param	Flag	Result	Result	Units	Dilution	RPD	Limit	
Total Dissolved Solids	-	3170	3100	m mg/L	1	2.23	20	

Sample: Duplicate

QC Batch: QC03223

		Duplicate	Sample				RPD	
Param	${f Flag}$	Result	Result	Units	Dilution	RPD	Limit	
Specific Conductance		1291	1300	uMHOS/cm	1	0.69	20	_

Sample: Duplicate

QC Batch: QC03240

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0.00	20
Carbonate Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0.00	20
Bicarbonate Alkalinity		313	316	mg/L as CaCo3	1	0.95	20
Total Alkalinity		313	316	mg/L as CaCo3	1	0.95	20

Sample: Duplicate

		Duplicate	Sample				RPD	
Param	Flag	Result	Result	Units	Dilution	RPD	Limit	
pН		9.5	9.5	s.u.	1	0.00	20	

Order Number: A00061311 I & W Inc. Page Number: 8 of 10 Due South Brine Storage Tanks/Carlbad

## Quality Control Report Continuing Calibration Verification Standards

Sample: CCV (1)

QC Batch: QC03219

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
$\overline{ ext{CL}}$		mg/L	12.50	11.50	92	80 - 120	6/14/00
Fluoride		mg/L	2.50	2.46	98	80 - 120	6/14/00
Nitrate-N		mg/L	5	4.63	92	80 - 120	6/14/00
Sulfate		mg/L	12.50	11.90	95	80 - 120	6/14/00

Sample: ICV (1)

QC Batch: QC03219

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date · Analyzed
$\overline{\mathrm{CL}}$		mg/L	12.50	11.53	92	80 - 120	6/14/00
Fluoride		mg/L	2.50	2.46	98	80 - 120	6/14/00
Nitrate-N		mg/L	5	4.61	92	80 - 120	6/14/00
Sulfate		mg/L	12.50	11.90	95	80 - 120	6/14/00

Sample: CCV (1)

QC Batch: QC03220

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids		mg/L	1000	933	93	80 - 120	6/14/00

Sample: ICV (1)

QC Batch: QC03220

			CCVs	CCVs	$\mathrm{CCVs}$	Percent	
			True	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids		mg/L	1000	959	95	80 - 120	6/14/00

Sample: CCV (1)

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	$\mathbf{Date}$
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Conductance		uMHOS/cm	1413	1409	99	80 - 120	6/15/00

Order Number: A00061311 I & W Inc. Page Number: 9 of 10 Due South Brine Storage Tanks/Carlbad

Sample: ICV (1)

QC Batch: QC03223

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Conductance		uMHOS/cm	1413	1390	98	80 - 120	6/15/00

Sample: CCV (1)

QC Batch: QC03240

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	80 - 120	6/16/00
Carbonate Alkalinity		mg/L as CaCo3	0	198	0	80 - 120	6/16/00
Bicarbonate Alkalinity		mg/L as CaCo3	0	36	0	80 - 120	6/16/00
Total Alkalinity		mg/L as CaCo3	250	234	93	80 - 120	6/16/00

Sample: ICV (1)

QC Batch: QC03240

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity	<u>~</u>	mg/L as CaCo3	0	<1.0	0	80 - 120	6/16/00
Carbonate Alkalinity		mg/L as CaCo3	0	230	0	80 - 120	6/16/00
Bicarbonate Alkalinity		mg/L as CaCo3	0	17	0	80 - 120	6/16/00
Total Alkalinity		mg/L as CaCo3	250	247	98	80 - 120	6/16/00

Sample: CCV (1)

QC Batch: QC03269

			$CCV_s$	CCVs	CCVs	Percent	<b>.</b>
Param	Flag	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed
pН		s.u.	7	7.0	100	80 - 120	6/13/00

Sample: ICV (1)

QC Batch: QC03269

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pН		s.u.	7	7.0	100	80 - 120	6/13/00

Sample: CCV (1)

Order Number: A00061311 I & W Inc. Page Number: 10 of 10 Due South Brine Storage Tanks/Carlbad

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium	Tiag	mg/L	20	21	105	75 - 125	6/20/00
Dissolved Magnesium		mg/L	20	21	105	75 - 125	6/20/00
Dissolved Potassium		mg/L	20	22	110	75 - 125	6/20/00
Dissolved Sodium		mg/L	20	20	100	75 - 125	6/20/00

Sample: ICV (1)

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	20	20.8	104	75 - 125	6/20/00
Dissolved Magnesium		mg/L	20	20.2	101	75 - 125	6/20/00
Dissolved Potassium		mg/L	20	19.6	98	75 - 125	6/20/00
Dissolved Sodium		mg/L	20	18.5	92	75 - 125	6/20/00

#### **Cation-Anion Balance Sheet**

Sample #	147972	Date:	6/26/00
Calcium Magnesium Sodium Potassium	Cations ppm  458 102 359 6.3	meq/L  22.8542  8.39358  15.6165  0.161154	Total Cations 47.0254 in meq/L
Alkalinity Sulfate	Anions ppm 86 1400	meq/L 1.72 29.148	

21.4396

0.084224

760

1.6

Percentage Error

10.7957 %

Total Anions
52.3918 in meq/L

(needs to be <10%)

#### OTHER INFORMATION

Chloride

Fluoride

Nitrate as N

TDS	3100
EC	4500

Measure EC and Cation Sums
Measure EC and Anion Sums
Calculated TDS/Conductivity
Measure TDS and Cation Sums
Measure TDS and Anion Sums

4702.5434	Range should be:	4050	to	4950
5239.1824	Range should be:	4050	to	4950
0.6888889	Range should be:	0.55	to	0.77
0.6592177	Range should be:	0.55	to	0.77
0.5916954	Range should be:	0.55	to	0.77

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Lubbock, Tel (806	en Avenue, Ste. 9 Texas 79424 5) 794-1296	Trace	Αı	ทล	lx	/S	is		In	C		ı	El Pa	aso, Tel (1	Texa 915)	s 79 585	r., Ste A 9922-102 -3443	28												ALYS		1	)UE	ST	<b>a</b>
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LAB # (LAB USE) ONLY	FIE	LD CODE	# CONTAINERS	Volume/Amount	WATER	SOIL	AIR	SLUDGE	된	HNO3	NaHSO₄	H <sub>2</sub> SO <sub>4</sub>	NaOH	ICE	NONE	,	DATE	TIME	MTBE 8021	BTEX 8021B/602	PAH 8270C	Total Metals Ag As	TCLP Metals Ag As Ba	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608 BOD, TSS, pH		- 1 - 1		Turn Around Time if different from standard	PloH
147972	Water	: Sample	1		V									V	V		10-7-00 UH	77.7	5				V	20	a.	6	u	da	el	10	1	X	4	1	
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# NEW MEXICO ENERGY, MERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

June 22, 2000

Lori Wrotenbery
Director
Oil Conservation Division

## CERTIFIED MAIL RETURN RECEIPT NO. 5051 5659

Mr. George Parchman I&W, Inc. P.O. Box 1685 Carlsbad, New Mexico 88220

Re:

**Eugenie Brine Extraction Facility** 

Discharge Plan BW-006

SW/4 SW/4 Section 17-Ts22s-R27e

Eddy County, New Mexico

Dear Mr. Parchman:

The New Mexico Oil Conservation Division (NMOCD) is in receipt of the pressure test results conducted on May 31, 2000 and the supporting documentation dated June 12, 2000. The NMOCD hereby approves I&W, Inc. to resume brine well operations for the Eugenie Brine Extraction Facility Discharge Plan BW-006 subject to the following additional conditions:

- 1. I&W, Inc. will submit an investigation plan for OCD approval to demonstrate that fluids have not migrated out of the permitted zone of interests.
- 2. I&W, Inc. operating pressure will not exceed 238 psig.

Please submit the above requested information by July 15, 2000

Please submit the above requested information by July 15, 2000.

If you have any questions, please contact Wayne Price of my staff at (505-827-7155). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

Roger C. Anderson

**Environmental Bureau Chief** 

RCA/lwp

xc:

OCD Artesia Office



ARTESIA (505) 746-4214 1 (800) 748-1972 CARLSBAD (505) 885-6663 1 (800) 658-2739

P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084

New Mexico Oil Conservation Division 2040 S. Pacheco

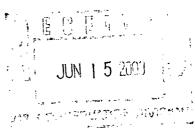
Santa Fe, New Mexico 87505

Attn: Wayne Price

Re: Eugenie #1

Brine Extraction Facility
Discharge Plan # BW-006

June 12,2000



To Whom It May Concern:

We received permission to begin loading the cavern from the OCD, for a cavern Test. We began using our own pump truck units to load the cavern putting approximately 4,000 bbls of fresh water into the cavern. Due to truck scheduling, customer service, and the loss of revenue we would have to pull the unit when needed to fill prior commitments leaving the truck off the cavern for 3 to 4 days at a time. At this time we hired Davis Tool reverse unit pump and resumed pumping, continuing for approx. 3 ½ days @ 2.5 bbls. Per minute. Pressure did not seem to be coming up after reaching a point around 240 PSI. After pumping another 2 or 3,000 bbls, we shut down and called Wayne Price in Santa Fe. Relaying to him that the well would hold about 235 to 240 PSI and would not go any further. The total amount of Barrels pumped was approximately 17,500.

Mr. Price agreed that the well was 1 ½ times the normal pump in pressure, Which is 75 to 100 PSI. He then instructed us to test the well with Mr. Mike Stubblefield As the witness for Oil Conservation Division. As Instructed we ran a chart for 4 hours, Showing no change at all. The gauge as of June 12, 2000 is setting at 233 PSI. The Chart was ran May 31, 2000.

Sincerely,

George Parchman

Manager

GP/lr



E-Mail: lah@traceanalysis.com

6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A

Lubback, Texas 79424 El Paso, Texas 79922 888 + 588 = 3443

806 - 794 - 1296 915+585+3443 FAX 806 = 794 = 1298 FAX 915 • 585 • 4944

#### **Analytical and Quality Control Report**

Mike Stubblefield OCD 811 S. First Street Artesia, NM 88210

Report Date:

5/10/00

Project Number:

I&W Inc.

Project Name:

I & W Monitor Well #2

Project Location:

Carshad, New Mex. I & W Inc. Yard

Order ID Number: A00041910

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
144820	Monitor Well #1 Shallow	Water	4/14/00	14:00	4/19/00

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 12 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Report Date: 5/10/00

1 & W Inc.

Order ID Number: A00041910

I & W Monitor Well #2

Page Number: .2 of 12 Carsbad, New Mex. I & W Inc. Yard

#### **Analytical Results Report**

Sample Number:

144820

Well #1 Shallow		A U-alaal	13-4-	Data		D	00	
Result	Dilution	Method	Prepared	Analyzed	Analyst	Batch #	Batch #	RDI.
	· · · · · · · · · · · · · · · · · · ·						WIN	
<1.0	1	E 310.1	4/19/00	4/19/00	18	PB01843	QC02217	ļ
<1.0	ì	E 310.1	4/19/00	4/19/00	JS	PB01843	QC02217	١
238	1	E 310.1	4/19/00	4/19/00	JS	PB01843	QC02217	ì
238	1	E 310.1	4/19/00	4/19/00	JS	PB01843	QC02217	1
8800	i	SM 2510B	4/20/00	4/20/00	JS	PB01842	QC02215	
		F 200 7	4174/00	Å10.8700	nn.	bno.cee	0000017	0.5
							•	
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•							-	0.5
826	1	E 200.7	4/24/00	4/24/00	RR	5301800	QC02237	0.5
	_	- + 150 1	A 100 C 110 C	A 10 E 10 0			222224	
<0.0002	1	\$ 74/0A	4/26/00	4/2 //00			QC02360	0.0002
/L)				414.0.00		•	~~~	
							-	0.5
=:							•	0.2
							=	0.2
	1	E 300.0	4/19/00	4/19/00	J\$	PB01899	QC02272	0.5
holding time for NO3.								
		F 165 1	******	4/10/00		5001071	~~^~	
- 7.4	1	E 150.1	4/19/00	4/19/00	KS	PB018/4	QC02240	1
5400	1	E 160.1	4/21/00	4/24/00	JS	PB01889	QC02260	10
0.19	1	S 6010B	4/25/00	4/26/00	KR	PB01906	QC02342	0.01
< 0.01	1	S COLOR	4/25/00	4/26/00	KK	PB01906	QC02342	0.01
0.03	1	S 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.01
0.30	1	S 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.05
<0.002	1	\$ 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.002
0.006	ı	\$ 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.005
<0.01	1	S 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.01
0.04	ı	S 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.01
	l			4/26/00			OC02342	0.05
	1			4/26/00		PB01906	-	0.01
0.03	1	S 6010B	4/25/00	4/26/00	RR			0.01
	1	S 6010B	4/25/00	4/26/00	RR			0.01
<0.01	1	S 6010B	4/25/00	4/26/00	RR	PB01906	-	0.01
	i	S 6010B	4/25/00	4/26/00	RR	PB01906	•	0.01
< 0.01		200105	7/22/10					
<0.01 7.1								
<0.01 7.1 <0.005	1	S 6010B S 6010B	4/25/00 4/25/00	4/26/00 4/26/00	RR RR	PB01906	QC02342 QC02342	0.01
	<1.0 <1.0 <1.0 238 238 8800  570 289 6.6 826  <0,0002  /L)  2400 1.2 * 7.1 1200  holding time for NO3.  * 7.4  \$400  0.19 <0.01 0.03 0.30 <0.002 0.006 <0.01 0.04 0.05 <0.01 0.03 <0.001 0.04	Result Dilution	Result   Dilution   Method	Analytical   Date   Prepared	Result   Dilution   Method   Prepared   Analyzed	Result   Dilution   Method   Prepared   Analyzed   Analyst	Result   Dilution   Nethod   Prepared   Analysed   Analysed   Analysed   Analysed   Batch #	Result   Dilution   Method   Prepared   Analyzed   Analyst   Batch #   Satch #   Co. 240

I & W Inc.

Report Date: 5/10/00

Order ID Number: A00041910

I & W Monitor Well #2

Page Number: 3 of 12 Carsbad, New Mex. I & W Inc. Yard

#### Quality Control Report Method Blanks

		Merito	a Distinz			
Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Hydroxide Alkalinity (mg/L as CaCo3)		<1.0	1	4/19/00	PB01843	QC02217
Carbonate Alkalinity (mg/l. as CaCo3)		<1.0	l	4/19/00	PB01843	QC02217
Bicarhonate Alkalinity (mg/L as CaCo3)		<4.0	1	4/19/00	PB01843	QC02217
Total Alkalinity (mg/L as CaCo3)		<4.0	1	4/19/00	PB01843	QC02217
Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Specific Conductance (uMHOS/cm)		3,5		4/20/00	PB01842	QC02215
Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Dissolved Calcium (mg/L)		<.50	0.5	4/24/00	PB01866	QC02237
Dissolved Magnesium (mg/L)		<.50	0.5	4/24/00	PB01866	QC02237
Dissolved Potassium (mg/L)		<.50	0.5	4/24/00	PB01866	QC02237
Dissolved Sodium (mg/L)		<.50	0.5	4/24/00 s	PB01866	QC02237
Param	Flag	Blank Resuit	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Mercury (mg/L)		<0.0002	0.0002	4/27/00	PB01979	QC02360
Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
CL (mg/L)		<0.5	0.5	4/19/00	PB01899	QC02272
Fluoride (mg/L)		<0.2	0.2	4/19/00	PB01899	QC02272
Nitrate-N (mg/L)		< 0.2	0.2	4/19/00	PB01899	QC02272
Sulfate (mg/L)		<0.5	0.5	4/19/00	PB01899	QC02272
Param .	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Dissolved Solids (mg/L)		<10	10	4/24/00	PB01889	QC02260
Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Aluminum (mg/L)		<0.01	0.01	4/26/00	PB01906	QC02342
Total Arsenic (mg/L)		<0.01	0.01	4/26/00	PB01906	QC02342
Total Barium (mg/L)		< 0.01	0.01	4/26/00	PB01906	QC02342
Total Boron (mg/L)		< 0.05	0.05	4/26/00	PB01906	QC02342
Fotal Cadmium (mg/L)		< 0.002	0.002	4/26/00	PB01906	QC02342
Total Chromium (mg/L)		< 0.005	0.005	4/26/00	PB01906	QC02342
Total Cobalt (mg/L)		< 0.01	0.01	4/26/00	PB01906	QC02342
, , ,						
Total Copper (mg/L) Total Iron (mg/L)		< 0.01	10,0	4/26/00	PB01906	QC02342

Report Date: S/10/00 I & W Inc. Total Lead (mg/L)	Order ID Number: A00041910  I & W Monitor Well #2		Page Number: 4 of 12 Carsbad, New Mex. 1 & W Inc. Yard		
	<0.01	0.01	4/26/00	PB01906	QC02342
Total Manganese (mg/L)	<0.01	0.01	4/26/00	PB01906	QC02342
Total Molybdenum (mg/L)	< 0.01	0.01	4/26/00	PB01906	QC02342
Total Nickel (mg/L)	< 0.01	0.01	4/26/00	PB01906	QC02342
Total Selenium (mg/L)	<0.01	0.01	4/26/00	PB01906	QC02342
Total Silica (mg/L)	<0.01	0,01	4/26/00	PB01906	QC02342
Total Silver (mg/L)	< 0.005	0.005	4/26/00	PB01906	QC02342
Total Zinc (mg/L)	<:0.01	0.01	4/26/00	PB01906	QC02342

Report Date:

5/10/00

Order ID Number: A00041910

I & W Monitor Well #2

Page Number: 5 of 12 Carsbad, New Mex. 1 & W Inc. Yard

Quality Control Panert

### Quality Control Report Matrix Spike and Matrix Duplicate Spike

	Macin	pike and	141%		-	e Ֆիլ	KE			
Standard	Param	Sample Result	Díl.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Dissolved Calcium (mg/L)	33	ĺ	1000	975	94		75 - 125		QC02237
MS	Dissolved Magnesium (mg/L)	6.3	i	1000	899	89		75 - 125	-	QC02237
MS	Dissolved Potassium (mg/L)	6.5	1	1000	914	91		75 - 125	<del></del>	QC02237
MS	Dissolved Sodium (mg/L)	12	1	1000	900	89		75 - 125	-	QC02237
MSD	Dissolved Calcium (mg/L)	33	1	100	1014	98	4	•	0 - 20	QC02237
MSD	Dissolved Magnesium (mg/L)	6.3	1	100	920	91	2	•	0 - 20	QC02237
MSD	Dissolved Patassium (mg/L)	6.5	Į	100	930	92	2	-	0 - 20	QC02237
MSD	Dissolved Sodium (mg/L)	12	í	100	948	94	5	<b>-</b>	0 - 20	QC02237
Standard	Param	Sample Result	اآن	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	27	1	62.5	87.81	97		80 - 120		QC02272
MS	Fluoride (mg/L)	1.6	1	12.5	13.78	97	1.	80 - 120	<b>~</b>	QC02272
MS	Nitrate-N (mg/L)	3.7	1	25	26.85	93		80 - 120	-44	QC02272
MS	Sulfate (mg/L)	24	1	62.5	88.50	103	7	80 - 120	•	QC02272
MSD	CL (mg/L)	27	1	62.5	88.41	98	1	•	0 - 20	QC02272
MSD	Fluoride (mg/L)	1.6	l	12.5	14,38	102	. 5	•	0 - 20	QC02272
MSD	Nitrate-N (mg/L)	3.7	1	25	26.83	93	O	-	0 - 20	QC02272
MSD	Sulfate (mg/L)	24	1	62.5	88.76	104	O	-	0 - 20	QC02272
Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Total Aluminum (mg/L)	0.19	1	2	2.13	97		75 - 125		QC02342
MS	Total Arsenic (mg/L)	< 0.01	ł	2	1.74	87		75 - 125	*	QC02342
MS	Total Barium (mg/L)	0.03	1	2	1.68	83		75 - 125	_	QC02342
MS	Total Boron (mg/L)	0.30	1	2	2.52	111		75 - 125	-	QC02342
MS	Total Cadmium (mg/L)	< 0.002	1	2	1.49	75		75 - 125	-	QC02342
MS	Total Chromium (mg/L)	0.006	ı	2	1.57	78		75 - 125	<del></del>	QC02342
MS	Total Cobalt (mg/L)	< 0.01	1	2	1.59	80		75 - 125	+	QC02342
MS	Total Copper (mg/L)	0.04	1	2	1.98	97		75 - 125	-	QC02342
MŞ	Total fron (mg/L)	0.05	1	2	1.65	80		75 ÷ 125	-	QC02342
MS	Total Lead (mg/L)	<0.01	1	2	1.56	78		75 - 125	-	QC02342
MS	Total Manganese (mg/L)	0.03	i	2	1.90	94		75 ÷ 125	-	QC02342
MS	Total Molybdenum (mg/L)	<0.01	į	2	1.60	80		75 - 125	-	QC02342
M5	Total Nickel (mg/L)	< 0.01	ì	2	1.80	90		75 - 125	4	QC02342
MS	Total Selenium (mg/L)	< 0.01	1	2	1.75	88		75 - 125		QC02342

Sent By: TRACEANALYSIS;

Report Da	ate: 5/10/00	Order ID Number: A00041910					Page Number: 6 of 12				
I&W Inc	•	I & W Mot	litor \	Well #2			Carsbad, New Mex. 1 & W Inc. Yard				
MS	Total Sílica (mg/L)	7.1	l	2	9.2	105		75 - 125	•	QC02342	
MS	Total Silver (mg/L)	<0.005	1	0.4	0.29	72		75 - 125	_	QC02342	
MS	Total Zine (mg/L)	0.48	1	2	2.00	76		75 - 125	-	QC02342	
MSD	Total Aluminum (mg/L)	0.19	ī	2	2.08	95	3	-	0 - 20	QC02342	
MSD	Total Arsenic (mg/L)	<0.01	ţ	2	1.71	86	2	_	0 - 20	QC02342	
MSD	Total Barium (mg/L)	0.03	l	2	1.65	81	2	-	0 - 20	QC02342	
MSD	Total Boron (mg/L)	0.30	1	2	2.06	88	23	•	0 - 20	QC02342	
MSD	Total Cadmium (mg/L)	<0.002	1	2	1.47	74	1	-	0 - 20	QC02342	
MSD	Total Chromium (mg/L)	0.006	i	2	1.55	77	1	-	0 - 20	QC02342	
MSD	Total Cobalt (mg/L)	<0.01	1	2	1.56	78	2	-	0 - 20	QC02342	
MSD	Total Copper (mg/L)	0.04	1	2	1.92	94	3	-	0 - 20	QC02342	
MSD	Total fron (mg/L)	0.05	1	2	1.61	78	3	-	0 - 20	QC02342	
MSD	Total Lead (mg/L)	<0.01	1	2	1.54	77	1	-	0 - 20	QC02342	
MSD	Total Manganese (mg/L)	0.03	1	2	1.64	81	15	-	0 - 20	QC02342	
MSD	Total Molybdenum (mg/L)	< 0.01	1	2 .	1.57	79	2	-	0 - 20	QC02342	
MSD	Total Nickel (mg/L)	< 0.01	l	2	1.74	87	3	-	0 - 20	QC02342	
MSD	Total Selenium (mg/L)	<0.01	1	2	1.70	85	. 3		0 - 20	QC02342	
MSD	Total Silica (mg/L)	7.1	1	2	9.3	110	5	•	: i <b>0 = 20</b>	QC02342	
MSD	Total Silver (mg/L)	<0.005	1	0.4	0.28	70	4	-	0 - 20	QC02342	
MSD	Total Zinc (mg/L)	0.48	1	2	1.97	75	2	•	0 - 20	QC02342	
		Sample		Spike Amount	Matrix Spike	%		9/ Pag	R <b>P</b> D	00	
Standard	Param	Sample Result	Dil.		Result		RPD	% Rec. Limit	Limit	QC Batch #	
MS	Total Mercury (mg/L)	0.00839	i	100.0	0.00850	99		80 - 120	-	QC02360	
MSD	Total Mercury (mg/L)	0.00839	i	0.001	0.00862	97	7	. •	0 - 20	QC02360	

### Quality Control Report Duplicates

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Hydroxide Alkalinity (mg/L as CaCo		<1.0	<1.0	I	0	0 - 20	QC02217
Duplicate	Carbonate Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC02217
Duplicate	Bicarbonate Alkalinity (mg/L as CaC		121	115	1	5	0 - 20	QC02217
Duplicate	Total Alkalinity (mg/L as CaCo3)		121	115	l .	5	0 - 20	QC02217
Standard	Param	Flag	Duplicate Result	Sample . Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Specific Conductance (uMHOS/cm)		127,991	130,000	1	2	0 - 20	QC02215

5 Jun'00 4:25PM; Job 234; Page 7/14

7941298;

Sent By: TRACEANALYSIS;

5/10/00 Report Date: Order ID Number: A00041910 Page Number: 7 of 12 1 & W Inc. [ & W Monitor Well #2 Carsbad, New Mex. I & W Inc. Yard Duplicate Sample RPD QĊ Result Flag Standard Param Result Dilution RPD Limit Batch # 7.5 1 Duplicate pH (s.u.) 7.5 0 0 - 20 QC02240 Duplicate Sample RPD QC Result Standard Param Flag Result Dilution RPD Limit Batch # Duplicate Total Dissolved Solids (mg/L) 5520 5400 1 2 0 - 20 QC02260

Report Date: 5/10/00 1 & W Inc. Order ID Number: A00041910 1 & W Monitor Well #2 Page Number: 8 of 12 Carsbad, New Mex. I & W Inc. Yard

Quality Control Report

Lab Control Spikes and Duplicate Spike

	<del></del>	она от Бр		Spike	Matrix					
	Param	Blank Result	Dil.	Amount Added	Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Dissolved Calcium (mg/L)	<.50	1	1000	998	100	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	75 - 125	-	QC02237
LCS	Dissolved Magnesium (mg/L)	<,50	1	1000	954	95		75 - 125	-	QC02237
LCS	Dissolved Potassium (mg/L)	<.50	1	1000	943	94		75 - 125	-	QC02237
LCS	Dissolved Sodium (mg/L)	<.50	ı	1000	950	95		75 - 125	-	QC02237
LCSD	Dissolved Calcium (mg/L)	<.50	1	100	989	99	1		0 - 20	QC02237
LCSD	• •	<.50	i	100	935	94	2	•	0 - 20	QC02237 QC02237
LCSD		<.50	i	100	939	94	0	-	0 - 20	QC02237
	Dissolved Sodium (mg/L)	<.50	j	100	929	93	2	•	0 - 20	QC02237
		Blank		Spike Amount	Matrix Spike	%	:	% Rec.	RPD	QC
	Param	Result	Dil.	Added	Result		RPD	Limit	Limit	Batch #
LCS	Total Mercury (mg/L)	<0.0002	1	0.001	0.00104	104		80 - 120	=	QC02360
LCSD	Total Mercury (mg/L)	<0.0002	1	0.001	0.00108	108	4	-	0 - 20	QC02360
		Blank	~~	Spike Amount	Matrix Spike	%	-	% Rec.	RPD	QC
	Param	Result	Dil.	Added	Result	Rec.	RPD	Limit	Limit	Batch #
LCS	Total Aluminum (mg/L)	<0.01	1	2	2.02	101	11	75 - 125	-	QC02342
LCS	Total Arsenic (mg/L)	<0.01	1	2	1.93	97		75 - 125	-	QC02342
LCS	Total Barium (mg/L)	< 0.01	1	2	2.22	111		75 - 125	-	QC02342
LCS	Total Boron (mg/L)	< 0.05	l	2	1.93	97		75 - 125	-	QC02342
LCS	Total Cadmium (mg/L)	<0.002	1	2	2.04	102		75 - 125	-	QC02342
LCS	Total Chromium (mg/L)	< 0.005	1	2	2.08	104		75 - 125	-	QC02342
LCS	Total Cobalt (mg/L)	<0.01	i	2	2.20	110		75 - 125		QC02342
LCS	Total Copper (mg/L)	< 0.01	1	2	2.22	111		75 - 125	-	QC02342
LCS	Total Lead (mg/L)	< 0.01	1	2	2.17	109	,,	75 - 125	_	QC02342
LCS	Total Manganese (mg/L)	<0.01	1	2	2.14	107		75 - 125	-	QC02342
LCS	Total Molybdenum (mg/L)	< 0.01	1	2	2.05	102		75 - 125	-	QC02342
LCS	Total Nickel (mg/L)	< 0.01	1	2	2.10	105		75 - 125	-	QC02342
LCS	Total Selenium (mg/L)	<0.01	1	2	1.90	95		75 - 125		QC02342
LCS	Total Silica (mg/L)	<0.01	1	2	2.05	102	ž.	75 - 125	-	QC02342
LCS	Total Silver (mg/L)	< 0.005	1	0.4	0.33	83		75 - 125	-	QC02342
LCS	Total Zine (mg/L)	<0.01	1	2	2.08	104	9	75 - 125	-	QC02342
	Total Aluminum (mg/L)	<0.01	1	2	2.01	100	0	•	0 - 20	QC02342
	Total Arsenic (mg/L)	<0.01	ı	2	1.93	97	0	78	0 - 20	QC02342
LCSD	Total Barium (mg/L)	< 0.01	ì	2	2.22	111	0	-	0 - 20	QC02342
	Total Boron (mg/L)	< 0.05	1	2	1.94	97	1	-	0 - 20	QC02342
LCSD	Total Cadmium (mg/L)	< 0.002	1	2	2.04	102	0	•	0 - 20	QC02342

Sent By: TRACEANALYSIS;

Report Date: 5/10/00	Order 1D Number: A00041910						Pa	ige Numbe	r: 9 of 12
I & W Inc.	I&W Mo	nitor V	/ell #2			Carsba	d, New N	1ex. I& ₩	Inc. Yard
LCSD Total Chromium (mg/L)	< 0.005	1	2	2.08	104	0	-	0 - 20	QC02342
LCSD Total Cobalt (mg/L)	< 0.01	1	2	2.20	110	0	-	0 - 20	QC02342
LCSD Total Copper (mg/L)	<0.01	1	2	2.21	111	0	+	0 - 20	QC02342
LCSD Total Lead (mg/L)	< 0.01	1	2	2.17	109	0	-	0 - 20	QC02342
LCSD Total Manganese (mg/L)	<0.01	1	2	2.14	107	ø	-	0 - 20	QC02342
LCSD Total Molybdenum (mg/L)	< 0.01	I	2	2.06	103	0	-	0 - 20	QC02342
LCSD Total Nickel (mg/L)	<0.01	1	2	2.11	106	0	-	0 - 20	QC02342
LCSD Total Selenium (mg/L)	<0.01	1	2	1.91	96	1	-	0 - 20	QC02342
LCSD Total Silica (mg/L)	< 0.01	1	2	2.05	102	0	-	0 - 20	QC02342
LCSD Total Silver (mg/L)	<0.005	ł	I	0.33	83	0	-	0 - 20	QC02342
LCSD Total Zinc (mg/L)	< 0.01	I	2	2.09	105	0	-	0 - 20	QC02342

I & W Inc.

Report Date: 5/10/00

0/00 Ord

1 & W Monitor Well #2

Order ID Number: A00041910

Page Number: 10 of 12 Carsbad, New Mex. 1 & W Inc. Yard

	•	Fla.	CCVs TRUE	CCVs Found	CCVs Percent	Percent Recovery	Date Analyzed	QC Batch
Standard		Flag	Conc.	Conc.	Recovery	Limits 80 - 120	4/19/00	
ICV	Hydroxide Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	4/19/00	QC02217 QC02217
ICV	Carbonate Alkalinity (mg/L as CaCo3)	`	0	204 25	0	80 - 120	4/19/00	QC02217
ICV	Bicarbonate Alkalinity (mg/L as CaCo3	)	236		97	80 - 120 80 - 120	4/19/00	-
ICV	Total Alkalinity (mg/L as CaCo3)		230	229	71		4/17/00	QC02217
CCV 1	Hydroxide Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	4/19/00	QC02217
CCV I	Carbonate Alkalinity (mg/L as CaCo3)		0	208	0	80 - 120	4/19/00	QC02217
CCV 1	Bicarbonate Alkalinity (mg/L as CaCo3	)	0	26	0	80 - 120	4/19/00	QC02217
CCV I	Total Alkalinity (mg/L as CaCo3)		236	234	99	80 - 120	4/19/00	QC02217
Januare No. 1			CCV <sub>5</sub>	CCVs	CCVs	Percent	Date	OO Deed
Manu dan d	D	Elaa	TRUE	Found	Percent	Recovery	Analyzed	QC Batch #
Standard	TANKS WALL THE PROPERTY OF THE PARTY OF THE	Flag	Cone.	Conc.	Recovery	Limits	·····	
ICV	Specific Conductance (uMHOS/cm)		1413	1461	103	80 - 120	4/20/00	QC02215
CCV I	Specific Conductance (uMHOS/cm)		1413	1452	103	80 - 120	4/20/00	QC02215
Yl.,			CCVs	CCV <sub>8</sub>	CCVs	Percent		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	_		TRUE	Found	Percent	Recovery	Date Analyzed	QC Batch
Standard		Flag	Conc.	Conc.	Recovery	Limits		
ICV	Dissolved Calcium (mg/L)		20	20.4	102	75 - 125	4/24/00	QC02237
ICA	Dissolved Magnesium (mg/L)		20	20.3	102	75 - 125	4/24/00	QC02237
ICV	Dissolved Potassium (mg/L)		20	19.3	97	75 - 125	4/24/00	QC02237
ICV	Dissolved Sodium (mg/L)		20	19.8	99	75 - 125	4/24/00	QC02237
CCV 1	Dissolved Calcium (mg/L)		20	20.4	102	75 - 125	4/24/00	QC02237
CCV I	Dissolved Magnesium (mg/L)		20	20.3	102	75 - 125	4/24/00	QC02237
CCV t	Dissolved Potassium (mg/L)		20	19.0	95	75 - 125	4/24/00	QC02237
CCV I	Dissolved Sodium (mg/L)		20	19.8	99	75 - 125	4/24/00	QC02237
portal Marian	The state of the s		CCVs	CCVs	CCVs	Percent		
			TRUE	Found	Percent	Recovery	Date	QC Batch #
Standard		Flag	Conc.	Conc.	Recovery	Limits	Analyzed	
ICV	Total Mercury (mg/L)		0.001	0.0010	100	80 - 120	4/27/00	QC02360
CCV I	Total Mercury (mg/L)		0.001	0.00103	103	80 - 120	4/27/00	QC02360
	0.000		CCVs	CCV <sub>8</sub>	CCV5	Percent		005
Standard	Param	Flag	TRUE Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)	<del></del>	12.5	12.01	96	80 - 120	4/19/00	QC02272
ICV	Fluoride (mg/L)		2.5	2.59	104	80 - 120	4/19/00	QC02272
ICV	Nitrate-N (mg/L)		5	4.89	98	80 - 120	4/19/00	QC02272
ICV	Sulfate (mg/L)		12.5	12.14	97	80 - 120	4/19/00	QC02272
			12.5	11.87	95	80 - 120	4/19/00	QC02272

J & W Inc.

Report Date: 5/10/00

Order ID Number: A00041910

I & W Monitor Well #2

Page Number: 11 of 12 Carsbad, New Mex. I & W Inc. Yard

			CCVs	CCVs	CCVs	Percent		
a		4'14	TRUE	Found	Percent	Recovery	Date	QC Batch
Standard	Param	Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
CCV 1	fluoride (mg/L)		2.5	2.48	99	80 - 120	4/19/00	QC02272
CCV 1	Nitrate-N (mg/L)		5	4.88	98	80 - 120	4/19/00	QC02272
CCV I	Sulfate (mg/L)		12.5	12.04	96	80 - 120	4/19/00	QC02272
			CCV\$	CCV <sub>3</sub>	CCVs	Percent		
Standard	D	#1	TRUE	Found	Percent	Recovery	Date	QC Batch
	Param	Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
IĊV	pH (s.u.)		7	7.0	100	80 - 120	4/19/00	QC02240
CCV I	pH (s.u.)		7	7.0	100	80 - 120	4/19/00	QC02240
			CCVs	CCVs	CCVs	Percent	. 1	
6d	Davis		TRUE	Found	Percent	Recovery	Date	QC Batch
Standard	Param	Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
ιcν	Total Dissolved Solids (mg/L)		1000	999	100	80 - 120	4/24/00	QC02260
CCVI	Total Dissolved Solids (mg/L)		1000	988	99	80 - 120	4/24/00	QC02260
		Vigania	CCV\$	CCVs	CCVs	Percent		V tole
	•	_4	TRUE	Found	Percent	Recovery	Date	QC Batch
Standard	Param	Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
1CV	Total Aluminum (mg/L)		10	10.1	101	75 - 125	4/26/00	QC02342
ICV	Total Arsenic (mg/L)		0.5	0.511	102	75 - 125	4/26/00	QC02342
ICV	Total Barium (mg/L)		10	10.4	104	75 - 125	4/26/00	QC02342
ICV	Total Boron (mg/L)		1.25	1.32	106	75 - 125	4/26/00	QC02342
ICV	Total Cadmium (mg/L)		0.25	0.256	102	75 - 125	4/26/00	QC02342
ICV	Total Chromium (mg/L)		0.5	0.513	103	75 - 125	4/26/00	QC02342
ICV	Total Cobalt (mg/L)		2.5	2.58	103	75 - 125	4/26/00	QC02342
ICV	Total Copper (mg/L)		1.25	1.27	102	75 - 125	4/26/00	QC02342
ICV	Total Iron (mg/L)		5	5.13	103	75 - 125	4/26/00	QC02342
ICV	Total Lead (mg/L)		0.25	0.257	103	75 - 125	4/26/00	QC02342
ICV	Total Manganese (mg/L)		0.75	0.77	103	75 - 125	4/26/00	QC02342
ICV	Total Molybdenum (mg/L)		1.25	1.28	102	75 - 125	4/26/00	QC02342
ICV	Total Nickel (mg/L)		2	2.05	102	75 <b>-</b> 125	4/26/00	QC02342
ICV	Total Selenium (mg/L)		0.25	0.254	102	75 - 125	4/26/00	QC02342
ICV	Total Silica (mg/L)		1.25	1.36	109	75 - 125	4/26/00	QC02342
ICV	Total Silver (mg/L)		0.5	0.508	102	75 - 125	4/26/00	QC02342
ICV	Total Zinc (mg/L)		i	1,03	103	75 - 125	4/26/00	QC02342
CCV I	Total Aluminum (mg/L)		10	10.1	101	75 - 125	4/26/00	QC02342
CCV 1	Total Arsenic (mg/L)		0.5	0.505	101	75 - 125	4/26/00	QC02342
CCV I	Total Barium (mg/L)		10	10.3	103	75 - 125	4/26/00	QC02342
CCV I	Total Boron (mg/L)		1.25	1.30	104	75 - 125	4/26/00	QC02342
CCV 1	Total Cadmium (mg/L)		0.25	0.252	101	75 - 125	4/26/00	QC02342
CCV I	Total Chromium (mg/L)		0.5	0.505	101	75 - 125	4/26/00	QC02342

5 Jun'00 4:27PM; Job 234; Page 12/14

Report Date: 5/10/00

Order ID Number: A00041910

Page Number: 12 of 12

I & W Inc.

I & W Monitor Well #2

Carsbad, New Mex. I & W Inc. Yard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV I	Total Cobait (mg/L)		2.5	2.55	102	75 - 125	4/26/00	QC02342
CCV 1	Total Copper (mg/L)		1.25	1.27	102	75 - 125	4/26/00	QC02342
CCV I	Total fron (mg/L)		5	5.06	101	75 - 125	4/26/00	QC02342
CCV I	Total Lead (mg/L)		0.25	.256	102	75 - 125	4/26/00	QC02342
CCV 1	Total Manganese (mg/L)		0.75	0.76	101	75 - 125	4/26/00	QC02342
CCV 1	Total Molybdenum (mg/L)		1.25	1.26	101	75 - 125	4/26/00	QC02342
CCV I	Total Nickel (mg/L)		2	2.03	101	75 - 125	4/26/00	QC02342
CCV I	Total Selenium (mg/L)		0.25	0.251	100	75 - 12 <i>5</i>	4/26/00	QC02342
CCV 1	Total Silica (mg/L)		1.25	1.37	110	75 - 125	4/26/00	QC02342
CCV I	Total Silver (mg/L)		0.5	0.505	101	75 - 125	4/26/00	QC02342
CCV I	Total Zinc (mg/L)		1	1.01	101	75 - 125	4/26/00	QC02342

### **Cation-Anion Balance Sheet**

Sample #	144820	Da	te: 5/9/00	
Calcium Magnesium Sodium Potassium	Cations ppm 570 289 826 6.6	meq/L 28.443 23.78181 35.931 0.168828	Total Cation 88.3246 in	
Alkalinity Sulfate Chloride	Anions ppm 238 1200 2400	meq/L 4.76 24.984 67.704		,

0.506869

0.063168

Percentage Error 10.4038 % (needs to be <10%)

98.018 in meq/L

Total Anions

#### OTHER INFORMATION

Nitrate as N

Fluoride

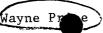
TDS	5400
EC	0088

Measure EC and Cation Sums Measure EC and Anion Sums Calculated TDS/Conductivity Measure TDS and Cation Sums Measure TDS and Anion Sums

8832.4638 Range should be:	7920	4	6000
Total Total Total De,	7920	to	9680
9801.8037 Range should be:	7920	to	9680
0.6136364 Range should be:	0.55	to	0.77
0.6113809 Range should be:	0.55	to	0.77
0.550919 Range should be:	0.55	to	0.77

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<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 811 South First, Artesia, NM 88210

State of New Mexico Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION

Form C-104 Revised March 25, 1999

Submit to Appropriate District Office

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			Operator na	me and Address					0108		ID Num	ber
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<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240

District II
811 South First, Artesia, NM 88210

State of New Mexico Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION

Form C-104 Revised March 25, 1999

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,	Previous Ope	rator Signature				Printed	Name			Title		Date

6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A

Lubbock, Texas 79424 El Paso, Texas 79922

800 • 378 • 1296 888 • 588 • 3443

806 • 794 • 1296 915 • 585 • 3443 FAX 806 • 794 • 1298 FAX 915 • 585 • 4944

E-Mail: lab@traceanalysis.com

Invoice #

42218

Invoice Date:

May 12, 2000

Order ID:

A00041910

Attn:

Bill To:

**Wayne Price** 

2040 S. Pacheco

Santa Fe, NM 87505

OCD

Project #:

I & W Inc.

**Project Name:** 

I & W Monitor Well #2

**Project Location:** 

Carsbad, New Mex. I & W Inc. Yard

Test	Quantity	Matrix	Description	Price	SubTotal
Cu, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Al, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Anions/Cations/Gen. Chem	. 1	Water	144820 - 144820	\$120.00	\$120.00
As, Total	1	Water	144820 - 144820	\$10.00	\$10.00
B, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Ba, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Ca, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Cd, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Ag, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Cr, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Zn, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Fe, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Hg, Total	1	Water	144820 - 144820	\$12.00	\$12.00
Mn, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Mo, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Ni, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Pb, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Se, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Si, Total	1	Water	144820 - 144820	\$10.00	\$10.00
Co, Total	1	Water	144820 - 144820	\$10.00	\$10.00
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Director, Dr. Blair Leftwich

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6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298

### TraceAnalysis, Inc.

4725 Ripley Dr., Ste A El Paso, Texas 79922-1028 Tel (915) 585-3443 Fax (915) 585-4944 1 (888) 588-3443

CHAIN-OF-	CUSTODY	AND	ANALYSIS	REQUEST
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**ORIGINAL COPY** 

6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A Lubbock, Texas 79424 El Paso, Texas 79922

800 • 378 • 1296 888 • 588 • 3443 806 • /94 • 1296

FAX 806 • 794 • 1298

Erraso, le

E-Mail: lab@traceanalysis.com

915 • 585 • 3443

FAX 915 • 585 • 4944

Bill To:

OCD

2040 S. Pacheco

Santa Fe, NM 87505

MAY - 8 2000

¥37. CONSERVATION DIVISHM:

Invoice # 42074

Invoice Date:

May 4, 2000

Order ID:

A00041911

Attn:

Wayne Price

Project #:

1 & W Inc.

**Project Name:** 

1 & W Monitor Well #2

**Project Location:** 

Carsbad, New Mex. I & W Inc. Yard

Test	Quantity	Matrix	Description	Price	SubTotal
Hg, Total	1	Water	144821 - 144821	\$12.00	\$12.00
Al, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Anions/Cations/GEN. CHI	<u>m.</u> 1	Water	144821 - 144821	\$120.00	\$120.00
As, Total	1	Water	144821 - 144821	\$10.00	\$10.00
B, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Ba, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Ca, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Cd, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Co, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Cr, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Ag, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Fe, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Zn, Total	1	Water	144821 - 144821	\$10.00	\$10.00
K, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Mg, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Mn, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Mo, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Na, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Ni, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Pb, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Se, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Si, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Cu, Total	1	Water	144821 - 144821	\$10.00	\$10.00
Payment Terms: I	Vet 30 Davs			Total	\$342

B

Director, Dr. Blair Leftwich

PAYMONT /

6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A

Lubbock, Texas 79424 El Paso, Texas 79922

800 • 378 • 1296 888 • 588 • 3443 806 • 794 • 1296

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E-Mail: lab@traceanalysis.com

915 • 585 • 3443

#### **Analytical and Quality Control Report**

Mike Stubblefield OCD

811 S. First Street Artesia, NM 88210 Report Date:

5/1/00

Project Number:

I & W Inc.

Project Name:

I & W Monitor Well #2

Order ID Number: A00041911

**Project Location:** 

Carsbad, New Mex. I & W Inc. Yard

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
144821	I & w Inc. Monitor Well #2 Deep	Water	4/14/00	15:00	4/19/00

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 12 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Blair Leftwich, Director

Report Date: 5/1/00

Order ID Number: A00041911

I & W Monitor Well #2 I & W Inc.

Page Number: 2 of 12 Carsbad, New Mex. I & W Inc. Yard

### **Analytical Results Report**

Sample Number:

Description: I & w Inc. Monitor	Well #2 Dee	p		ъ.	ъ.		ъ	0.0	
Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	770	1	E 310.1	4/19/00	4/19/00	JS	PB01843	QC02217	1
Carbonate Alkalinity	76	1	E 310.1	4/19/00	4/19/00	JS	PB01843		1
Bicarbonate Alkalinity	<1.0	1	E 310.1	4/19/00	4/19/00	JS	PB01843	QC02217	1
Total Alkalinity	846	1	E 310.1	4/19/00	4/19/00	JS	PB01843	QC02217	1
Conductivity (uMHOS/cm)									
Specific Conductance	8700	1	SM 2510B	4/20/00	4/20/00	JS	PB01842	QC02215	
Dissolved Metals (mg/L)									
Dissolved Calcium	518	1	E 200.7	4/24/00	4/24/00	RR	PB01866	QC02237	0.5
Dissolved Magnesium	1.7	1	E 200.7	4/24/00	4/24/00	RR	PB01866	QC02237	0.5
Dissolved Potassium	388	1	E 200.7	4/24/00	4/24/00	RR	PB01866	QC02237	0.5
Dissolved Sodium	289	1	E 200.7	4/24/00	4/24/00	RR	PB01866	QC02237	0.5
Hg, Total (mg/L)									
Total Mercury	< 0.0002	1	S 7470A	4/26/00	4/27/00	JM	PB01979	QC02360	0.0002
Ion Chromatography (IC) (mg/L)								•	
CL	130	1	E 300.0	4/19/00	4/19/00	JS	PB01899	•	0.5
Fluoride	1.2	1	E 300.0	4/19/00	4/19/00	JS	PB01899	QC02272	0.2
Nitrate-N	* 3.0	1	E 300.0	4/19/00	4/19/00	JS	PB01899	QC02272	0.2
Sulfate	1400	1	E 300.0	4/19/00	4/19/00	JS	PB01899	QC02272	0.5
* Nitrate-N - Sample out of holding time	for NO3.								
pH (s.u.)									
pH	* 12.0	1	E 150.1	4/19/00	4/19/00	RS	PB01874	QC02240	1
* pH - Out of holding time.									
TDS (mg/L)	•								
Total Dissolved Solids	3700	1	E 160.1	4/21/00	4/24/00	JS	PB01889	QC02260	10
Total Metals (mg/L)									
Total Aluminum	0.09	1	S 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.01
Total Arsenic	< 0.01	1	S 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.01
Total Barium	0.12	1	S 6010B	4/25/00	4/26/00	RR	PB01906	•	0.01
Total Boron	0.19	1	S 6010B	4/25/00	4/26/00	RR		QC02342	0.05
Total Cadmium	< 0.002	1	S 6010B	4/25/00	4/26/00	RR		QC02342	0.002
Total Chromium	0.069	1	S 6010B	4/25/00	4/26/00	RR		QC02342	0.005
Total Cobalt	< 0.01	1	S 6010B	4/25/00	4/26/00	RR	PB01906	•	0.01
Total Copper	0.03	1	S 6010B	4/25/00	4/26/00	RR	PB01906	-	0.01
Total Iron	0.06	1	S 6010B	4/25/00	4/26/00	RR	PB01906	-	0.05
Total Lead	< 0.01	1	S 6010B	4/25/00	4/26/00	RR	PB01906	=	0.01
Total Manganese	< 0.01	1	S 6010B	4/25/00	4/26/00	RR	PB01906	-	0.01
Total Molybdenum	0.03	1	S 6010B	4/25/00	4/26/00	RR	PB01906	-	0.01
Total Nickel	< 0.01	1	S 6010B	4/25/00	4/26/00	RR	PB01906	-	0.01
Total Selenium	< 0.01	1	S 6010B	4/25/00	4/26/00	RR	PB01906	-	0.01
Total Silica	1.6	1	S 6010B	4/25/00	4/26/00	RR	PB01906	-	0.01
Total Silver	< 0.005	1	S 6010B	4/25/00	4/26/00	RR	PB01906		0.005
Total Zinc	0.12	1	S 6010B	4/25/00	4/26/00	RR	PB01906	QC02342	0.01

Report Date: 5/1/00 I & W Inc.

Order ID Number: A00041911

I & W Monitor Well #2

Page Number: 3 of 12

Carsbad, New Mex. I & W Inc. Yard

### Quality Control Report Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Hydroxide Alkalinity (mg/L as CaCo3)		<1.0	1	4/19/00	PB01843	QC02217
Carbonate Alkalinity (mg/L as CaCo3)		<1.0	1	4/19/00	PB01843	QC02217
Bicarbonate Alkalinity (mg/L as CaCo3)		<4.0	1	4/19/00	PB01843	QC02217
Total Alkalinity (mg/L as CaCo3)		<4.0	1	4/19/00	PB01843	QC02217
		Blank	Reporting	Date	Prep	QC
Param	Flag	Result	Limit	Analyzed	Batch #	Batch #
Specific Conductance (uMHOS/cm)		3.5		4/20/00	PB01842	QC02215
	· · · · · · · · · · · · · · · · · · ·	Blank	Reporting	Date	Prep	QC
Param	Flag	Result	Limit	Analyzed	Batch #	Batch #
Dissolved Calcium (mg/L)		<.50	0.5	4/24/00	PB01866	QC02237
Dissolved Magnesium (mg/L)		<.50	0.5	4/24/00	PB01866	QC02237
Dissolved Potassium (mg/L)		<.50	0.5	4/24/00	PB01866	QC02237
Dissolved Sodium (mg/L)		<.50	0.5	4/24/00	PB01866	QC02237
Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep	QC Batch #
	riag			<u> </u>	Batch #	
Total Mercury (mg/L)		<0.0002	0.0002	4/27/00	PB01979	QC02360
D.		Blank	Reporting	Date	Prep	QC
Param	Flag	Result	Limit	Analyzed	Batch #	Batch #
CL (mg/L)		< 0.5	0.5	4/19/00	PB01899	QC02272
Fluoride (mg/L)		< 0.2	0.2	4/19/00	PB01899	QC02272
Nitrate-N (mg/L)		< 0.2	0.2	4/19/00	PB01899	QC02272
Sulfate (mg/L)		<0.5	0.5	4/19/00	PB01899	QC02272
4410		Blank	Reporting	Date	Prep	QC
Param	Flag	Result	Limit	Analyzed	Batch #	Batch #
Total Dissolved Solids (mg/L)		<10	10	4/24/00	PB01889	QC02260
Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Aluminum (mg/L)		<0.01	0.01	4/26/00	PB01906	QC02342
Total Arsenic (mg/L)		< 0.01	0.01	4/26/00	PB01906	QC02342
Total Barium (mg/L)		< 0.01	0.01	4/26/00	PB01906	QC02342 QC02342
Total Boron (mg/L)		< 0.05	0.05	4/26/00	PB01906	QC02342 QC02342
Total Cadmium (mg/L)		< 0.002	0.002	4/26/00	PB01906	QC02342
Total Chromium (mg/L)		< 0.005	0.005	4/26/00	PB01906	QC02342 QC02342
Total Cobalt (mg/L)		< 0.01	0.01	4/26/00	PB01906	QC02342
Total Copper (mg/L)		< 0.01	0.01	4/26/00	PB01906	QC02342
Total Iron (mg/L)		< 0.05	0.05	4/26/00	PB01906	QC02342
- 0-mr 11011 (1119 11)		0.00	2.00	5, 5 5		4 5 5 E 5 1 E

Report Date: 5/1/00 I & W Inc.	Order ID Numbe		Car	Page Number: 4 of 12 rsbad, New Mex. I & W Inc. Yard		
Total Lead (mg/L)	<0.01	0.01	4/26/00	PB01906	QC02342	
Total Manganese (mg/L)	< 0.01	0.01	4/26/00	PB01906	QC02342	
Total Molybdenum (mg/L)	< 0.01	0.01	4/26/00	PB01906	QC02342	
Total Nickel (mg/L)	< 0.01	0.01	4/26/00	PB01906	QC02342	
Total Selenium (mg/L)	< 0.01	0.01	4/26/00	PB01906	QC02342	
Total Silica (mg/L)	< 0.01	0.01	4/26/00	PB01906	QC02342	
Total Silver (mg/L)	< 0.005	0.005	4/26/00	PB01906	QC02342	
Total Zinc (mg/L)	< 0.01	0.01	4/26/00	PB01906	QC02342	

Report Date: I & W Inc.

5/1/00

Order ID Number: A00041911

I & W Monitor Well #2

Page Number: 5 of 12

Carsbad, New Mex. I & W Inc. Yard

# Quality Control Report Matrix Spike and Matrix Duplicate Spike

				Spike	Matrix					
C4	D	Sample	Dil	Amount Added	Spike Result	% Bas	RPD	% Rec.	RPD	QC
Standard	Param	Result	Dil.				KPD	Limit	Limit_	Batch #
MS	Dissolved Calcium (mg/L)	33	1	1000	975	94		75 - 125	-	QC02237
MS	Dissolved Magnesium (mg/L)	6.3	1	1000	899	89		75 - 125	-	QC02237
MS	Dissolved Potassium (mg/L)	6.5	1	1000	914	91		75 - 125	-	QC02237
MS	Dissolved Sodium (mg/L)	12	1	1000	900	89		75 - 125	-	QC02237
MSD	Dissolved Calcium (mg/L)	33	1	100	1014	98	4	-	0 - 20	QC02237
MSD	Dissolved Magnesium (mg/L)	6.3	1	100	920	91	2	-	0 - 20	QC02237
MSD	Dissolved Potassium (mg/L)	6.5	1	100	930	92	2	-	0 - 20	QC02237
MSD	Dissolved Sodium (mg/L)	12	1	100	948	94	5	-	0 - 20	QC02237
Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	27	1	62.5	87.81	97		80 - 120	_	QC02272
MS	Fluoride (mg/L)	1.6	1	12.5	13.78	97		80 - 120	-	QC02272
MS	Nitrate-N (mg/L)	3.7	1	25	26.85	93		80 - 120	-	QC02272
MS	Sulfate (mg/L)	24	1	62.5	88.50	103		80 - 120	_	QC02272
	\ <b>3</b> /									
MSD	CL (mg/L)	27	1	62.5	88.41	98	1	-	0 - 20	QC02272
MSD	Fluoride (mg/L)	1.6	1	12.5	14.38	102	5	-	0 - 20	QC02272
MSD	Nitrate-N (mg/L)	3.7	1	25	26.83	93	0	-	0 - 20	QC02272
MSD	Sulfate (mg/L)	24	1	62.5	88.76	104	0	-	0 - 20	QC02272
	A CONTRACTOR OF THE PROPERTY O									
Standand	Danam	Sample	D:I	Spike Amount Added	Matrix Spike	% Bas	RPD	% Rec.	RPD	QC
Standard	Param	Result	Dil.		Result		KPD	Limit	Limit	Batch #
MS	Total Aluminum (mg/L)	0.19	1	2	2.13	97 2 <b>7</b>		75 - 125	-	QC02342
MS	Total Arsenic (mg/L)	< 0.01	1	2	1.74	87		75 - 125	-	QC02342
MS	Total Barium (mg/L)	0.03	1	2	1.68	83		75 - 125	-	QC02342
MS	Total Boron (mg/L)	0.30	1	2	2.52	111		75 - 125	-	QC02342
MS	Total Cadmium (mg/L)	<0.002	1	2	1.49	75		75 - 125	-	QC02342
MS	Total Chromium (mg/L)	0.006	1	2	1.57	78		75 - 125	-	QC02342
MS	Total Cobalt (mg/L)	<0.01	1	2	1.59	80		75 - 125	-	QC02342
MS	Total Copper (mg/L)	0.04	1	2	1.98	97		75 - 125	-	QC02342
MS	Total Iron (mg/L)	0.05	1	2	1.65	80		75 - 125	-	QC02342
MS	Total Lead (mg/L)	< 0.01	1	2	1.56	78		75 - 125	-	QC02342
MS	Total Manganese (mg/L)	0.03	1	2	1.90	94		75 - 125	-	QC02342
MS	Total Molybdenum (mg/L)	< 0.01	1	2	1.60	80		75 - 125		QC02342
MS	Total Nickel (mg/L)	< 0.01	1	2	1.80	90		75 - 125	-	QC02342
MS	Total Selenium (mg/L)	<0.01	1	2	1.75	88		75 - 125	-	QC02342

Report Da	te: 5/1/00	Order ID Nu	mber	: A00041	911			Pag	e Numbe	r: 6 of 12
I & W Inc		I & W Mon	itor V	Vell #2			Carsba	ıd, New Me	x. I & W	Inc. Yard
MS	Total Silica (mg/L)	7.1	1	2	9.2	105		75 - 125	-	QC02342
MS	Total Silver (mg/L)	< 0.005	1	0.4	0.29	72		75 - 125	-	QC02342
MS	Total Zinc (mg/L)	0.48	1	2	2.00	76		75 - 125	-	QC02342
MSD	Total Aluminum (mg/L)	0.19	1	2	2.08	95	3	-	0 - 20	QC02342
MSD	Total Arsenic (mg/L)	< 0.01	1	2	1.71	86	2	-	0 - 20	QC02342
MSD	Total Barium (mg/L)	0.03	1	2	1.65	81	2	-	0 - 20	QC02342
MSD	Total Boron (mg/L)	0.30	1	2	2.06	88	23	-	0 - 20	QC02342
MSD	Total Cadmium (mg/L)	< 0.002	1	2	1.47	74	1	-	0 - 20	QC02342
MSD ·	Total Chromium (mg/L)	0.006	1	2	1.55	77	1	-	0 - 20	QC02342
MSD	Total Cobalt (mg/L)	< 0.01	1	2	1.56	78	2	-	0 - 20	QC02342
MSD	Total Copper (mg/L)	0.04	1	2	1.92	94	3	-	0 - 20	QC02342
MSD	Total Iron (mg/L)	0.05	1	2	1.61	78	3	-	0 - 20	QC02342
MSD	Total Lead (mg/L)	< 0.01	1	2	1.54	77	1	-	0 - 20	QC02342
MSD	Total Manganese (mg/L)	0.03	1	2	1.64	81	15	-	0 - 20	QC02342
MSD	Total Molybdenum (mg/L)	< 0.01	1	2	1.57	79	2	-	0 - 20	QC02342
MSD	Total Nickel (mg/L)	< 0.01	1	2	1.74	87	3	-	0 - 20	QC02342
MSD	Total Selenium (mg/L)	< 0.01	1	2	1.70	85	3	-	0 - 20	QC02342
MSD	Total Silica (mg/L)	7.1	1	2	9.3	110	5	-	0 - 20	QC02342
MSD	Total Silver (mg/L)	< 0.005	1	0.4	0.28	70	4	-	0 - 20	QC02342
MSD	Total Zinc (mg/L)	0.48	1	2	1.97	75	2	-	0 - 20	QC02342
Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS							IN D			·····
INIS	Total Mercury (mg/L)	0.00839	1	0.001	0.00850	99		80 - 120	-	QC02360
MSD	Total Mercury (mg/L)	0.00839	1	0.001	0.00862	97	7	-	0 - 20	QC02360

### Quality Control Report Duplicates

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Hydroxide Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC02217
Duplicate	Carbonate Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC02217
Duplicate	Bicarbonate Alkalinity (mg/L as CaC		121	115	1	5	0 - 20	QC02217
Duplicate	Total Alkalinity (mg/L as CaCo3)		121	115	1	5	0 - 20	QC02217
Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Specific Conductance (uMHOS/cm)		127,991	130,000	1	2	0 - 20	QC02215

5/1/00 Order ID Number: A00041911 Page Number: 7 of 12 Report Date: I & W Inc. I & W Monitor Well #2 Carsbad, New Mex. I & W Inc. Yard Duplicate Sample RPD QC Result Result Dilution Batch # Standard Param Flag RPD Limit 7.5 7.5 1 0 0 - 20 QC02240 Duplicate pH (s.u.) Duplicate Sample RPD QC Result Result Dilution Batch # Standard Param Flag RPD Limit 2 Duplicate Total Dissolved Solids (mg/L) 5520 5400 1 0 - 20 QC02260

Report Date: 5/1/00

1 & W 1nc.

Order ID Number: A00041911

I & W Monitor Well #2

Page Number: 8 of 12 Carsbad, New Mex. I & W. Inc. Yard

Quality Control Report
Lab Control Spikes and Duplicate Spike

				C-:1	-	~ p				
		Blank		Spike Amount	Matrix Spike	%		% Rec.	RPD	QC
	Param	Result	Dil.	Added	Result		RPD	Limit	Limit	Batch #
LCS	Dissolved Calcium (mg/L)	<.50	1	1000	998	100		75 - 125		QC02237
LCS	Dissolved Magnesium (mg/L)	<.50	1	1000	954	95		75 - 125	_	QC02237
LCS	Dissolved Potassium (mg/L)	<.50	1	1000	943	94		75 - 125	_	QC02237
LCS	Dissolved Sodium (mg/L)	<.50	1	1000	950	95		75 - 125	-	QC02237
										•
LCSD	Dissolved Calcium (mg/L)	<.50	1	100	989	99	1	-	0 - 20	QC02237
LCSD	Dissolved Magnesium (mg/L)	<.50	1	100	935	94	2	-	0 - 20	QC02237
LCSD	Dissolved Potassium (mg/L)	<.50	1	100	939	94	0	-	0 - 20	QC02237
LCSD	Dissolved Sodium (mg/L)	<.50	I	100	929	93	2	-	0 - 20	QC02237
				Spike	Matrix					
		Blank		Amount	Spike	%		% Rec.	RPD	QC
	Param	Result	Dil.	Added	Result	Rec.	RPD	Limit	Limit	Batch #
LCS	Total Mercury (mg/L)	< 0.0002	1	0.001	0.00104	104		80 - 120	-	QC02360
LCSD	Total Mercury (mg/L)	< 0.0002	1	0.001	0.00108	108	4	-	0 - 20	QC02360
									·····	<del>-,</del>
				Spike	Matrix					
		Blank		Amount	Spike	%		% Rec.	RPD	QC
	Param	Result	Dil.	Added	Result	Rec.	RPD	Limit	Limit	Batch #
LCS	Total Aluminum (mg/L)	<0.01	1	2	2.02	101		75 - 125	-	QC02342
LCS	Total Arsenic (mg/L)	< 0.01	1	2	1.93	97		75 - 125	-	QC02342
LCS	Total Barium (mg/L)	< 0.01	1	2	2.22	111		75 - 125	-	QC02342
LCS	Total Boron (mg/L)	< 0.05	1	2	1.93	97		75 - 125	-	QC02342
LCS	Total Cadmium (mg/L)	< 0.002	1	2	2.04	102		75 - 125	-	QC02342
LCS	Total Chromium (mg/L)	< 0.005	1	2	2.08	104		75 - 125	-	QC02342
LCS	Total Cobalt (mg/L)	< 0.01	1	2	2.20	110		75 - 125	-	QC02342
LCS	Total Copper (mg/L)	< 0.01	1	2	2.22	111		75 - 125	-	QC02342
LCS	Total Lead (mg/L)	< 0.01	1	2	2.17	109		75 - 125	-	QC02342
LCS	Total Manganese (mg/L)	< 0.01	1	2	2.14	107		75 - 125	-	QC02342
LCS	Total Molybdenum (mg/L)	< 0.01	1	2	2.05	102		75 - 125	-	QC02342
LCS	Total Nickel (mg/L)	< 0.01	1	2	2.10	105		75 - 125	-	QC02342
LCS	Total Selenium (mg/L)	< 0.01	1	2	1.90	95		75 - 125	-	QC02342
LCS	Total Silica (mg/L)	< 0.01	1	2	2.05	102		75 - 125	-	QC02342
LCS	Total Silver (mg/L)	< 0.005	1	0.4	0.33	83		75 - 125	_	QC02342
LCS	Total Zinc (mg/L)	< 0.01	1	2	2.08	104		75 - 125	_	QC02342
	(8-)									(
LCSD	Total Aluminum (mg/L)	< 0.01	1	2	2.01	100	0	-	0 - 20	QC02342
LCSD	Total Arsenic (mg/L)	< 0.01	1	2	1.93	97	0	-	0 - 20	QC02342
LCSD	Total Barium (mg/L)	< 0.01	1	2	2.22	111	0	-	0 - 20	QC02342
LCSD	Total Boron (mg/L)	< 0.05	1	2	1.94	97	1	_	0 - 20	QC02342
	1000, 2010. (		-	_			•		0 20	Q C 0 2 3 . 2

Report Date: 5/1/00	Order ID N	umber:	A0004	1911			Pa	ige Numbe	r: 9 of 12
1 & W Inc.	I & W Mor	nitor W	/ell #2		Carsbad, New Mex. I & W Inc.				Inc. Yard
LCSD Total Chromium (mg/L)	< 0.005	1	2	2.08	104	0	-	0 - 20	QC02342
LCSD Total Cobalt (mg/L)	< 0.01	1	2	2.20	110	0	-	0 - 20	QC02342
LCSD Total Copper (mg/L)	< 0.01	1	2	2.21	111	0	-	0 - 20	QC02342
LCSD Total Lead (mg/L)	< 0.01	1	2	2.17	109	0	-	0 - 20	QC02342
LCSD Total Manganese (mg/L)	< 0.01	1	2	2.14	107	0	-	0 - 20	QC02342
LCSD Total Molybdenum (mg/L)	< 0.01	1	2	2.06	103	0	-	0 - 20	QC02342
LCSD Total Nickel (mg/L)	< 0.01	1	2	2.11	106	0	-	0 - 20	QC02342
LCSD Total Selenium (mg/L)	< 0.01	1	2	1.91	96	1	-	0 - 20	QC02342
LCSD Total Silica (mg/L)	< 0.01	1	2	2.05	102	0	-	0 - 20	QC02342
LCSD Total Silver (mg/L)	< 0.005	1	1	0.33	83	0	-	0 - 20	QC02342
LCSD Total Zinc (mg/L)	< 0.01	1	2	2.09	105	0	_	0 - 20	QC02342

Report Date: 5/1/00 I & W Inc.

Order ID Number: A00041911

I & W Monitor Well #2

Page Number: 10 of 12

Carsbad, New Mex. I & W Inc. Yard

		CCVs TRUE	CCVs Found	CCVs Percent	Percent Recovery	Date	QC Batch
Standard	Param Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
ICV	Hydroxide Alkalinity (mg/L as CaCo3)	0	<1.0	0	80 - 120	4/19/00	QC02217
ICV	Carbonate Alkalinity (mg/L as CaCo3)	0	204	0	80 - 120	4/19/00	QC02217
ICV	Bicarbonate Alkalinity (mg/L as CaCo3)	0	25	0	80 - 120	4/19/00	QC02217
ICV	Total Alkalinity (mg/L as CaCo3)	236	229	97	80 - 120	4/19/00	QC02217
CCV 1	Hydroxide Alkalinity (mg/L as CaCo3)	0	<1.0	0	80 - 120	4/19/00	QC02217
CCV 1	Carbonate Alkalinity (mg/L as CaCo3)	0	208	0	80 - 120	4/19/00	QC02217
CCV 1	Bicarbonate Alkalinity (mg/L as CaCo3)	0	26	0	80 - 120	4/19/00	QC02217
CCV 1	Total Alkalinity (mg/L as CaCo3)	236	234	99	80 - 120	4/19/00	QC02217
		CCVs	CCVs	CCVs	Percent		
		TRUE	Found	Percent	Recovery	Date	QC Batch
Standard	Param Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
ICV	Specific Conductance (uMHOS/cm)	1413	I 461	103	80 - 120	4/20/00	QC02215
CCV 1	Specific Conductance (uMHOS/cm)	1413	1452	103	80 - 120	4/20/00	QC02215
		CCVs	CCVs	CCVs	Percent	***************************************	
		TRUE	Found	Percent	Recovery	Date	QC Batch
Standard	Param Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
ICV	Dissolved Calcium (mg/L)	20	20.4	102	75 - 125	4/24/00	QC02237
ICV	Dissolved Magnesium (mg/L)	20	20.3	102	75 - 125	4/24/00	QC02237
ICV	Dissolved Potassium (mg/L)	20	19.3	97	75 - 125	4/24/00	QC02237
ICV	Dissolved Sodium (mg/L)	20	19.8	99	75 - 125	4/24/00	QC02237
CCV 1	Dissolved Calcium (mg/L)	20	20.4	102	75 - 125	4/24/00	QC02237
CCV 1	Dissolved Magnesium (mg/L)	20	20.3	102	75 - 125	4/24/00	QC02237
CCV 1	Dissolved Potassium (mg/L)	20	19.0	95	75 - 125	4/24/00	QC02237
CCV 1	Dissolved Sodium (mg/L)	20	19.8	99	75 - 125	4/24/00	QC02237
		CCVs	CCVs	CCVs	Percent	·····	
		TRUE	Found	Percent	Recovery	Date	QC Batch
Standard	Param Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
ICV	Total Mercury (mg/L)	0.001	0.0010	100	80 - 120	4/27/00	QC02360
CCV I	Total Mercury (mg/L)	0.001	0.00103	103	80 - 120	4/27/00	QC02360
		CCVs	CCVs	CCVs	Percent		00 = 1
		TRUE	Found	Percent	Recovery	Date Analyzed	QC Batch #
Standard	Param Flag	Conc.	Conc.	Recovery	Limits		
ICV	CL (mg/L)	12.5	12.01	96	80 - 120	4/19/00	QC02272
ICV	Fluoride (mg/L)	2.5	2.59	104	80 - 120	4/19/00	QC02272
ICV	Nitrate-N (mg/L)	5	4.89	98	80 - 120	4/19/00	QC02272
ICV	Sulfate (mg/L)	12.5	12.14	97	80 - 120	4/19/00	QC02272
CCV 1	CL (mg/L)	12.5	11.87	95	80 - 120	4/19/00	QC02272

Report Date: I & W Inc.

5/1/00

Order ID Number: A00041911

I & W Monitor Well #2

Page Number: 11 of 12 Carsbad, New Mex. I & W Inc. Yard

			CCVs	CCVs	CCVs	Percent	Date	QC Batch
Standard	Param	Flag	TRUE Conc.	Found Conc.	Percent Recovery	Recovery Limits	Analyzed	#
CCV 1	Fluoride (mg/L)		2.5	2.48	99	80 - 120	4/19/00	QC02272
CCV 1	Nitrate-N (mg/L)		5	4.88	98	80 - 120	4/19/00	QC02272
CCV 1	Sulfate (mg/L)		12.5	12.04	96	80 - 120	4/19/00	QC02272
			CCVs	CCVs	CCVs	Percent	Data	OC Batak
C+- 11	Davier	Elec	TRUE	Found	Percent	Recovery Limits	Date Analyzed	QC Batch #
Standard	Param	Flag	Conc.	Conc.	Recovery		<del>-</del>	
ICV	pH (s.u.)		7	7.0	100	80 - 120	4/19/00	QC02240
CCV 1	pH (s.u.)		7	7.0	100	80 - 120	4/19/00	QC02240
			CCVs	CCVs	CCVs	Percent	Date	QC Batch
Standord	Daram	Elec	TRUE Conc.	Found Conc.	Percent Recovery	Recovery Limits	Analyzed	#
Standard ICV	Param Total Disselved Solids (mg/L)	Flag	1000	999	100	80 - 120	4/24/00	QC02260
IC V	Total Dissolved Solids (mg/L)		1000	999	100	<b>60 -</b> 120	4/24/00	QC02260
CCV 1	Total Dissolved Solids (mg/L)		1000	988	99	80 - 120	4/24/00	QC02260
			CCVs TRUE	CCVs Found	CCVs Percent	Percent Recovery	Date	QC Batch
Standard	Param	Flag	Conc.	Conc.	Recovery	Limits	Analyzed	#
ICV	Total Aluminum (mg/L)		10	10.1	101	75 - 125	4/26/00	QC02342
ICV	Total Arsenic (mg/L)		0.5	0.511	102	75 - 125	4/26/00	QC02342
ICV	Total Barium (mg/L)		10	10.4	104	75 - 125	4/26/00	QC02342
ICV	Total Boron (mg/L)		1.25	1.32	106	75 - 125	4/26/00	QC02342
ICV	Total Cadmium (mg/L)		0.25	0.256	102	75 - 125	4/26/00	QC02342
ICV	Total Chromium (mg/L)		0.5	0.513	103	75 - 125	4/26/00	QC02342
ICV	Total Cobalt (mg/L)		2.5	2.58	103	75 - 125	4/26/00	QC02342
ICV	Total Copper (mg/L)		1.25	1.27	102	75 - 125	4/26/00	QC02342
ICV	Total Iron (mg/L)		5	5.13	103	75 - 125	4/26/00	QC02342
ICV	Total Lead (mg/L)		0.25	0.257	103	75 - 125	4/26/00	QC02342
ICV	Total Manganese (mg/L)		0.75	0.77	103	75 - 125	4/26/00	QC02342
ICV	Total Molybdenum (mg/L)		1.25	1.28	102	75 - 125	4/26/00	QC02342
ICV	Total Nickel (mg/L)		2	2.05	102	75 - 125	4/26/00	QC02342
ICV	Total Selenium (mg/L)		0.25	0.254	102	75 - 125	4/26/00	QC02342
ICV	Total Silica (mg/L)		1.25	1.36	109	75 - 125	4/26/00	QC02342
ICV	Total Silver (mg/L)		0.5	0.508	102	75 - 125	4/26/00	QC02342
ICV	Total Zinc (mg/L)		1	1.03	103	75 - 125	4/26/00	QC02342
CCV 1	Total Aluminum (mg/L)		10	10.1	101	75 - 125	4/26/00	QC02342
CCV 1	Total Arsenic (mg/L)		0.5	0.505	101	75 - 125	4/26/00	QC02342
CCV 1	Total Barium (mg/L)		10	10.3	103	75 - 125	4/26/00	QC02342
CCV 1	Total Boron (mg/L)		1.25	1.30	104	75 - 125	4/26/00	QC02342
CCV 1	Total Cadmium (mg/L)		0.25	0.252	101	75 - 125	4/26/00	QC02342
CCV 1	Total Chromium (mg/L)		0.5	0.505	101	75 - 125	4/26/00	QC02342

Report Date:

l & W Inc.

5/1/00

Order ID Number: A00041911

I & W Monitor Well #2

Page Number: 12 of 12

Carsbad, New Mex. I & W Inc. Yard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	Total Cobalt (mg/L)		2.5	2.55	102	75 - 125	4/26/00	QC02342
CCV 1	Total Copper (mg/L)		1.25	1.27	102	75 - 125	4/26/00	QC02342
CCV 1	Total Iron (mg/L)		5	5.06	101	75 - 125	4/26/00	QC02342
CCV 1	Total Lead (mg/L)		0.25	.256	102	75 - 125	4/26/00	QC02342
CCV 1	Total Manganese (mg/L)		0.75	0.76	101	75 - 125	4/26/00	QC02342
CCV 1	Total Molybdenum (mg/L)		1.25	1.26	101	75 - 125	4/26/00	QC02342
CCV 1	Total Nickel (mg/L)		2	2.03	101	75 - 125	4/26/00	QC02342
CCV 1	Total Selenium (mg/L)		0.25	0.251	100	75 - 125	4/26/00	QC02342
CCV 1	Total Silica (mg/L)		1.25	1.37	110	75 - 125	4/26/00	QC02342
CCV 1	Total Silver (mg/L)		0.5	0.505	101	75 - 125	4/26/00	QC02342
CCV 1	Total Zinc (mg/L)		1	1.01	101	75 - 125	4/26/00	QC02342

### **Cation-Anion Balance Sheet**

Sample #	144821	Date:	5/3/00
Calcium Magnesium Sodium Potassium	Cations ppm 518 1.7 289 388	meq/L 25.8482 0.139893 12.5715 9.92504	Total Cations 48.4846 in meq/L
Alkalinity Sulfate Chloride Nitrate as N Fluoride	Anions ppm  846  1400  130  3  1.2	meq/L  16.92 29.148 3.6673 0.21417 0.063168	Total Anions 50.0126 in meq/L

Percentage Error

3.10263 %

(needs to be <10%)

#### OTHER INFORMATION

8700

Measure EC and Cation Sums
Measure EC and Anion Sums
Calculated TDS/Conductivity
Measure TDS and Cation Sums
Measure TDS and Anion Sums

4848.4633	Range should be:	7830	to	9570
5001.2638	Range should be:	7830	to	9570
0.4252874	Range should be:	0.55	to	0.77
0.7631284	Range should be:	0.55	to	0.77
0.739813	Range should be:	0.55	to	0.77

Page\_\_\_of\_\_\_

6701 Aberdeen Avenue, Ste. 9 Lubbock, Texas 79424					so, T	ipley Dr., S exas 7992	CHAIN-OF-CUSTODY AND ANALYSIS REQUEST																								
Tel (806) 794-1296 Fax (806) 794-1298 1 (800) 378-1296 TraceAnalysis, Inc.  TraceAnalysis, Inc.  Tel (915) 585-3443 Fax (915) 585-4944 1 (888) 588-3443					LAB Order ID #																										
Company Name:										ANALYSIS REQUEST (Circle or Specify Method No.)																					
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LAB # FIELD CODE	ATA	те/А	EB	} .}		SLUDGE	j	9		Ш		ш		802	8021	418.1	PAH 8270C	Metal	TCLP Volatiles	Sem	Pest		NS Vo	IS Se	Posticidae 8081	BOD, TSS, pH	Q	0		Aroun	
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### NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT Price, Wayne

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

From:

Price, Wayne

Sent: To:

Tuesday, May 02, 2000 4:16 PM Gum, Tim; Stubblefield, Mike I&W Brine Well

Subject:

#### Dear Tim:

Please find enclosed a signed Copy of the C-103 allowing I&W to Perform an open hole test on the brine cavern. Would you please notify I&W and witness test. If they pass the test then they will be allowed to start-up brine operations. This test will be for 4 hours with no pressure drop allowed.



Submit 3 Copies to Appropriate
District Office

State of New Mexico Energy, Minerals and Natural Resources Department

Form C-103 Revised 1-1-89

OIL CONSERVATION DIVISION DISTRICT I

•				 
L	API NO.		7.11	
		00001		

P.O. Box 20						
DISTRICT II Santa Fe, New Mexico P.O. Drawer DD, Ariesia, NM 88210	5. Indicate Type of Lease STATE XX FEE					
DISTRICT III 1000 Rio Brazos Rd., Aziec, NM 87410	6. State Oil & Gas Lease No.					
SUNDRY NOTICES AND REPORTS ON WE (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPE DIFFERENT RESERVOIR. USE "APPLICATION FOR P (FORM C-101) FOR SUCH PROPOSALS.)	N OR PLUG BACK TO A 7. Lease Name of Unit Agreement Name					
1. Type of Well:  On.  WELL  ONE Brin	e Well Eugenie					
2. Name of Operator	8. Well No.					
I & W , Inc.	9. Pool name or Wildeat					
3. Address of Operator	. 9. Poor name or window					
P.O. Box 1685 Carlsbad, NM 88220						
	Line and 497 Feet From The WT, Line					
Section 1.7 Township 22S	tange 27 NMPM Eddy County					
10. Elevation (Show whether	T DF, RKB, RT, GR, etc.)					
11. Check Appropriate Box to Indicate	Nature of Notice, Report, or Other Data					
NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:					
PERFORM REMEDIAL WORK  PLUG AND ABANDON	REMEDIAL WORK ALTERING CASING					
TEMPORARILY ABANDON CHANGE PLANS	COMMENCE DRILLING OPNS. PLUG AND ABANDONMENT					
PULL OR ALTER CASING	CASING TEST AND CEMENT JOB					
OTHER: Resume Brine Production X	OTHER:					
12. Describe Proposed or Completed Operations (Clearly store all periment details, a work) SEE RULE 1103.	nd give persinent dates, including estimated date of starting any proposed					

- 1.) The fresh water injection well has been plugged & abandoned as directed by the OCD, EPA.
- 2.) Two monitor wells have been drilled & sampled with no indication of brine water migrating into fresh water zones.
- 3.) Would like to begin loading cavern & run mit on well #1, in order to start producing brine water.

I hereby vertify that the information above is true and complete to the heat of my knowledge	and boilef.	
SIONATURE TO SOLVE TO COMPANY	mu Manager	DATE May 2,2000
TYPEOR PRINT NAME George Parchman		TELEFICIONE NO.
(This space for State Use)		(505)885-6663
APTROVED BY AMPLE LIVE	PEL. FAUX. SIEC	5/2/00
CONDITIONS OF ATTROVAL, ANY:		

PO Box 1685, Carlsbad, NM 88220 Tel. (505) 865-6663 Fax (505) 885-8477

1 & W, Inc.





aFTo: W	PAYNE P	) Rice OF	om George	TARCHMAN	IFW TO
	827-81	~~-	'agesi 2		******
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5058858477





PO Box 1085, Carlsbad, NM 88220 Tel. (505) 895-6663 Fax (505) 895-8477

I & W, inc.

# Fax



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ARTESIA (505) 748-4214 1 (800) 748-1972

CARLSBAD (505) 885-6663 1 (800) 658-2739



P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972

LOVINGTON (505) 396-3331 1 (800) 748-2084

NMOCD Santa Fe

March 14, 2000

Attn.: Wayne Price

When you & I spoke a couple of weeks ago, I brought it to your attention that it did not look like we would be able to make the 15<sup>th</sup> deadline previously set. At this time you advised me to submit a letter either by mail or fax stating that we would need an extension of time to start this project.

In speaking to our water well driller, we have tried to come up with a time Irame at which we could possible get started down here. At this time it looks as though the 22<sup>nd</sup> of March would be the soonest date possible, unless unforescen problems arise. However I will call you on Monday the 20<sup>th</sup>, 2000 with a set date.

Thank you for your understanding and cooperation in the matter.

Sincerely,

George E. Parelman

Manager

GP/Ir

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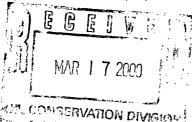
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ARTESIA (505) 746-4214 1 (800) 748-1972





P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084



NMOCD Santa Fe March 14, 2000

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Thank you for your understanding and cooperation in the matter.

Sincerely,

George E. Parchman

Manager

GP/lr

#### Price, Wayne

From: Sent: To:

Price, Wayne Tuesday, February 29, 2000 8:11 AM 'Mike Stubblefield' I&W C-104's

Subject:

Mike this is a reminder of our conversation the other day, when you get a chance please send us copies of the new C-104's change of ownership for the I&W Brine wells.

Thanks!

From:

Sent:

Subject:

System Administrator Wednesday, February 23, 2000 3:46 PM Delivered: RE: APPROVAL OF I&W INC. MONITOR WELLS.

### Your message

To:

Subject:

Stubblefield, Mike RE: APPROVAL OF I&W INC. MONITOR WELLS. 2/23/2000 3:46:17 PM

Sent:

### was delivered to the following recipient(s):

Stubblefield, Mike on 2/23/2000 3:46:17 PM

From: Sent:

System Administrator Wednesday, February 23, 2000 3:43 PM Delivered: FW: I&W

Subject:

### Your message

To:

'Mike Stubblefield' Gum, Tim FW: I&W

Cc: Subject: Sent:

2/23/2000 3:43:30 PM

was delivered to the following recipient(s):

Gum, Tim on 2/23/2000 3:43:30 PM

From:

Price, Wayne

Sent:

Wednesday, February 23, 2000 3:43 PM 'Mike Stubblefield'
Gum, Tim
FW: I&W

To:

Cc: Subject:

Mike! Please note I had already sent both you and Tim a copy of the Monitor Well approval letter on Feb17, 2000. The letter was sent registered to I&W on Feb 16, 2000. Please find enclosed a copy of the letter. Please note we show that you gus received it! Let us know if we have a E-mail problem!

### Thanks!

From:

Sent:

Price, Wayne Thursday, February 17, 2000 8:29 AM Gum, Tim

To:

Cc:

'Mike Stubblefield'

Subject:

Please find attached the letter we sent I&W yesterday. Please feel free to give them a copy so they may get started.



From:

Stubblefield, Mike

Sent:

Wednesday, February 23, 2000 2:44 PM

To:

Price, Wayne

Subject:

APPROVÁL OF I&W INC. MONITOR WELLS.

### WAYNE,

LARRY DADE WITH I&W CAME BY OUT OFFICE THIS MORNING.
MR. DADE WAS WANTING TO KNOW IF WE HAD HEARD ANY WORD
FROM SANTA FE ON THE APPROVAL OF I&W'S MONITOR WELLS. I&W HAS A WATER WELL
DRILLING COMPANY LINED UP TO DRILL AND INSTALL THE MONITOR WELLS.
THE WATER WELL COMPANY IS ON STANDBY TO START THE DRILLING OF THE MONITOR
WELLS AS SOON AS APPROVAL IS
OBTAINED FROM THE ENVIROMENTAL BUREAU.
THE WATER WELL COMPANY ALSO HAS BEEN CONTRACTED
BY WIPP PERSONAL TO DRILL MONITOR WELLS IN THE WIPP
AREA THE WATER WELL COMPANY HAS BEEN PRESSURING
I&W AS TO WHEN THE MONITOR WELLS FOR I&W WILL START
AND MAY PUT I&W ON WAITING LIST IF THEY DO NOT HAVE APPROVAL SOON.

MIKE S.

From:

Sent:

Price, Wayne Thursday, February 17, 2000 8:29 AM Gum, Tim 'Mike Stubblefield'

To:

Cc:

Subject:

I&W

Please find attached the letter we sent I&W yesterday. Please feel free to give them a copy so they may get started.



Mwapp.doc

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

February 16, 2000

## CERTIFIED MAIL RETURN RECEIPT NO. Z 142 564 941

Mr. George Parchman I&W, Inc. P.O. Box 1685 Carlsbad, New Mexico 88220

Re:

**Eugenie Brine Extraction Facility** 

Discharge Plan BW-006

SW/4 SW/4 Section 17-Ts22s-R27e

Eddy County, New Mexico

Dear Mr. Parchman:

The New Mexico Oil Conservation Division (NMOCD) is in receipt of I&W Inc.'s (I&W) letter dated January 06, 2000. I&W proposed to install three monitor wells all being within 10 feet of each other. This proposed method is not acceptable because the distance between monitor wells is to close to determine a measured groundwater gradient, also proposed monitor wells would not be far enough apart to make a preliminary determination of the extent of any possible down gradient contamination, and the well construction does not meet OCD standards. Therefore, the NMOCD will require I&W to initially install two nested monitor wells to be located approximately 10 feet southeast of the Eugenie #2 brine supply well. The following conditions are placed on the installation:

- 1. I&W shall complete the new monitor well(s) as follows:
  - a. One monitor well shall be drilled to a shallow depth to determine if the upper part of the groundwater has been impacted. This well shall have At least 15 feet of well screen to be placed across the water table interface with 5 feet of the well screen above the water table and 10 feet of the well screen below the water table. The hole must be logged by identifying each different geologic/lithologic section encountered during the drilling of the well bore.

### a. (cont)

The other monitor well shall be drilled to a depth of 200 feet, or lesser depth if I&W can demonstrate that the lowermost confining layer (i.e. red bed clay) underlying the above water aquifer has been encountered for a least 10 feet. This well shall have at least 15 feet of screen placed at the bottom of the hole. The hole must be logged by identifying each different geologic/lithologic section encountered during the drilling of the well bore.

- b. An appropriately sized gravel pack shall be set in the annulus around the well(s) screen from the bottom of the hole to 2-3 feet above the top of the well screen. The well pipe and screen shall be appropriately sized and approved by OCD before installation.
- c. A 2-3 foot bentonite plug shall be placed above the gravel pack.
- d. The remainder of the hole shall be grouted to the surface with cement containing 3-5% bentonite.
- e. A concrete pad shall be placed at the surface around the well. The well shall be installed with a suitable protective locking device.
- f. The well(s) shall be developed after construction using EPA approved procedures.
- 2. No less than 48 hours after the well(s) are developed, ground water from all monitor well(s) shall be purged, sampled and analyzed for concentrations of major cations and anions (general chemistry) EPA method from CFR 136.3 using EPA approved methods and quality assurance/quality control (QA/QC) procedures.
- 3. All wastes generated during the investigation shall be disposed of at an OCD approved facility.
- 4. I&W shall submit the results of the investigation to the OCD Santa Fe Office by March 15, 2000 with a copy provided to the OCD Artesia District Office and shall include the following investigative information:
  - a. A description of all investigation, remediation and monitoring activities which have occurred including conclusions and recommendations.
  - b. A geologic/lithologic log and well completion diagram for each monitor well.

Mr. George Parchman 02/16/00 Page 3

- c. Summary tables of all ground water quality sampling results and copies of all laboratory analytical data sheets and associated QA/QC data taken within the past year.
- 5. I&W will notify the OCD Santa Fe office and the OCD District office at least 48 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

Once I&W has submitted the results as outlined in item 4. Above, I&W may then apply for permission to re-test the the brine cavern. If the brine cavern test is satisfactory and approved by OCD then I&W will be issued written permission to start up brine well operations.

Please be advised that NMOCD approval of this plan does not relieve I&W of liability should their investigations and/or operations fail to adequately investigate and/or remediate contamination that poses a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve I&W of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price-Pet. Engr. Spec.

Environmental Bureau

cc: OCD Artesia Office

to Appropriate District Office	Energy, Minerals and Natura	l Resources Department	Form C-103 Revised 1-1-89
DISTRICT I	OILONSERVAT	TON DIVISION	
P.O. Box 1980, Hobbs, NM 88240	2040 Pachec		WELL API NO.
DISTRICT II	Santa 4567	NM 87505	30-015-23031
P.O. Drawer DD, Artesia, NM 8821		39,	5. Indicate Type of Lease STATE FEE
DISTRICT III 1000 Rio Brazos Rd., Azzec, NM 87	410	0.11	6. State Oil & Gas Lease No.
SUNDRY I	NOTICES AND REPORTS ON V	VELLS	
( DO NOT USE THIS FORM FOR	R PROPOSALS TO DRILL OF TO DEE! LESERVOIR. USE "APPLICATION FOR	PEN OF PLUG BACK TO A	7. Lease Name or Unit Agreement Name
(FO	RM C-101) FOR SUCH PROPOSA(S.)	\$ /	
1. Type of Well:	- 53-5	81/	1
WELL WELL	1970 SIESS	Injection Well	Eugenie
2. Name of Operator	T	•	8. Well No.
3. Address of Operator	Inc.		#2  9. Pool name or Wildcat
•	, Carlsbad, New Mexi	co 88220	9. FOR BRIDE OF VIROSE
4. Well Location			
Unit Letter :	1288' Feet From TheS	Line and	Feet From The W Line
17	2.2	27	Fddv
Section 1 /	TOMENTO	Range I   I   I   I   I   I   I   I   I   I	NMPM County
			<i>\(\(\(\(\(\(\(\(\(\)\\\\\\\\\\\\\\\\\\</i>
11. Che	eck Appropriate Box to Indica	te Nature of Notice Re	eport or Other Data
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12. Describe Proposed or Completed work) SEE RULE 1103.	Operations (Clearly state all pertinent detail	s, and give pertinent dates, inclu	ding estimated date of starting any proposed
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	CaCl. (3.) Shut well "tubing in hole, ta	_	. (2.)Spotted 4 sacks class
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			o'. (2.)Pressure test 2 7/8
had 900	PSI. bled off to 600	) PSI in 15 minu	ites. (3.)Spotted 6 sacks of
			well in over night.
	<u>-</u>		1" tubing in hole tagged up
• •			5. (4.)Cement set for appro
2 hours.	cc	ONTINUED	
I hereby certify that the information above	us true and complete to the best of my knowledge	e and belief.	
SIGNATURE LOLAR	in china	Manager	DATE 2/1/2000
0	Parchman	. Inte	885-6663
TYPE OR PRINT NAME GEOLIGE	; raiciiiiaii		TELEPHONE NO.
(This space for State Use)			
~ e \ c 6 000	<b>\*</b> .n\		~ / · · · / - · · ·
APPROVED BY Mile S Will	freeze	me Field Rep. II	RECEIVED 2/14/2000
CONDITIONS OF APPROVAL, IF ANY:			
			EED 1 C 0000

Submit 3 Copies to Appropriate District Office	Energy, erals and Natural Re	exico esources Department	Form C-103 Revised 1-1-89
DISTRICT I P.O. Box 1980, Hobbs, NM 88240	OIL CONSERVATIO	-	WELL API NO.
	2040 Pacheco	St.	30-015-23031
DISTRICT II P.O. Drawer DD, Artesia, NM 88210	23 Sandas Se Ni	M 87505	5. Indicate Type of Lease
DISTRICT III	// 4 2		STATE FEE
1000 Rio Brazos Rd., Aztec, NM 87410	FEB 2000 376		6. State Oil & Gas Lease No.
( DO NOT USE THIS FORM FOR PR DIFFERENT RESE (FORM C	ICES AND REPORTS ON WELL OPOSALS TO DRIED OF TO DEEREN RVOIR: USE "APPLICATION FOR PEI >-101) POR SUCH PROPOSALS!	OR PLUG BACK TO A	7. Lease Name or Unit Agreement Name
1. Type of Well: OIL GAS WELL WELL	] VERESTINE F/W In	jection well	Eugenie
2. Name of Operator I & W, Inc.			8. Well No. #2
3. Address of Operator			9. Pool name or Wildcat
	arlsbad, New Mexico	88220	
4. Well Location  Unit Letter M: 128	38' Feet From The S	Line and 497	Feet From The Line
Section 17			MMPM Eddy County
	10. Elevation (Show whether	DF, RKB, RT, GR, etc.)	
11. Check	Appropriate Box to Indicate l	Nature of Notice, Re	port, or Other Data
NOTICE OF IN	TENTION TO:	SUBS	SEQUENT REPORT OF:
PERFORM REMEDIAL WORK	PLUG AND ABANDON	REMEDIAL WORK	ALTERING CASING
TEMPORARILY ABANDON	CHANGE PLANS	COMMENCE DRILLING	OPNS. PLUG AND ABANDONMENT
PULL OR ALTER CASING		CASING TEST AND CE	MENT JOB
OTHER:		OTHER:	
12. Describe Proposed or Completed Oper work) SEE RULE 1103.	ations (Clearly state all pertinent details, ar	nd give pertinent dates, includ	ing estimated date of starting any proposed
1/14/00 (5.)Teste	d 2 7/8 to 450 PSI f	or 30 minutes	no loss of pressure.
			" in soft slurry, pulled
up to wer	e it would circulate	⊋.	
(7.)Circu	late cement out to s	surface as dir	ected by OCD represenitive.
	·		RECEIVED
			FFR 1 6 2000
			Environmental Bureau
			Oil Conservation Division
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SIONATURE DECLARED	archine to the test of my thowards and		DATE 2/1/2000
TYPEOR PRINT NAME George	Parchman		<b>TELEPHONE NO.</b> 885–6663
(This space for State Use)			
Tres. (Stole lie		ne Field Rep. II	DATE 2/14/2000 .
CONDITIONS OF APPROVAL, IF ANY:	TII	ILE	DATE

# IN COMING!

DATE: 2/14/2000

ATTENTION: Wayne Price 827-1150	1 TOTAL
FROM: Mike Stubblefield	
NUMBER OF PAGES INCLUDING COVER SHEET:	
	(A)

OIL CONSERVATION DIVISION DISTRICT II ARTESIA, NM 88210

IF YOU HAVE ANY PROBLEMS WITH THIS TRANSMISSION OR IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL 505-748-1283.
FAX NUMBER: (505) 748-9720

Wayne there is a	hard copy		 
	17		
in the mail.		 	 
		 ,	

HAVE A GREAT DAY!

	0 MON 11:18 AM	OCD DISTRIST I	] d Namral Re	FAX NO. 5( <b>2000:ces Department</b>	)57489720.	P. Revised 1	2
to Appropriate District Office	Z.	-		•			
P.O. Box 1980,	Hobbs, NM 88240	OIL CONSE	<b>KVATIU</b> Pacheco :	N DIVISION	WELL API NO.		
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DISTRICT III 1000 Rio Eman	n Rd., Assec, NM 27410		<b>₹</b>	72	6. State Oil & Ges	Lasse No.	
	SUNDRY NOT	ICES AND REPOR	S ON WEL	13			
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2. Name of Op	perator				8. Well No.		
3. Address of	I & W, Inc	<u>.                                    </u>			9. Pool same or W		
	O.Box 1685, 0	erichad. New	Mexico	88220	9. POOL BEEDS OF W	, there is a	
4. Well Locati	OR.						
Unit 1	Letter <u>M</u> : 128	8 Pest From The	S	Line and497	Post From	The W	Line
Sectio	n 17	Township 22	<b>D</b> _	27	NMPM Edd	ły.	County
		- Address A		of, RKB, RT, GR, etc.)	NATA		
						<u> </u>	
11.	Check	Appropriate Box to	Indicate l	vature of Notice, R	eport, or Other	Data	
	NOTICE OF IN	FENTION TO:		SUB	SEQUENT R	EPORT OF:	
PERFORM REL	MEDIAL WORK	PLUG AND ABAN	DOW	REMEDIAL WORK		ALTERING CASING	
TEMPORARILY				•	· <b>=</b>	PLUG AND ABAND	<del></del> -
		CHANGE PLANS	. لــا	COMMENCE DRILLING		PLUG AND ABAND	DRIMEN I
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OTHER:			🗆	OTHER:			
12. Describe Pro	oposed or Completed Open RULE 1103.	tions (Clearly more all pers	irem dessits, on	d give partinent dates, inclu	ding estimated date of	eserting any proposed	
./10/00	(1.) Rigged	ter. (3.) Po	mped 25	ucks. (2.) Fi sacks of cen well in with	ient with	2 76 CaCliii	FO SIUL
/11/00	(1.) Ran 1"		le tagg	ed up at 450'			
/12/00	(1.)Ran 1"	subing in hol	e, tago	ed up at 390	. (2.)Spot	tted 4 sack	s class
.,,	"C" neat c	ement @ 390'.	(3.)Sh	ut well in ov	ver night.	•	
1/13/00	(1.)Ran l" '	tubing in hol	e, tagg	ed TOC at 320	)'. (2.)Pre	essure test	2 7/8
•	had 900 PS	I, bled off t	o 600 P	SI in 15 minu	ıtes. (3.):	Spotted 5 s	acks of
	cement @ 3	20' put 600 I	SI on w	ell. (4.)Shut	well in	over night.	
./14/00	(1.)checked	well had 200	) PSI on	it. (2.)Ran	i" tubing	in hole to	igged up
	<pre> @315'. (3. 2 hours.</pre>	)spotted 6 sa	CKS Of	cement at 315 'INUED	o (4.)Ce	ment set I(	or abbro
I handa anatifu ti	pt the information above, as the						
I many comy		() E stato combinary só mas care ca. m	À monante en			DATE 2/1/20	ייי יייי
SIGNATURE	Leonar Tra	chine-	TIR	<u>Manager</u>			
TYPE OR PRINT N	George P	archman				телетноме мо. 8 (	35-6663
(This space for Si	tale Uso)						
	mis Sceretie	20_		Field Rep. II		DATE 2/14/2	000
APTROVED BY			7M				

FEB-14-00 MON 11:19 AM	OCD DISTRIST II	FAX NO.	5057489720	P. 3
Submit 3 Copies To Appropriate District Office	State of New Mi Energy, Minerals and Natural R			Form C-143 Revised 1-1-89
DISTRICT I P.O. Box 1980, Hobbs, NM, 38240	OIL CONSERVATIO		WELL API NO.	
DISTRICT II	2040 Pacheco	St. M 87505	30-015-230	
P.O. Drawer DD, Artesia, NM \$8210			5. Indicate Type of Lease	TATE FEE
DISTRICT III 1000 Rio Brizos Rd., Azzec, NM 87410	8 Pr 2000 P3 V	-	6. State Oil & Gas Leans	No.
SUNDRY NOTI ( DO NOT USE THIS FORM FOR PRO DIFFERENT RESER (FORM C-	CES AND REPORTS ON VIEW POSALS TO DEED TO DEED TO DEED TO DEED TO DEED TO DEED TO DEED TO THE TOP OSALS OF THE PROPOSALS OF T	LLS I OR PLUG BACK TO A RMIT!	7. Leass Name or Unit A	greenest Name
I. Type of Well: OR. GAS WELL WELL	F/W II	njection well	Eugenie	
2. Name of Operator			8. Well No.	
I & W, Inc.			#2	
3. Address of Operator P. O. Box 1685 Ca	rlsbad, New Mexico	88220	9. Pool name of Wilgon	
4. Well Location			r	W
Unit Letter : 120	8 Peet From The S	Line and	Feet From The	Line
Section 17	Township 22 R	27	NMPM Eddy	County
	10. FIEARING (240m MASSAGE	Dr. RRD. KI. GR. MC.)		
ii. Check	Appropriate Box to Indicate	Nature of Notice, F	Report, or Other Dat	2
NOTICE OF INT	ENTION TO:	SUE	SEQUENT REPO	ORT OF:
PERFORM REMEDIAL WORK	PLUG AND ABANDON	REMEDIAL WORK	ALTE	RING CASING
TEMPORARILY ABANDON	CHANGE PLANS	COMMENCE DRILLIN	G OPNS. DPLUG	AND ABANDONMENT
PULL OR ALTER CASING	_	CABING TEST AND C	EMENT JOB	
OTHER:		OTHER:		
12. Describe Proposed or Completed Opera- work) SEE RULE 1103.	tions (Clearly state all puriosess dessits, e	nd give pertinent dates, incl	iding eximated data of starti	ug any proposed
	2 7/8 to 450 PSI			
	to TOC tagged up		0" in soft sl	urry, pulled
	it would circulat			
(7.)Circul	ate cement out to	surface as di	rected by OCD	representtive.
•				
I hereby certify that the information above is an	n mai segments to the buff of my knowledge an			2/1/2000
SIGNATURE ALEXANDER	Ur Xiva ar T	ma <u>Manager</u>		ATE
TYPEORPOITNAME George	Parchman		1	еценюм≘ но. 885—6663
(Thus space for State Use)				
ATTROVED BY TYPE STORRES	<u>.                                    </u>	me Field Rep. IF		2/14/2000

From:

Sent:

Price, Wayne Monday, February 14, 2000 10:35 AM Stubblefield, Mike

To:

Cc:

Gum, Tim

Subject:

I&W

Mike! Thanks for the phone call! I forgot to tell you that Tim requested us to have the monitor wells installed before we allow I&W to test. Please send us a copy of the signed C-103 showing where you approved of the plugging!

I will be sending I&W a letter on the Monitor well issue. Once the MW's are installed per OCD Santa Fe approval then we will issue I&W approval from this office on the test and start-up.

From:

Stubblefield, Mike Monday, February 14, 2000 11:08 AM Price, Wayne Read: I&W

Sent: To: Subject:

### Your message

To:

Stubblefield, Mike Gum, Tim

Cc:

Subject: Sent:

I&W 2/14/2000 10:35:08 AM

was read on 2/14/2000 11:08:28 AM

1/31/2000

ROGER,

I TALKED TO GEORGE PARCHMAN THIS MORNING AND REQUESTED THE SUBSEQUENT C-141 REPORT WITH FINAL PLUGGING OPERATIONS TAKEN ON THE EUGENIE #2.

I WILL FORWARD SUBSEQUENT C-141 TO YOU WHEN WE RECEIVE IT.

MIKE S.

**RECEIVED** 

FEB 0 1 2000

Environmental Bureau Oil Conservation Division

notific NMOCD. To witness Plugging Operations.

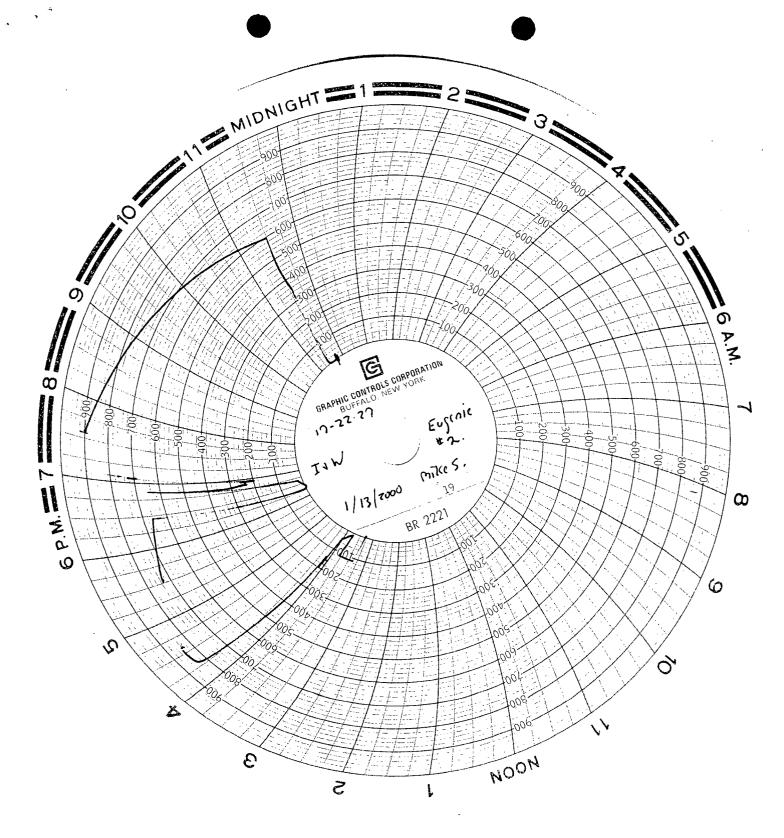
Eugune #1

P.B.S.& S. BOX 1591 ODESSA.TEXAS 79760

JUNE 30, 1978

### SALT & 1

0 to 46	TOP SOIL WITH GRAVEL
46 to 58	SAND & GRAVEL
58 to 62	LIME
62 to 65	RED BED
65 to 76	RED SAND
76 to 107	GRAVEL
107 to 163	BROWN CLAY W/GRAVEL & SAND
163 to 170	
170 to 178	
178 to 225	RED BED
225 to 237	
237 to 252	LIME & ANHYDRITE W/SOME GYP. 15
252 to 268	
268 to 285	LIME W/GYP. STRINGERS
285 to 305	GYP. W/SOME RED BED
305 to 320	GYP. & ANHYDRITE 15
320 to 328	RED BED
328 to 360	ANHYDRITE W/LIME & SAND
360 to 410	RED FOCK & ANHYDRITE 50
410 to 430	ANHYDRITE W/SOME LIME 20
430 to 437	GRAY LINE ( HARD ) & ANHYDRITE '7
437 to 445	ANHYDRITE 8'
445 to 456	ANHYDRITE & GRAY LIME
456 to 555	SALT
555 to 567	SALT & SOME LIME
567 to 576	SALT & BLUE SHALE VERY LITTLE .
576 to 592	SALT
592 to 663	ANHYDRITE



### PLUGGING ACTIONS TAKEN ON I&W ENGINE #2

1/10/00

DOWELL PUMPED 25 SX DOWN 2.875" TBG. CAL CMT VOL. {1015' FILL IN 2.875" TBG} DISPLACED WITH .03 BBLS.

1/11/00

RAN 1" TBG AND TAGGED TOC AT 450'.
SPOTTED 5 SX CMT AT 450' CAL CMT VOL. {184' FILL IN 2.875" TBG}

1/12/00

RAN TBG AND TAGGED TOC AT 390'. SPOTTED 50' CMT AT 390'.

1/13/00

RAN TBG AND TAGGED TOC AT 320'.

PRESSURE TEST 2.875" TBG LOST FROM 900# TO 600# IN 15 MINUATES.

SPOTTED 6 SX CMT AT 320' CAL CMT VOL. {243' FILL IN 2.875" TBG}

LEFT UNDER PRESSURE 600# OVERNIGHT.

1/14/00
200# PSI ON TBG IN AM.
RAN 1" TBG AND TAGGED TOC AT 315'.
6SX=7.92 CU FT CMT 2.875"/5"HOLE LIN. FT PER CU. FT IS 10.9563
7.92 CU FT IS 86' LIN FILL OUTSIDE CSG.
PRESSURE TESTED 2.875" TBG AT 450# FOR FIFTEEN MINUATES NO LOST OF PRESSURE. CIRCULATED CMT TO SURFACE USING 10 SX CMT.

WHEN 3' SECTION OF TUBING WAS REPLACED AND WELDED
GEORGE PARCHMAN DID RUN .5 TBG EST 8" DOWN BACKSIDE
2.875" TBG AND EMPTIED STANDING WATER WITH VACUUM TRUCK
TOPPED OFF TO SURF. WITH MIXED CEMENT.
GEORGE FELT THAT THE HOLE IN THE 2.875" TBG WAS A RESULT OF CORROISION
FROM WATER STANDING LONG TERM ON THE BACKSIDE OF THE 2.875" TBG.

From:

Gum, Tim

Sent: To: Monday, January 24, 2000 8:35 AM Stubblefield, Mike; Price, Wayne Anderson, Roger; Wrotenbery, Lori

Cc: Subject:

RE: I&W Brine well system BW-006

From:

Price, Wayne

Sent:

Thursday, January 20, 2000 2:25 PM

To: Cc: Gum, Tim; Stubblefield, Mike

Cc: Subject: Anderson, Roger; Wrotenbery, Lori 1&W Brine well system BW-006

Wayne---- It was our understanding, based on several phone conversations that we would approve and witness the P&A of this well. I&W has been advised that they can not begin operations until they comply with all specified conditions and our given approval. Thanks TWG.

Tele: Con: 2pm Jan 20, 2000

Mike Stubble to WPrice & RC Anderson

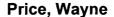
Dear Tim and Mike:

I&W seems to not understand the discharge plan process and the inter-action with the OCD District office. We though we made it clear to I&W in our N.O.V. letter and during our conference call on 12/06/99.

Mike just informed us that I&W has plugged the Euginie #2 well without NMOCD Environmental Bureau approval. This was a requirement in OCD's N.O.V. letter to I&W on November 19, 1999. However, we understand that OCD Artesia did approve the plugging procedure. Please have I&W submit the C-103 P&A form signed-off by OCD Artesia. Once we receive this we will evauate the plugging procedure and the groundwater investigation plan. We will notify I&W of our decisions and testing requirements by Certified Mail.

I&W Brine shall remain shut down and shall not pressure test until we issue approval from Santa Fe.

In the mean time if I&W wants to perform piping changes on the surface that will be ok, but at their own risk!



From:

Price, Wayne

Sent:

Thursday, January 20, 2000 2:26 PM

To: Cc: Gum, Tim; Stubblefield, Mike; Price, Wayne

Subject:

Anderson, Roger; Wrotenbery, Lori RE: I&W Brine well system BW-006

From:

Price, Wayne

Sent:

Thursday, January 20, 2000 2:25 PM Gum, Tim; Stubblefield, Mike

To:

Cc:

Anderson, Roger; Wrotenbery, Lori I&W Brine well system BW-006

Subject:

Tele: Con: 2pm Jan 20, 2000

Mike Stubble to WPrice & RC Anderson

Dear Tim and Mike:

I&W seems to not understand the discharge plan process and the inter-action with the OCD District office. We thought we made it clear to I&W in our N.O.V. letter and during our conference call on 12/06/99.

Mike just informed us that I&W has plugged the Euginie #2 well without NMOCD Environmental Bureau approval. This was a requirement in OCD's N.O.V. letter to I&W on November 19, 1999. However, we understand that OCD Artesia did approve the plugging procedure. Please have I&W submit the C-103 P&A form signed-off by OCD Artesia. Once we receive this we will evaluate the plugging procedure and the groundwater investigation plan. We will notify I&W of our decisions and testing requirements by Certified Mail.

I&W Brine shall remain shut down and shall not pressure test until we issue approval from Santa Fe.

In the mean time if I&W wants to perform piping changes on the surface that will be ok, but at their own risk!

Inc. W

ARTESIA (505) 746-4214 1 (800) 748-1972 CARLSBAD (505) 885-6663 1 (800) 658-2739

P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255 LOCO HILLS (505) 677-2111 1 (800) 748 1972 LOVINGTON --(505) 396-3331 1((800) 748-2084

JAN 1 0 2000

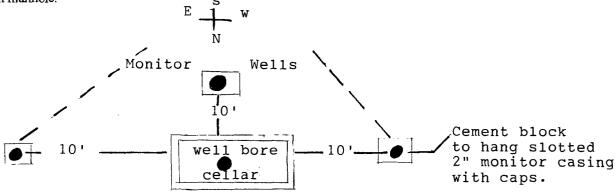
CONGERVATION DIVISION

NMOCD-EPA 2040 S. Pacheco Santa Fe, New Mexico 87505 January 06, 2000

Attn. Roger Anderson

This is a proposal only. The monitor wells for the Eugenie #2 will not be drilled until the NMOCD approves this plan or gives I & W , Inc. a plan of their own specifications of their approval.

The monitor wells will be drilled with air. Diameter of hole will be 4 7/8". Casing will be 2" flush joint monitor casing with 10' of slotted monitor with a plug on bottom. Installed on top will be water tight locking caps with bolt down manhole. The well will also be gravel packed with bentonite grout on top. Cement curbing will be placed around each manhole.



These three wells are to be drilled to 65'. We will install monitor casing which is EPA specification. The cellar, once all operations have been completed to plug well bore, will be filled with cement. A dry hole marker will be installed on the Eugenie #2.

Your comments on this proposal would be appreciated. If you have any questions or comments please contact me at (505) 885-6663.

Sincerely,

George E. Parchman

Manager

GP/lr

to Appropriate District Office	Energy, Minerals and Natural Resources Department	Revised 1-1-89
DISTRICT I P.O. Box 1980, Hobbs, NM 88240	OU ONSERVATION DIVISION 2040 Pacheco St.	WELL API NO.
DISTRICT II	Santa Fe, NM 87505	30-015-22574
2.O. Drawer DD, Arlesia, NM 88210	Santa re, Mr 07303	5. Indicate Type of Lesse STATE  FEE
DISTRICT III 1000 Rio Brazos Rd., Aziec, NM 87410	• • • • • • • • • • • • • • • • • • •	6. State Oil & Gas Lease No.
( DO NOT USE THIS FORM FOR PRODIFFERENT RESERVANCE)	ICES AND REPORTS ON WELLS OPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A RVOIR. USE "APPLICATION FOR PERMIT"101) FOR SUCH PROPOSALS.)	7. Lease Name or Unit Agreement Name
. Type of Well:		Eugenie
WELL WELL Name of Operator	one Brine Extraction	
I & W, Inc.	·	8. Well No. #1
. Address of Operator	2000	9. Pool name or Wildcat
P.O. Box 1685 , C	arlsbad, NM 88220	
Unit Letter M: 995	Feet From The South Line and 641	Feet From The West Line
	22	naa
Section 17	Township ZZ Range Z/ /////// 10. Elevation (Show whether DF, RKB, RT, GR, etc.)	NMPM Eddy County
1. Check A	Appropriate Box to Indicate Nature of Notice, I	Report, or Other Data
		BSEQUENT REPORT OF:
NOTICE OF INT	LITTION TO.	
	PLUG AND ABANDON REMEDIAL WORK	ALTERING CASING
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ERFORM REMEDIAL WORK  EMPORARILY ABANDON  JILL OR ALTER CASING  THER: To change to 1 w  2. Describe Proposed or Completed Operat work) SEE RULE 1103.  Proposal: To pl fresh thru  Thereby certify that the information above is true shanature  SHANATURE A CASING  THER: To change to 1 w  A change to 1 w  Thereby certify that the information above is true shanature.  Thereby certify that the information above is true.	PLUG AND ABANDON	ALTERING CASING  GOPNS. PLUG AND ABANDONMENT  CEMENT JOB  Description of starting any proposed  rine, We will pump the brine water up  Date Jan.4th,2000
ERFORM REMEDIAL WORK  EMPORARILY ABANDON  ULL OR ALTER CASING  THER: To change to 1 w  12. Describe Proposed or Completed Operation work) SEE RULE 1103.  Proposal: To pl fresh thru	PLUG AND ABANDON REMEDIAL WORK CHANGE PLANS CASING TEST AND CONTHER:  THORE (Clearly state all pertinent details, and give pertinent dates, included by the Eugenie #1 to extract be a water down the casing to bring the tubing to our storage tanks  and complete to the best of my knowledge and belief.  TIME Manager  Parchman	ALTERING CASING  GOPNS. PLUG AND ABANDONMENT  CEMENT JOB  Duding estimated date of starting any proposed  rine, We will pump the brine water up





Oil Conservation Division attre: Roger Anderson 2040 S. Pacheco Santa In New Mexico 87505

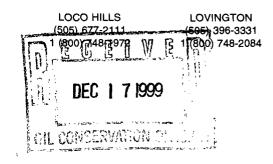
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Haldadddladdddd - Baddadddddaladdddddddalladdd



ARTESIA (505) 746-4214 1 (800) 748-1972 CARLSBAD (505) 885-6663 1 (800) 658-2739

P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255



December 14, 1999

New Mexico Oil Conservation Division Attn.: Roger Anderson Or Wayne Price 2040 S. Pacheco St. Santa Fe, New Mexico 87505

Dear Sirs:

The Letter of violation that I & W, Inc. received on or about the 26<sup>th</sup> of November was read. I & W carried out the action necessary to comply.

- 1. Brine well was shutdown according to NMOCD direction. There has been no more operation without approval.
- 2. The 103 was submitted for approval to NMOCD in Santa Fe and the Artesia District office on December  $9^{th}$  1999. The 103 outlined the work as discussed in the conference call on Monday December  $6^{th}$  1999.
- 3. I & W, Inc. will proceed to drill monitor wells (3), to check if water zone was impacted, and future checks will be performed as directed by the NMOCD.

In conclusion I & W, Inc. would like to thank you for your help and concern in this matter. If you have further question please contact us at (505)885-6663.

Sincerely,

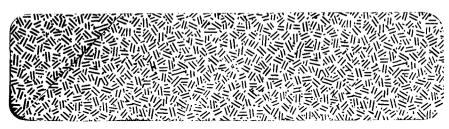
George E. Parchman

Manager

lr/GP

Submit 3 Copies to Appropriate District Office	Energy, Minerals and Natural I	Resources Department	•	Form C-103 Revised 1-1-89
<u>DÍSTRICT I</u> P.O. Box 1980, Hobbs, NM 88240	OIL CUSERVATION 2040 Pacheco		WELL API NO.	
DISTRICT II P.O. Drawer DD, Artesia, NM 88210	Santa Fe,	NM 87505	5. Indicate Type of Lease	TEX FEE
DISTRICT III 1000 Rio Brazos Rd., Azzec, NM 87410			6. State Oil & Gas Lease No	
( DO NOT USE THIS FORM FOR PRODIFFERENT RESE	ICES AND REPORTS ON WE OPOSALS TO DRILL OR TO DEEPE RVOIR. USE "APPLICATION FOR P 101) FOR SUCH PROPOSALS.)	N OR PLUG BACK TO A	7. Lease Name or Unit Agree	ement Name
1. Type of Well: Off. GAS WELL WELL		Injection 11	Eugenie	
2. Name of Operator I & W, Inc	100		8. Well No. #1	
3. Address of Operator P.O. Box 1685 C	arlsbad, New Mexico	88220	9. Pool name or Wildcat	
4. Well Location Unit Letter:	Feet From The	Line and	Feet From The	Line
Section 17	Township 22S		NMPM Eddy	County
	10. Elevation (Show whether	r DF, RKB, RT, GR, etc.)		
NOTICE OF INT	Appropriate Box to Indicate TENTION TO:		leport, or Other Data SSEQUENT REPOR	T OF:
PERFORM REMEDIAL WORK	PLUG AND ABANDON	REMEDIAL WORK		G CASING
TEMPORARILY ABANDON  PULL OR ALTER CASING	CHANGE PLANS	CASING TEST AND C		ID ABANDONMENT L
OTHER: Change Operation	of B/W System XX	OTHER:		
12. Describe Proposed or Completed Opera work) SEE RULE 1103.	ntions (Clearly state all pertinent details,	and give persinent dates, inclu	iding estimated date of starting a	пу proposed
brine f	Inc. Proposes to go rom the Eugenie #1 esh water down the	<ul> <li>If approved</li> </ul>	then we propos	se to
	·			
·				
				٠
I hereby certify that the information above as the SKINATURE	) () _	nd belief.	DATE	12/14/99
TYPEOR PRINT NAME George Pa	rchman		Teler	HONE NO. 885-6663
(This space for State Use)				
APPROVED BY	7	mle	DATE	





87505-5472 57

DOID. PER têlé CON 12/6/99 Ita will Ré-SUBMIT. Jul

Environmental Bureau Oil Conservation Division

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

\_\_\_\_ mr <u>Manager</u>

DATE 11/30/99

TYPEOR PRINT NAME George Parchman

TELEPHIONE NO. 505 885-6661

(This space for State Use)

APPROVED BY -

CONDITIONS OF AFFROVAL, IF ANY:

- DATE

OPERATION PLESS	EUGENIE	BRINE WELLS
No	1 well.	No 2 well
BRINE WATER OUT A	FRESH h  FRESH h  GRAVEC  46' GRAVEC	1/11 /N 18 -5/2 CEMENT To 285
	98' Red BEDS  10 HARD LIMESTONE 42' RED BEDS	
95/8 CEMENTED TO 349.4'	TEN DEDS  TEN DEDS  TEN DEDS  TO STRIT, OF ANHYORD  E RED BEDS  OMPOUM & ANHYORD	
512" CEMENITED TO 466'	limpstens d dampst	12/3 LE STED
LIME & SHIPLE	CAVERA	590
ANHYORITE to 64	BETWEEN BETWEEN	IATED
SCALE 1"= 100"		
	CROSS E	ECTION

4-1000 BBL BRIVE Storage Tauks 1 sugpy3 Eugenie 2 FW Injection DiscHarge Brine To Storage Tanks Down Hole GROUND SURGACE 8% CASING 220' 5%" Crews CASING 2% TiBling 21/8 TUBING 456 456 Top of SALT SALT FORMATION 1601 601' 663'

> Date May 7, 1987

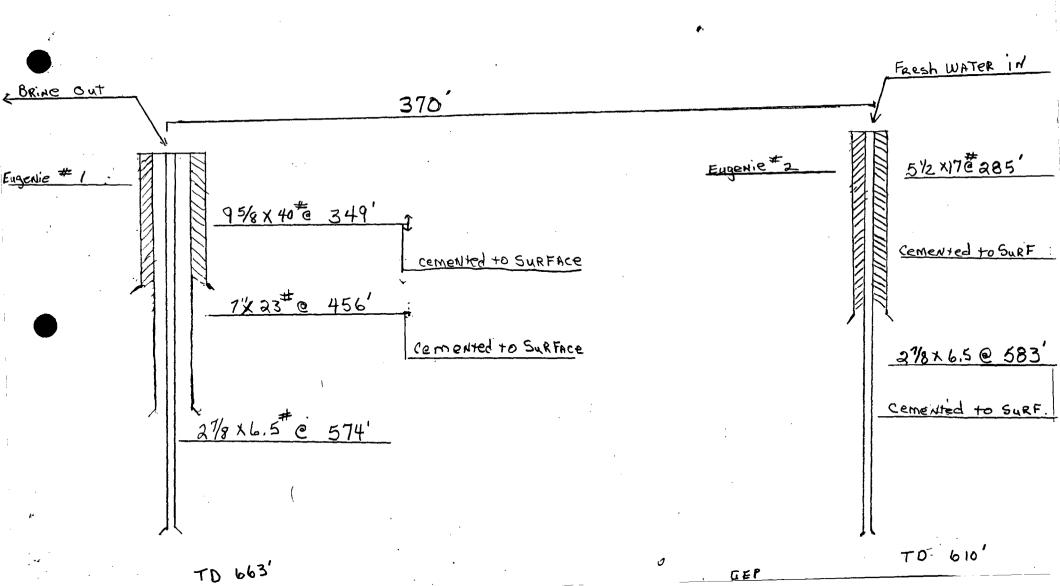
Depth, Diameter Sub-Surgers. Schematic Drawing os Eugenie 1 & Eugenie 2

Casing & Tubing South Y CARLSBAD N.T.M.

GENE PRUTT BAE Inc.

South Y CARLSBAD NIM 88220

IEW INC.
BRINE STATION
CARISDAD, NM



OIL CONSERVATION DIVISION ARTESIA, NEW MEX. 88210

TO: WAYNE Price
FROM: OCD - GARY Williams
DATE: 1/8/99

NUMBER OF SHEETS ( INCLUDING TRANSMITTAL SHEET ) 2

IF YOU HAVE ANY PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL 505-748-1283. FAX NUMBER (505) 748-9720

From: 18M, INC.

FAX NO. 5057489720 P. 2

		· • • • • • • • • • • • • • • • • • • •
to Appropriate District Office	Hantyy, Minerals and Namesi Resources Departme	acti Revised (-) 49
PAR Mar 1990, Hobbs, PGM SE240	OIL CONSERVATION DIVISION 2040 Pacheto St.	N WELLAPING
OFFICE A O. Drawin DO, Americ, NM \$2210	Santa Fe. MM 87505	S. Indicate Type of Lame
DISTRICT III 000 Ajo Briano Rd., Aston, 194 8741		STATE STATE FRE
	TICES AND REPORTS ON WELLS	
DUFFERENT RES	POPOBALS TO DRILL OR TO DEEPEN OR PLUG BACK TO ERVOIR. USE "APPLICATION FOR PERMIT" O-101) FOR SUCH PROPOBALS.)	7. Lagra Nusso or Unit Agreemost North
Type of Walt:	max/w Injection Wel	1 Eugenie
Ham of Oyener	.'	a. Well No.
Allow d Opinion	Hills, New Mexico 88255	7. Poet aum = Wildet
Well Lassalon	RALLO INC. INC.	
Unit Later	Pres Press Tirs Lips red	Per Prin The Lin
Beston 17	Typerchip 228 Reace 27  [[A 10. Marrian (Show whether DF, REA, RE, GR, etc.]]	MMM Eddy County
	(S. Blevminn (Show whether DF, RKA, RT, GR. etc.)	
Check	Appropriate Box to Indicate Nature of Notice,	Report of Other Data
NOTICE OF IN		UBSEQUENT REPORT OF:
PROPON MEMERIAL WORK	PLUG AND ABANDON THEMEDIAL WORK	ALTERING CASING
MPORARILY ARANDON	CHANGE PLANS COMMENCE DIVILL	
-		
aloralter Cabing [_]	CASHIG TEST AND	CEMENT JOS L
W#N:	C) OTHER:	
L Dentales Proposed or Completed Open work) SEE RULE 1103.	usinas (Clourly state off partisons denule, and give partitums deres, in	thating azimutal date of starting ony proposed
November 8th 1999		t, Run gauge rig &bare O'to check casing. Rig
	up C/I bridge plug	toset in 2 7/8casing.
	Set plug at approximation of selections of the selection	mately 285'. Then rig up at 120 degrees perf 2 7/8
November 9th 1999	Continued: Rig up cement truck through perf and truck beside 2 7/8casing stop flow.	pump 25 sacks down 2 7/8 y to circulate cement up inside 3 1/2 casing, to
harring entity that the influence prices in in	or and complete to the burt of my knownings and notice.	1 1
BRANCE THE STATE OF THE STATE O	Your Some Mark.	DATE 11/3/99
TEGERATION GEORGE	e Parchman	теления но S05-98\$ 6 #
his spices for Jude West		

#### CARLSBAD BRINE STATION

Permian's Carlsbad Brine Station is located in the SW/4 - SW/4 Section 17, Township 22 South, Range 27 East, Eddy County, New Mexico. This location is at the intersection of US Highways 285 and 180 on the Southern outskirts of the city of Carlsbad. See drawing number 1 and map 2. The pumping rate is 68 GPM at 150 PSI Pressure.

Two brine wells were drilled at this site: Eugenie No. 1 and No. 2. The No. 1 well was drilled in 1978 to a total depth of 663'. A string of 9 5/8" O.D., 40#/ft. casing was set at 349' and 170 sacks of cement was circulated. A string of 7" O.D. 23#/ft. casing was set at 456' and 135 sacks of cement circulated. 587' of 2 7/8" tubing was hung in the well, bottomed in the salt section. A drillers log, exhibit 1, is attached.

After completion of this well, in August, 1978, the production of adequate supplies of brine could not be maintained due to the relatively thin section of salt being washed, i.e. 456' to 547'. The second well Eugenie No. 2 was drilled, in November, 1979, and fractured across to the No. 1 well. This well was drilled to a total depth of 610'. 5 1/2", 17#/ft. casing was set at 285' and 125 sacks of cement circulated. 2 1/2", 6.5#/ft. tubing was set at 583' and 100 sacks of cement circulated. The well was fractured across to No. 1 well through a salt and shale stringer 576' to 592'.

Exhibit 2, attached is the drillers log for the No. 2 well, Fresh Water for operations is obtained from the city of Carlsbad from a connection at the lease site. The fresh water is pumped down the tubing of the No. 2 well and brine circulated up the tubing of the No. 1 well to the 500 bbl: brine storage tanks. Water circulation at a rate of 70 GPM is maintained by a booster pump taking suction from the Carlsbad water system. Truck loading facilities have been provided adjacent to the No. 1 brine well -

A search of the area surrounding the brine station did not reveal the presence of any fresh water wells.

The flood potential of this station appears remote. It is approximately 50' above the normal level of the Pecos River, 20' above the downtown area of Carlshad and the highways provide excellent drainage to the west. See USGS Map 2, attached.

Sample connections are provided at the well heads of the brine wells.

A drillers logs for both wells are attached, exhibits 1 & 2 which describes the lithological character of the underground formations.

Since there are no water wells in the vicinity of the brine station no facilities for monitoring are available.

TRANSACTION REPORT

TX TIME PAGES TYPE

P. 01 NOV-24-99 WED 04:15 PM

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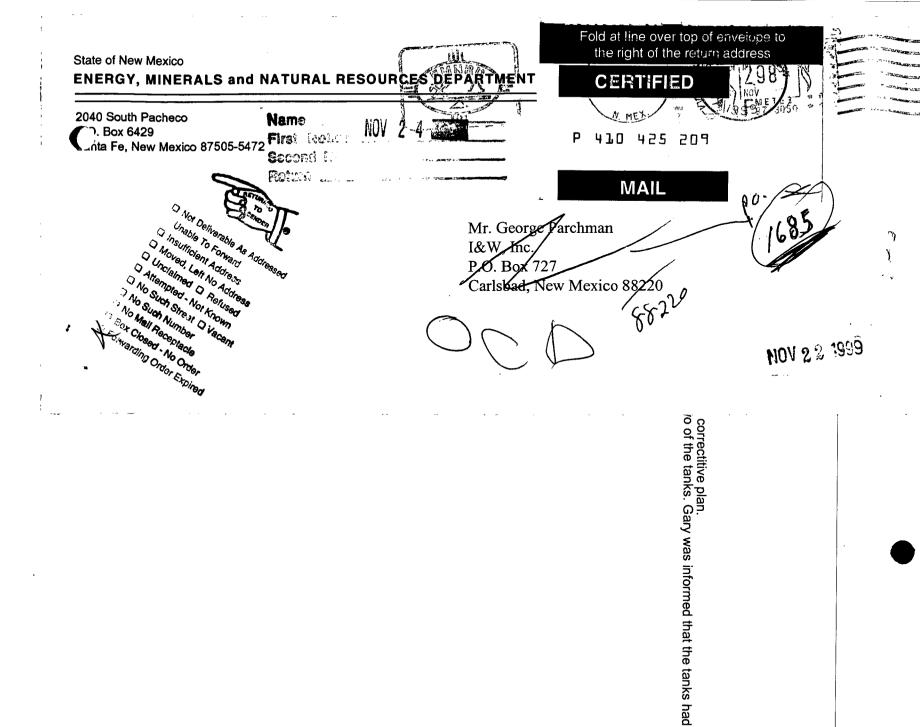
NOTE

1' 31" 2 SEND OK NOV-24 04:13 PM 915058858477

DATE START

RECE I VER

SAXED N.O.V.



### Price, Wayne

From:

Sent:

Gum, Tim Monday, November 22, 1999 9:33 AM Anderson, Roger; Price, Wayne

To:

Cc:

Subject:

Gum, Tim I & W BRINE WELL

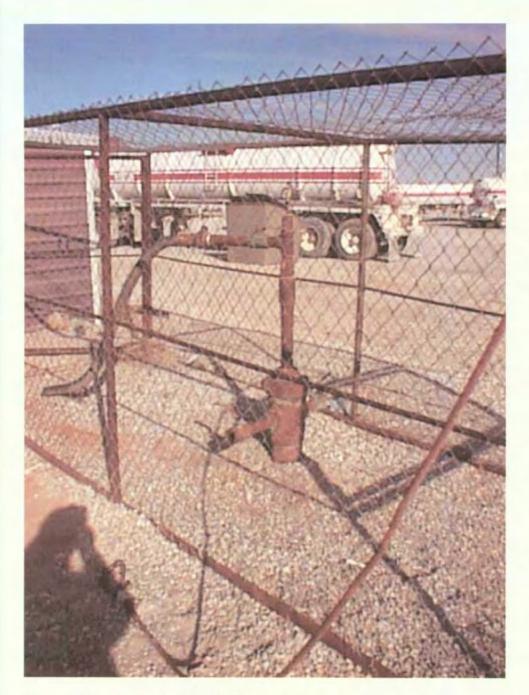
Roger --- FYI and consideration when I & W submits there correctitive plan. They are currently in the process of coating the inside of two of the tanks. Gary was informed that the tanks had SEEPS . We have received no spill reports. Thanks TWG.

#### Form C-103 Energy, Minerals and Natural Resources Department Revised 1-1-89 Office ONSERVATION DIVISION WELL API NO. Box 1980, Hobbs, NM 88240 2040 Pacheco St. Santa Fe. NM 87505 O. Drawer DD, Artesia, NM 88210 Indicate Type of Lease STATE FEE 6. State Oil & Gas Lease No. 1000 Rio Brazos Rd., Aztec, NM 87410 SUNDRY NOTICES AND REPORTS ON WELLS ( DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A 7. Lesse Name or Unit Agreement Name DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) Type of Well: MELL. Eugenie OMERF/W Injection Well 2. Name of Operator 8. Well No. I&W, Inc. 3. Address of Operator 9. Pool name or Wildcat 88255 P.O. Box 98 Loco Hills, New Mexico 4. Well Location Unit Letter \_\_\_\_\_ : \_\_\_\_ Feet From The \_ Feet From The Line and 22S 27 Range Eddy Township **NMPM** County 10. Elevation (Show whether DF, RKB, RT, GR, etc.) Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data 11. NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF: PERFORM REMEDIAL WORK PLUG AND ABANDON REMEDIAL WORK ALTERING CASING TEMPORARILY ABANDON **CHANGE PLANS** COMMENCE DRILLING OPNS. PLUG AND ABANDONMENT PULL OR ALTER CASING CASING TEST AND CEMENT JOB L OTHER: OTHER:\_ 12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103. Rig up wireline unit, Run gauge rig &bars November 8th 1999 Proposed: to Approximately 550'to check casing. Rig up C/I bridge plug toset in 2 7/8casing. Set plug at approximately 2851. Then rig up tubing qun, 3 shots at 120 degrees perf 2 7/8 at 284'. November 9th 1999 Continued: Rig up cement truck pump 25 sacks down 2 7/8 through perf and try to circulate cement up beside 2 7/8casing inside 5 1/2 casing, to stop flow. I hereby certify that the information above is true and complete to the best of my knowledge and belief. TELEPHONE NO. 505-8856663 TYPE OR PRINT NAME

(This space for State Use)

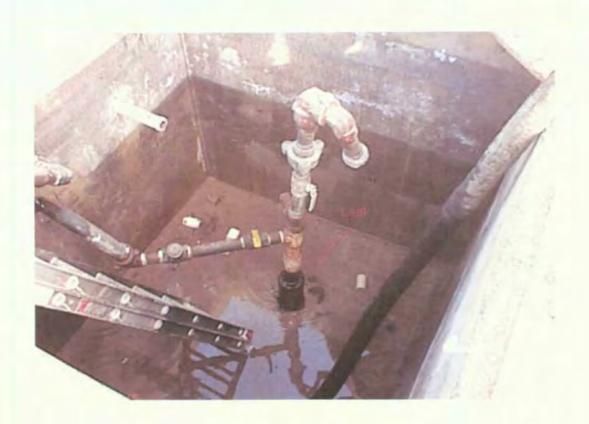
CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY -



Date: November 2, 1999 By: Wayne Price-OCD

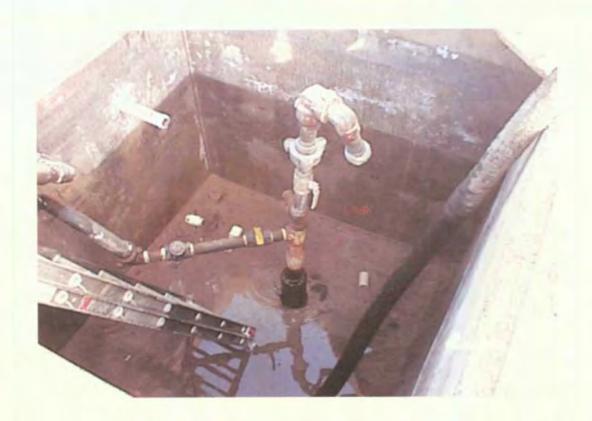
I&W BW-006 Brine well #1 Production Well



Date: November 2, 1999

By: Wayne Price- NMOCD

I&W BW-006 Brine Well #2 - Well leaked during Mechanical Integrity Test of Cavern. Brine water was noted to be flowing out from between the tubing and tubing/casing cemented macro-annulus. This well is normally used to inject fresh water with produced brine coming out well #1 located approximately 150-200 feet away.



Date: November 2, 1999

By: Wayne Price- NMOCD

I&W BW-006 Brine Well #2 - Well leaked during Mechanical Integrity Test of Cavern. Brine water was noted to be flowing out from between the tubing and tubing/casing cemented macro-annulus. This well is normally used to inject fresh water with produced brine coming out well #1 located approximately 150-200 feet away.

# ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

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To be depo	Payment or Annual    No.	Increment  95-198 1122  WES ARTESIA CHECK NO.	TERN BANK NEW MEXICO 88210  CHECK DATE  02/28/97  CHECK AMC	VENDOR NO

PAY

ACCOUNT	NO.		VENL	NMED	NMED-WATER	QUALITY MGM	CHECK N.		CHECK DA	ATE 2/28/97
OUCHER	INVOICE NUMBER	INV. DATE		REFEREN	NCE	INVOICE AMOUNT 690.00	AMOUNT PAID 690.00	DISCOU	NT TAKEN	NET CHECK AMOUNT
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OIL CONSERVATION DIVISION 2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131

February 7, 1997

# CERTIFIED MAIL RETURN RECEIPT NO. P-288-258-898

Mr. George Parchman I & W, Inc. P.O. Box 727 Carlsbad, New Mexico 88220

RE: Discharge Plan Fees BW-006

**Eugenie Brine Extraction Facility** 

Vinder

**Eddy County, New Mexico** 

Dear Mr. Parchman:

On April 15, 1996, I&W, Inc. received, via certified mail, a letter from the New Mexico Oil Conservation Division (OCD) stating that the discharge plan BW-006 for the Eugenie Brine Extraction Facility located in the SW/4 SW/4 Section 17, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico was approved. In that letter it was also stated that, in accordance with Water Quality Control Commission Regulation 3114, a \$50 filing fee and a \$690 flat fee were required upon receipt of the approval letter. The \$50 filing fee was received by the OCD on August 18, 1995. As of this date, the OCD has not received the \$690 flat fee. Please submit the required flat fee by March 7, 1997.

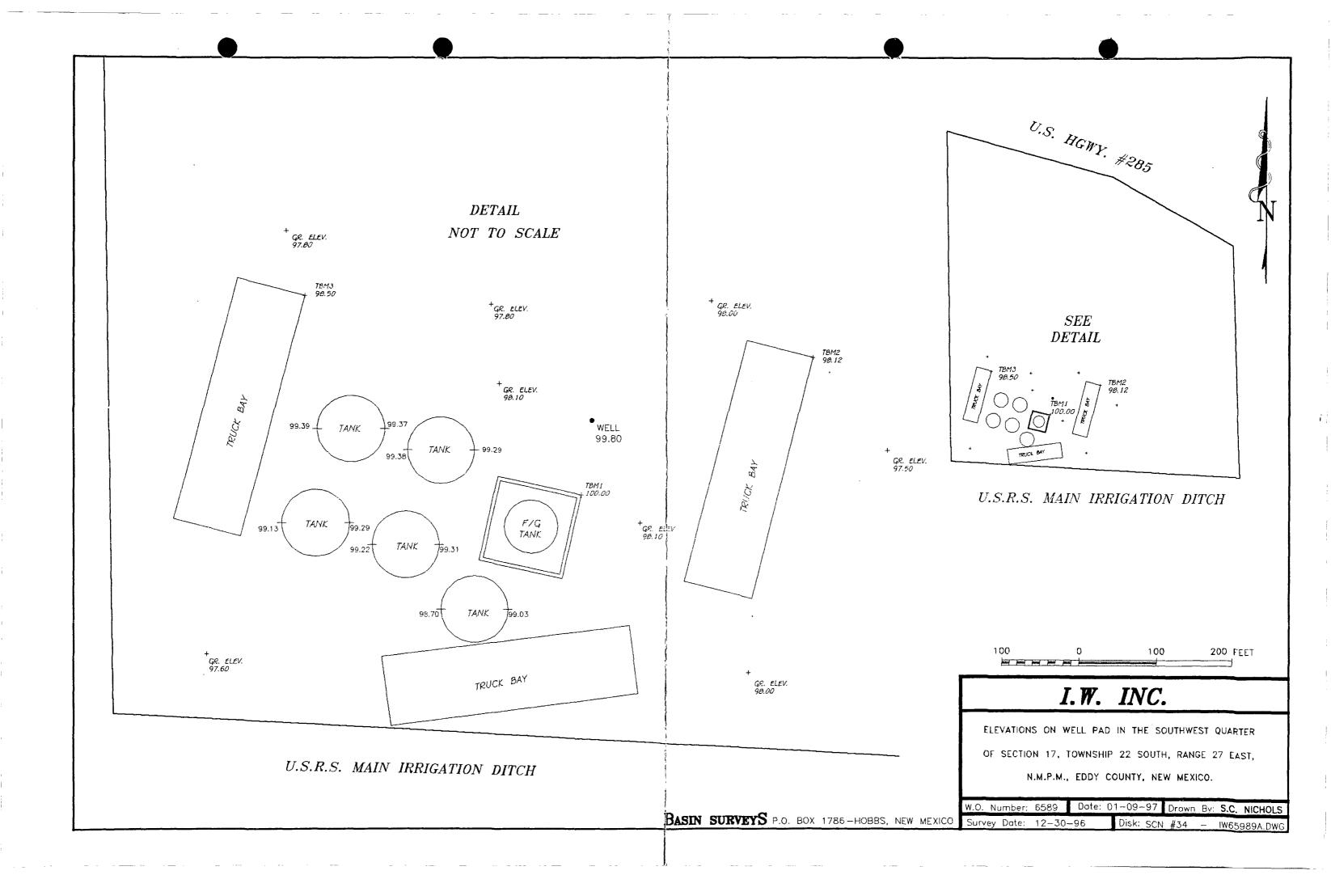
Please make all checks payable to: NMED-Water Quality Management and addressed to the OCD Santa Fe Office.

If you have any questions regarding this matter, please contact me at (505) 827-7152.

Sincerely,

Roger Anderson

Environmental Bureau Chief



STATE OF NEW MEXICO OIL CONSERVATION DIVISION

# MEMORANDUM OF MEETING OR CONVERSATION

Telephone	Personal	Time 9:30 A	ly	Date /2.6.96	
	Originating Party	nating Party Other Parties			
MAX	ASHUEY		GEORGO BARCHIMAN		
Subject £ 4	W_ ORISBNO				
Discussion	DISCHARGE POW AND BERWING.	RFQUIREMKY.		SUBSEDENCE MONETORONG	
Conclusions or	BOTH, of 1	· · · · · · · · · · · · · · · · · · ·	fun Dont	THE PROCESS OF DULLD BY THE END OF THE OCD.	
<u>Distribution</u>		Sig	gned	last fally	

SONAR & WELL TESTING SERVICES, INC.

#### SONAR CALIPER SURVEY

Die John Seiter

RELITIC

FOC UC 110 100 8 52

TREATMENT NO:

JOB NO: 3092

#### WELL DATA

T.D. SONAR:

497 ft,

T.D. OPERATOR:

500 ft.

CASING SIZE:

TUBING SIZE:

 $5 \ 1/2 \ in.$ 

2 7/8 in.

CASING DEPTH:

452 ft.

INTERMEDIATE SIZE:

INTER. DEPTH: TUBING DEPTH:

out

I & W, Inc.

Eugenie No.1

Carlsbad, N.M.

October 19,1996

#### GENERAL COMMENTS:

Zero at 5 1/2 in. casing flange. No depth corrections.

#### MAILING ADDRESS:

CUSTOMER REP:

P.O. Box 939 Lovington, N.M. 88260 George Parchman

SONAR ENGINEER:

Attn: George Parchman

Bill Schnitger

SONAR & WELL TESTING SERVICES
SONAR CALIPER SURVEY

PAGE 1

October 19,1996 JOB NO: 3092

I & W, Inc. Eugenie No.1

#### VOLUME CALCULATIONS

		`	OLUME CALCULATION	S	
	DEPTH	INCR CU FT	TOTAL CU FT	INCR BBLS	BBLS
ABOVE	452	54,064.	54,064.	9,629.	9,629.
	454	25,738.	79,802.	4,584.	14,213.
	456	20,976.	100,779.	3,736.	17,949.
	458	16,519.	117,297.	2,942.	20,892.
	460	13,125.	130,422.	2,338.	23,229.
	462	10,355.	140,777.	1,844.	25,074.
	464	8,270.	149,047.	1,473.	26,546.
	466	6,968.	156,015.	1,241.	27,787.
	468	5,628.	161,643.	1,002.	28,790.
	470	4,247.	165,890.	756.	29,546.
	472	3,092.	168,982.	551.	30,097.
	474	2,126.	171,108.	379.	30,476.
	476	1,405.	172,513.	250.	30,726.
	478	678.	173,190.	121.	30,846.
	480	139.	173,329.	25.	30,871.
	482	10.	173,339.	2.	30,873.
	484	28.	173,368.	5.	30,878.
	486	33.	173,400.	6.	30,884.
	488	8.	173,408.	1.	30,885.
	490	18.	173,426.	3.	30,888.
	492	29.	173,455.	5.	30,894.
	494	20.	173,475.	4.	30,897.

SONAR & WELL TESTING SERVICES SONAR CALIPER SURVEY

PAGE 2

October 19,1996 JOB NO: 3092

I & W, Inc. Eugenie No.1

VOLUME CALCULATIONS

DEPTH	INCR CU FT	TOTAL CU FT	INCR BBLS	BBLS
496	10.	173,485.	2.	30,899.
497	3.	173,487.	0.	30,899.

## SONAR & WELL TESTING SERVICES SONAR CALIPER SURVEY

I & W, Inc. Eugenie No.1

October 19,1996 JOB NO: 3092

DEPTH	ANGLE	N	s	E	W	NE	SW	SE	NW
452	90	63.1	65.1	66.4	70.5	65.5	73.1	65.4	70.4
454	90	63.4	57.5	57.3	62.3	61.2	64.7	61.8	63.9
456	90	48.2	56.6	46.8	63.5	47.2	65.6	51.8	52.9
458	90	39.4	50.3	46.2	46.4	41.6	60.9	46.4	44.7
460	90	36.4	46.3	45.1	42.1	39.0	58.7	45.4	40.6
462	90	32.9	44.8	42.5	38.1	33.9	34.0	43.5	35.9
464	90	26.5	43,9	39.9	36.3	28.6	32.6	38.3	27.3
466	90	24.1	40.7	36.9	33.1	28.2	28.1	36.4	25.4
468	90	21.8	33.4	33.7	30.2	26.3	25.8	29.1	22.6
470	90	19.2	31.6	30.0	24.0	20.4	22.7	24.3	21.6
472	90	15.9	21.5	26.0	21.0	16.9	20.0	19.9	17.5
474	90	14.6	18.9	21.0	16.0	16.0	14.5	15.5	14.6.
476	90	10.0	10.6	17.0	14.0	10.9	13.5	16.0	12.0
478	90	4.7	5.4	5.5	10.2	4.0	10.4	2.1	8.2
480	90	1.8	1.5	2.1	1.1	1.6	1.4	1.9	1.2
482	90	0.9	0.7	0.8	0.8	0.9	0.8	0.9	0.8
484	90	3,6	3.5	2,7	0.8	3.1	3.0	3.3	3.7
486	90	0.8	2.3	0.8	0.8	0.9	0.7	0.8	0.8
488	90	1.0	1.1	0.8	1.2	0.8	1.2	1.1	1.2
490	90	1.8	2.3	1.0	2.0	0.8	4.2	2.9	2.3
492	90	2.2	1.9	0.6	2.8	0.9	2.8	0.8	3.1
494	90	1.8	0.7	1.6	0.9	1.7	1.4	0.8	2.3

2

PAGE

### SONAR & WELL TESTING SERVICES SONAR CALIPER SURVEY

I & W, Inc. Eugenie No.1 October 19,1996 👍

JOB NO: 3092

DEPTH	ANGLE	N	s	E	W	NE	SW	SE	NW
496	90	1.3	0.8	1.0	1.4	1.2	0.8	1.1	0.8
497	90	0.9	0.8	0.7	0.7	0.7	0.7	0.8	0.8

# SONAR & WELL TESTING SERVICES SONAR CALIPER SURVEY UPS

I & W, Inc. Eugenie No.1 October 19,1996 JOB NO: 3092

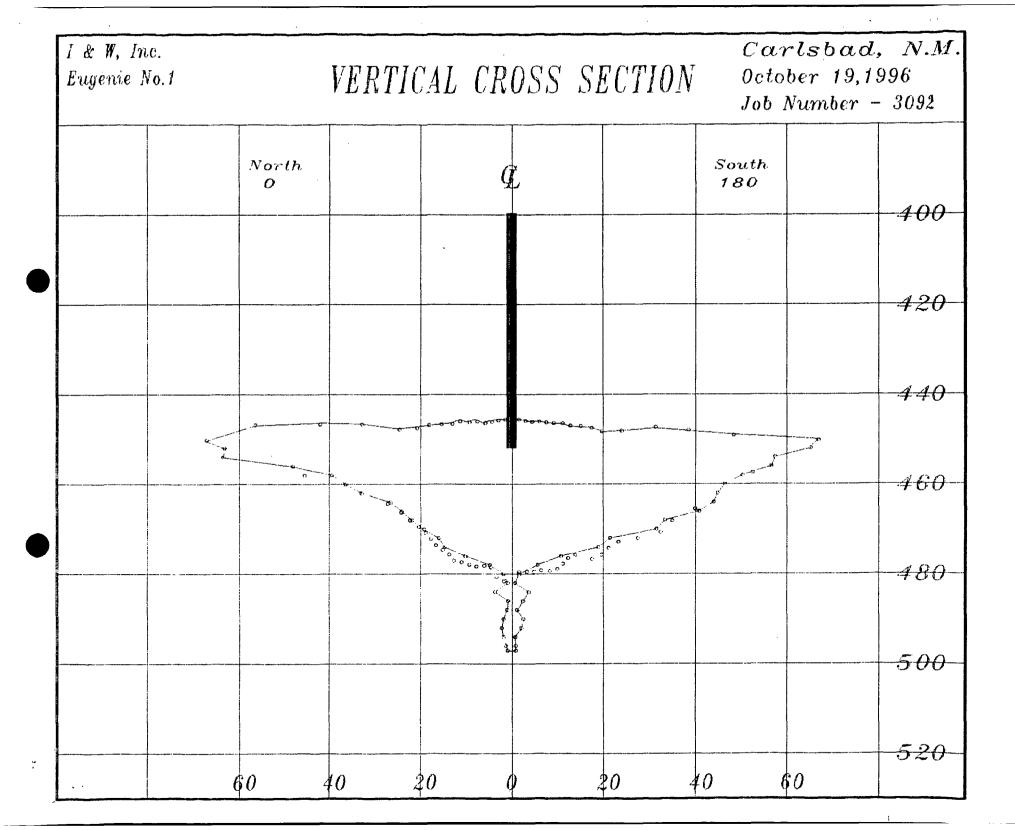
DEPTH	ANGLE	N	S	E	W	NE	SW	SE	NW
462	1	16.8	16.7	16.6	17.0	16.6	17.1	16.6	16.8
462	5	16.5	16.5	16.5	16.5	16.6	16.5	16.6	16.2
462	10	16.5	16.4	16.4	16.4	16.6	16.3	16.4	16.3
462	15	16.4	16.5	16.2	16.2	16.6	16.2	16.4	16.0
462	20	16.6	17.0	16.8	16.7	16.9	16.7	16.8	16.8
462	25	17.6	17.4	17.0	17.4	17.4	17.1	17.3	17.6
462	30	18.2	18.0	17.4	17.5	17.8	17.4	17.5	18.1
462	35	19.5	19.0	18.1	17.9	18.9	18.4	18.5	18.5
462	40	20.1	19.6	19.1	18.5	19.9	19.1	19.6	19.1
462	45	21.7	21.1	21.3	19.8	21.8	19.9	21.1	20.9
462	50	23.6	22.6	22.5	21.4	23.1	21.8	23.0	22.1
462	55	25.3	24.0	23.5	22.8	26.9	24.3	24.2	23.8
462	60	28.4	27.7	27.6	27.9	29.1	27.4	29.1	29.8
462	65	36.2	34.7	34.0	36.3	35.2	34.2	35.0	34.4
462	70	44.8	40.9	40.6	41.1	41.3	38.2	45.3	44.8
462	<b>7</b> 5	58.6	50.0	57.7	57.0	56.5	51.7	53.6	58.1
462	80	68.0	67.8	63.4	69.0	63.9	67.3	61.9	65.1
462	85	45.7	52.7	45.5	65.8	46.4	64.7	49.0	46.2

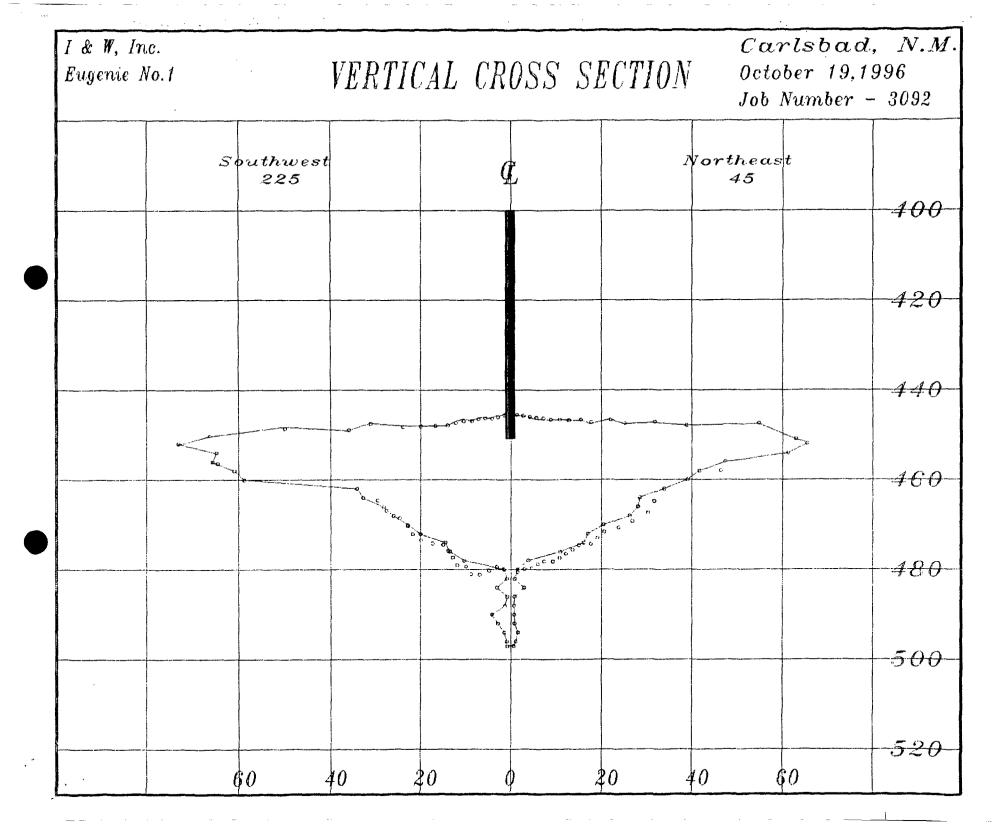
PAGE 4

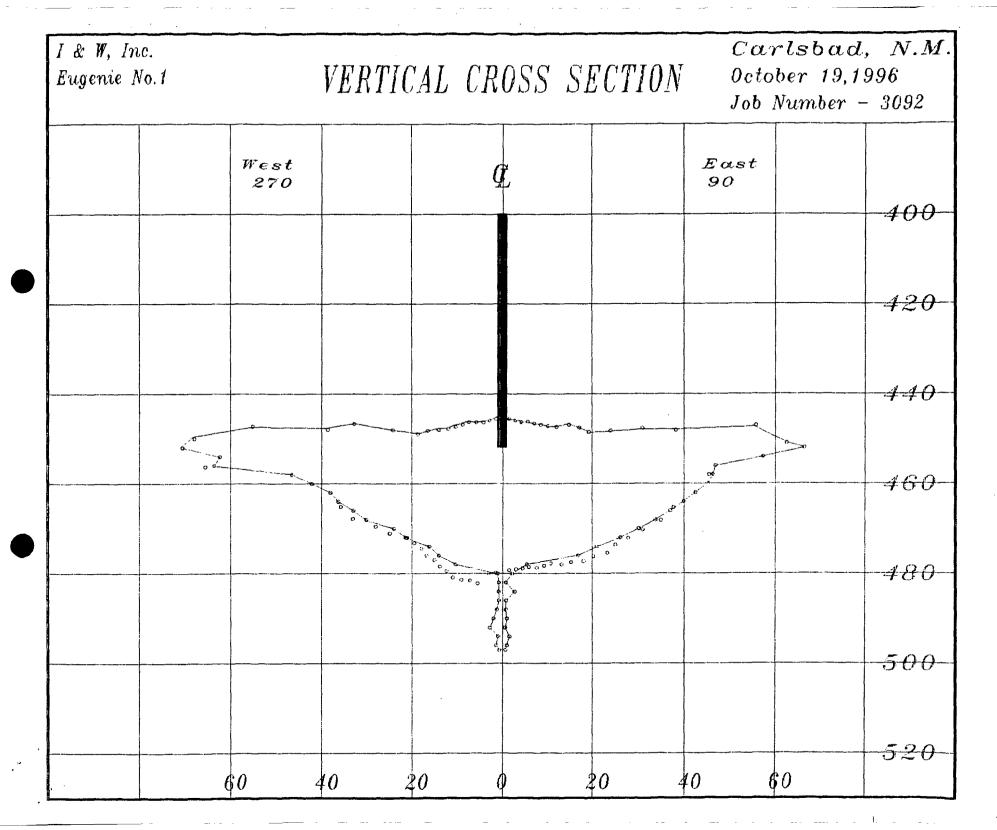
# SONAR & WELL TESTING SERVICES SONAR CALIPER SURVEY DOWNS

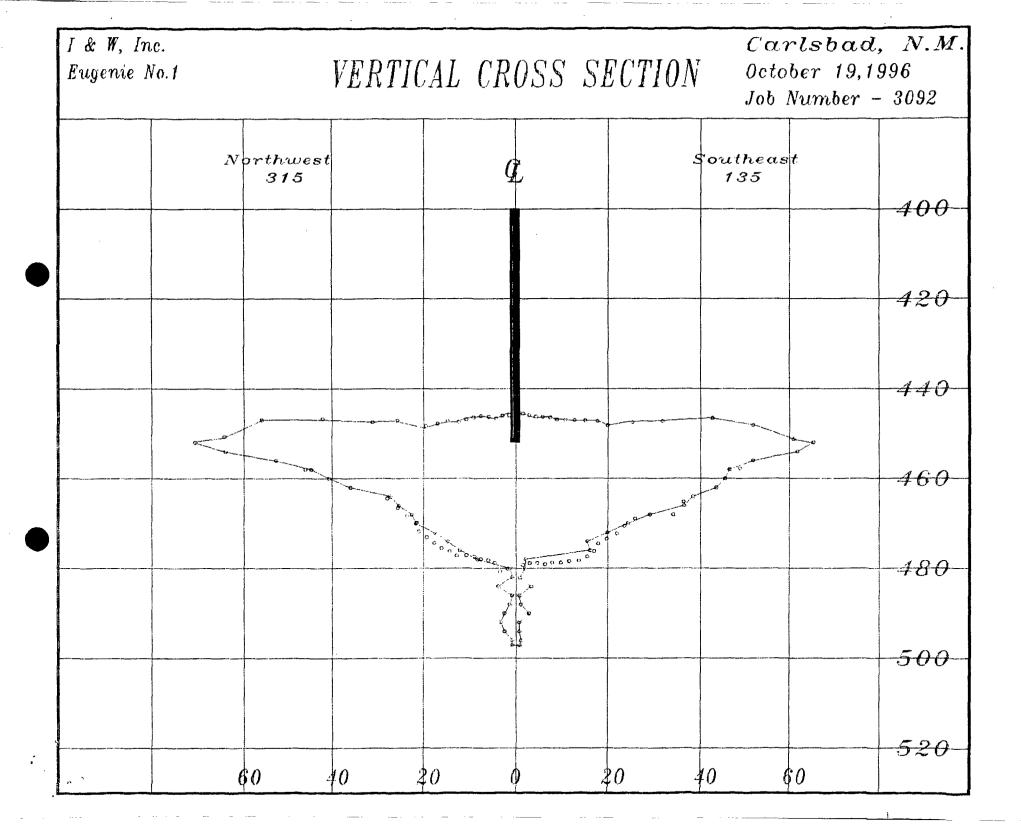
I & W, Inc. Eugenie No.1 October 19,1996 JOB NO: 3092

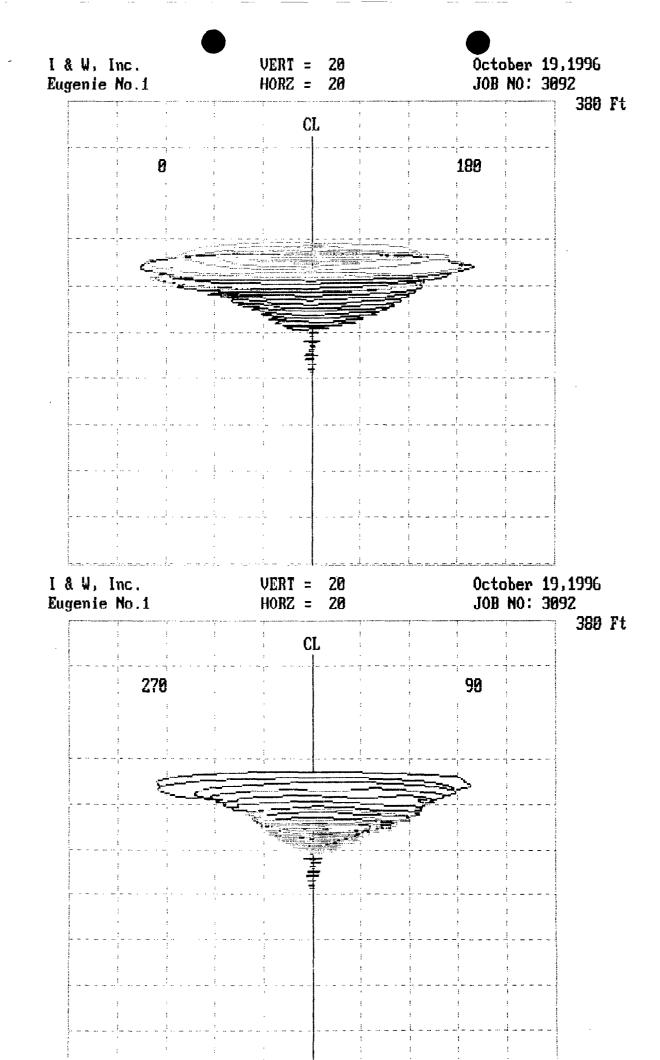
DEPTH	ANGLE	И	S	E	W	NE	SW	SE	NW
462	95	27.2	40.0	37.7	36.0	31.9	29.5	36.4	28.1
462	100	24.6	35.5	35.4	33.7	30.9	27.9	34.6	26.0
462	105	23,1	33.6	31.9	29.0	27.9	25.3	26.8	24.5
462	110	21.7	29.3	29.5	26.5	25.3	24.2	25.1	22.8
462	115	20.8	25.7	27.5	23.5	22.7	23.9	24.2	23.1
462	120	20.4	24.4	26.8	22.4	22.0	22.9	22.8	22.2
462	125	20.2	23.9	24.7	21.7	21.5	21.2	21.8	21.5
462	130	19.7	22.8	23.7	21.8	19.6	19.5	22.1	21.0
462	135	19.3	19.4	21.9	21.2	19.2	19.6	21.8	20.1
462	140	19.6	18.9	20.8	21.4	18.9	20.0	21.2	19.8
462	145	18.8	19.2	19.2	21.3	18.8	20.8	20.0	18.5
462	150	18.4	19.5	18.8	21.8	18.7	20.0	19.3	17.7
462	155	18.0	19.1	18.4	21.4	17.8	21.0	18.4	17.6
462	160	17.2	18.3	17.6	20.8	17.8	20.4	18.2	17.2
462	165	17.1	18.1	17.5	20.9	18.3	18.9	17.4	17.4
462	170	19.0	17.7	17.3	18.2	18.2	17.7	17.1	19.0
462	175	19.7	17.6	17.3	17.9	18.6	17.9	17.3	18.2

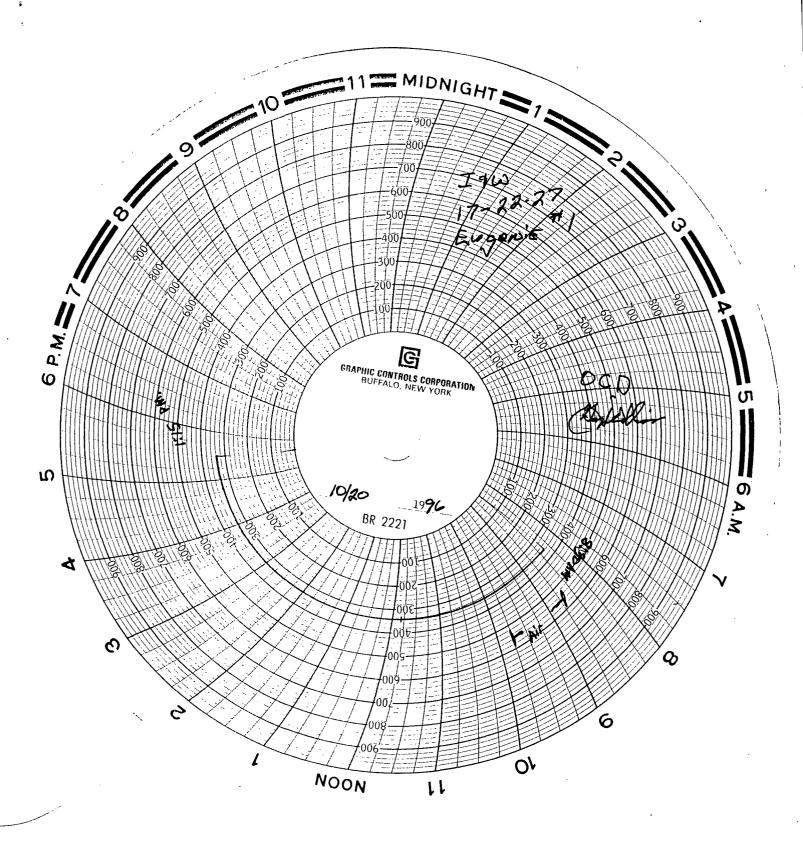












OIL CONSERVATION DIVISION 2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131

#### **MEMORANDUM**

TO:

Bill LeMay and Roger Anderson

FROM:

Mark Ashley

SUBJECT:

I&W Brine Well (BW-006) - Carlsbad

DATE:

October 15, 1996

On October 11, 1996 at 9:30 am the OCD required I&W to shut in their brine well in Carlsbad after they failed to have the well ready for mechanical integrity testing (MIT) and cavern surveying. This was the OCD's fourth attempt to test the well since October 12, 1995. The last scheduled MIT was performed on September 30, 1993.

#### Chronology of events:

October 12, 1995:

The OCD visited the facility for a discharge plan renewal inspection, MIT and cavern survey. The scheduling of the inspection, MIT and cavern survey was setup in advance by the OCD with the cooperation of I&W. The requested MIT and cavern survey was not performed. I&W wanted to reschedule the tests when both could be performed at the same time, and the OCD agreed. The OCD was represented by Mark Ashley, Gary Williams and Bryan Arrant.

August 16, 1996:

I&W was notified by certified mail that the MIT would be performed on their well on September 16, 1996. I&W was notified by phone that the cavern survey would be performed at the same time as the MIT, and I&W agreed. The scheduling of the MIT and cavern survey was setup in advance by the OCD with the cooperation of I&W.

September 16, 1996: The OCD visited the facility to conduct the scheduled MIT and cavern survey. I&W was not ready due to availability of equipment, and the test was rescheduled for October 8, 1996. The OCD was represented by Mark Ashley, Gary Williams and Bryan Arrant.

September 23, 1996: I&W was contacted to reschedule the October 8, 1996 test to October 10, 1996 due to OCD schedule conflicts. I&W did not protest rescheduling.

October 9, 1996:

The OCD visited the facility and was informed by I&W that they would not be ready for the MIT and cavern survey that was rescheduled for October 10, 1996 due to availability of equipment. They rescheduled for October 11, 1996. The OCD was represented by Mark Ashley, Gary Williams.

October 11, 1996:

Roger Anderson and Tim Gum were notified of I&W's failure to comply with OCD requirements, and a decision was reached by both of them that I&W would be required to shut in their brine well if they were not ready for the October 11, 1996 MIT and cavern survey.

The OCD visited the facility and was informed by I&W that they would not be ready for the rescheduled MIT and cavern survey due to availability of equipment. At that time the OCD required the well to be shut in until further notice. I&W was also informed that the MIT and cavern survey would be scheduled and witnessed by the OCD. OCD representatives present were Tim Gum, Mark Ashley, Bryan Arrant.

October 11, 1996

Mr. Mike Butts I & W Loco Hills, New Mexico

Dear Mr. Butts:

The brine well which was the subject of our conversation today will be shut in until further notice.

Sincerely, WILLIAM J. LEMAY

Director

Poger/ Derec I've had homevous amoresetime of Botts duit 6 rouge and Bottes wanted an order shorting him down. This set is it. Get together with Isw for an test (why can't actesize withouss, X.2) Let me know what the schoole is and

Tiff the s.t.

October 11, 1996

Mr. Mike Butts I & W Loco Hills, New Mexico

Dear Mr. Butts:

The brine well which was the subject of our conversation today will be shut in until further notice.

Sincerely,

Director

Poger / Marce

Tive had numerous amoversations of Botts

100 months shuffing and 6 rouge and Botts wanted an order shuffing Lin down. This stis it. Get typhen with Inw for an test (why can't autosize withers, X. Let me know what the schedule





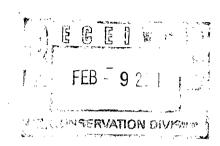


P.O. BOX 98 LOCO HILLS, NEW MEXICO 88255

LOCO HILLS (505) 677-2111 1 (800) 748-1972 LOVINGTON (505) 396-3331 1 (800) 748-2084

January 30, 2001

Mr. Wayne Price Oil Conservation Division 1220 S. St. Francis Dr. Santa Fe, New Mexico 87504



Re: Eugenie Brine Extraction Facility
Discharge Plan Application
Discharge Plan BW-006
SW/4 SW/4 Section 17-T22S-R27E

Dear Mr. Price:

Enclosed please find our Discharge Plan Application and a copy of the New Existing Plot of Location. I would appreciate it if you would look this over and let me know if there is anything else I need to do.

Please feel free to call me at (505) 677-2111 if there is anything else needed.

Thank you,

George E. Parchman

Heorge Farch

Manager

NM OIL CONSERVATION DIVISION

ATTN: WAYNE PRICE

1220 S. ST. FRANCIS DRIVE

SANTA FE, NM 87505

AD NUMBER: 211290 ACCOUNT: 56689 LEGAL NO: 69498 P.O.#: 01199000033

299 LINES 1 time(s) at \$ 131.80

AFFIDAVITS: 5.25

TAX: 8.57 TOTAL: 145.62

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO COUNTY OF SANTA/FE

I. MM We Alma heing first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication a copy of which is hereto attached was published #69498 in said newspaper 1 day(s) between 06/13/2001 and 06/13/2001 and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 13 day of June, 2001 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/ MM Wldlman
LEGAL ADVERTISEMENT REPRESENTATIVE

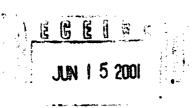
Subscribed and sworn to before me on this 13 day of June A.D., 2001

Notary Muse E.

Commission Expires

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Aller 1/06/01



# NOTICE OF PUBLICATION

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RE-SOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(BW-004) - Gandy Corporation., Larry Gandy, Vice-President, P.O. Box 827, Tatum, New Mexico, 88267 has submitted an application for renewal of its previously approved discharge plan for its brine well facility. The brine extraction facility is located in the SW/4 SW/4 of Section 31, Township 16 South, Range 35 East, NMPM Lea County, New Mexico. Fresh water is injected to an approxi-mate depth of 2,000 feet and brine is extracted with an average total dissolved solids concentration 313,000 mg/l. Groundwater most likely to be affected by any accidental discharge is at a depth of approximately 120 feet and has a total dissolved solids content of approximately 325 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be man-

(BW-006) - I&W Incorporated, George Parchman, P.O. Box 98, Loco Hills, New Mexico 88255, has submitted a discharge plan renewal application for their Carlsbad Eugenie Brine Extraction Facility located in the SW/4 SW/4 of Section 17, Township 22 South, Range 27 East, NMPM Eddy County, New Mexico. Fresh water is injected down annulas of the No. 1 well to an approximate depth of 550 feet and brine is produced through the tubing. The brine has an average total dissolved content solids 300,000 mg/l. Ground-water most likely to be affected by any accidental discharge is at a depth of 50 feet with a depth of 50 feet with a total dissolved solids concentration of about 1,000 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

(BW-028) - Gold Star SWD Ltd. Co., Royce Manager/ Crowell, Partner, P.O. Box 1480, Eunice, New Mexico, 88231 has submitted an Mexico, application for their proapplication for their proposed Eunice Brine Station, located in the NW/4 NW/4 of Section 15, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. Fresh water will be injected to an approxi-mate depth of 2,000 Approximately feet. 1,000 barrels per day of brine water will be extracted with an average total dissolved solids concentration 300,000 mg/l. brine water will stored in three 500 barrei aboveground closed top fiberglass tanks. Ground water most likely to be affected by any accidental discharge is at a depth of approximately 80 feet and has a total dissolved solids content of approximately 1,200 mg/l. The discharge plan addresses how spills, leaks, and other accidental charges to the surface will be managed.

> interested person may uptaill rulu mation from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday: Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the

#### **LEGALS**

reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 7th day of June 2001.

STATE OF NEW MEXICO OIL CONSERVATION DIVISION

LORI WROTENBERY, Director Legal #69498 Pub. June 13, 2001

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