Enron Oil & Gas
Application for Injection
Attachments to Form C - 108

Part VI. Tabulation of data on wells within the area of review

Diamond "30" Federal No. 1 (0.3 mile east of proposed injector)

Status:	P & A'd Morrow completion attempt
Previous operator:	Enron Oil & Gas Company
Date Drilled:	6/18/1985
Location:	1980' FSL & 1980' FEL , Section 30-24S-34E, Lea County, New Mexico
Depth:	15, 480'
Record of completion:	Perforated Morrows 14,695' - 15,374' overall. squeezed.
Construction:	13 3/8" csg set @ 609' cmt circulated. 9 5/8" csg set @ 5,200' cmt circulated. 7" csg 6,500' - 13,250' cmt w/1,200 sx. est TOC 7,000' Pulled 6,500' of 7" csg during P&A
Plugs:	25 sx squeeze @ 14,400'; 50 sx @ 12,960'; 50 sx @ 12,200'; 30 sx @ 9,300'; 65 sx @ 6,550'; 75 sx @ 5,250'; 35 sx @ 2,500'; 35 sx @ 610'; 20 sx surface.

Part VII.

1. Proposed average daily injection rate - 1,000 BPD. Proposed maximum daily injection rate - 2,000 BPD

2. The system will be open. Water will be trucked from field batteries.

3. Proposed average daily injection pressure - 300 PSIG. Proposed maxium daily injection pressure - 600 PSIG.

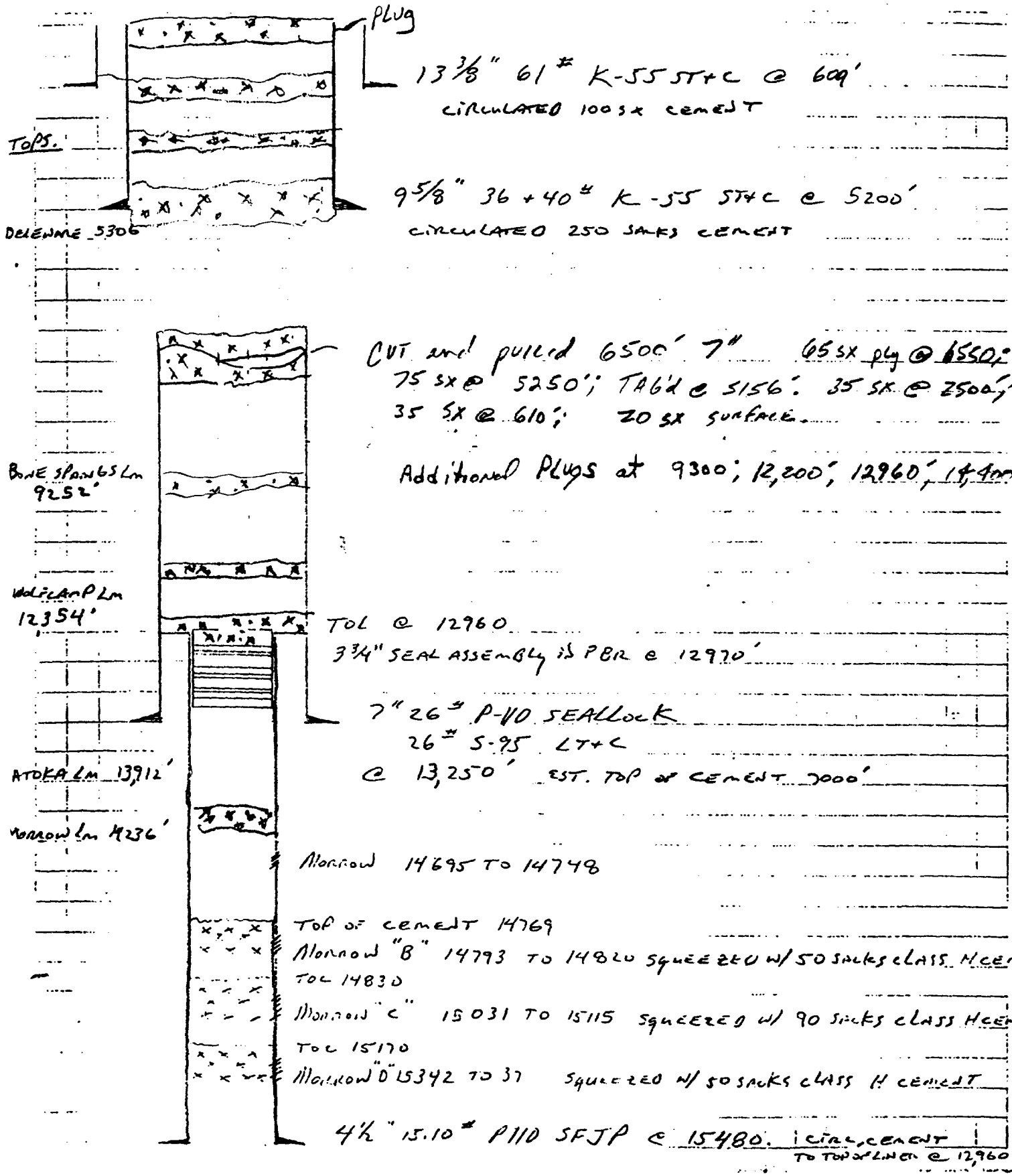
4. Primarily Morrow water from the Pitchfork Ranch Field will be injected into the Delaware zones identified. Minor amounts of Atoka and Wolfcamp waters will also be injected. Produced waters have been tested and found compatible with each other and with the receiving formation. See attached analyses and lab report.

ENRON OIL & GAS APPLICATION TO INJECT

PART VI

WELL WITHIN .5 mile AREA OF REVIEW

DIAMOND 30 FEDERAL No. 1
0.3 MILE EAST



PART VI

Form 3160-4 (November 1983) (formerly 9-330)

OPERATORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM 28881

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Diamond 30 Federal

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Pitchfork Ranch /Morrow/

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 30, T24S, R34E

12. COUNTY OR PARISH: Lea

13. STATE: New Mexico

RECEIVED
FEB 13 1986
DIST. 6 N.M.
Carlsbad, New Mexico
BUREAU OF LAND MANAGEMENT

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: HNG OIL COMPANY

3. ADDRESS OF OPERATOR: P. O. Box 2267, Midland, Texas 79702

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1980' FSL & 1980' FEL
At top prod. interval reported below: Same
At total depth: Same

14. PERMIT NO.: -
DATE ISSUED: 4/10/85

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
4-28-85	6-18-85	8-13-85	3532.1' GR	3532.1'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
15,480'	14,775'		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 14,695' - 14,748' (Morrow)

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Comp. Neutron-Litho Density, BHC Sonic, Composite of Dual Laterolog & Dual Induction

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	61#	609'	17-1/2"	275 HLC & 250 Cl C	Circulated
9-5/8"	36# & 40#	5200'	12-1/4"	2000 HLC & 475 Cl C	Circulated
7"	26#	13250'	8-3/4"	850 TLC & 350 Cl H	-

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
4-1/2"	12960	15480	325 Cl H	-

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	12,960'	12,960 PRB & MSL

31. PERFORATION RECORD (Interval, size and number)
15342 - 15374 (.30" 18)
15031 - 15115 (.30" 24)
14793 - 14820 (.30" 16)
14695 - 14748 (.32" 12)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
15342-15374	sq. w/50 sx Cl H tested to 6000 p
15031-15115	sq. w/50 sx Cl H tested to 6000 ps
14793-14820	sq. w/50 sx Cl H tested to 8000 ps
14695-14748	4000 gals mor flo BC acid

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
		Shut-in waiting on P&A

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

ACCEPTED FOR RECORD
FEB 13 1986
CARLSBAD, NEW MEXICO

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

WITNESSED BY

35. LIST OF ATTACHMENTS: Logs

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Betty Gildon (Betty Gildon) TITLE Regulatory Analyst DATE 2/12/86

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO: NM 28881
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER: Dry Hole
2. NAME OF OPERATOR: HNG OIL COMPANY
8. FARM OR LEASE NAME: Diamond 30 Federal
3. ADDRESS OF OPERATOR: P. O. Box 2267, Midland, Texas 79702
9. WELL NO.: 1
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FEL
10. FIELD AND POOL, OR WILDCAT: Pitchfork Ranch /Morrow/
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 30, T24S, R34E
14. PERMIT NO.: API # 30-025-29210
15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3532.1' GR
12. COUNTY OR PARISH: Lea
13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	X
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

5-8-86 - Squeezed perfs 14695 to 14748 feet with 25 sacks Class H. Top of cement at 14400'.
50 sack plug at 12960'
50 sack plug at 12200'
30 sack plug at 9300'

5-10-86 - Cut and recovered 6500 feet of 7" 26# casing.
5-11-86 - 65 sack plug at 6550'
75 sack plug at 5250'. Tagged cement at 5156'.
35 sack plug at 2500'
35 sack plug at 610 feet

5-12-86 - Cut off bradenhead and set 20 sack plug 90' to surface.
Rig released.

18. I hereby certify that the foregoing is true and correct

SIGNED Betty Gildon (Betty Gildon) TITLE Regulatory Analyst DATE 5/13/86

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Enron Oil & Gas
Application for Injection
Attachments to Form C - 108

5. Injection is for disposal purposes into a zone not productive of oil or gas within one mile of the proposed well. A fluid analysis indicative of Delaware formation water in this area is attached from the Enron Oil & Gas Madera "10" Federal No. 1. The well is located in drilling unit M, Section 10-26S- 33E. See attached lab report.

Part VIII.

Lithologic detail:	Sand/Shale Sequence
Geologic name:	Delaware Mountain Group - Bell Canyon Formation
Thickness:	2,560'
Depth:	5,310' - 7,860'
Overlying underground sources of drinking water:	The red bed formation found between surface and 600'
Underlying underground drinking water:	none

Part IX. Proposed stimulation program: Perforations will be cleaned up with 4,000 gals 15% HCL acid. Near wellbore damage may require a gelled water and sand fracture treatment consisting of 18,000 gallons and 30,000 lbs. 20-40 sand.

Part X. The well logs are on file with the OCD. The Morrow formation was production tested from perforations at 14,854' - 15,152'. See attached well completion report.

Part XI. There is one fresh water well at or within one mile from the proposed injection well. See the attached topographic map. An analysis of the water is attached.

Part XII. EOG has examined available geologic and engineering data and has found no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

Martin Water Laboratories, Inc.
WATER CONSULTANTS SINCE 1953
BACTERIAL AND CHEMICAL ANALYSES

P.O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 or 563-1040

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

December 1, 1993

Mr. Randy Cate
Enron Oil & Gas Company
P.O. Box 3229
Midland, TX 79702

Dear Mr. Cate:

The objective herein is to provide an interpretation regarding the compatibility between Morrow, Wolfcamp, and Atoka. This evaluation is provided based on our records of Morrow reported on laboratory #109273 (10-14-92) and #892188 (8-31-92). The records of Wolfcamp and Atoka are based on chemical company analyses that you provided us. It should be clarified that our interpretations provided herein are based on the assumption that their records of Wolfcamp and Atoka are representative. It is further the objective herein to evaluate the possibility of injecting Morrow, Wolfcamp, and Atoka into the Delaware, which is represented on laboratory #12836 (12-5-83). It should be noted that this Delaware is also very similar to other Delaware records we have in the Pitchfork Ranch field.

In comparing the above analyses of waters represented, we have identified no evidence of any potential precipitation or scaling potential that would result from any combination of waters from the Morrow, Wolfcamp, or Atoka. Therefore, we would classify these waters as being compatible in any combination.

Our study of the Delaware water compatibility with the Morrow, Wolfcamp, and Atoka has revealed no evidence of any need for concern in injecting one or more of these waters into the Delaware interval.

It is noted in studying the waters herein that all of the produced waters involved from the Morrow, Wolfcamp, and Atoka could be anticipated to contain some soluble iron. This renders the water sensitive to air contamination; therefore, any oxygen that gets into the waters would be expected to result in iron oxide precipitation somewhat proportionate to the amount of oxygen that gets into the water. Therefore, maximum efforts should be applied to avoiding any air contamination in these waters to prevent as much of this precipitation as feasible.

Yours very truly,

Waylan C. Martin

WCM/mo

Copy to WF Prod file
Bill Thomas

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 12836

TO: Mr. Jim Kimbrow
P.O. Box 2267, Midland, Texas

SAMPLE RECEIVED 12-2-83
RESULTS REPORTED 12-5-83

COMPANY HNG Oil Company LEASE Madera 10

FIELD OR POOL

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Produced water - taken from Madera 10 #1, 11-30-83

NO. 2

NO. 3 DELAWARE

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1889			
pH When Sampled				
pH When Received	5.81			
Bicarbonate as HCO_3	56			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	96,500			
Calcium as Ca	32,200			
Magnesium as Mg	3,888			
Sodium and/or Potassium	74,659			
Sulfate as SO_4	387			
Chloride as Cl	183,229			
Iron as Fe	38.2			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	294,419			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.047			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Calcium Sulfate Scaling Tendency	NONE			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: We are not familiar with the location of this well or the zone being produced, but the characteristics of the water are typical of natural connate Delaware water in southeast Lea county.

Form No. 3

cc: Mr. Dan Honeyfield, BrakeSol
Mr. J. W. Clifford, Pyote
Mr. Robert Builta, Pyote

By

Waylan C. Martin, M. A.

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 109273
SAMPLE RECEIVED 10-10-92
RESULTS REPORTED 10-14-92

TO: Mr. Rick Schatz
P.O. Box 3229, Carlsbad, NM 88220

COMPANY Enron Oil & Gas Company LEASE Madera 33
FIELD OR POOL Pitchfork Ranch
SECTION ____ BLOCK ____ SURVEY ____ COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Produced water - taken from Madera 33 #1. Morrow
NO. 2 Produced water - taken from Madera 33 #2. Morrow
NO. 3
NO. 4
REMARKS: Morrow

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0166	1.0190		
pH When Sampled				
pH When Received	7.07	7.12		
Bicarbonate as HCO_3	769	1,037		
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	1,100	800		
Calcium as Ca	424	280		
Magnesium as Mg	10	24		
Sodium and/or Potassium	7,776	9,797		
Sulfate as SO_4	915	17		
Chloride as Cl	11,647	15,056		
Iron as Fe	14.0	82.8		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	21,540	26,212		
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	0.370	0.295		
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The above results show the water from well #1 to have a high level of sulfate similar to what we encountered on laboratory #129055 (12-8-90). This is the only discrepancy in the characteristics of this water as compared to what we would expect from natural Morrow. However, we are not confident that this is suggesting a foreign water is involved. The water from well #2 correlates well with natural Morrow. This water has also not changed significantly since the above mentioned previous analysis.

Form No. 3

By Waylan C. Martin, M.A.

Champion Chemicals, Inc.

..BOX 2187
)BBS, N.M. 88240

PHONE: (505) 393-7726

W A T E R A N A L Y S I S R E P O R T

Report for: RICK SCHATZ
cc: GARLAND PORTER
cc:
cc:
Company: ENRON
Address:
Service Engineer: DONNY SELMAN

Date sampled: 6-7-88
Date reported: 6-8-88
Lease or well #.: MADERA 33 FED COM 4
County: State:
Formation: ATOKA
Depth:
Submitted by: DONNY SELMAN

CHEMICAL COMPOSITION :	mg/L	meq/L
Chloride (Cl)	11000	310
Iron (Fe) (total)	238.0	
Total hardness	7000	
Calcium (Ca)	2406	120
Magnesium (Mg)	243	20
Bicarbonates (HCO3)	732	12
Carbonates (CO3)	n/a	
Sulfates (SO4)	89	2
Hydrogen sulfide (H2S)	0	
Carbon dioxide (CO2)	n/a	
Sodium (Na)	4245	185
Total dissolved solids	18715	
Barium (Ba)	n/a	
Strontium (Sr)	n/a	

Specific Gravity	1.013
Density (#/gal.)	8.442
pH	6.250
IONIC STRENGTH	0.39

Stiff-Davis (CaCO3) Stability Index :
SI = pH - pCa - pAlk - K

SI @ 86 F = +0.09
104 F = +0.31
122 F = +0.57
140 F = +0.85
158 F = +1.16

This water is 1684 mg/l (-93.04%) under ITS CALCULATED CaSO4 saturation value at 82 F.
SATURATION= 1810 mg/L PRESENT= 126 mg/L

REPORTED BY RANDOLPH SCOTT

CHEMIST

Champion Chemicals, Inc.

.BOX 2187
BBS, N.M. 88240

PHONE: (505) 393-7726

WATER ANALYSIS REPORT

Report for: RICK SCHATZ
cc: GARLAND PORTER
cc:
cc:
Company: ENRON
Address:
Service Engineer: DONNY SELMAN

Date sampled: 6-7-88
Date reported: 6-8-88
Lease or well # : MADERA 33 FED COM 3
County: State:
Formation: ATOKA
Depth:
Submitted by: DONNY SELMAN

CHEMICAL COMPOSITION :	mg/L	meq/L
Chloride (Cl)	1000	28
Iron (Fe) (total)	29.0	
Total hardness	600	
Calcium (Ca)	200	10
Magnesium (Mg)	24	2
Bicarbonates (HCO3)	61	1
Carbonates (CO3)	n/a	
Sulfates (SO4)	58	1
Hydrogen sulfide (H2S)	0	
Carbon dioxide (CO2)	n/a	
Sodium (Na)	425	18
Total dissolved solids	1769	
Barium (Ba)	n/a	
Strontium (Sr)	n/a	

Specific Gravity	1.001
Density (#/gal.)	8.342
pH	5.600
IONIC STRENGTH	0.04

Stiff-Davis (CaCO3) Stability Index :
SI = pH - pCa - pAlk - K

SI @ 86 F = -1.77
104 F = -1.55
122 F = -1.32
140 F = -1.08
158 F = -0.83

This water is 2085 mg/l (-96.17%) under ITS CALCULATED CaSO4 saturation value at 82 F.
SATURATION= 2168 mg/L PRESENT= 83 mg/L

REPORTED BY RANDOLPH SCOTT

CHEMIST

Champion Chemicals, Inc.

P.O.BOX 2187
OBBS, N.M. 88240

PHONE: (505) 393-7726

WATER ANALYSIS REPORT

Report for: RICK SCHATZ
cc:
cc:
cc:
Company: ENRON
Address:
Service Engineer:

Date sampled: 4-14-89
Date reported: 4-18-89
Lease or well # : 25 FED COM #1
County: State:
Formation: MADERA RIDGE
Depth:
Submitted by: RICK SCHATZ

Wolfcamp

CHEMICAL COMPOSITION :	mg/L	meq/L
Chloride (Cl)	9000	254
Iron (Fe) (total)	15.0	
Total hardness	5000	
Calcium (Ca)	1203	60
Magnesium (Mg)	486	39
Bicarbonates (HCO3)	134	2
Carbonates (CO3)	n/a	
Sulfates (SO4)	168	4
Hydrogen sulfide (H2S)	0	
Carbon dioxide (CO2)	n/a	
Sodium (Na)	3692	161
Total dissolved solids	14683	
Barium (Ba)	n/a	
Strontium (Sr)	n/a	

Specific Gravity	1.010
Density (#/gal.)	8.417
pH	7.000
IONIC STRENGTH	0.31

Stiff-Davis (CaCO3) Stability Index :
SI = pH - pCa - pAlk - K

SI @ 86 F = -0.10
104 F = +0.12
122 F = +0.37
140 F = +0.65
158 F = +0.94

This water is 2325 mg/l (-90.71%) under ITS CALCULATED CaSO4 saturation value at 82 F.
SATURATION= 2563 mg/L PRESENT= 238 mg/L

REPORTED BY RANDOLPH SCOTT

CHEMIST

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. Dewey Smeltzer
P. O. Box 2267, Midland, TX 79702

LABORATORY NO. 129322
SAMPLE RECEIVED 12-7-93
RESULTS REPORTED 12-7-93

COMPANY Enron Oil & Gas Company LEASE Vaca Ridge 30 Fed. Com. #1 (proposed disposal well)
FIELD OR POOL
SECTION 25 BLOCK SURVEY T-25S&R-34E COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Raw water - taken from Rancher's water well (holding tank). 12-7-93 Fresh H_2O
NO. 2 Raw water - taken from Rancher's water well (dirt pit). 12-7-93 WELL WITHIN 1 MILE
NO. 3
NO. 4
REMARKS:

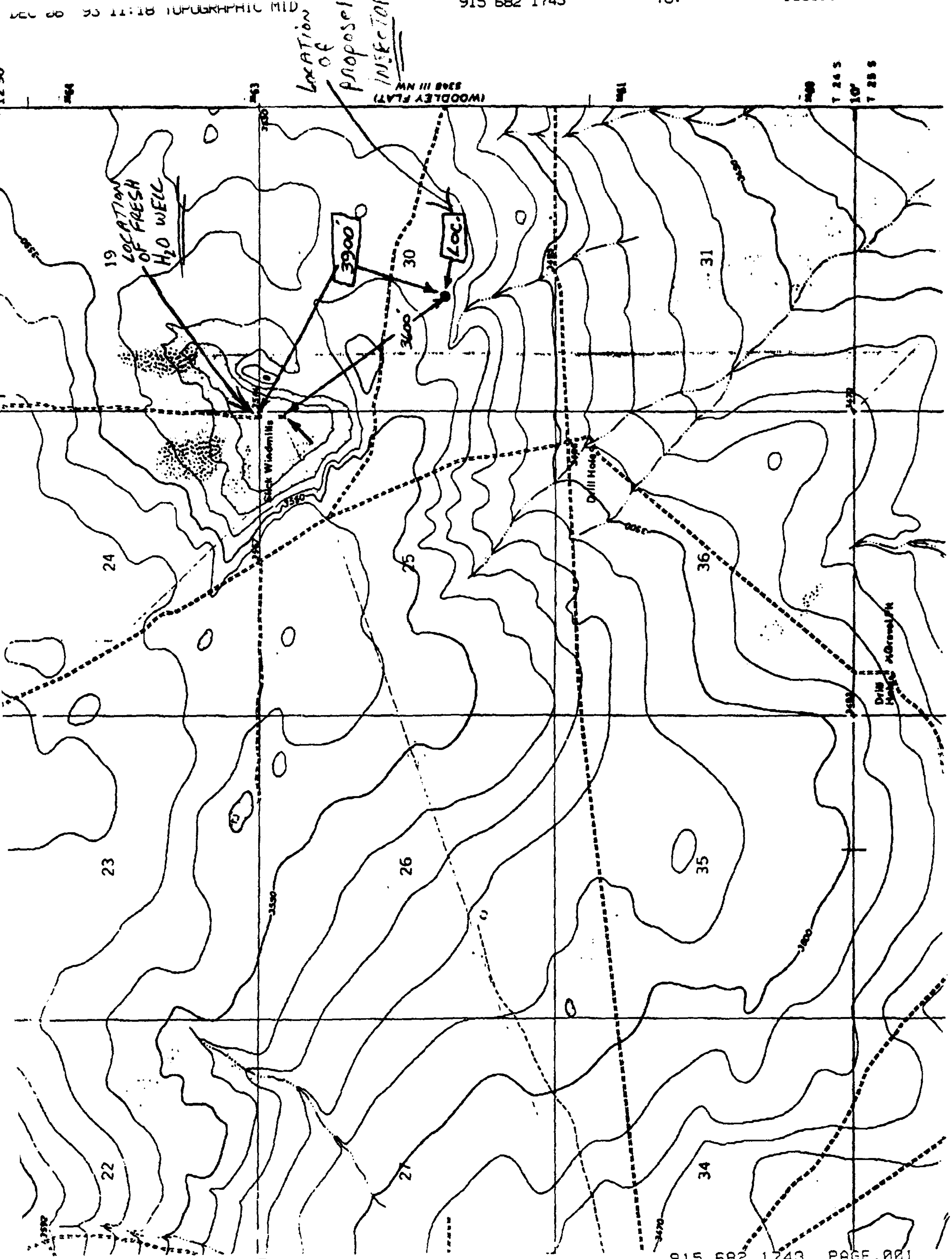
CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0038	1.0034		
pH When Sampled				
pH When Received	7.16	7.13		
Bicarbonate as HCO_3	254	256		
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	2,150	2,150		
Calcium as Ca	600	600		
Magnesium as Mg	158	158		
Sodium and/or Potassium	364	258		
Sulfate as SO_4	2,377	2,164		
Chloride as Cl	185	178		
Iron as Fe	0.03	0.06		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	3,937	3,613		
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	2.02	2.02		
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	4.5	4.1		

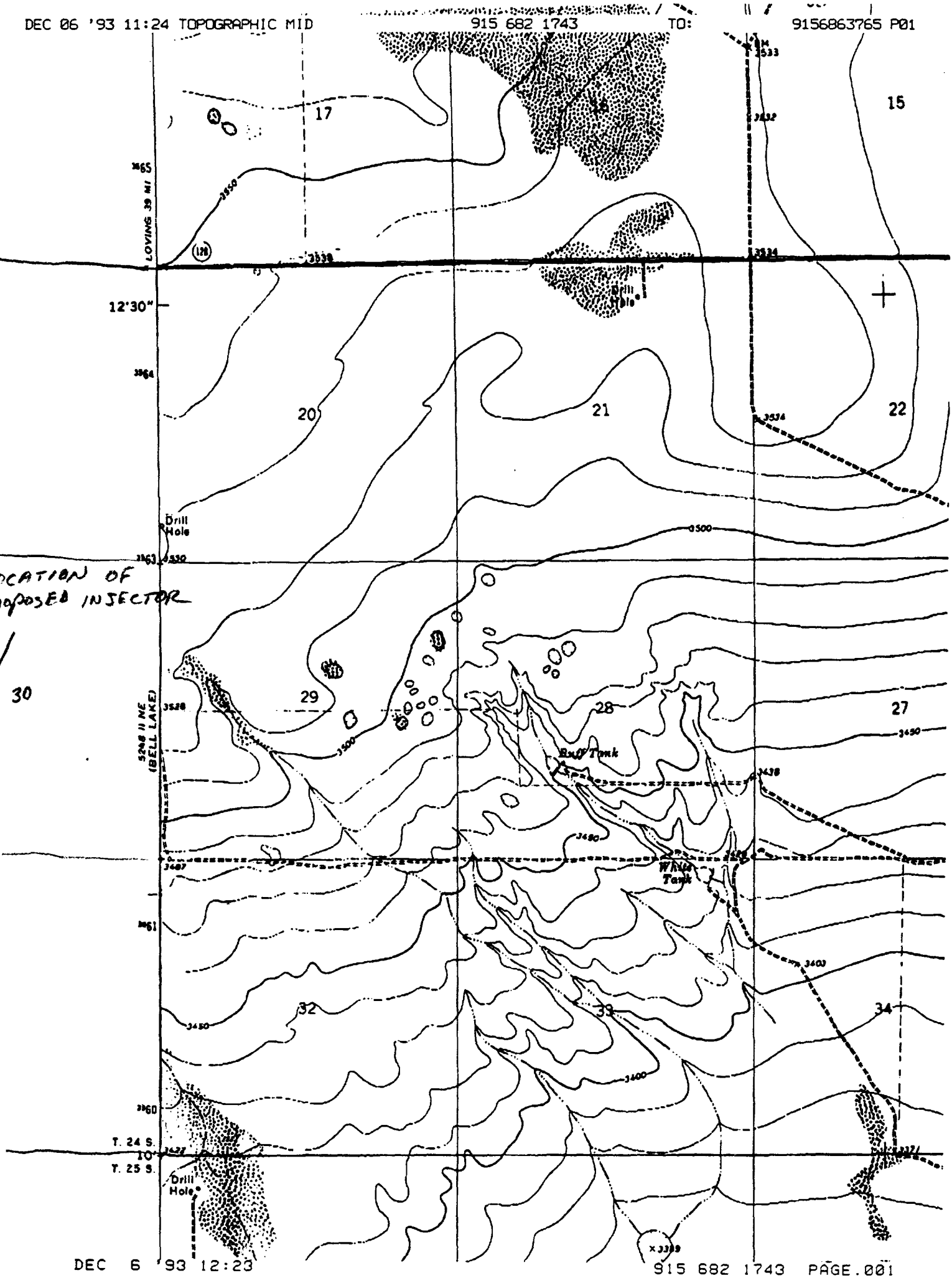
Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Form No. 3

By
Waylan C. Martin, M.A.


LOCATION OF PROPOSED INJECTOR
LOCATION OF FRESH H2O WELL
3900'
3600'
LOC.
(WOODLEY FLAT)
Drill Hole
19
30
31
24
25
36
23
26
35
22
27
34


17
16
15
LOVING 39 MI
12'30"
20
21
22
Drill Hole
CATION OF
POSED INJECTOR
30
29
28
27
5248 II NE (BELL LAKE)
Bull Tank
White Tank
32
33
34
T. 24 S.
T. 25 S.
Drill Hole

Enron Oil & Gas
Application for Injection
Attachments to Form C - 108

Part XIII. Proof of Notice

Surface Owner:

1. Leta Dillon Trust
   1514 S. Indianapolis
   Tulsa, Oklahoma 74135

Leasehold owners or operators on adjacent property or within one-half mile of the diposal well location:

1. Enron Oil & Gas Company
   P.O. Box 2267
   Midland, Texas 79702

2. Yates Petroleum Corporation
   105 South 4th Street
   Artesia, New Mexico 88210

As a courtesy, the following nearby leasehold and surface owners are also being notified:

3. Meridian Oil Inc.
   P.O. Box 51810
   Midland, Texas 79710

4. New Mexico State Land Office
   P.O. Box 1148
   Santa Fe, New Mexico 87504-1148

ENRON
Oil & Gas Company

P. O. Box 2267 Midland, Texas 79702 (915) 686-3600

January 6, 1994

Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Oil Conservation Division
P. O. Box 1980
Hobbs, New Mexico 88240

Re: Enron's Application for SWD
Vaca Ridge 30 Fed Com #1
Section 30, T24S, R34E
Lea County, New Mexico

Gentlemen:

Enclosed to complete your files, please find copies of the Certified Return Receipt green cards evidencing proof of receipt by the owner of the surface and each leasehold operator of Enron's referenced application.

A copy of the proof of publication will be submitted by Enron's attorney, Mr. Bill Carr.

Should you require anything further in this regard, please feel free to contact the undersigned at (915)686-3758.

Very truly yours,

ENRON OIL & GAS COMPANY

Patrick J. Tower
Project Landman

PJT/sbe

attachments

cc: Mr. Bill Carr
CAMPBELL, CARR, BERGE & SHERIDAN, P.A.
P. O. Box 2208
Santa Fe, New Mexico 87504-2208

CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS

MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
MARK F. SHERIDAN
WILLIAM P. SLATTERY

PATRICIA A. MATTHEWS
MICHAEL H. FELDEWERT
DAVID B. LAWRENZ
TANYA M. TRUJILLO

JACK M. CAMPBELL
OF COUNSEL

JEFFERSON PLACE
SUITE 1 - 110 NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87504-2208
TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

January 26, 1994

HAND-DELIVERED

JAN 26 1994

William J. LeMay, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
State Land Office Building
Santa Fe, New Mexico 87503

Re: Application of Enron Oil and Gas Company for Salt Water Disposal Authority, Lea County, New Mexico

Dear Mr. LeMay:

Enron Oil and Gas Company has previously filed an application in which it seeks administrative approval to use its Vaca Ridge 30 Federal Well No. 1 for salt water disposal. This well is located 1980 feet from the South and West lines of Section 30, Township 24 South, Range 34 East and Enron proposes to use the well for injection into the Bell Canyon portion of the Delaware formation at a depth of 5400 feet to 6400 feet. Enclosed you will find an Affidavit of Publication which confirms that notice of this application was published in the *Hobbs Daily News-Sun* on January 2, 1994.

No objections to this application have been received by Enron as of this date and, accordingly, we believe all information concerning this application has now been provided to the Division for your consideration of this application for administrative approval. Should you need anything further from Enron to proceed with your consideration of this application, please advise.

Very truly yours,

William F. Carr

WILLIAM F. CARR

WFC:mlh
Enclosure

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, Kathi Bearden

General Manager

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 _____

one weeks.
Beginning with the issue dated

January 2, 1994
and ending with the issue dated

January 2, 1994

Kathi Bearden
General Manager
Sworn and subscribed to before

me this 6 day of
January, 1994.
Charlene Perrin
Notary Public.

My Commission expires
March 15, 1997
(Seal)

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
January 2, 1994

Enron Oil and Gas Company hereby gives notice to the public that it has filed an application with the New Mexico Oil Conservation Division seeking authority to inject water for the purpose of disposal in its Vaca Ridge 30 Federal Well No. 1 located 1980 feet from the South line and 1980 feet from the West line of Section 30, Township 24 South, Range 34 East, N.M.P.M., Lea County, New Mexico. The proposed injection will be into the Bell Canyon portion of the Delaware formation at a depth of 5400 feet to 6400 feet. The maximum injection rate sought is 2000 barrels of water per day and the maximum surface pressure to be used will be 600 psia. Any objection to this application must be filed within fifteen (15) days of the date of this advertisement at the Oil Conservation Division, Post Office Box 2088, Santa Fe, New Mexico 87504. Questions concerning this application should be directed to Mr. Patrick J. Tower, Enron Oil and Gas Company, 508 W. Wall, Suite 1100, Midland, Texas 79701. Telephone (915) 686-3758.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

HOBBS DISTRICT OFFICE

RECEIVED
'93 DEC 27 AM 11 09

12-21-93

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

SWD-549

RE: Proposed:
MC
DHC
NSL
NSP
SWD X
WFX
PMX

Gentlemen:

I have examined the application for the:

Southland Royalty Co. Vaca Ridge 30 Fed #1-K 30-24-34
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed