

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: DYNALCO ENERGY, INC. Well: WAGON WHEEL 32' Fee No. 1

Contact: JOHN GRAY Title: SR. PROD. ENG. Phone: 915-683-2534

DATE IN 7-30-97 RELEASE DATE 8-14-97 DATE OUT 9-17-97

Proposed Injection Application is for: WATERFLOOD Expansion Initial

Original Order: R- Secondary Recovery Pressure Maintenance

SENSITIVE AREAS

SALT WATER DISPOSAL Commercial Well

WIPP Capitan Reef

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

AREA of REVIEW WELLS

Total # of AOR # of Plugged Wells

Tabulation Complete Schematics of P & A's

Cement Tops Adequate AOR Repair Required

INJECTION FORMATION

Injection Formation(s) BISCO CANYON + DELTA/PIII Compatible Analysis _____

Source of Water or Injectate _____

PROOF of NOTICE

Copy of Legal Notice Information Printed Correctly

Correct Operators Copies of Certified Mail Receipts

Objection Received Set to Hearing _____ Date

NOTES: _____

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact: Telephoned Letter _____ Date _____ Nature of Discussion _____

2nd Contact: Telephoned Letter _____ Date _____ Nature of Discussion _____

3rd Contact: Telephoned Letter _____ Date _____ Nature of Discussion _____

SWA

8/14/97

674

July 22, 1997

JUL 30 1997

State of New Mexico
Energy, Minerals, and Natural
Resources Department
Oil Conservation Division
2040 Pacheco Street
Santa Fe, New Mexico 87505
Attn: Mr. David Catanach

Re: Permit to inject produced water in Sec 22, T22S, R22E, Eddy County, New Mexico

Enclosed is Penwell Energy, Inc.'s APPLICATION FOR AUTHORIZATION TO INJECT into Penwell's Wagon Wheel 22 Federal Unit #1. This application is to inject water produced from the Cisco Canyon Formation at perforations between 7418' and 7778' into the Devonian Formation at perforations between 10,260' and 10,555' in the same well bore. Water and gas separation will be by gravity and a submersible pump. The formations will be kept separate by a packer placed below the submersible pump. A check valve will be placed in the discharge of the submersible pump so that pressure from the submersible pump will be required to inject water into the Devonian Formation. The check valve will also prevent communication between the zones when the submersible pump is not operating.

In support of this application, the following items are attached:

1. A map identifying all wells and leases within two miles of the proposed well with a one-half mile radius circle drawn around the proposed injection well.
2. There are no other wells within the one-half mile radius area of review.
3. Data on the proposed operation.
4. Geologic data.
5. The only stimulation required will be a small acid treatment in the Devonian Formation to insure that the perforations are open.
6. Electric logs and production tests from the Cisco Canyon. The Devonian Formation takes fluid on a vacuum at the surface.
7. Chemical Analysis of Fresh Water.
8. Available geologic and engineering data has been examined and there is no evidence of open faults or other hydrologic connections between any source of drinking water and the Devonian Formation.
9. Proof of Notice to the BLM, the surface owner, and the legal advertisement in the Carlsbad Current Argus newspaper.
10. The well data sheet and a full page wellbore schematic.

The return Proof of Notice to the BLM and the copy of the legal advertisement and affidavit of publication will be sent to you as soon as I receive them.

Operations will begin in mid-August to perforate and perform injectivity tests in the Devonian Formation. As soon as these tests are complete, this information will also be sent to you.

Your consideration of this proposal is greatly appreciated.



John T. Gray

Cc: Tim Gumm, OCD in Artesia

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage
Application qualifies for administrative approval? X Yes No
- II. OPERATOR: PENWELL ENERGY, INC.
ADDRESS: 600 N. MARIENFELD, STE. 1100, MIDLAND, TX 79701
CONTACT PARTY: JOHN GRAY, SENIOR PRODUCTION ENGINEER 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: JOHN T. GRAY TITLE: SENIOR PRODUCTION ENGINEER
SIGNATURE: *John T. Gray* DATE: 7-25-97
- * 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. _____

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

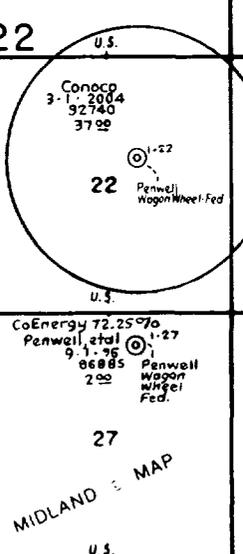
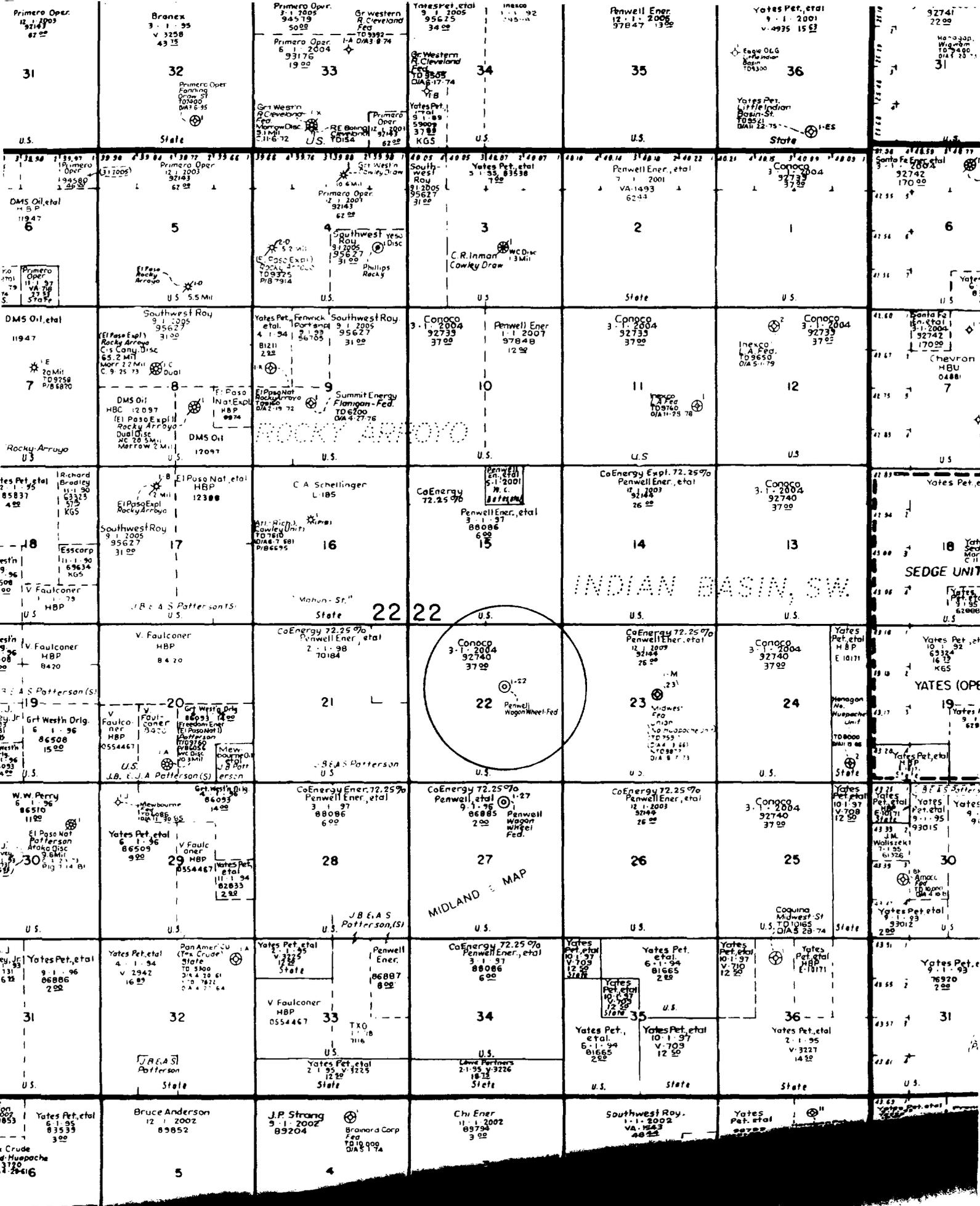
All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

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.



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DMS Oil, et al
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Primero Oper
Fanning
Ormsby
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DM 16-95

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Southwest Roy
9-1-2005
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Cis Cony. Disc
65.2 Mil
Morr 17 Mil
C 9.25 73
DUAL

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El Paso Nat. et al
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v. 4935 15 52

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Chevron
HBU
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U.S.
Richard
Bradley
11-1-90
63323
KGS

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U.S.
Summit Energy
Flanagan - Fed.
TO 6200
DM 4-27-76

10
U.S.
Penwell Ener
1-1-2007
88086
600

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U.S.
Inexco
L.A. Fed.
TO 9650
DM 5-1-79

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Conoco
3-1-2004
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CoEnergy Expl. 72.25%
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El Paso Nat. et al
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DATA ON PROPOSED OPERATION
PENWELL ENERGY, INC.
WAGON WHEEL 22 FEDERAL UNIT #1
SEC 22, T22S, R22E, EDDY COUNTY, NEW MEXICO

The proposed operation is to set a packer between the Cisco Canyon and the Devonian Formations and use a submersible pump that is turned upside down to separate the gas and water produced in the Cisco Canyon Formation and inject the water downhole into the Devonian Formation. Gas will be produced through tubing to the surface. A packer will be set above the Cisco Canyon Formation to keep all sour gas off the casing. The submersible pump will have a check valve in the discharge so that when the pump is off there will be no communication between the two zones.

The proposed average injection volume of produced water is anticipated to be 3500 BWPD.

The proposed maximum injection volume is 6000 BWPD.

The system will be a closed system.

The proposed average injection pressure will be 1000 psig.

The proposed maximum injection pressure will be 3000 psig.

The source water will be Cisco Canyon Formation water, which has less than 6000 ppm chlorides but does contain hydrogen sulfide making it unsuitable for drinking water.

The Devonian Formation in this well lost complete returns at a depth of 10,448' with a 10 ppg mud system in the well.

Injectivity tests into the Devonian Formation have not been performed yet in this well. The above information on injection rates and pressures is based on other operations in the area in the Cisco Canyon and Devonian Formations.

No detailed water analysis has been performed on either formation in this well yet. Operations to open up the Devonian Formation and perform injectivity test will be conducted soon. A true water analysis on the Devonian may be hard to get. A search at analytical labs and service companies has produced no record of samples of water from the Devonian Formation in this area.

**GEOLOGIC DATA
PENWELL ENERGY, INC.
WAGON WHEEL 22 FEDERAL UNIT #1
SEC 22, T22S, R22E, EDDY COUNTY, NEW MEXICO**

The proposed injection zone is the Devonian Formation which is comprised mainly of dolomite and limestone. The top of the Devonian is at 10,222' and is approximately 340' thick.

The only underground source for drinking water is surface rock, clay, sand and intermingled red beds at the surface to a depth of 950'.

Other geologic marker tops are:

Glorietta	1900'
Bone Springs	3060'
Wolfcamp	5950'
Cisco	7454'
Strawn	8170'
Atoka	8766'
Morrow	9218'

Wagon Wheel 22 Federal Unit #1
 Test Data

Date	Oil	Water	Gas	Choke	FTP	Fluid Level	Comments
	BOPD	BWPD	MCFD	64"	PSIG	Ft. frm Sur	
1/28/97	0	990	640	20	190	5700	17.5 hr. testing well with sub pump.
29-Jan	0	1320	581	20	210	5700	
30-Jan	0	1320	547	20	180	5970	
31-Jan	22	1298	512	26	165	5919	
2/1/97	33	1287	512	26	160	5677	
2/2/97	0	1320	474	26	160	5962	
3-Feb	15	1320	474	26	160	5984	
4-Feb	3	1152	474	26	160	5997	Down 3 hours: Cooler on control unit.
5-Feb	0	1320	474	26	180	6219	
6-Feb	5	1310			180	6130	
7-Feb	0	1320	433		180	6133	
8-Feb	0	1320	387	26	180	6117	
9-Feb	0	165	387	26	180	6117	3 hr test only. SD Reda pump.
3/5/97	0	1380	907	26	365		Changed Reda pump from 100 to 300 HP.
6-Mar	0	2300	907	64	350		Electrical storm. Short down hole.
10-Mar	0	1012	757		340		
11-Mar	10	2100	813	64	310		
12-Mar	5	2600	813	64	300		
13-Mar	0	2080	606	64	300		Down 3 hours.
14-Mar	0	2560	696	64	330		
15-Mar	0	2700	649	64	400		Down 6.5 hrs due to generator.
16-Mar	0	1250					



BJ Services, USA

Water Analysis Report

Date Sample Received: 09/04/96
Date Analysis Performed: 09/04/96

Penwell

Date:	09/04/96	Company Name:	Yates Petroleum
Well Name:	Wagon Wheel Water Well	Company Rep:	
Formation:	Water Zone	Company Phone:	N/A
Depth:	300 feet <i>840'</i>	Company Fax:	N/A
County:	Eddy	Prepared By:	Hobbs District Lab

Water Well Located 1553 FSL - 2085 FEL SEC-15-T225-R22E

Specific Gravity @ 60° F:	1	pH:	7.6
Sulfides: Absent		Reducing Agents:	N/A
Sample Temperature:	68	Rw:	N/A

Anions

Chlorides	400	mg/l
Sulfates	300	mg/l
Bicarbonates	329	mg/l

MG/L = PPM

Cations

Calcium	228	mg/l
Magnesium	50	mg/l
Iron	1	mg/l
Sodium	137	mg/l

Total Hardness 780 mg/l

Total Dissolved Solids 1444 mg/l

Scaling Tendencies

Calcium Carbonate: REMOTE
Calcium Sulfate: REMOTE

Comments:

Sample from Wellhead

Waterwks1

MG/L = To PPM

INJECTION WELL DATA SHEET

OPERATOR

Penwell Energy Inc.

LEASE

Wagon Wheel Federal Unit

WELL NO.

22 #1

2080' 1980' FNL - 1980' FEET

SECTION 22

TOWNSHIP 22

RANGE 22

Eddy County New Mexico

Schematic

Well Construction Data

See enclosed full page schematic

Surface Casing

Size 13 3/8" Cemented with 1050' sx.

TOC surface feet determined by circulation

Hole Size 17 1/2"

Intermediate Casing

Size 9 5/8" Cemented with 1350' sx.

TOC surface feet determined by circulation

Hole Size 12 1/4"

Long String

Size 7" Cemented with 1950' sx.

TOC surface feet determined by circ.

Hole Size 8 3/4"

Total Depth 10,665'

Injection Interval

10,260' feet to 10,555' feet

(perforated or not, indicate which)

INJECTION WELL DATA SHEET

Tubing Size 2 3/8" lined with _____ set in a _____
(type of internal coating) _____
feet
packer at _____

Other type of tubing / casing seal if applicable _____

Other Data

1. Is this a new well drilled for injection? Yes XX No _____

If no, for what purpose was the well originally drilled? To produce Oil & Gas.

2. Name of the injection formation Devonian.

3. Name of Field or Pool (if applicable) _____

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. Cisco Canyon: 7418' - 7778'.

This zone is open, ready for testing.

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

Cisco Canyon & Morrow.

Sanwell Energy, Inc.

Proposed Wellbore Diagram

6-13-97
By J. Gray

Well No: 22' Feeds #1
2080' FNL, 1980' FEL
S. 22, T 22S, R 22E
Eddy County, New Mexico

17 1/2" Hole
R&C 13 3/8", 48#, H-40 Csg @ 990' w/ 1050 SX Cmt.

12 1/4" Hole
R&C 9 5/8", 36 # 40#, J-55 Csg @ 2505' w/ 1350 SX Cmt.

2 3/8" Tbg.

3 3/4" Hole
R&C 7", 26 # 29# L-80 Csg; 1st Stage Cmt 350 SX.
2nd Stage Cmt 1600 SX.
DV Tool @ 9050'.

Gas
Water

Packer

Cisco Canyon Perfs: 7418'-34, 474'-558, 586-619,
634-654, 658-676, 717-726, 734-778.

Submersible pump with a check valve in the discharge.

DV Tool

Packer

Devonian Perfs: 10, 260'-262', 266'-268', 274'-282',
288', 294', 330'-341', 348'-350', 368'-372',
414'-420', 422'-426', 452'-454', 480'-482',
490'-492', 514', 519'-534', & 545'-555'.

PENWELL ENERGY, INC.
600 N. MARIENFELD
SUITE 1100
MIDLAND, TEXAS 79701
915/683-2534
FAX: 915/683-4514

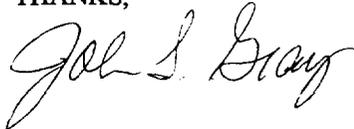
TO: Carlsbad Current - Argus
Classifieds

FAX: 505/885-1066

PAGES: 2 INCLUDING COVER

Enclosed is a copy of a NOTICE OF INTENT TO INJECT PRODUCED WATER. Please publish this notice in the Legal Classified Section as soon as possible and send me the required affidavit of publication.

THANKS,

A handwritten signature in cursive script that reads "John T. Gray". The signature is written in black ink and is positioned below the word "THANKS,".

JOHN T. GRAY

NOTICE OF INTENT TO INJECT PRODUCED WATER

PENWELL ENERGY, INC.
600 N. Marienfeld
Suite 1100
Midland, Texas 79701

Contact Person: John T. Gray, Senior Production Engineer: 915/783-2534

The purpose is to inject water produced from the Cisco-Canyon Formation at an interval of 7418' to 7778' into the Devonian Formation at an interval of 10,260' to 10,555' in the same well.

The well is located ^{2080'}~~1980'~~ FNL, 1980' FEL, Sec 22, T22S, R22E, Eddy, County New Mexico.

The producing perforations are in the Cisco-Canyon at 7818-34, 7474-7558, 7586-7610, 7634-7654, 7658-7676, 7717-7726, & 7734-7778.

The injection perforations are in the Devonian at 10260-10262, 10266-10268, 10274-10282, 10288, 10294, 10338-10341, 10348-10350, 10368-10372, 10414-10420, 10422-10426, 10452-10454, 10480-10482, 10490-10492, 10514, 10519-10534, & 10545-10555.

The maximum injection rate expected is 6000 BWPD.

The maximum injection pressure expected is 3000 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 within 15 days.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT-" for such proposals

5. Lease Designation and Serial No.
NM 92740

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation

Wagon Wheel 22 Federal Unit

8. Well Name and No.

Wagon Wheel 22 Federal Unit #1

9. API Well No.

30-015-29101

10. Field and Pool, or Exploratory Area

Capitan Reef

11. County or Parish, State

Eddy County, New Mexico

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
 Penwell Energy, Inc.

3. Address and Telephone No.
 600 N. Marienfeld, Suite 1100, Midland, Texas 79703 - 915-683-2534

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
 2080' FNL, 1980' FEL, Section 22, T22S, R22E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Other _____	<input checked="" type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. 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.)*

See Enclosed "Data on Proposed Operation."
 Cisco Canyon Perfs: 7418' to 7778'.
 Devonian Perfs: 10,260' to 10,555'

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

Signed *John J. Gray*

Title Senior Production Engineer

Date 7-25-97

(This space for Federal or State office use)

Approved by _____
 Conditions of approval, if any:

Title _____

Date _____

DATA ON PROPOSED OPERATION
PENWELL ENERGY, INC.
WAGON WHEEL 22 FEDERAL UNIT #1
SEC 22, T22S, R22E, EDDY COUNTY, NEW MEXICO

The proposed operation is to set a packer between the Cisco Canyon and the Devonian Formations and use a submersible pump that is turned upside down to separate the gas and water produced in the Cisco Canyon Formation and inject the water downhole into the Devonian Formation. Gas will be produced through tubing to the surface. A packer will be set above the Cisco Canyon Formation to keep all sour gas off the casing. The submersible pump will have a check valve in the discharge so that when the pump is off there will be no communication between the two zones.

The proposed average injection volume of produced water is anticipated to be 3500 BWPD.

The proposed maximum injection volume is 6000 BWPD.

The system will be a closed system.

The proposed average injection pressure will be 1000 psig.

The proposed maximum injection pressure will be 3000 psig.

The source water will be Cisco Canyon Formation water, which has less than 6000 ppm chlorides but does contain hydrogen sulfide making it unsuitable for drinking water.

The Devonian Formation in this well lost complete returns at a depth of 10,448' with a 10 ppg mud system in the well.

Injectivity tests into the Devonian Formation have not been performed yet in this well. The above information on injection rates and pressures is based on other operations in the area in the Cisco Canyon and Devonian Formations.

No detailed water analysis has been performed on either formation in this well yet. Operations to open up the Devonian Formation and perform injectivity test will be conducted soon. A true water analysis on the Devonian may be hard to get. A search at analytical labs and service companies has produced no record of samples of water from the Devonian Formation in this area.

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

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Return Receipt Showing to Whom & Date Delivered		
Return Receipt Showing to Whom, Date, & Addressee's Address		
TOTAL Postage & Fees		
Postmark or Date		

PS Form 3800, April 1995

