

Union Oil Company of California
500 North Marienfeld, Midland, Texas 79701
P.O. Box 671, Midland, Texas 79702
Telephone (915) 682-9731



Midland District

March 4, 1983

New Mexico Oil Conservation Commission
P. O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Gentlemen:

SUBJECT:

Union Oil Company of California
Application for Administrative Approval
To Use the Wersell Federal No. 1
For Salt Water Disposal

Union Oil Company of California respectfully requests administrative approval to dispose of produced water into the Delaware formation on our Wersell Federal Well No. 1, Section 4, T-22-S, R-27-E, 810' FNL and 1980' FWL, Eddy County, New Mexico. We are proposing to perforate the lower Delaware salt water bearing formation and dually complete the well to produce oil from the upper oil bearing zone and dispose into the lower water bearing zone. We are proposing to dispose of approximately 500 BPD of Delaware production water into the disposal zone.

In support of this application, we enclose the following:

1. Completed Form C-108.
2. A map identifying the subject well, and all other wells within two miles of this well.
3. A table listing all wells within the one-half mile radius area of review, which have penetrated our proposed SWD interval. Note: There are no wells within area of review other than subject well.
4. A well data form and schematic diagram of all wells located within this area of review. Note: There are no wells within area of review other than subject well.
5. A water analysis of the produced water we are proposing to inject in the subject SWD well.
6. A "typical Delaware" water analysis taken from the producing zone in this well. (There are no lower Delaware completions in the area).
7. A water analysis of water taken from a shallow fresh water supply well located near the proposed SWD well.

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION

UNION EXHIBIT NO. 1

CASE NO. 7886

Submitted by STANGLE

Hearing Date 5/25/83

New Mexico Oil Conservation Commission

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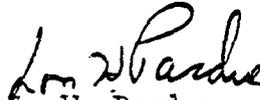
March 4, 1983

Wersell Federal Well No. 1

8. Copies of letters sent to leasehold operators.
9. Copies of letters sent to owners of the surface of the land on which the subject well is located.
10. A copy of our legal advertisement of this request, which was published in the Carlsbad Current Argus.

If you need additional information, please advise. Your early consideration of this request will be greatly appreciated.

Very truly yours,



L. H. Pardue

District Production Superintendent

ECS:pd
Enclosures

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? yes no
- II. Operator: Union Oil Company of California
Address: P. O. Box 671; Midland, Texas 79702
Contact party: Lon H. Pardue Phone: (915) 682-9731
- 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: Lon H. Pardue Title District Production Superintendent
Signature: Lon H. Pardue Date: March 4, 1983

- * 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.

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 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, 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.

Union Oil Company of California
Wersell Federal Well No. 1

III. Well Data

A. (1) Lease Name: Wersell Federal Com.

Well No.: 1

Location: 810' FNL and 1980' FWL
Section 4, T-22-S, R-27-E
Eddy County, New Mexico

(2) Casing Record:

13-3/8" set at 400', 17-1/2" hole, 600 sacks cement, TOC surface
9-5/8" set at 5262', 12-1/4" hole, 2400 sacks cement, TOC surface,
circulated
5-1/2" set at 11,660', 8-1/2" hole, 900 sacks cement, TOC 8180',
temperature survey. Top 5-1/2" casing 6971' cut off with
cement plug over top of cut-off; plug top 6837'

(3) Tubing:

2-3/8" OD, EUE, 4.7#, internally plastic coated, set depth
approximately 4600'

(4) Packer:

Baker Model 'D', set depth approximately 4500'.

B. (1) Injection Formation:

Delaware Sand, Esperanza (Delaware) Field

(2) Injection Interval:

Perforations 4822-4838'

(3) Well was drilled for oil production. It is proposed to dually
complete this well as a producer and disposal well.

(4) Perforations for oil production at 4392-4396' and 4458-4466'.
Interval will be separated from disposal perforations by the
packer in A(4) above.

(5) Depth of next higher oil zone is 4392-4396' (Delaware).
Depth of next lower gas zone is 11,268' (Morrow).

VI. No wells other than the subject well have been drilled within the area
of review.

Union Oil Company of California
Wersell Federal Well No. 1

- VII. (1) Proposed average daily injection rate - 100-200 BPD
Proposed maximum daily injection rate - 500 BPD
- (2) Whether system is open or closed: Closed
- (3) Proposed average injection pressure - 500 psi
Proposed maximum injection pressure - 1000 psi
- (4) Source of injection fluid is produced water from Delaware sand in this well. Analysis of injected water is attached.
- (5) Analysis of disposal zone water attached. Inferred to be the same as water from producing zone as in VII(4) above.
- IX Stimulation Program:
Break down perforations 4822-4838' with 1000 gallons 7-1/2% HCl acid and displace acid.
- X. Well logs filed upon original completion of well.
- XI. Analysis from fresh water well attached. (Only one well within one-half mile).
- XII. Available geologic and engineering data has been examined and no evidence of open faults or any other hydrologic connection exists between the disposal zone and any underground source of drinking water.

UNION OIL WERSELL FEDERAL #1 GEOLOGIC SUMMARY

VIII. The proposed injection zone in the Union Oil Wersell Federal #1, Sec. 4, T-22-S, R-27-E, Eddy County, New Mexico is in the Delaware Sand of the Guadalupian Series of Permian Age. The top of the Delaware Sand is at 1926' (+1243') and the top of the underlying Bone Springs Formation of the Leonardian Series (Permian Age) is at 5,096' (-1926'). The proposed injection zone is in the interval from 4822-38'. This is a basinal facies. The proposed injections are in 100% tan to brown, fine-medium grained sand. An impervious shale zone overlies the proposed injection zone.

The only known possible sources of drinking water in the area are at relatively shallow depths less than 1926 feet in the Santa Rosa and Ogallala Formations of Tertiary age. There is no evidence of faulting in the area which could cause these possible sources of drinking water to be contaminated by any injections of salt water in the proposed interval.