5 WD 12/8/98

734

PENWELL ENERGY, INC.
1100 ARCO BUILDING
600 N. MARIENFELD
MIDLAND, TEXAS 79701

OFF: (915) 683-2534
FAX: (915) 683-4514

November 16, 1998

State of New Mexico
Energy, Minerals, & Natural Resources Dept.
Oil Conservation Division
2040 Pacheco Street
Santa Fe, New Mexico 87505

WITHIN SURF BOUND RTK

Attn: David Catanach

Re: Application For Authorization To Inject
Wright Federal #1 SWD, Sec. 6, T20S, R28E, Eddy Co.

Mr. Catanach,

Enclosed please find Form C-108 "Application For Authorization To Inject" with attachments for the proposed Wright Federal #1 SWD located in Section 6, T20S, R28E, Eddy County, New Mexico.

The wellbore was originally drilled as a Morrow test and later plugged. Penwell Energy proposes to re-enter the upper portion of the hole and run 5 ½" casing to the top of an existing cement plug at 4212'. The Delaware interval 3960'-4070', which is wet in this area, is the proposed injection target. Produced water from an area Cisco-Canyon well will be the source of the disposal water. Future wells targeting an uphole Bell Canyon Delaware zone and the Bone Springs may also be sources of injection water.

If you should have any questions or need additional data, please contact the undersigned at (915) 683-2534.

Charlie Knight
Engineer

Cc: Tim Gum, NMOCD Artesia

AOR 2
1
P&A
REPAIR 0

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ____ Secondary Recovery ____ Pressure Maintenance __X__ Disposal ____ Storage
Application qualifies for administrative approval? __Yes ___No

II. OPERATOR: Penwell Energy, Inc.

ADDRESS: 600 N. Marienfeld, Suite 1100, Midland, TX 79701

CONTACT PARTY: Charlie Knight PHONE: 915-683-2534

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

IV. Is this an expansion of an existing project: ___ Yes __X__ 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 sources 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: Charles W. Knight, Jr. TITLE: Engineer

SIGNATURE: Charles W. Knight Jr. DATE: 10/28/98

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

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate 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 higher 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;

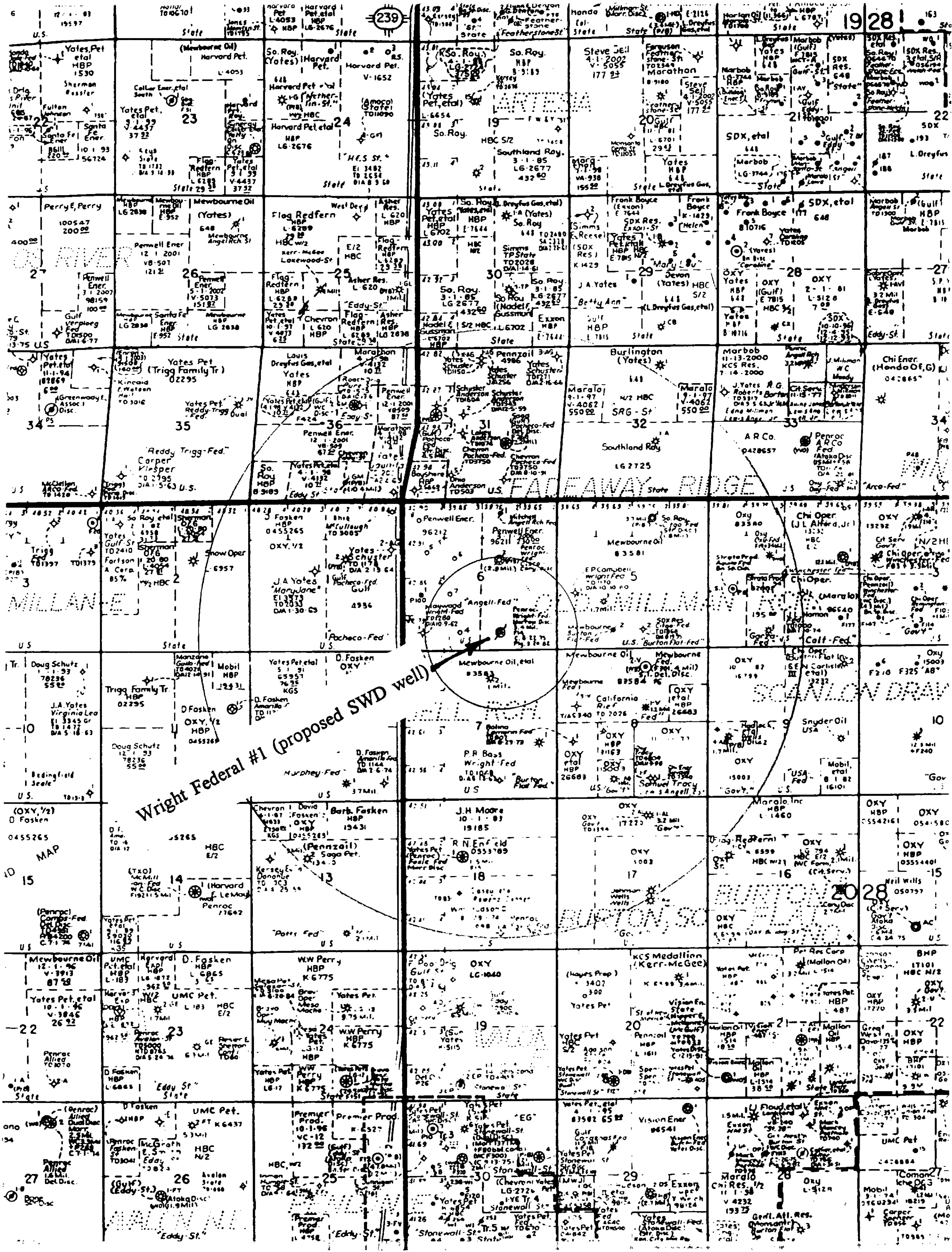
(2) The intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(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, PO Box 2088, Santa Fe, NM 87504-2088 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.



Wright Federal #1 (proposed SWD well)
239
19
28
Mewbourne Oil, etal
Angell-Fed
Penwell Ener.
Mewbourne Oil
J.A.Yates
Pacheco-Fed
Trigg Family Tr.
Yates Pet.
Frank Boyce
Burlington (Yates)
Southland Roy.
So. Roy.
Flag Redfern
Harvard Pet.
Marbob
SDX, etal
OXY
D. Fosken
W.W Perry
UMC Pet.
Premier Prod.
Vision Ener.
Eddy-St.
Stonewall-St.

Application For Authorization To Inject

Attachment to Form C-108
Wright Federal #1 SWD
Sec 6, T20S, R28E, Eddy Co.

I. Purpose: Disposal

II. Operator: Penwell Energy, Inc.
Address: 600 N. Marienfeld, Suite 1100, Midland, TX, 79701
Contact: Charlie Knight (915) 683-2534

III. Well data: See attached "Injection Well Data Sheet".

IV. Is this an expansion of an existing project? No.

V. Map showing wells and leases and half-mile radius: See map attached.

VI. Data on wells within area of review:

The following 4 wells are located within the area of review:

1. Wright Federal #1 (drilled, produced, & plugged by Penroc Oil Corp.) subject proposed SWD well – *see attached injection well data sheet*

2. Wright Federal #2 (drilled, produced, & plugged by Penroc Oil Corp.)
   A. Well type: plugged gas well
   B. Construction:
      Surf Csg – 13 3/8" @ 415' cmt to surface w/ 425 sx in 17" hole
      Inter Csg – 8 5/8" @ 2500' cmt to surface w/ 900 sx in 11" hole
      Prod Csg – 4 ½" @ 11,121' cmt to 7460' w/ 900 sx in 7 7/8" hole
   C. Date drilled: spud 11/1/75, TD 12/6/75, completed 1/13/76
   D. Location: 1980' FNL, 1980' FEL, Sec 6, T20S, R28E, Eddy Co
   E. Depth: 11,212' TD
   F. Record of completion: Morrow perfs @ 10,729'-10,940'
      Cisco-Canyon perfs @ 9407'-9484'
   G. Schematic of plugged well: see attached wellbore diagram

3. Wright Federal #1 (drilled and plugged by Maywood Oil Company)
   A. Well type: plugged dry hole
   B. Construction: Surf Csg – 8 5/8" @ 290'
   C. Date drilled: spud 9/27/62, TD 10/9/62
   D. Location: 660' FSL, 660' FWL, Sec 6, T20S, R28E, Eddy Co
   E. Depth: 1230' TD
   F. Record of completion: Dry hole – did not run production casing
   G. Schematic of plugged well: see attached wellbore diagram

4. Burton Flat "7" Federal #2 (drilled & produced by Mewbourne Oil Co.)
   A. Well type: producing Morrow gas well
   B. Construction:
      Surf Csg – 13 3/8" @ 450' cmt to surface w/ 450 sx in 17 ½" hole
      Inter Csg – 8 5/8" @ 3002' cmt to surf w/ 1200 sx in 12 1/4" hole
      Prod Csg – 5 ½" @ 11,197' cmt to 3150' w/ 1500 sx in 7 7/8" hole
   C. Date drilled: spud 3/6/97, TD 4/3/97, completed 4/21/97
   D. Location: 990' FNL, 2310' FEL, Sec 7, T20S, R28E, Eddy Co
   E. Depth: 11,200' TD
   F. Record of completion: Morrow perfs @ 10,979'-10,999'
   G. Schematic of plugged well: well not plugged

VII. 1. Proposed average and maximum injection rates:
   2000 BWPD average
   3500 BWPD maximum

2. The water injection system will be a closed system.

3. Proposed average and maximum injection pressure:
   1000 psig average
   2500 psig maximum

4. Sources and analysis of injection water and compatibility with receiving formation: Injection water will be produced water from the Penwell Energy operated Angell Federal #1 and other wells soon to be drilled on the Angell Federal lease on Section 6, T20S, R28E. The Angell Federal #1 produces from the Cisco-Canyon interval 9360'-9378' (see attached water analysis).

   Once the Wright Federal #1 (proposed SWD well) has been re-entered and completed in the proposed injection interval 3960'-4070', a water sample will be taken and compatibility tests will be run with the Angell Federal #1 produced water. It is expected that the waters will be compatible since Delaware water and Bone Springs water from nearby wells were shown to be compatible (reference attached portions of Order SWD-524 application) and have similar water analysis to the Angell Federal #1 produced water.

5. Disposal into a zone not productive of oil or gas; disposal zone water analysis: It is expected that once the Wright Federal #1 has been re-entered and a water sample is taken from the proposed Delaware injection target, the water will be of similar chemical composition and compatibility as the Angell Federal #1 produced water. The proposed injection interval is anticipated to be wet and therefore non-productive of oil or gas.

VIII. Geological data on the injection zone: The proposed injection interval 3960'-4070' is within the Delaware Mountain Group. The lithology is primarily sandstone and shales. The top of the Delaware sand is at 2630' and is 1632' thick to the top of the Bone Springs at 4262'.

Geological data on underground drinking water: The only known source of underground drinking water is surface rock, clay, sand, and intermingled red beds from the surface to a depth of approximately 500'. There are no known sources of fresh water underlying the proposed injection interval.

IX. Proposed stimulation: The open hole injection target 3960'-4070' will be stimulated with acid as needed to clean up the formation face.

X. A well log on the Wright Federal #1 is attached.

XI. Eric Milstead of the State Engineers Office in Roswell has confirmed in writing that there is no record of any fresh water wells within one mile of the proposed SWD well.

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

XIII. Proof of notice: Attached is a copy of certified mail receipts from when a copy of the application was sent to the following:

Surface owner: USA - Bureau of Land Management

Leasehold operators within ½ mile: Penwell Energy, Mewbourne Oil Co.

Also attached is proof of publication in the Carlsbad Current Argus newspaper.

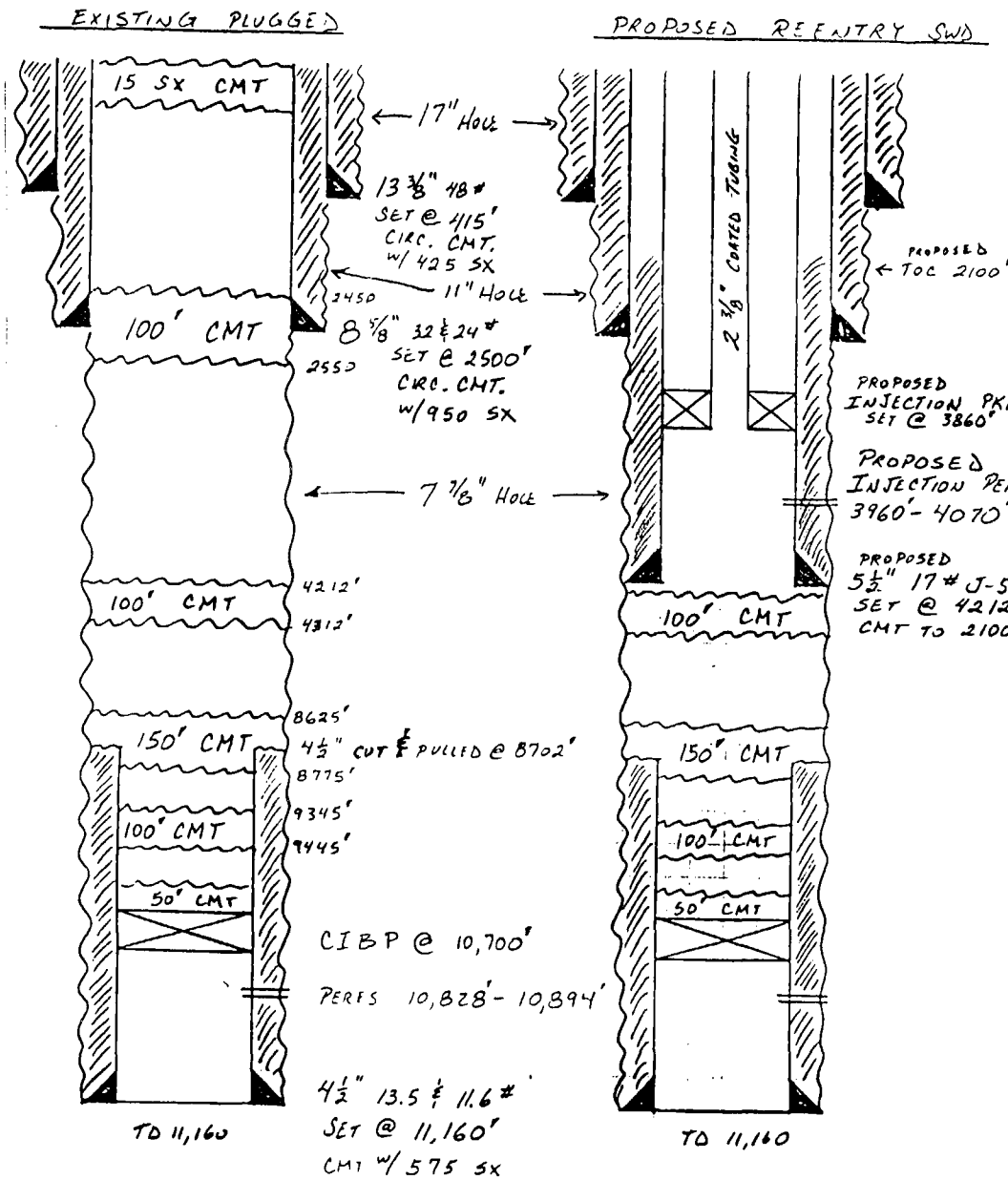
XIV. Certification: See Form C-108.

INJECTION WELL DATA SHEET

OPERATOR Penwell Energy, Inc. LEASE Wright Federal

WELL NO. 1 660' FSL & 1980' FEL 6 20S 28E

FOOTAGE LOCATION SECTION TOWNSHIP RANGE



Well Construction Data

Surface Casing

Size 13 3/8" @ 415' Cemented with 425 sx.

TOC Surface feet determined by Circulated

Hole Size 17"

Intermediate Casing

Size 8 5/8" @ 2500' Cemented with 950 sx.

TOC Surface feet determined by Circulated

Hole Size 11"

Long String (Proposed)

Size 5 1/2" @ 4212' Cemented with 350 sx.

TOC 2100' feet determined by Calculated

Hole Size 7 7/8"

Total Depth 11,160' (4 1/2" from 8702' to 11,160')

Injection Interval (PROPOSED)

3960 feet to 4070 feet

(perforated or ~~open-hole~~; indicate which)

(OVER)

INJECTION WELL DATA SHEET

Tubing Size 2 7/8" lined with Plastic Coated set in a
(type of internal coating)

Baker 5 1/2" X 2 7/8" Lok-Set packer at 3860' feet

Other type of tubing / casing seal if applicable _____

Other Data

1. Is this a new well drilled for injection? ____ Yes X No

   If no, for what purpose was the well originally drilled? Well was drilled and completed in the Morrow in 1975, then plugged in 1982.

2. Name of the injection formation Delaware

3. Name of Field or Pool (if applicable) Fadeaway Ridge (UPHOLE DELAWARE)

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. Perf'd. 10,828'-10,894', CIBP @ 10,700' + 50' cmt., 100' cmt 9445'-9345', 150' cmt 8775'-8625', 100' cmt 4312'-4212', 100' cmt 2550'-2450', 15 sx. cmt @ surface.

5. Give the names and depths of any over or underlying oil of gas zones (pools) in this area.

   Fadeaway Ridge (Delaware) Interval 3242' - 3429'

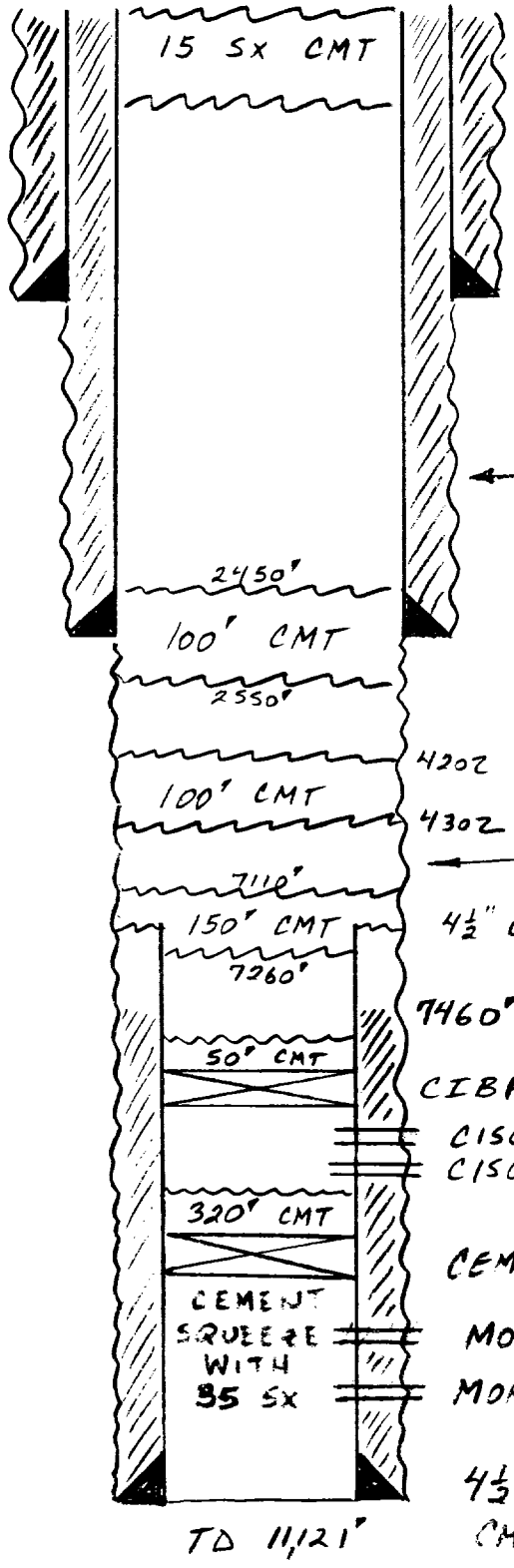
   Old Millman Ranch (Bone Springs) Interval 6038' - 6131'

   Fadeaway (Cisco-Canyon) Interval 9360' - 9378'

   Angell Ranch (Morrow) Interval 10828' - 10894'

General Purpose Worksheet

Subject	WRIGHT FEDERAL #2	Page No.	of
File		By	Date



17" Hole

13 3/8" 48# SET @ 415'
CMT W/ 425 SX CIRC. TO SURF.

11" HOLE

8 5/8" 24 & 32 # SET @ 2500'
CMT W/ 900 SX CIRC. TO SURF.

7 7/8" Hole

4½" CUT @ 7192'

ILLEGIBLE

7460' TOC

CIBP SET @ 9300'

CISCO CANYON PERFS 9407'-9436'
CISCO CANYON PERFS 9475'-9484'

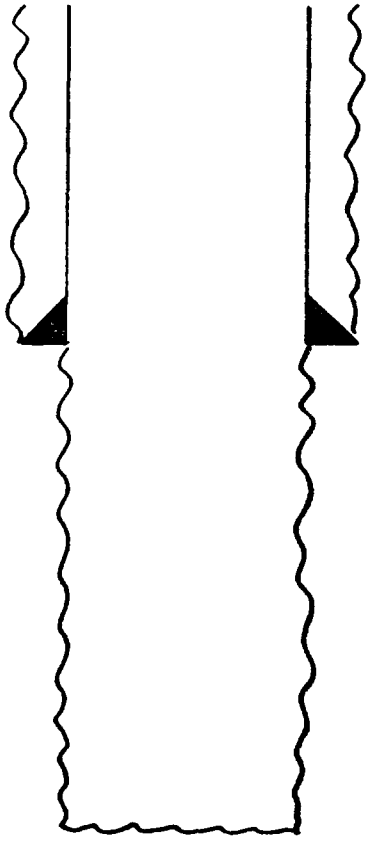
CEMENT RETAINER @ 10520

MORROW PERFS 10729 - 10937
MORROW PERFS 10935 - 10940

4½" 11.6 & 13.5 # SET @ 11,121'
CMT W/ 900 SX

General Purpose Worksheet

Subject	WRIGHT FEDERAL #1 (MAYWOOD OIL CO.)	Page No.	of
File	660' FSL, 660' FWL, SEC 6, T20S, R28E,	By EDDY CO., NM	Date



8 5/8" 24# SET @ 290'
CEMENT VOLUME UNKNOWN

TOTAL DEPTH 1230'

Note: Records on this 1962 dry hole do not show the cement volume used or the hole sizes drilled. The plug setting depths are not reported, however, it is expected the wellbore has a cement plug across the surface casing shoe and at the surface.

It should be noted that the well did not penetrate the proposed zone of injection for the Wright Federal #1 SWD.

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. 109833
SAMPLE RECEIVED 10-5-98
RESULTS REPORTED 10-8-98

TO: Mr. Bill Pierce
600 N. Marienfeld, Ste. 1100
Midland, TX 79701

COMPANY Penwell Energy, Inc. LEASE Angell 6 Federal #1
FIELD OR POOL Burton Flat
SECTION 6 BLOCK ____ SURVEY T-20S&R-28E COUNTY Eddy STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Recovered water - taken from Angell 6 Federal #1.
NO. 2
NO. 3
NO. 4
REMARKS: Cisco Canyon Sand - 9,360'-9,378

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F	1.1217			
pH When Sampled				
pH When Received	7.55			
Bicarbonate as HCO_3	146			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	9,600			
Calcium as Ca	2,320			
Magnesium as Mg	923			
Sodium and/or Potassium	70,234			
Sulfate as SO_4	5,760			
Chloride as Cl	110,760			
Iron as Fe	8.6			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	190,144			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.060			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks Our nearest records of Cisco water are located approximately 15-20 miles to the southwest of this area, but they show no similarity whatsoever to the above water. These distant Cisco records show a very low salinity water and also contain hydrogen sulfide. The above water has characteristics that we sometimes see in a cut-brine. It is possible this is water that has been artificially induced into the well if a commercial brine was used in the work-over procedures. However, we could not exclude the possibility of some Canyon being involved due to the distance of the records we are comparing with as it is possible that Canyon in the area of this well could have different characteristics.

Form No. 3

By Waylan C. Martin, M.A.

FROM
SWD-524

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

MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

INJECTION FLUID

TO: Mewbourne Oil Company
P.O. Box 5270, Hobbs, NM 88241

LABORATORY NO. 991239
SAMPLE RECEIVED 9-26-91
RESULTS REPORTED 10-2-91

COMPANY Mewbourne Oil Company LEASE Federal V-2 (SEC 8, T20S, R28E)
FIELD OR POOL OLD MILLMAN RANCH (BONE SPRINGS)
SECTION ___ BLOCK ___ SURVEY ___ COUNTY Eddy STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Produced water - taken from Federal V-2. INTERVAL 6038' - 6131'
NO. 2
NO. 3
NO. 4
REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1333			
pH When Sampled				
pH When Received	7.29			
Bicarbonate as HCO_3	1,129			
Supersaturation as $CaCO_3$	95			
Undersaturation as $CaCO_3$	--			
Total Hardness as $CaCO_3$	8,150			
Calcium as Ca	2,400			
Magnesium as Mg	522			
Sodium and/or Potassium	79,413			
Sulfate as SO_4	592			
Chloride as Cl	127,124			
Iron as Fe	21.2			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	211,180			
Temperature °F.				
Carbon Dioxide, Calculated	124			
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F. - Measured	0.054			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Calcium Carbonate Scaling Tendency	None			
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. However, if we can be of any additional assistance in regard to the objective herein, please contact us.

Form No. 3

By Waylan C. Martin, M.A.

cc: Mr. David Overton, Midland
HydroChek Chemicals, Midland

Analytical Laboratory, Inc.
915 - 687-2240

FROM SWD-524

INJECTION WELL - FORMATION WATER

Mewbourne Oil Company
Federal V #3
Sec.8-T20S-R28E
Eddy County, New Mexico

Date of Analysis: May 8, 1992
Date submitted: May 7, 1992
Formation: Delaware
Depth: 2,600'
Reference Number: D1-13103

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

DISSOLVED SOLIDS		
CATIONS	mg/l	me/l
Sodium, Na	43410	1887
Calcium, Ca	6617	330
Magnesium, Mg	1701	140
ANIONS		
Chloride, Cl	80940	2283
Sulfate, SO4	2921	61
Carbonate, CO3	366	12
Bicarbonate, HCO3	122	2
Total Dissolved Solids	136077	
Specific Gravity	1.092	
Iron (total), mg/l	22	
pH	7.5	
Hardness as CaCO3, mg/l	23526	
Resistivity (ohm-meters @ 72'F)	0.11	
Sulfate as H2S	PRESENT	

R.S. Dickey
Dickey Analytical Laboratory, Inc.

FROM SWD-524

FIELD NAME:Eddy Co.,New Mexico

ION(mg/L)	WATER A :Federal V-2 SAMPLE NO:991239 100%A	90%A	75%A	50%A	WATER B :Federal V-3 SAMPLE NO:D1-13103 25%A	10%A	100%
Na	79413	75813	70412	61412	52411	47010	4341
Ca	2400	2822	3454	4509	5563	6195	661
Mg	822	640	817	1112	1406	1583	170
Ba	0.0	0.0	0.0	0.0	0.0	0.0	0.
Sr	0.0	0.0	0.0	0.0	0.0	0.0	0.
Cl	127124	122506	115578	104032	92486	85558	8094
SO4	592	825	1174	1757	2339	2688	292
CO3	0.0	36.6	91.5	183.0	274.5	329.4	366.
HCO3	1129.0	1028.3	877.3	625.5	373.8	222.7	122.
TDS	211180	203670	192404	173629	154853	143587	13607
pH	7.30	7.30	7.30	7.40	7.40	7.50	7.5
SG	1.133	1.129	1.123	1.112	1.102	1.096	1.09
I(molar)	3.71	3.60	3.44	3.17	2.90	2.74	2.6

WATER INJECTION SYSTEM

CALCIUM CARBONATE SCALING CALCULATIONS

	[---------Upstream of Pump----------]						[-----Downstream of Pump------			
%A	TF	Psia	XCO2	pHc	SI	PTB	Is	TF	Psia	pHd	SId	PTB
100	80	15			*****	*******		80	100	7.29	*****	*******
90	80	15	0	****	1.63	592	****	80	100	7.31	1.63	592
75	80	15	0	****	1.63	539.9	****	80	100	7.33	1.63	539.9
50	80	15	0	****	1.61	451	****	80	100	7.38	1.61	451
25	80	15	0	****	1.57	361	****	80	100	7.44	1.57	361
10	80	15	0	****	1.52	306.6	****	80	100	7.47	1.52	306.6
0	80	15	0	****	1.48	270.4	****	80	100	7.5	1.48	270.4

SULFATE SCALE CALCULATIONS

			[------CaSO4------]		[-----BaSO4-----]		[-----SrSO4-----]	
%A	TF	Psia	SR	PTB	SR	PTB	SR	PTB
100	80	100	.1	-1328.9	0	-.3	*****	*******
90	80	100	.2	-1123.6	0	-.2	*****	*******
75	80	100	.3	-830.4	0	-.1	*****	*******
50	80	100	.6	-373.8	0	-.1	*****	*******
25	80	100	1.1	49.7	0	-.1	*****	*******
10	80	100	1.3	289	0	-.1	*****	*******
0	80	100	1.6	445.2	0	0	*****	*******

NOTE: Values of SI & PTB for CaCO3, and SR & PTB for CaSO4 and BaSO4 are calculated at 14.7 psia.

80°

10/02/98 FRI 13:26 FAX 505 748 2415 MELANIE PARKER

FROM
SWD-524

WATER COM...

FIELD NAME:Eddy Co.,New Mexico

WATER A :Federal V-2
SAMPLE NO:991239

WATER B :Federal V-3
SAMPLE NO:D1-13103

ION(mg/L)	100%A	90%A	75%A	50%A	25%A	10%A	100%
Na	79413	75813	70412	61412	52411	47010	4341
Ca	2400	2822	3454	4509	5563	6195	661
Mg	522	640	817	1112	1406	1583	170
Ba	0.0	0.0	0.0	0.0	0.0	0.0	0.
Sr	0.0	0.0	0.0	0.0	0.0	0.0	0.
Cl	127124	122506	115578	104032	92486	85558	8094
SO4	592	825	1174	1757	2339	2688	292
CO3	0.0	36.6	91.5	183.0	274.5	329.4	366.
HCO3	1129.0	1028.3	877.3	625.5	373.8	222.7	122.
TDS	211180	203670	192404	173629	154853	143587	13607
pH	7.30	7.30	7.30	7.40	7.40	7.50	7.5
SG	1.133	1.129	1.123	1.112	1.102	1.096	1.09
I(molar)	3.71	3.60	3.44	3.17	2.90	2.74	2.6

WATER INJECTION SYSTEM

CALCIUM CARBONATE SCALING CALCULATIONS

[---------Upstream of Pump							-------------]	[-----Downstream of Pump------				
%A	TF	Psia	XCO2	pHc	SI	PTB	Is	TF	Psia	pHd	SId	PTB
100	100	15	0	****	*****	*******	****	100	100	7.29	*****	*******
90	100	15	0	****	1.9	600.8	****	100	100	7.31	1.9	600.8
75	100	15	0	****	1.89	547.1	****	100	100	7.33	1.89	547.1
50	100	15	0	****	1.85	456.5	****	100	100	7.38	1.85	456.5
25	100	15	0	****	1.8	365.6	****	100	100	7.44	1.8	365.6
10	100	15	0	****	1.75	310.8	****	100	100	7.47	1.75	310.8
0	100	15	0	****	1.72	274.4	****	100	100	7.5	1.72	274.4

SULFATE SCALE CALCULATIONS

			[------CaSO4------]		[-----BaSO4-----]		[-----SrSO4-----]	
%A	TF	Psia	SR	PTB	SR	PTB	SR	PTB
100	100	100	.1	-1328.2	0	-.4	*****	*******
90	100	100	.2	-1122.6	0	-.3	*****	*******
75	100	100	.3	-829.2	0	-.2	*****	*******
50	100	100	.6	-373.3	0	-.1	0	-75.6
25	100	100	1.1	48.3	0	-.1	0	-58.7
10	100	100	1.3	285.9	0	-.1	0	-51.5
0	100	100	1.6	440.6	0	-.1	0	-47.5

NOTE: Values of SI & PTB for CaCO3, and SR & PTB for CaSO4 and BaSO4 are calculated at 14.7 psia.

100°

WATER COMPATIBILITY CALCULATIONS

FIELD NAME:Eddy Co.,New Mexico

WATER A :Federal V-2
SAMPLE NO:991239

WATER B :Federal V-3
SAMPLE NO:D1-13103

ION(mg/L)	100%A	90%A	75%A	50%A	25%A	10%A	100%B
Na	79413	75813	70412	61412	52411	47010	43410
Ca	2400	2822	3454	4509	5563	6195	6617
Mg	522	640	817	1112	1406	1583	1701
Ba	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sr	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cl	127124	122506	115578	104032	92486	85558	80940
SO4	592	825	1174	1757	2339	2688	2921
CO3	0.0	36.6	91.5	183.0	274.5	329.4	366.0
HCO3	1129.0	1028.3	877.3	625.5	373.8	222.7	122.0
TDS	211180	203670	192404	173629	154853	143587	136077
pH	7.30	7.30	7.30	7.40	7.40	7.50	7.50
SG	1.133	1.129	1.123	1.112	1.102	1.096	1.092
I(molar)	3.71	3.60	3.44	3.17	2.90	2.74	2.63

WATER INJECTION SYSTEM

CALCIUM CARBONATE SCALING CALCULATIONS

	[---------Upstream of Pump----------]						[-----Downstream of Pump----------]					
%A	TF	Psia	XCO2	pHc	SI	PTB	Is	TF	Psia	pHd	SId	PTB	Is
100	120	15	0	****	*****	********	****	120	100	7.29	*****	**********	*****
90	120	15	0	****	2.23	606.2	****	120	100	7.31	2.23	606.2	*****
75	120	15	0	****	2.21	551.6	****	120	100	7.33	2.21	551.6	*****
50	120	15	0	****	2.15	460.2	****	120	100	7.38	2.15	460.2	*****
25	120	15	0	****	2.08	368.6	****	120	100	7.44	2.08	368.6	*****
10	120	15	0	****	2.03	313.6	****	120	100	7.47	2.03	313.6	*****
0	120	15	0	****	2	277	****	120	100	7.5	2	277	*****

SULFATE SCALE CALCULATIONS

			[------CaSO4------]		[-----BaSO4-----]		[-----SrSO4-----]	
%A	TF	Psia	SR	PTB	SR	PTB	SR	PTB
100	120	100	.1	-1329.3	0	-.5	*****	*******
90	120	100	.2	-1120.7	0	-.3	*****	*******
75	120	100	.3	-823.7	0	-.2	*****	*******
50	120	100	.7	-364.2	0	-.1	0	-72.1
25	120	100	1.1	58.1	0	-.1	0	-55.9
10	120	100	1.4	295	0	-.1	0	-49.1
0	120	100	1.6	448.3	0	-.1	0	-45.3

NOTE: Values of SI & PTB for CaCO3, and SR & PTB for CaSO4 and BaSO4 are calculated at 14.7 psia.

120°

FROM SWD-524

FIELD NAME:Eddy Co.,New Mexico

	WATER A :Federal V-2 SAMPLE NO:991239				WATER B :Federal V-3 SAMPLE NO:D1-13103.		
ION(mg/L)	100%A	90%A	75%A	50%A	25%A	10%A	100%
Na	79413	75813	70412	61412	52411	47010	434
Ca	2400	2822	3454	4509	5563	6195	66
Mg	522	640	817	1112	1406	1583	17
Ba	0.0	0.0	0.0	0.0	0.0	0.0	0.
Sr	0.0	0.0	0.0	0.0	0.0	0.0	0.
Cl	127124	122506	115578	104032	92486	85558	809
SO4	592	825	1174	1757	2339	2688	29
CO3	0.0	36.6	91.5	183.0	274.5	329.4	366.
HCO3	1129.0	1028.3	877.3	625.5	373.8	222.7	122.
TDS	211180	203670	192404	173629	154853	143587	136
pH	7.30	7.30	7.30	7.40	7.40	7.50	7.
SG	1.133	1.129	1.123	1.112	1.102	1.096	1.0
I(molar)	3.71	3.60	3.44	3.17	2.90	2.74	2.

WATER INJECTION SYSTEM

CALCIUM CARBONATE SCALING CALCULATIONS

	[---------Upstream of Pump----------]						[-----Downstream of Pump-----			
%A	TF	Psia	XCO2	pHc	SI	PTB	Is	TF	Psia	pHd	SId	PTB
100	140	15	0	****	*****	*******	****	140	100	7.29	*****	******
90	140	15	0	****	2.64	609.1	****	140	100	7.31	2.64	609.1
75	140	15	0	****	2.59	554.1	****	140	100	7.33	2.59	554.1
50	140	15	0	****	2.48	462.2	****	140	100	7.38	2.48	462.2
25	140	15	0	****	2.41	370.4	****	140	100	7.44	2.41	370.4
10	140	15	0	****	2.36	315.3	****	140	100	7.47	2.36	315.3
0	140	15	0	****	2.33	278.6	****	140	100	7.5	2.33	278.6

SULFATE SCALE CALCULATIONS

			[------CaSO4------]		[-----BaSO4-----]		[-----SrSO4-----]	
%A	TF	Psia	SR	PTB	SR	PTB	SR	PTB
100	140	100	.1	-1339.3	0	-.6	*****	*******
90	140	100	.2	-1129.3	0	-.4	*****	*******
75	140	100	.3	-830.3	0	-.3	*****	*******
50	140	100	.7	-367.6	0	-.2	0	-68.7
25	140	100	1.1	56.7	0	-.1	0	-53.2
10	140	100	1.4	294.3	0	-.1	0	-46.7
0	140	100	1.6	447.7	0	-.1	0	-43.1

NOTE: Values of SI & PTB for CaCO3, and SR & PTB for CaSO4 and BaSO4 are calculated at 14.7 psia.

140°

FROM
SWD-524

WATER COMPATIBILITY CALCULATIONS

FIELD NAME:Eddy Co.,New Mexico

WATER A :Federal V-2
SAMPLE NO:991239

WATER B :Federal V-3
SAMPLE NO:D1-13103

ION(mg/L)	100%A	90%A	75%A	50%A	25%A	10%A	100%B
Na	79413	75813	70412	61412	52411	47010	4341
Ca	2400	2822	3454	4509	5563	6195	661
Mg	522	640	817	1112	1406	1583	170
Ba	0.0	0.0	0.0	0.0	0.0	0.0	0.
Sr	0.0	0.0	0.0	0.0	0.0	0.0	0.
Cl	127124	122506	115578	104032	92486	85558	8094
SO4	592	825	1174	1757	2339	2688	292
CO3	0.0	36.6	91.5	183.0	274.5	329.4	366.
HCO3	1129.0	1028.3	877.3	625.5	373.8	222.7	122.
TDS	211180	203670	192404	173629	154853	143587	13607
pH	7.30	7.30	7.30	7.40	7.40	7.50	7.5
SG	1.133	1.129	1.123	1.112	1.102	1.096	1.09
I(molar)	3.71	3.60	3.44	3.17	2.90	2.74	2.6

WATER INJECTION SYSTEM

CALCIUM CARBONATE SCALING CALCULATIONS

	[---------Upstream of Pump----------]						[-----Downstream of Pump------				
%A	TF	Psia	XCO2	pHc	SI	PTB	Is	TF	Psia	pHd	SId	PTB
100	160	15	0	****	*****	*******	****	160	100	7.29	*****	*******
90	160	15	0	****	3.08	610.3	****	160	100	7.31	3.08	610.3
75	160	15	0	****	3.02	555.2	****	160	100	7.33	3.02	555.2
50	160	15	0	****	2.9	463.2	****	160	100	7.38	2.9	463.2
25	160	15	0	****	2.81	371.3	****	160	100	7.44	2.81	371.3
10	160	15	0	****	2.74	316.2	****	160	100	7.47	2.74	316.2
0	160	15	0	****	2.71	279.4	****	160	100	7.5	2.71	279.4

SULFATE SCALE CALCULATIONS

			[------CaSO4------]		[-----BaSO4-----]		[-----SrSO4-----]	
%A	TF	Psia	SR	PTB	SR	PTB	SR	PTB
100	160	100	.1	-1350.3	0	-.8	*****	*******
90	160	100	.2	-1139	0	-.5	*****	*******
75	160	100	.3	-838.2	0	-.4	*****	*******
50	160	100	.6	-372.4	0	-.2	0	-65.3
25	160	100	1.1	54.2	0	-.2	0	-50.6
10	160	100	1.4	292.7	0	-.2	0	-44.4
0	160	100	1.6	446.2	0	-.1	0	-41

NOTE: Values of SI & PTB for CaCO3, and SR & PTB for CaSO4 and BaSO4 are calculated at 14.7 psia.

WRIGHT Fed. #1 SWD

Z 100 667 392

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Newbourne Oil Co.	
Street & Number 500 W. Texas, Ste 1020	
Post Office, State, & ZIP Code Midland, TX 79701	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 10/28/98	

PS Form 3800, April 1995

WRIGHT Fed. #1 SWD

Z 100 667 393

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to BLM	
Street & Number 2909 W. 2nd	
Post Office, State, & ZIP Code Roswell, NM 88201	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 10/28/98	

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "*Return Receipt Requested*" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: Newbourne Oil Co. 500 W. Texas, Suite 1020 Midland, Tx 79701

4a. Article Number Z 100 667 392

4b. Service Type ☐ Registered ☐ Certified ☐ Express Mail ☐ Insured ☑ Return Receipt for Merchandise ☐ COD

5. Received By: *(Print Name)*

6. Signature: *(Addressee or Agent)* X

7. Date of Delivery 10-30-98

8. Addressee's Address *(Only if requested and fee is paid)*

PS Form 3811, December 1994 102595-97-B-0179 Domestic Return Receipt

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "*Return Receipt Requested*" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: Bureau of Land Management 2909 W. 2nd Roswell, NM 88201 (Wright Fed)

4a. Article Number Z 100 667 393

4b. Service Type ☐ Registered ☑ Certified ☐ Express Mail ☐ Insured ☑ Return Receipt for Merchandise ☐ COD

5. Received By: *(Print Name)*

6. Signature: *(Addressee or Agent)* X

7. Date of Delivery 10-30-98

8. Addressee's Address *(Only if requested and fee is paid)*

PS Form 3811, December 1994 102595-97-B-0179 Domestic Return Receipt

Thank you for using Return Receipt Service.

Affidavit of Publication

№ 19405

State of New Mexico,
County of Eddy, ss.
Amy McKay

being first duly sworn, on oath says:

That she is Business Manager 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:

November 4, 1998
_____, 19____
_____, 19____
_____, 19____
_____, 19____
_____, 19____
_____, 19____

That the cost of publication is $ 26.94, and that payment thereof has been made and will be assessed as court costs.

Amy McKay

Subscribed and sworn to before me this 9th day of November, 1998

Donna Crump

My commission expires 8/1/02

Notary Public

November 4, 1998

NOTICE OF INTENT TO INJECT PRODUCED WATER

Penwell Energy, Inc.
600 N. Marienfeld, Suite 1100
Midland, Texas 79701

Contact party: Charlie Knight, Engineer (915)683-2534

The purpose of the proposed Salt Water Disposal well is to inject water produced from oil and gas wells that Penwell Energy operates in Section 6 of T20S, R28E, Eddy County, New Mexico. Produced water is from the Cisco-Canyon formation (9360'-9378') and will be disposed of in the Delaware interval 3960-4070' which is non-productive of oil and gas in this immediate area.

The proposed disposal well is the Wright Federal #1 located 660' FSL, 1980' FEL, Section 6, T28E, Eddy County, New Mexico. The maximum expected injection rate is 3500 BWPD and the maximum expected injection pressure is 2500 psig.

All interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87504-2088 with 15 days.

Welex

COMPENSATED DENSITY LOG

MAR 0 3 1988

OCT 2 1 1988

SEP 1 4 1988

JUN 2 7 1988

NOV 0 3 1987

NOV 1 7 1987

DEC 1 1987

COMPANY PENROC OIL CORPORATION

WELL WRIGHT FEDERAL # 1

FIELD WILDCAT

COUNTY EDDY STATE NEW MEXICO

Location: 1980' FEL & 660' FSL

Other Services: Guard-Forxo

Sec. 6 Twp. 20-S Rge. 28-E

Permanent Datum: Ground Level Elev. 3323'

Log Measured from: K. B. - 16 Ft. Above Perm. Datum

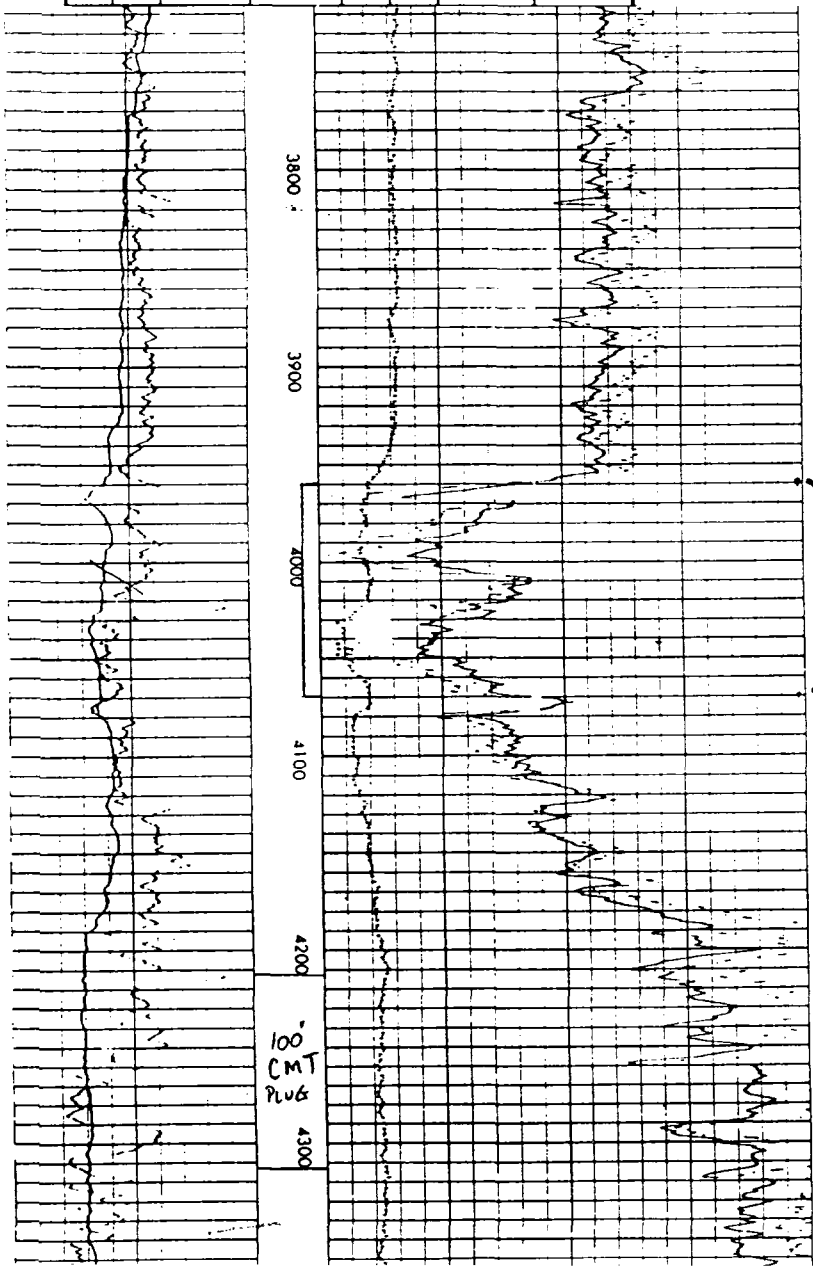
Drilling Measured From: Kelly Bushing

Elev.: K.B. 3339' D.F. G.L. 3323'

COMPANY Penroc Oil Corporation WELL Wright Federal # 1 FIELD Wildcat County Eddy State N. M.

Date	8/11/75
Run No.	- One -
Type Log	Density
Depth-Driller	11,160
Depth-Wales	11,154
Bottom Logged Interval	11,152
Top Logged Interval	Surface
Type Fluid in Hole	Mud
Salinity, PPM Cl.	
Density	9.6
Level	Full
Max. rec. temp., deg. F.	171° F.
Operating Rig Time	
Recorded By	L. Choate
Witnessed by	Mr. Talley

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To
-1-				8-5/8"		0	2,500'
	7-7/8"	2,500'	11,160'				



PROPOSED INJECTION ZONE