CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: PERMIAN RESOURCES, INC. Well: BUFFALO FED NO. 7

Contact: ROBERT MARSHALL Title: V.P. Phone: 915-685-0113

DATE IN APRIL 27 RELEASE DATE MAY 12 DATE OUT JUNE 17

Proposed Injection Application is for: ___ **WATERFLOOD** ___ Expansion ___ Initial

Original Order: R- _____ ___ Secondary Recovery ___ Pressure Maintenance

SENSITIVE AREAS X **SALT WATER DISPOSAL** ___ Commercial Well

___ WIPP ___ Capitan Reef

Data is complete for proposed well(s)? YES Additional Data Req'd _____

AREA of REVIEW WELLS

1 Total # of AOR

3 # of Plugged Wells

YES Tabulation Complete

YES Schematics of P & A's

YES Cement Tops Adequate

NO AOR Repair Required

INJECTION FORMATION

Injection Formation(s) QUEEN Compatible Analysis YES

Source of Water or Injectate AREA PRODUCTION

PROOF of NOTICE

YES Copy of Legal Notice

YES Information Printed Correctly

YES Correct Operators

NO Copies of Certified Mail Receipts

No Objection Received ___ Set to Hearing _____ Date

NOTES: _____

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact:	___ Telephoned	___ Letter	6-16 Date	Nature of Discussion VERBAL APPR'L
2nd Contact:	___ Telephoned	___ Letter	_____ Date	Nature of Discussion _____
3rd Contact:	___ Telephoned	___ Letter	_____ Date	Nature of Discussion _____

SWD 5/12/98
713 R.M. - CALLED 5-5-98

PERMIAN RESOURCES INCORPORATED

April 23, 1998

State of New Mexico
Oil Conversation Commission
P.O Box 2088 2040 S. Pacheco 87505
Santa Fe, NM 87501

APR 27 1998

RE: Application for Authorization to Inject
South Corbin (Queen) Field
Permian Resources, Inc. #7 Buffalo Federal
T18S, R33E, Section 34, (b)

Ladies and Gentlemen:

Permian Resources, Inc. is making application to inject water into a zone productive of oil and gas at the location captioned above in Lea County.

Please find attached the appropriate documents which support this application

II. Well Data
V. Well Area of Review Map
VI. Schematics of Wells within the Area of Review
VII Data on the Proposed Operation
VIII. Geological Data
IX. Proposed Stimulation Program
X. Log Sections
XI. Examination of Hydrologic Data
XII. Proof of Notice

We appreciate your timely approval of this matter and if you have any questions please feel free to call.

Sincerely,

Robert Marshall
c:\winword\letters\ocdbuff.doc

P. O. BOX 590 · MIDLAND, TEXAS 79702-0590
PHONE: (915) 685-0113 · FAX: (915) 685-3621

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: Permian Resources, Inc. dba Permian Partners, Inc.

Address: P. O. Box 590 Midland, TX 79702

Contact party: Robert H. Marshall Phone: 915/685-0113

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Robert H. Marshall Title Vice-President

Signature: Robert H. Marshall Date: April 23, 1998

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. NA

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next highest and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant:

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells:

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Application for Authority to Inject
Supplemental Information

Permian Resources, Inc.
Buffalo Federal #7
Section 34, Unit "B", 1980' FEL, 660 FNL,
Township 18 South, Range 33 East
South Corbin (Queen) Field
Lea County, New Mexico

III. WELL DATA:

A. (1) WELL NAME: #7 Buffalo Federal
Section 34, Township 18 South, Range 33 East
Lea County, New Mexico

(2) CASING DATA

Casing Size	Hole Size	Depth	Sacks Cement (Class)	Top of Cement
8 5/8"	11"	252'	80 ("C")	Circulated to surface
4 1/2"	7 7/8"	4620'	200 ("C")	3115 Bond Log

(3) INJECTION TUBING AND PACKER

Tubing String: 4250 feet 2 3/8" internally plastic coated, 8rd EUE

Packer: 4 1/2" Baker AD-1 set at 4240'.

B. (1) INJECTION FORMATION: Penrose-Queen
Field Name: South Corbin (Queen)

(2) INJECTION INTERVAL: 4286-4306(Currently Open) and 4519-4550
(After drilling the CIBP at 4510)

(3) ORIGINAL PURPOSE OF WELLS: Oil Producer from the Penrose-Queen.

(4) OTHER PERFORATED INTERVALS: None

(5) DEPTH OF HIGHER/LOWER OIL OR GAS ZONE IN AREA: No zone higher
Lower Zone: EK(Bone Spring) 8799-9766, Sec. 27(O), T18S, R33E.

V. Map

See attached map with appropriate "Area of Review" 1/2 mile radius circle around each well.

VI. TABULATION OF WELL DATA WITHIN THE AREA OF REVIEW.

Section 27:

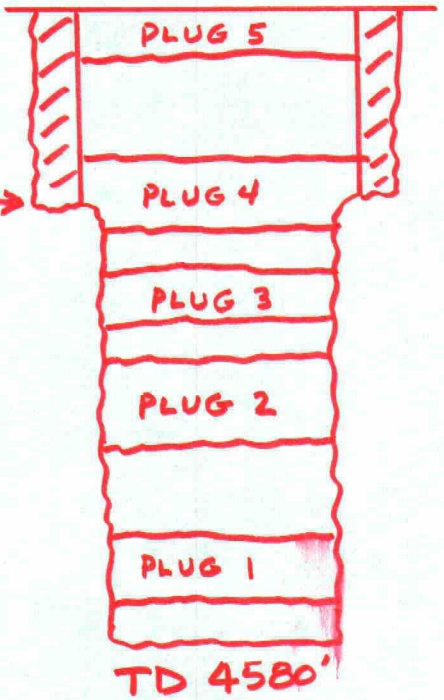
1. Huber #1-27 Federal, TD 9810
   660' FSL, 1830' FEL, Unit "O",
   Perfs: 8799-9766 P 115 BOPD, 9/85, EK(Bone Spring)
   13 3/8" 350' with 375 sx,
   8 5/8" 3700' with 2075 sx
   5 1/2" 9810 with 2535 sx.

2. Huber #2-27 Federal, TD 10700'
   560' FSL, 660' FEL, Unit "P",
   Perfs: 8828-9482, P17 BOPD, 2/86, EK(Bone Spring)
   13 3/8" 360' with 375 sx,
   8 5/8" 3700' with 1500 sx
   4 1/2" 10700 with 1525 sx.

3. Smith #1 Aztec Federal, TD 4580
   330' FSL, 2310' FEL, Unit "O"
   P&A 8/12/66

8 5/8" 306' with 225 sx.

Plug 5: 10-surface, 5 sx.
Plug 4: 350-250, 30 sx.
Plug 3: 1530-1430, 30 sx.
Plug 2: 3000-2900, 30 sx.
Plug 1: 4330-4250-35sx.



Section 34:

4. 1650' FNL, 2310' FWL, Unit "F",
Pan American #9 Buffalo Unit, TD 4570'
P&A, 3-6-67

Plug 5: 10 sx at surf

Plug 4 in/out of 8 5/8-28-250

8 5/8" 445' with 250 sx.

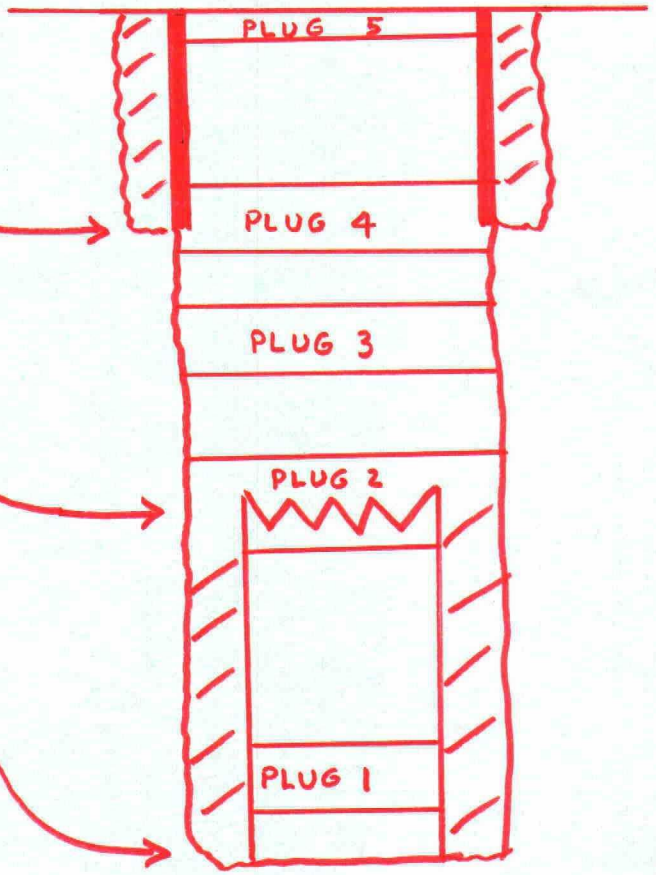
Plug 3: 1455-1345, 25 sx

Plug 2: 2995, 25 sx.

Re-shot casing at 2995, pulled 4 1/2"
Shot casing at 3215

Plug 1: 4400-4072, 20 sx

4 1/2" 4570' with 300 sx.



5. 1650' FNL, 1650' FEL, Unit "G",
Smith #13 Buffalo Unit, TD 4555',
Perfs 4503-4528, F 12 BOPD, 10/68
9 5/8" 250' with 240 sx,
4 1/2" 4629' with 300 sx.

6. 1980' FNL, 660' FEL, Unit H",
Smith #8 Buffalo Unit, TD 4600',
Perfs: 4499-4512, F 61 BOPD, 10/66
8 5/8" 266' with 225 sx,
4 1/2" 4555' with 250 sx.

7. 660' FNL, 990' FEL, Unit "A",
Smith #10 Buffalo Unit, TD 4600',
Perfs: 4521-4555, P 65 BOPD, 3/67
8 5/8" 312' with 250 sx.,
5 1/2" 4600' with 315 sx.

VII. DATA ON THE PROPOSED OPERATION

(1) Average and maximum daily volume of fluids: Average: 100 barrels water per day per well. Maximum: 200 barrels of water per day.
(2) Closed System: On-lease water and water only from offset company lease.
(3) Average and maximum injection pressure: Average: 500 psi; Maximum: 750 psi.
(4) Sources of injection fluid: Produced water
(5) Not applicable

VIII. GEOLOGICAL DATA:

Formation Name: Queen-Penrose
Lithology: Sandstone and Dolomitic Sandstone
Thickness: 500' thick
Bottom of drinking water aquifers: 150' Ogallala, None below

IX. PROPOSED STIMULATION

1,500 gallons HCl 15%, NeFe

X. LOGGING DATA

Xerox of Formation Density and Cement Bond Log attached.

XI. FRESH WATER WELLS:

None located within 1 mile of the proposed well

XIV. PROOF OF NOTICE:

(1) Surface Owner:

Bureau of Land Management
414 W. Taylor
Hobbs, NM 88240

(2) Offset Production Owners:

J.M Huber Corporation
7120 I-40 West, Suite 232,
Amarillo, TX 79106

Burlington Resources
P.O. Box 51810
Midland, TX 79710-1810

Conoco
10 Desta Drive West
Midland, TX 79705

Amoco Corporation
P.O. Box 3092
Houston, TX 77253

(3) Legal Notices:

Hobbs Daily News Sun
Hobbs, New Mexico

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period.

of 1

_____ weeks.

Beginning with the issue dated

April 20 1998

and ending with the issue dated

April 20 1998

Kathi Bearden

Publisher

Sworn and subscribed to before me this 17th day of

April 1998

Jodi Henson

Notary Public.

My Commission expires
October 18, 2000
(Seal)

JODI HENSON
NOTARY PUBLIC

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

LEGAL NOTICE
April 20, 1998

Permian Resources, Inc. at P.O. Box 590, Midland, Texas 79702, is applying to convert its Buffalo Federal #7 to salt water disposal in the Penrose Queen formation at a depth of 4286 to 4550 feet. The Buffalo Federal #7 is in the South Corbin (Queen) Field, located in Unit B, Section 34, Township 18 South, Range 33 East, Lea County, New Mexico. The expected maximum injection rate is 200 barrels of water daily at a maximum pressure of 750 psi. Interested parties must file objections or requests for hearing with the Oil Conversation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501 within 15 days. Parties requesting additional information may contact Robert Marshall at Permian Resources, Inc., at 915-685-0113 or at the address listed above.
#15880

01102680000 02515159

Permian Resources
P.O. Box 590
a/c# 458930
MIDLAND, TX 79702

WATER ANALYSIS V11

InterChem, Inc.
(915) 550-7027 P. O. Box 13166 Odessa, Tx. 79768

Comparison Between Two Waters 01-May-1998

Permian Treating Chemicals
Permian Resources

The samples from the above-cited location showed the following conclusions:

Topic:
Combination of the LEK 28 # 1 water with the Buffalo # 8 water at various ratios:

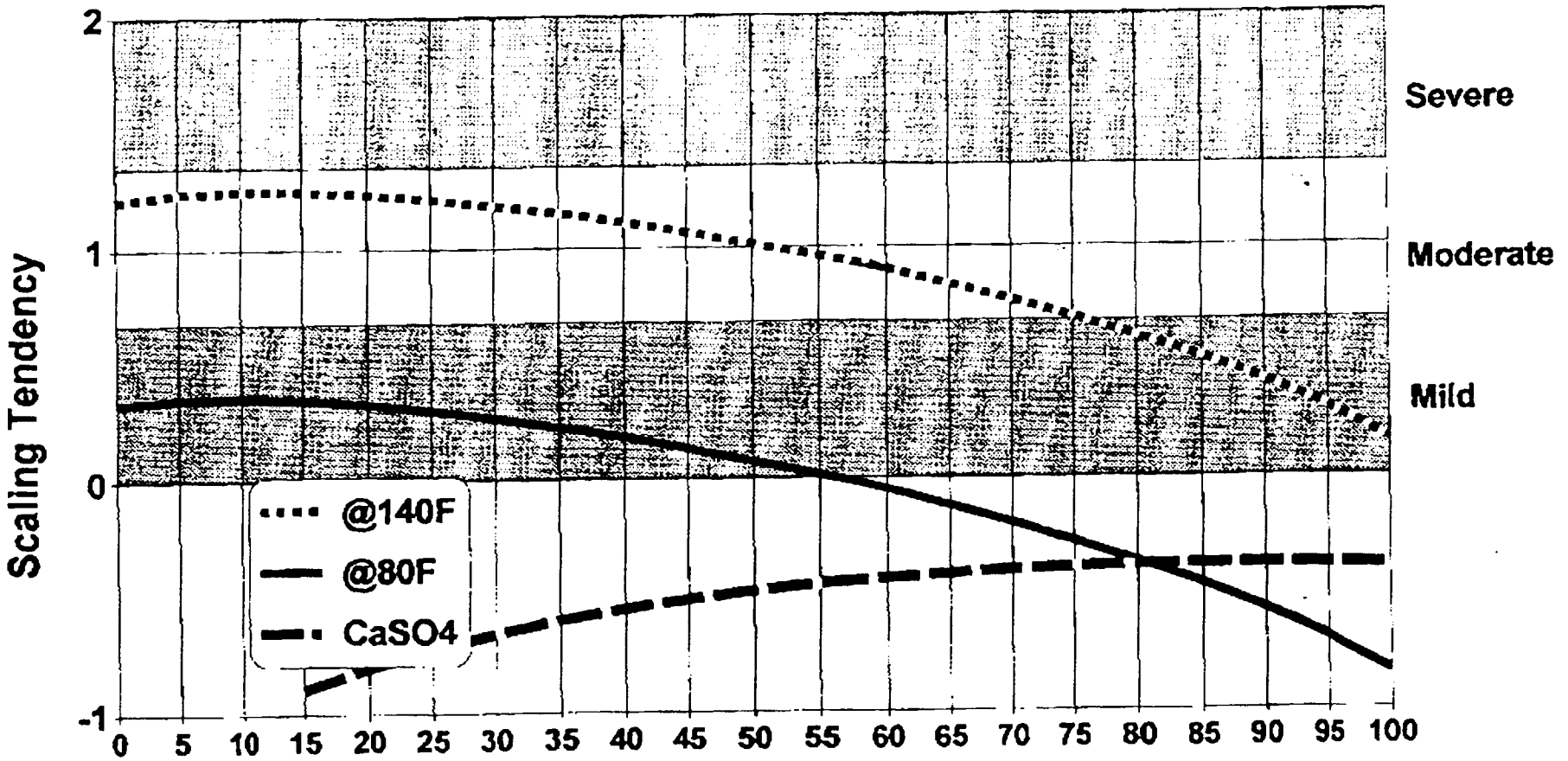
Conclusions:
As the Buffalo # 8 water increases, the calcium carbonate scaling tendency (Stiff & Davis Saturation Index) decreases to a mild level at 140° F and to a marginal level at 80° F. In addition, as the Buffalo # 8 water increases, the calcium sulfate scaling potential increases slightly to a marginal to mild level.

Attachments:
A graphical summary of the results is attached.

If we may further assist you in the interpretation of the above information, please call at your convenience.

Brad Mullins
Technical Services

Mixture of Two Waters
Permian Resources



Comparison Between Two Waters

01-May-1998

TO: Permian Treating Chemicals Company : **Permian Resources**

Sample # 1
LEK 28 # 1

Sample # 2
Buffalo # 8

Percent of #1 & #2	pH	TDS mg/L	SpGr	Saturation Index @80°F.	Saturation Index @140°F.	Calcium Sulfate Scaling Potential
100 - 0	6.170	189087	1.123	+0.331	+1.209	Nil
95 - 5	6.087	192121	1.125	+0.356	+1.241	Nil
90 - 10	6.003	195156	1.128	+0.361	+1.252	Nil
85 - 15	5.920	198190	1.130	+0.352	+1.249	Nil
80 - 20	5.836	201224	1.132	+0.332	+1.235	Nil
75 - 25	5.753	204258	1.134	+0.304	+1.213	Nil
70 - 30	5.669	207293	1.137	+0.269	+1.184	Nil
65 - 35	5.586	210327	1.139	+0.228	+1.150	Nil
60 - 40	5.502	213361	1.141	+0.182	+1.110	Nil
55 - 45	5.419	216395	1.143	+0.131	+1.065	Nil
50 - 50	5.335	219430	1.146	+0.075	+1.015	Nil
45 - 55	5.252	222464	1.148	+0.015	+0.961	Nil
40 - 60	5.168	225498	1.150	-0.050	+0.902	Nil
35 - 65	5.085	228532	1.152	-0.121	+0.837	Nil
30 - 70	5.001	231567	1.155	-0.196	+0.768	Nil
25 - 75	4.918	234601	1.157	-0.278	+0.692	Nil
20 - 80	4.834	237635	1.159	-0.367	+0.609	Nil
15 - 85	4.751	240669	1.161	-0.464	+0.518	Nil
10 - 90	4.667	243704	1.164	-0.573	+0.415	Nil
5 - 95	4.584	246738	1.166	-0.697	+0.298	Nil
0 - 100	4.500	249772	1.168	-0.843	+0.158	Nil

Permian Treating Chemicals
WATER ANALYSIS REPORT

SAMPLE

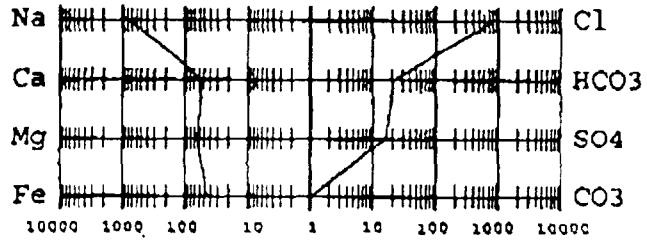
Oil Co. : **Permian Resources**
Lease : **Wallen-Bass**
Well No.: **N/A**
Lab No. :

Sample Loc. :
Date Analyzed: **01-May-1998**
Date Sampled :

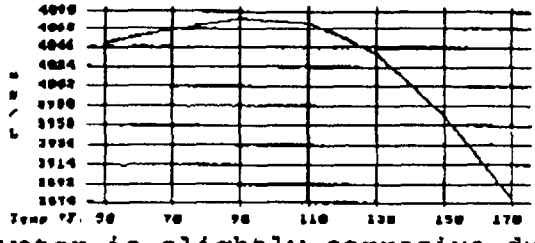
ANALYSIS

1.	pH			8.120		
2.	Specific Gravity 60/60 F.			1.033		
3.	$CaCO_3$ Saturation Index		@ 80 F.	+1.467		
			@ 140 F.	+2.397		
	Dissolved Gasses			**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide			Present		
5.	Carbon Dioxide			Not Determined		
6.	Dissolved Oxygen			Not Determined		
	Cations					
7.	Calcium	(Ca^{++})		1,042	/ 20.1 =	51.84
8.	Magnesium	(Mg^{++})		759	/ 12.2 =	62.21
9.	Sodium	(Na^{+})	(Calculated)	16,990	/ 23.0 =	738.70
10.	Barium	(Ba^{++})		Not Determined		
	Anions					
11.	Hydroxyl	(OH^{-})		0	/ 17.0 =	0.00
12.	Carbonate	($CO_3^{=}$)		0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})		1,225	/ 61.1 =	20.05
14.	Sulfate	($SO_4^{=}$)		750	/ 48.8 =	15.37
15.	Chloride	(Cl^{-})		28,993	/ 35.5 =	816.70
16.	Total Dissolved Solids			49,759		
17.	Total Iron (Fe)			775	/ 18.2 =	42.58
18.	Total Hardness As $CaCO_3$			5,725		
19.	Resistivity @ 75 F. (Calculated)			0.186 /cm.		

LOGARITHMIC WATER PATTERN
***meq/L.**



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT. X	*meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	20.05	1,625
$CaSO_4$	68.07	15.37	1,046
$CaCl_2$	55.50	16.42	911
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	62.21	2,963
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	738.07	43,147

***Milli Equivalents per Liter**

This water is slightly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts, and the presence of H2S in solution.

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

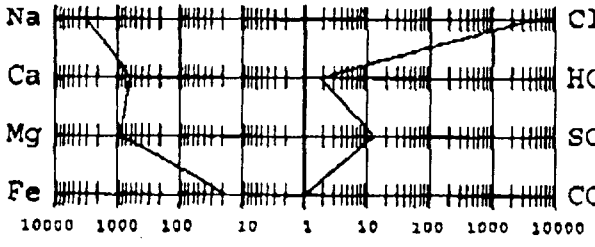
Oil Co. : **Permian Resources**
Lease : **Buffalo**
Well No. : **# 13**
Lab No. :

Sample Loc. :
Date Analyzed: **01-May-1998**
Date Sampled :

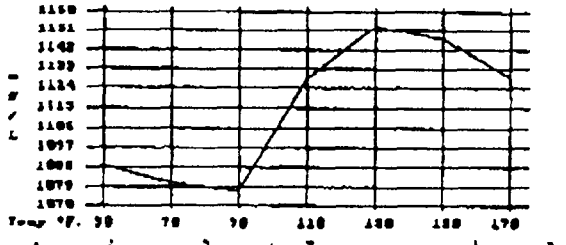
ANALYSIS

1.	pH		4.350		
2.	Specific Gravity 60/60 F.		1.171		
3.	$CaCO_3$ Saturation Index @ 80 F.		-0.646		
	@ 140 F.		+1.094		
	Dissolved Gasses		**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide		Not Present		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	11,671	/ 20.1 =	580.65
8.	Magnesium	(Mg^{++})	10,430	/ 12.2 =	854.92
9.	Sodium	(Na^{+}) (Calculated)	68,348	/ 23.0 =	2,971.65
10.	Barium	(Ba^{++})	Not Determined		
	Anions				
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	($CO_3^{=}$)	0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})	103	/ 61.1 =	1.69
14.	Sulfate	($SO_4^{=}$)	600	/ 48.8 =	12.30
15.	Chloride	(Cl^{-})	155,965	/ 35.5 =	4,393.38
16.	Total Dissolved Solids		247,117		
17.	Total Iron (Fe)		315	/ 18.2 =	17.31
18.	Total Hardness As $CaCO_3$		72,084		
19.	Resistivity @ 75 F. (Calculated)		0.001 /cm.		

LOGARITHMIC WATER PATTERN
***meq/L.**



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L	= mg/L.
$Ca(HCO_3)_2$	81.04	1.69	137
$CaSO_4$	68.07	12.30	837
$CaCl_2$	55.50	566.67	31,450
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	854.92	40,711
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	2,971.80	173,731

***Milli Equivalents per Liter**

This water is moderately corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

Permian Treating Chemicals
WATER ANALYSIS REPORT

SAMPLE

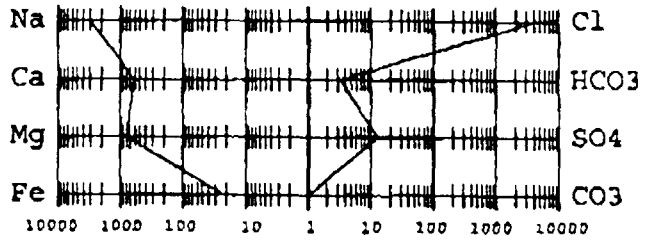
Oil Co. : **Permian Resources**
Lease : **Buffalo**
Well No.: **# 8**
Lab No. :

Sample Loc. :
Date Analyzed: **01-May-1998**
Date Sampled :

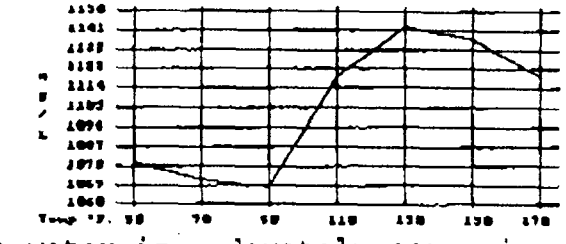
ANALYSIS

1.	pH		4.500		
2.	Specific Gravity 60/60 F.		1.168		
3.	$CaCO_3$ Saturation Index	@ 80 F.	-0.228		
		@ 140 F.	+1.512		
	Dissolved Gasses		**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide		Not Present		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	11,776	/ 20.1 =	585.87
8.	Magnesium	(Mg^{++})	9,418	/ 12.2 =	771.97
9.	Sodium	(Na^{+}) (Calculated)	70,823	/ 23.0 =	3,079.26
10.	Barium	(Ba^{++})	Not Determined		
	Anions				
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	($CO_3^{=}$)	0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})	190	/ 61.1 =	3.11
14.	Sulfate	($SO_4^{=}$)	600	/ 48.8 =	12.30
15.	Chloride	(Cl^{-})	156,965	/ 35.5 =	4,421.55
16.	Total Dissolved Solids		249,772		
17.	Total Iron (Fe)		380	/ 18.2 =	20.88
18.	Total Hardness As $CaCO_3$		68,181		
19.	Resistivity @ 75 F. (Calculated)		0.001 /cm.		

LOGARITHMIC WATER PATTERN
***meq/L.**



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L	= mg/L.
$Ca(HCO_3)_2$	81.04	3.11	252
$CaSO_4$	68.07	12.30	837
$CaCl_2$	55.50	570.47	31,661
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	771.97	36,761
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	3,079.12	180,005

***Milli Equivalents per Liter**

This water is moderately corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.