



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

TONY ANAYA
GOVERNOR

POST OFFICE BOX 1990
HOBBS, NEW MEXICO 88240
(505) 333-5161

24 2X 536

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

RE: Proposed:

MC _____
DHC _____
NSL _____
NSP _____
SWD _____
WFX X _____
PMX _____

Gentlemen:

I have examined the application for the:

Union Oil Co. of Calif. S. Caprock Seven Unit Tr. 48# 10-8
Operator Lease & Well No. Unit S-T-R 30-15-31

and my recommendations are as follows:

Yours very truly,

Jerry Sexton
Supervisor, District 1

/mc

Union Oil and Gas Division: Central Region

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



Midland District

November 21, 1985

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

SUBJECT:

Union Oil Co. of California's
Application for Administrative Approval
Reentry of the South Caprock Queen Unit
Well No. 10-30 Water Injection Well

Gentlemen:

Union Oil Company of California respectfully requests administrative approval to reenter the South Caprock Queen Unit Well No. 10-30, Section 30, T-15-S, R-31-E, 1980' FSL and 1980' FEL of section, Chaves County, New Mexico. We are proposing to reenter the subject well and use it to inject water into the Queen Sand for secondary recovery. The injection fluid will be produced water from the Queen Sand. Prior to abandonment in 1972, the well was being used for this same purpose.

In support of this application, we enclose the following:

1. Completed Forms C-101, C-102, and C-108.
2. A tabulation of well data for the proposed injection well including a schematic diagram of its present and proposed conditions.
3. A map identifying all wells and leases within a two-mile radius of the subject well.
4. A tabulation of well data on all wells within the one-half mile radius area of review, including schematic diagrams of all plugged wells illustrating plugging details.
5. Data concerning our proposed operating parameters for the well.
6. A water analysis of the injection fluid taken from the producing zone in the area. This is the same zone as the proposed injection zone.
7. A water analysis of a fresh water well located within one mile of the proposed injection well.

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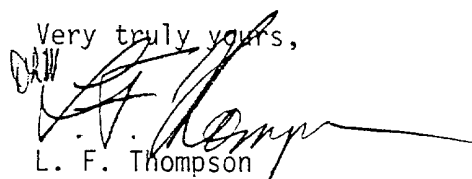
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New Mexico Oil Conservation Commission
South Caprock Queen Unit Well No. 10-30
November 21, 1985
Page Two

8. A copy of the letters sent to the surface owner, surface lessee, and offset leasehold operators notifying them of our application to inject.
9. A copy of the legal advertisement of our application, published in the Roswell Daily Record.

Should you require any further information concerning this application, please contact D. L. Watkins by telephone at 915/682-9731. Thank you for your consideration in this matter.

Very truly yours,

L. F. Thompson
District Operations Manager

TLP:ggc
Enclosures

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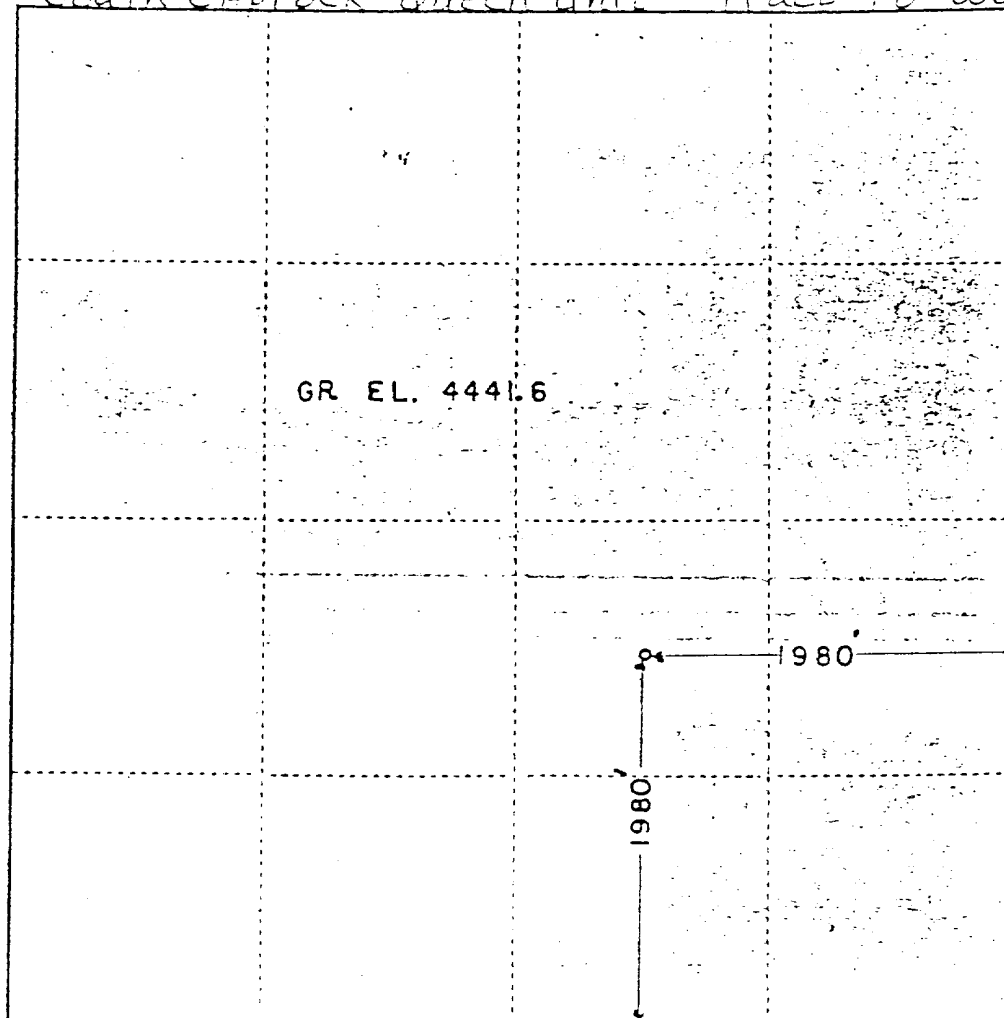
WELL LOCATION SURVEY PLAT

OPERATOR JOSEPH I. O'NEILL, JR.

LEASE STATE E

WELL NO. 1

South Caprock Queen Unit Tract 48 Well #10



SEC. 30, TWP. 15 S., RGE. 31 E., N.M.P.M.

I HEREBY CERTIFY THAT THIS PLAT WAS MADE
FROM NOTES TAKEN IN THE FIELD BY ME AND
THAT THE SAME IS TRUE AND CORRECT TO THE
BEST OF MY KNOWLEDGE AND BELIEF.

John W West

JOHN W. WEST, PE & LS NO. 676

5-17-55

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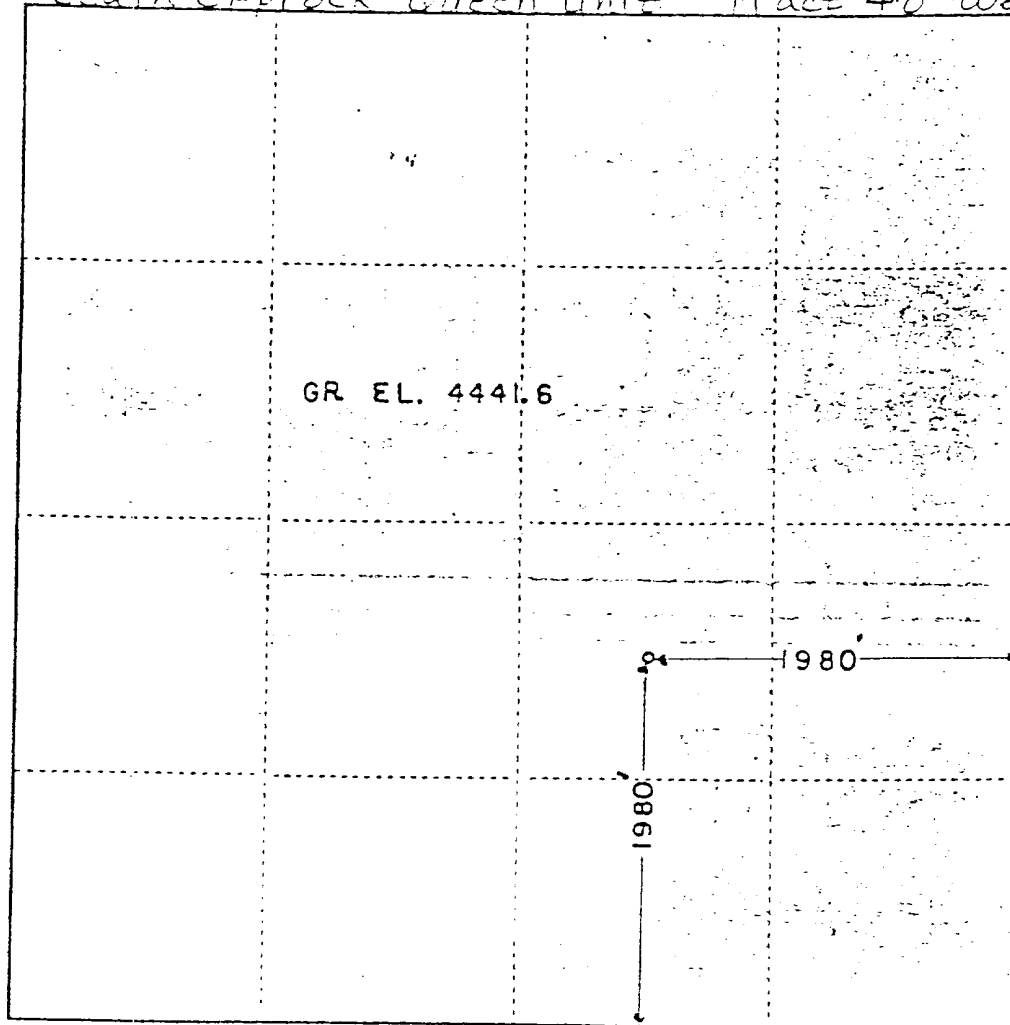
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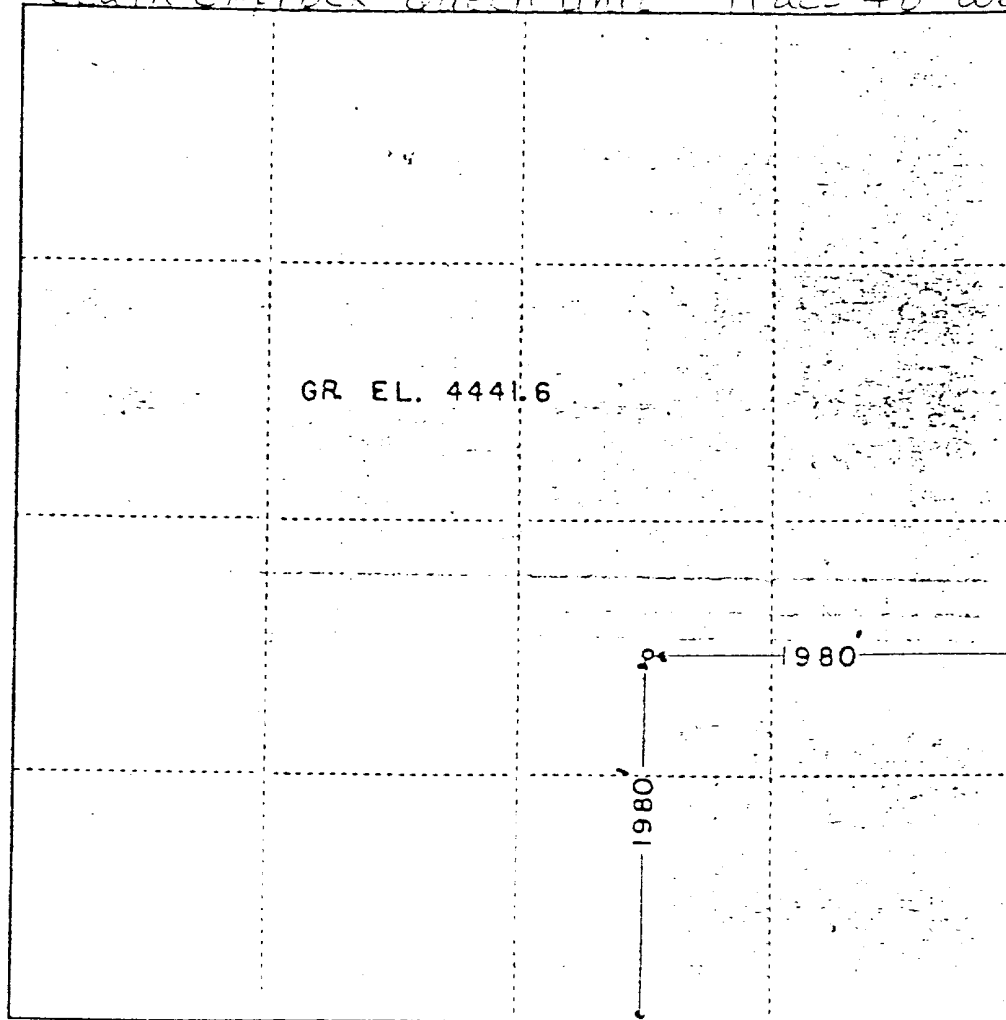
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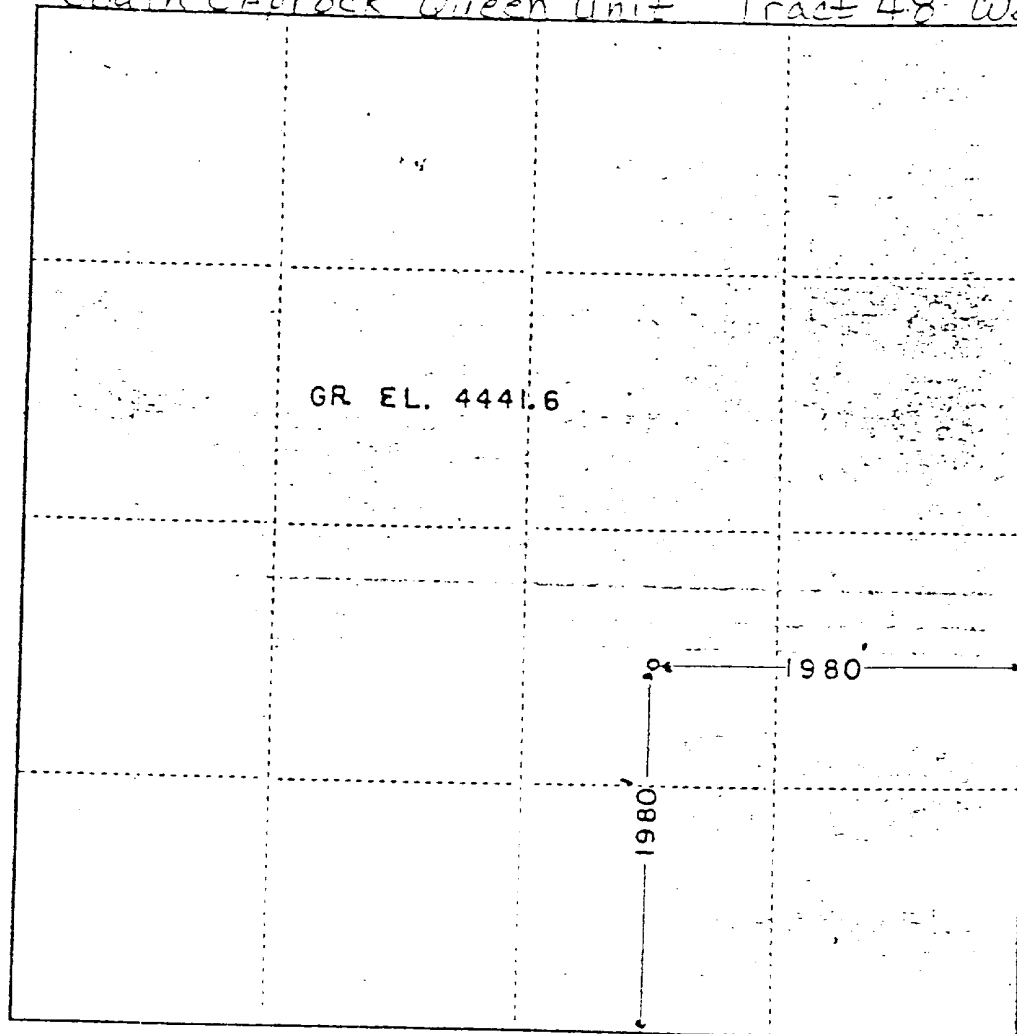
WELL LOCATION SURVEY PLAT

OPERATOR JOSEPH I. O'NEILL, JR.

LEASE STATE E

WELL NO. 1

South Cadrock Queen Unit Tract 48 Well #10



SEC. 30, TWP. 15 S., RGE. 31 E., N.M.P.M.

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John W West

JOHN W. WEST, PE & LS NO. 676
5-17-55

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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: D. L. Watkins 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 Original Auth.No.R-1729
If yes, give the Division order number authorizing the project Expansion Auth.No.R-2660.
- 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: D. L. Watkins Title District Engineer
Signature: *D. L. Watkins* Date: December 4, 1985
- * 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.

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III. Well Data

A. (1) Lease Name: South Caprock Queen Unit
Well No.: 10-30
Location: 1980' FSL & 1980' FEL, Section 30, T-15-S, R-31-E,
Chaves County, New Mexico

(2) Casing Record: 9-5/8" casing set at 315' in 12-1/4" hole,
cemented with 200 sacks, circulated.
5-1/2" casing set at 3195' in 7-7/8" hole,
cemented with 175 sacks. Top of cement
calculated at 2625'. (100% efficiency).

(3) Tubing: 2-3/8" 4.70# J-55 8rd EUE internally plastic-
coated tubing set at approximately 3100'.

(4) Packer: Guiberson Uni pkr VI, set at approximately
3100'.

B. (1) Injection
Formation: Queen Sand
Field: Caprock Queen

(2) Injection
Interval: 3152-3165'

(3) This well was originally drilled as an oil well. It was
converted to water injection January 29, 1964, and plugged
and abandoned March 24, 1972.

(4) There are no other perforated intervals.

(5) There are no known higher or lower oil or gas zones in the
area of the well.

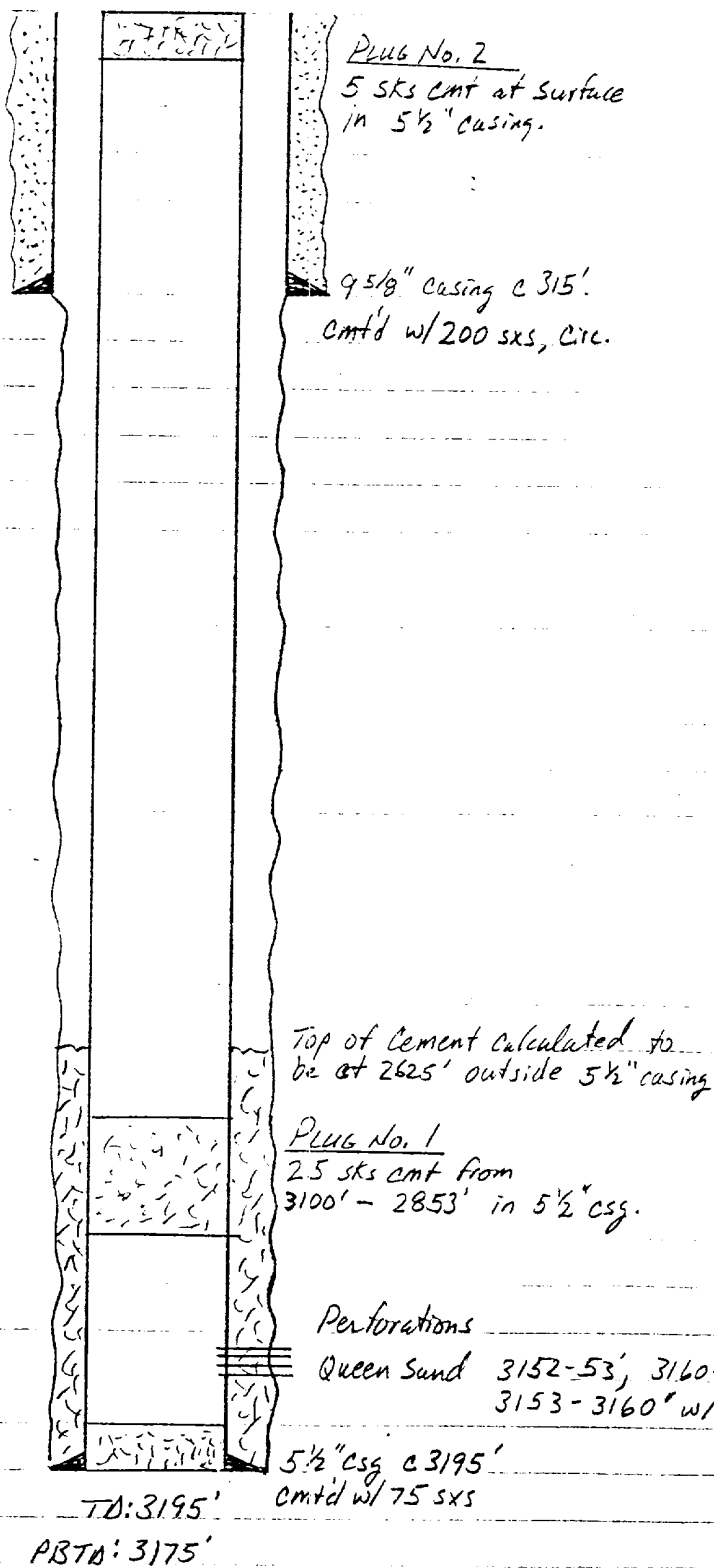
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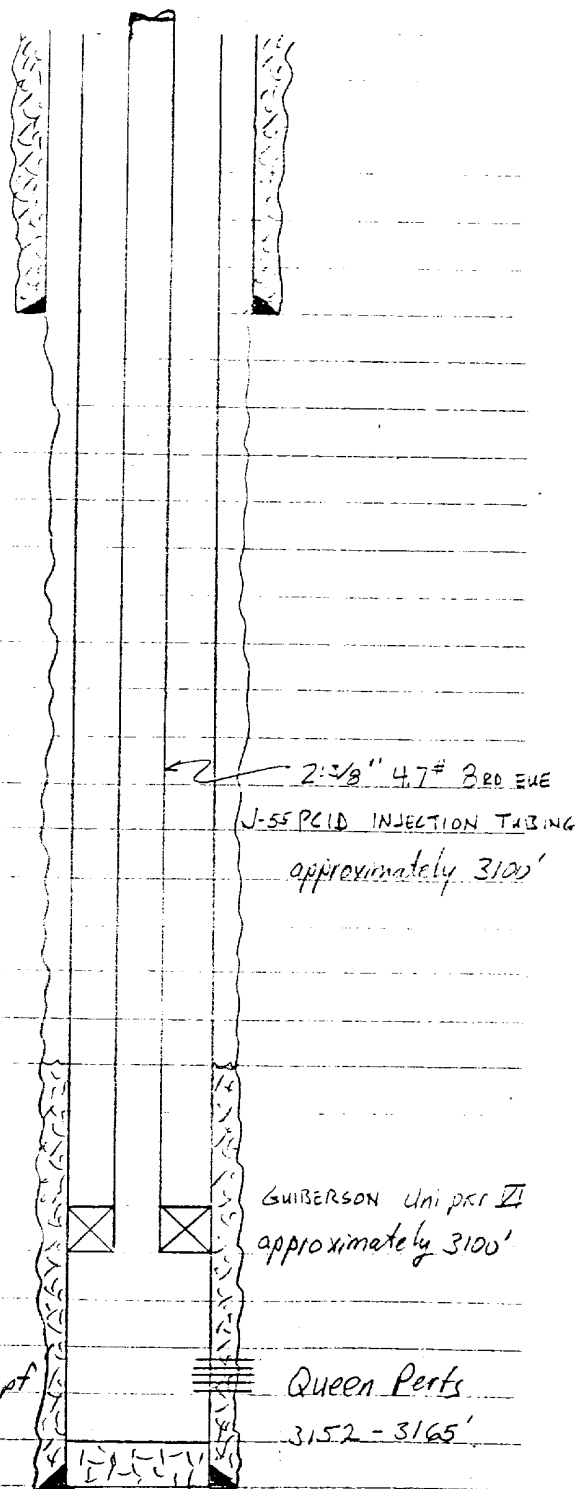
Q.C.B.
HODGE LOYCE

South Caprock Queen Unit No. 10-30

CURRENT STATUS



PROPOSED STATUS



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VI. Tabulation of Well Data Within Area of Review

<u>Well No.</u>	<u>Description</u>
South Caprock Queen Unit (SCQU) 12-29	<p>Location: 2310' FSL & 330' FWL, Section 29, T-15-S, R-31-E</p> <p>Type: Water Injection Well</p> <p>Date Drilled: September 7, 1955 - September 23, 1955</p> <p>Construction: 8-5/8" csg set at 325' cmt'd w/200 sks 5-1/2" csg set at 3185' cmt'd w/175 sks TD = 3188'</p> <p>Completion: Perf 3154-3167' w/6 SPF Frac'd w/10,000 gals lease oil Potential flowed 66 BOPD thru 16/64" ck</p> <p>Converted to water injection July 20, 1965. Injected 405 BWPD at 1280 psi.</p> <p>Plugged and abandoned August 12, 1971 (Schematic attached).</p>
South Caprock Queen Unit (SCQU) 13-29	<p>Location: 990' FSL & 330' FWL, Section 29, T-15-S, R-31-E</p> <p>Type: Water Injection Well</p> <p>Date Drilled: November 18, 1956 - December 28, 1956</p> <p>Construction: 12-3/4" csg set at 300' cmt'd w/250 sks 8-5/8" csg set at 1325' TD = 3187' Plugged and abandoned December 28, 1956</p> <p>Convert to water injection August 1, 1964 and deepen to 3235'. 4-1/2" 9.5# csg set at 3234' cmt'd w/250 sks. Perf 3188-3203' w/2 SPF</p> <p>Plugged and abandoned August 12, 1971</p>

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VI. Tabulation of Well Data Within Area of Review - Continued

<u>Well No.</u>	<u>Description</u>
South Caprock Queen Unit (SCQU) 2-30	<p>Location: 660' FNL & 1980' FEL, Section 30, T-15-S, R-31-E</p> <p>Type: Water Injection Well</p> <p>Date Drilled: July 15, 1955</p> <p>Construction: 8-5/8" csg set at 315' cmt'd w/175 sks 5-1/2" csg set at 3138' cmt's w/200 sks TD = 3138'</p> <p>Completion: Perforate 3118-3130' w/4 SPF Sand Frac'd w/8000 gals lease oil Potential: Flowed 624 BOPD through 1/2" ck</p> <p>Plugged and abandoned March 24, 1972</p>
South Caprock Queen Unit (SCQU) 3-30	<p>Location: 990' FNL & 2310' FWL, Section 30, T-15-S, R-31-E</p> <p>Type: Producing Well</p> <p>Date Drilled: November 15, 1955</p> <p>Construction: 8-5/8" csg set at 300' cmt'd w/175 sks 5-1/2" csg set at 3138' cmt'd w/200 sks TD = 3138'</p> <p>Completion: Perforate 3123-3130' w/4 SPF Sand Frac'd w/8000 gals lease oil Potential: Flowed 155 BOPD through 1/4" ck</p> <p>Plugged and abandoned March 24, 1972</p>
South Caprock Queen Unit (SCQU) 5-30	<p>Location: 2310' FNL & 990' FWL, Section 30, T-15-S, R-31-E</p> <p>Type: Producing Well (Active)</p> <p>Date Drilled: November 20, 1955</p> <p>Construction: 8-5/8" csg set at 311' cmt'd w/175 sks 5-1/2" csg set at 3129' cmt'd w/200 sks TD = 3129'</p> <p>Completion: Perforate 3109-3123' Sand Frac'd w/8000 gals lease oil Potential: Flowed 290 BOPD through 1/4" ck</p> <p>Plugged and abandoned March 24, 1972 Reentered on April 2, 1984. Perforated 3109-3123'. Acidized w/1000 gal. Potentialized 5 BOPD + 248 BOPD.</p>

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VI. Tabulation of Well Data Within Area of Review - Continued

<u>Well No.</u>	<u>Description</u>
South Caprock Queen Unit (SCQU) 6-30	<p>Location: 1980' FNL & 1980' FWL, Section 30, T-15-S, R-31-E</p> <p>Type: Water Injection Well</p> <p>Date Drilled: June 21, 1955</p> <p>Construction: 8-5/8" csg set at 320' cmt'd w/135 sks 5-1/2" csg set at 3148' cmt'd w/200 sks TD = 3148'</p> <p>Completion: Perforate 3125-3139' w/4 SPF Sand Frac'd w/8000 gal lease oil Potential: Flowed 618 BOPD through 3/4" ck</p> <p>Plugged and abandoned March 24, 1972</p>
South Caprock Queen Unit (SCQU) 7-30	<p>Location: 1980' FNL & 1980' FEL, Section 30, T-15-S, R-31-E</p> <p>Type: Oil Well</p> <p>Date Drilled: July 31, 1955 - July 24, 1955</p> <p>Construction: 8-5/8" csg set at 315' cmt'd w/330 sks 5-1/2" csg set at 3137' cmt'd w/150 sks Open Hole - 3137-3159' TD = 3159'</p> <p>Completion: Frac'd open hole 3137-3159' w/20,000 gals oil Potential: Flowed 70 BOPD on 16/64" ck</p> <p>Plugged and abandoned March 24, 1972.</p>
South Caprock Queen Unit	<p>Location: 1650' FNL & 990' FEL, Section 30, T-15-S, R-31-E</p> <p>Type: Water Injection Well</p> <p>Date Drilled: July 13, 1955 - July 24, 1955</p> <p>Construction: 8-5/8" csg set at 309' cmt'd w/175 sks 5-1/2" csg set at 3158' cmt'd w/200 sks TD = 3159'</p> <p>Completion: Perfed 3140-3152' w/3 SPF Frac'd w/8000 gals oil Potential: 188 BOPD on 1/2" ck</p> <p>Convert to water injection October 1, 1963</p> <p>Plugged and abandoned March 24, 1972</p>

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VI. Tabulation of Well Data Within Area of Review - Continued

<u>Well No.</u>	<u>Description</u>
South Caprock Queen Unit (SCQU) 9-30	<p>Location: 1980' FSL & 660' FEL, Section 30, T-15-S, R-31-E</p> <p>Type: Oil Well</p> <p>Date Drilled: July 26, 1955 - August 16, 1955</p> <p>Construction: 8-5/8" csg set at 314' cmt'd w/200 sks 5-1/2" csg set at 3203' cmt'd w/175 sks TD = 3205'</p> <p>Completion: Perf 3157-3169' w/8 SPF Natural completion Potential: Flowed 144 BOPD on 16/64" ck</p> <p>Plugged and abandoned March 24, 1972</p>
South Caprock Queen Unit (SCQU) 11-30	<p>Location: 1980' FSL & 1962.8' FWL, Section 30, T-15-S, R-31-E</p> <p>Type: Oil Well</p> <p>Date Drilled: May 19, 1955 - June 8, 1955</p> <p>Construction: 9-5/8" csg set at 315' cmt'd w/200 sks 5-1/2" csg set at 3181' cmt'd w/175 sks TD = 3182'</p> <p>Completion: Perf 3143-3151' w/8 SPF Natural completion Potential: Flowed 144 BOPD on 16/64" ck</p> <p>Plugged and abandoned March 24, 1972</p> <p>Reentered March 27, 1984. Perf 3143-51' w/2 SPF. Acidized w/1200 gals 15% HCl acid. Potential (May 14, 1984): Pumped 7 BOPD + 266 BWPD</p>
South Caprock Queen Unit (SCQU) 12-30	<p>Location: 1880' FSL & 501' FWL, Section 30, T-15-S, R-31-E</p> <p>Type: Water injection well</p> <p>Date Drilled: October 19, 1955</p> <p>Construction: 8-5/8" csg set at 207' cmt'd w/180 sks 5-1/2" csg set at 3009' cmt'd w/175 sks TD = 3010'</p> <p>Completion: Perf 2982-2989' w/6 SPF Sand Frac'd w/10,000 gal lease oil Potential: Flowed 960 BOPD on 24/64"ck</p> <p>Convert to water injection February 26, 1964 at 580 BWP, 0 psi</p> <p>Plugged and abandoned March 24, 1972</p>

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VI. Tabulation of Well Data Within Area of Review - Continued

<u>Well No.</u>	<u>Description</u>
South Caprock Queen Unit (SCQU) 13-30	Location: 990' FSL & 972' FWL, Section 30, T-15-S, R-31-E Type: Oil Well Date Drilled: May 11, 1956 Construction: 8-5/8" csg set at 208' cmt'd w/150 sks 4-1/2" csg set at 2901' cmt'd w/75 sks 3-1/2" liner 2837-3008' cmt'd w/25 sks TD = 3060' Completion: Perf 2990-3004' w/4 SPF Sand Frac'd w/8000 gals lease oil Potential: Pumped 276 BOPD Plugged and abandoned March 24, 1972
South Caprock Queen Unit (SCQU) 14-30	Location: 990' FSL & 2293' FWL, Section 30, T-15-S, R-31-E Type: Water Injection Well Date Drilled: May 30, 1955 - June 20, 1955 Construction: 9-5/8" csg set at 322' cmt'd w/200 sks 5-1/2" csg set at 3185' cmt'd w/175 sks TD = 3186' Completion: Perf 3184-3160' w/8 SPF Frac'd w/10,000 gals lease oil Potential: Flowed 296 BOPD on 30/64" ck Converted to water injection February 27, 1964. Injected 700 BWPD on vacuum. Plugged and abandoned March 24, 1972
South Caprock Queen Unit (SCQU) 15-30	Location: 1980' FEL & 990' FSL, Section 30, T-15-S, R-31-E Type: Oil Well Date Drilled: August 3, 1955 - August 31, 1955 Construction: 8-5/8" csg set at 322' cmt'd w/200 sks 5-1/2" csg set at 3186' cmt'd w/175 sks TD = 3187' Completion: Perf 3165-3176' w/8 SPF Frac'd w/10,000 gals lease oil Potential: Flowed 372 BOPD on 16-64" ck Plugged and abandoned March 24, 1972 Reentered April 3, 1984. Perf 3163-3176' w/2 SPF. Acidized w/2000 gals 15% HCl acid. Potential (May 14, 1984): 5 BOPD + 275 BWPD

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VI. Tabulation of Well Data Within Area of Review - Continued

<u>Well No.</u>	<u>Description</u>
South Caprock Queen Unit (SCQU) 16-30	Location: 990' FSL & 990' FEL, Section 30, T-15-S, R-31-E Type: Water Injection Well (Active) Date Drilled: September 12, 1955 Construction: 8-5/8" csg set at 305' cmt'd w/100 sks 5-1/2" csg set at 3195' cmt'd w/175 sks TD = 3200' Completion: Perf 3172-3184' Sand Frac'd w/10,000 gals lease oil Potential: Flowed 319 BOPD on 24/64' ck Converted to water injection April 18, 1966, 554 BWPD @1050 psi. Plugged and abandoned March 24, 1972 Reentered and returned to injection February 1985.
South Caprock Queen Unit (SCQU) 17-30	Location: 2630' FSL & 1330' FEL, Section 30, T-15-S, R-31-E Type: Oil Well (Active) Date Drilled: April 16, 1985 Construction: 8-5/8" csg set at 354' cmt'd w/300 sks 5-1/2" csg set at 3300' cmt'd w/750 sks TD = 3300' Completion: Perf 3158-78' Sand Frac'd w/12,000 gal gelled water Potential: Pumped 16 BOPD + 172 BWPD
Pubco Drickey-State No. 3-A	Location: Unit A, Section 31, T-15-S, R-31-E Type: Oil Well Date Drilled: Unknown Construction: 9-5/8" surface csg 5-1/2" csg set at 3252' TD = 3252' Completion: Perfs 3185-3191' Plugged and abandoned June 30, 1956

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VI. Tabulation of Well Data Within Area of Review - Continued

<u>Well No.</u>	<u>Description</u>
South Caprock Queen Unit (SCQU) 1-31	Location: 330' FNL & 990' FEL, Section 31, T-15-S, R-31-E Type: Water Injection Well Date Drilled: May 1, 1956 - May 31, 1956 Construction: 9-5/8" csg set at 327' cmt'd w/204 sks 5-1/2" csg set at 3217' cmt'd w/125 sks TD = 3220' Completion: Perf 3187-3191' w/4 SPF Squeezed perfs w/100 sks Reperf 3185-88' w/4 SPF Frac'd w/10,000 gals oil Potential: Pumped 48 BOPD + 50 BWPD Converted to water injection July 1964 Plugged and abandoned August 12, 1971
South Caprock Queen Unit (SCQU) 2-31	Location: 330' FWL & 2310' FEL, Section 31, T-15-S, R-31-E Type: Water Injection Well Date Drilled: October 25, 1956 - November 21, 1956 Construction: 13-3/8" csg set at 255' cmt'd w/100 sks 8-5/8" csg set at 1242' 5-1/2" csg set at 3087' cmt'd w/100 sks Open Hole 3087-3095' TD = 3095' Completion: Frac'd open hole 3087-3095' w/10,000 gals oil Potential: Pumped 47 BOPD Converted to water injection June 27, 1966. Injected 490 BWPD at 1000 psi. Plugged and abandoned March 1972

RECEIVED

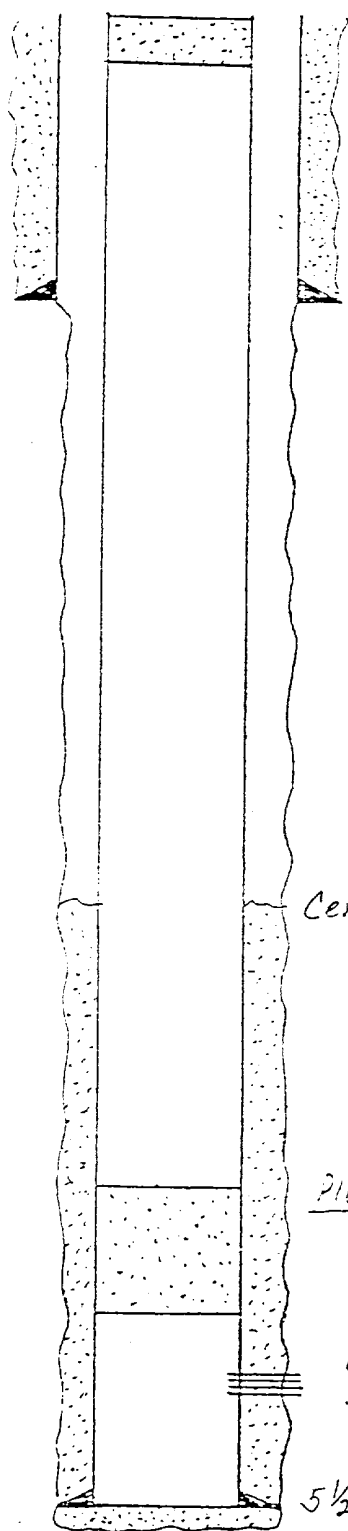
DEC 5 - 1985

O.C.D.
HODGES OFFICE

South Caprock Queen Unit Well No. 12-29

Plugged 8/12/71.

Current wellbore schematic



Plug No. 2 5 sxs cement at surface.

8-5/8" casing set at 325' cemented with 200 sxs.
Cement circulated.

Cement top calculated at 1852' outside 5 1/2" casing

Plug No. 1 25 sxs cement in 5 1/2" casing
from 3100' - 2853'

Queen Sand perts
3154 - 3167' w/ 6 holes per foot

5 1/2" Casing set at 3185' cemented with 175 sxs.

TD = 3188'

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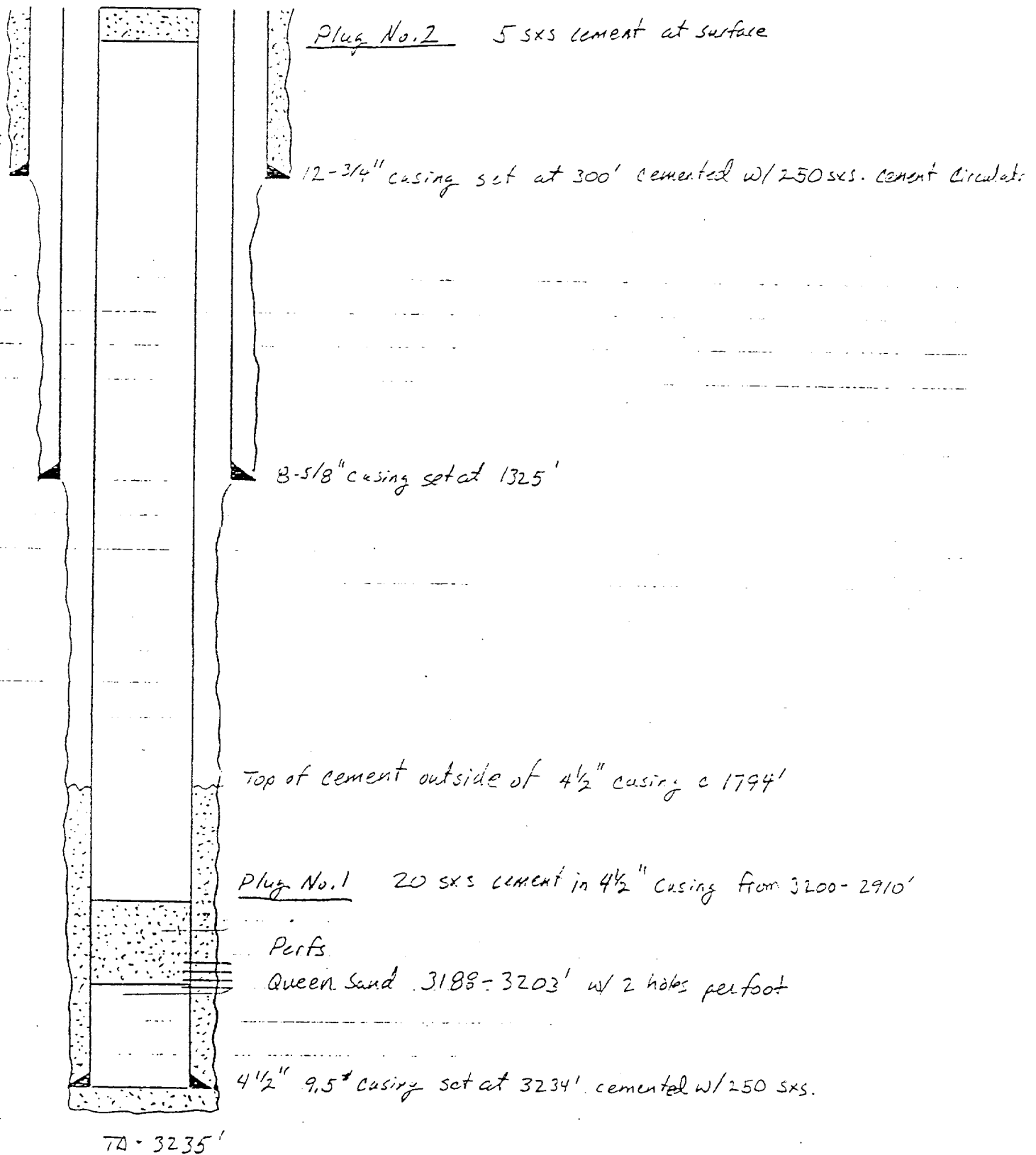
DEC 5 - 1985

O.C.D.
HOBBS OFFICE

South Caprock Queen Unit Well No. 13-29

plugged 6/12/71

Current Well bore schematic



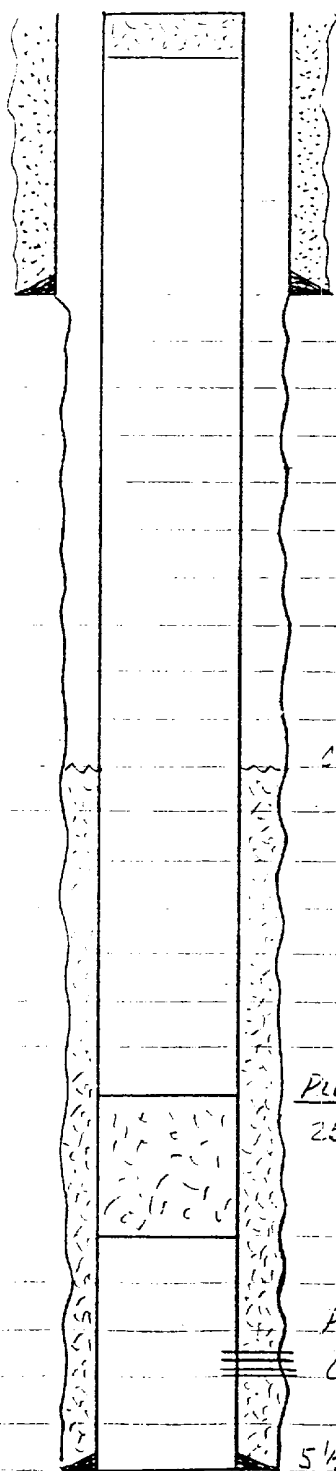
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O.C.D.
HOBBS OFFICE

South Caprock Queen Unit Well No. 2-30

Plugged and Abandoned March 24, 1972



PLUG No. 2

5 sks cmt at surface in 5 1/2" casing

8 5/8" casing set at 315'. Cmt'd w/ 175 sacks, circulated.

Cement top outside 5 1/2" casing calculated at 1615'.

PLUG No. 1

25 sks cement in 5 1/2" casing from 3100' to 2853'

Perforations

Queen Sand 3118-3130' w/ 4 shots per foot

5 1/2" casing set at 3138'. Cmt'd w/ 200 sacks

TO: 3138'

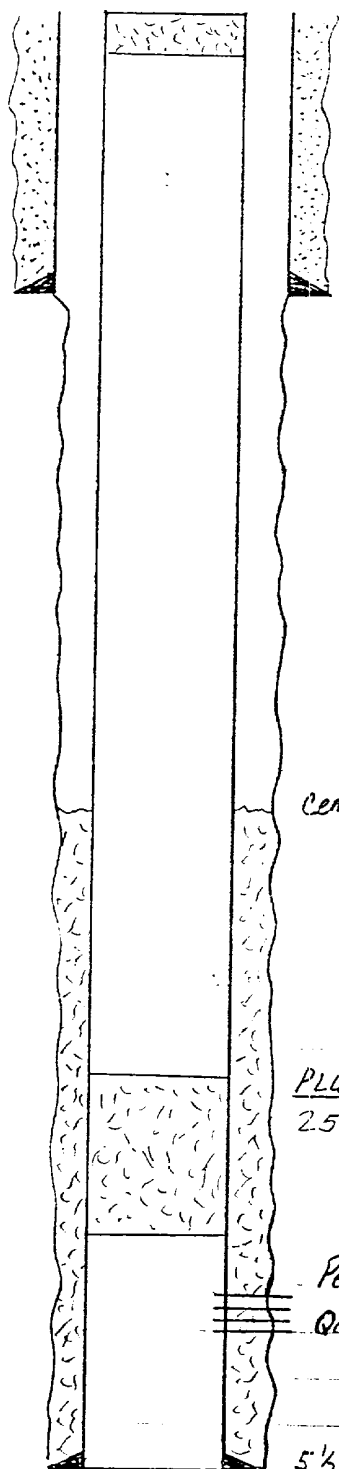
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O.C.D.
HOBBS OFFICE

South Caprock Queen Unit Well No. 3-30.

Plugged and Abandoned March 24, 1972.



PLUG No. 2

5 Sacks cmt at surface in 5 1/2" casing.

8 5/8" casing set at 300', cemented w/ 175 sacks, Circulated.

Cement Top calculated at 1615' outside 5 1/2" casing.

PLUG No. 1

25 sacks cmt in 5 1/2" casing from 3100' - 2853'.

Perforations

Queen Sand 3123-3130' w/ 4 shots per foot.

5 1/2" casing set at 3138', cemented w/ 200 sacks.

TD: 3138'

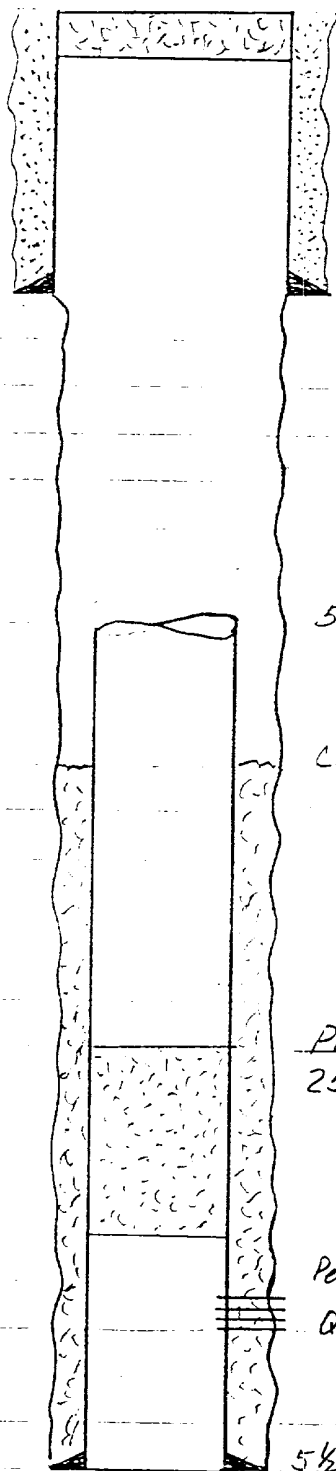
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O.C.D.
HOBBS OFFICE

South Caprock Queen Unit Well No. 6-30

Plugged And Abandoned March 24, 1972



PLUG No. 2.

5 sacks cement at surface in 8 $\frac{5}{8}$ " casing.

8 $\frac{5}{8}$ " casing set at 320' cemented w/ 135 sxs, circulated.

5 $\frac{1}{2}$ " casing cut off, stub at 1256'

Cement top calculated at 1625' outside 5 $\frac{1}{2}$ " casing.

PLUG No. 1

25 sacks cement from 3100' - 2853' in 5 $\frac{1}{2}$ " casing

Perforations

Queen Sand 3125-3139 w/ 4 spots per foot

5 $\frac{1}{2}$ " casing set at 3148' cemented w/ 200 sxs.

TD: 3148'

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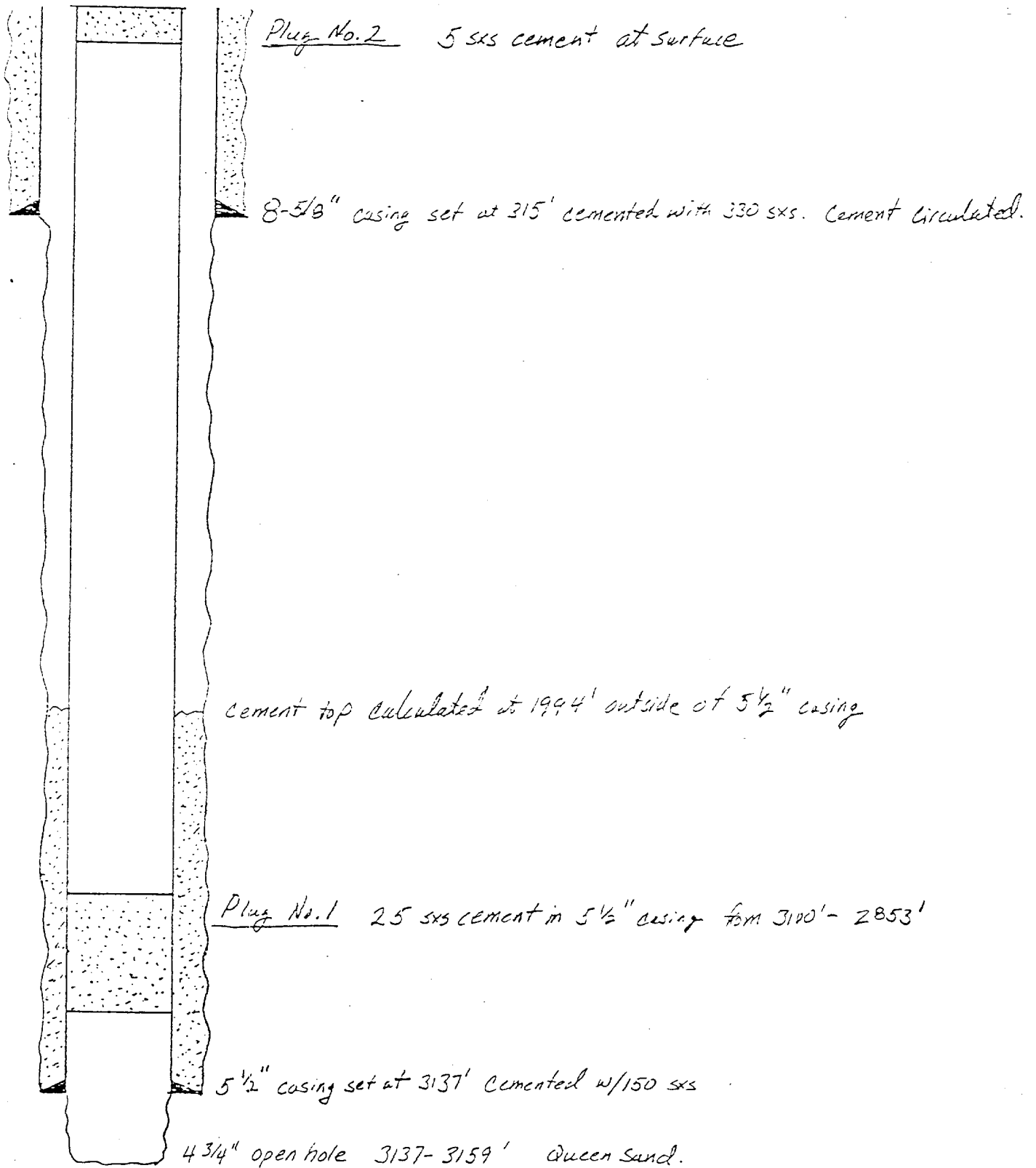
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O.C.D.
HOUS OFFICE

South Caprock Queen Unit Well No. 7-30

Plugged 3/24/72

Current Wellbore Schematic



TD = 3159'

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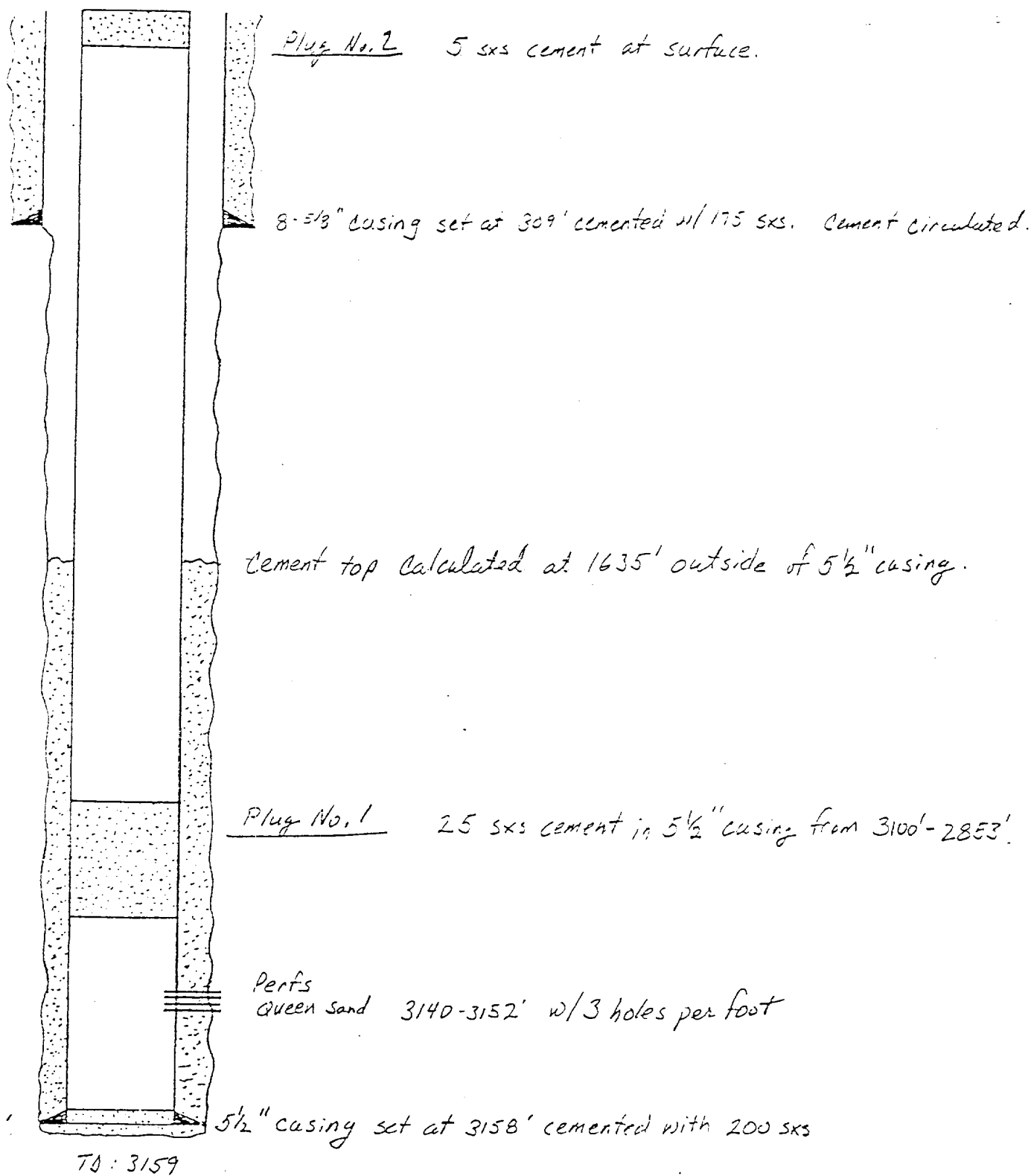
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O.C.D.
HOBBS OFFICE

South Cuprock Queen Unit Well No. 8-30

Plugged 3/24/72

Current Wellbore Schematic



RECEIVED

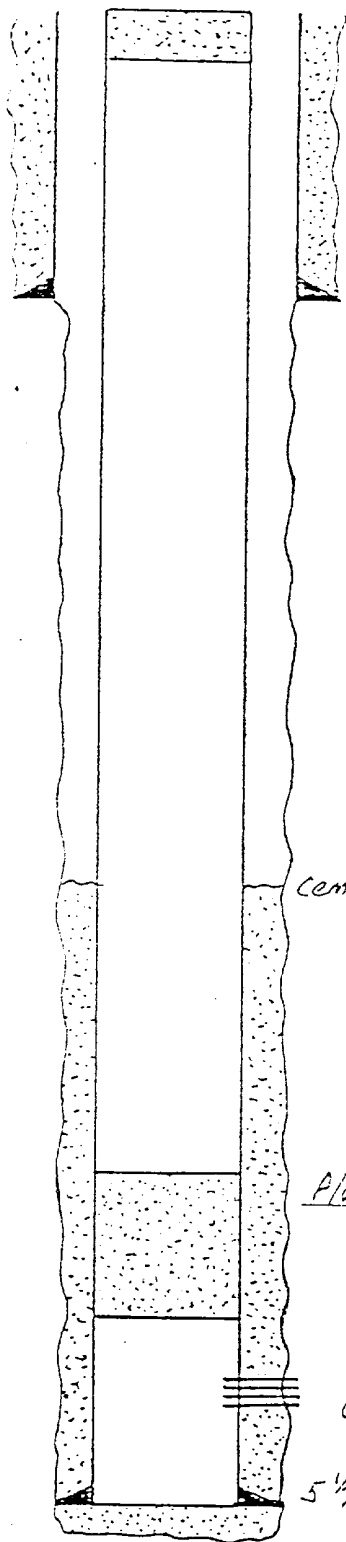
DEC 5- 1985

O.C.D.
HOBBS OFFICE

South Caprock Queen Unit Well No. 9-30

plugged 3/24/72

Current Wellbore Schematic



Plug No. 2 5 sxs cement at surface

8-5/8" casing set at 314' cemented with 200 sxs. Cement circulated

cement top calculated at 1870' outside 5 1/2" casing

Plug No. 1 25 sxs cement in 5 1/2" casing from 3100'-2853'.

Perfs

Queen Sand 3157-3169' w/ 8 holes per foot

5 1/2" casing set at 3203' cemented with 175 sxs

TO : 3205'

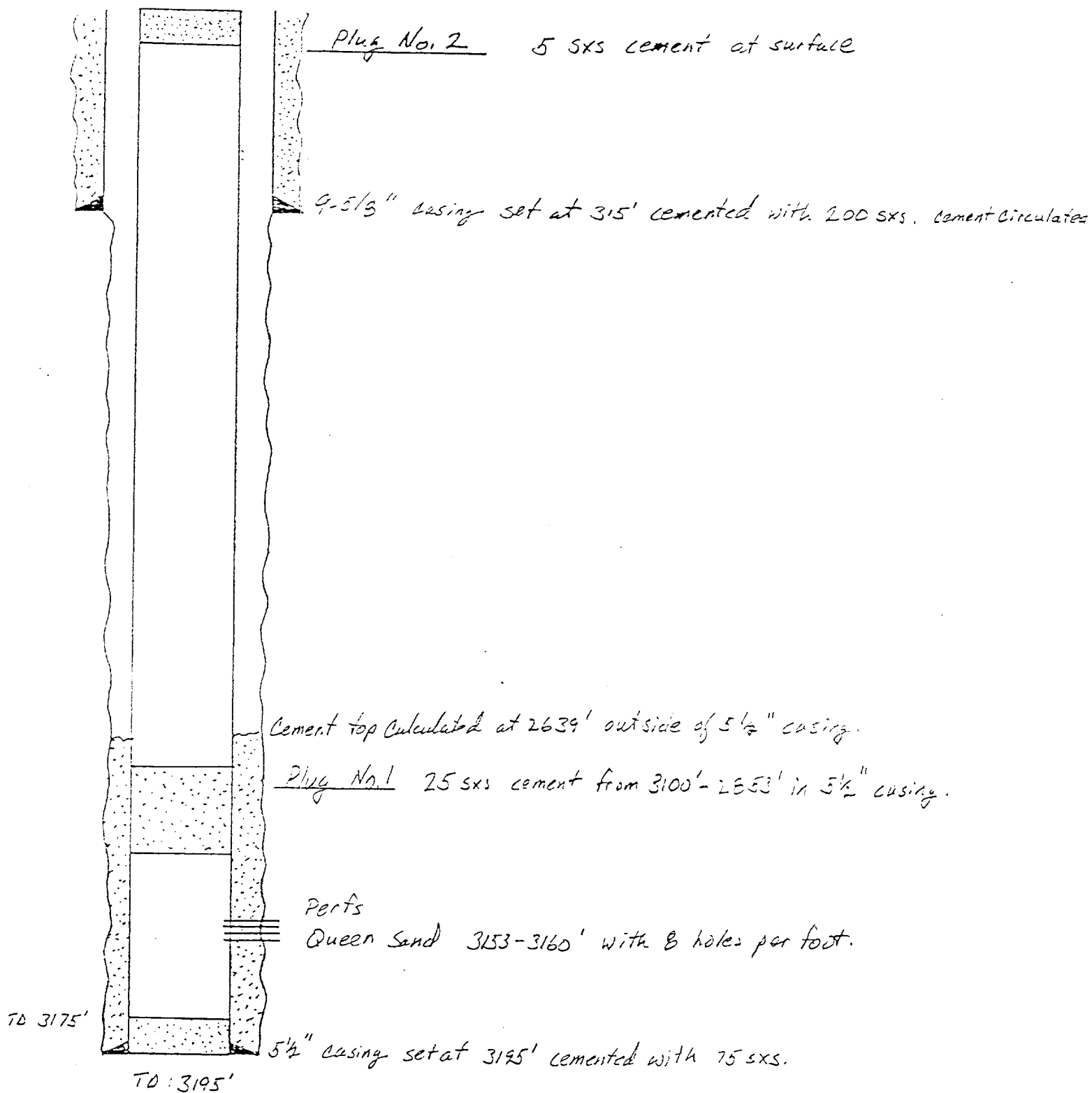
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O.C.D.
HOBBS OFFICE

South Caprock Queen Unit Well No. 10-30

Plugged 3/24/72



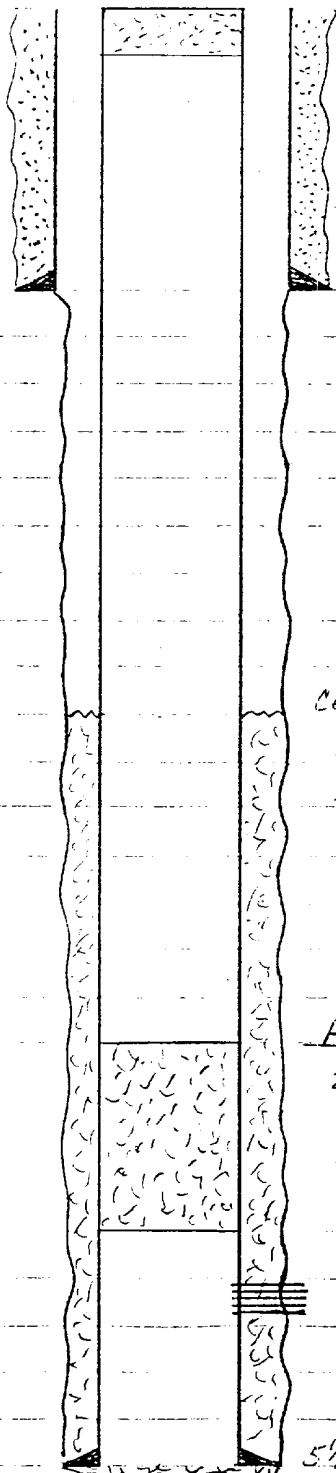
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O.C.D.
HOBBS OFFICE

South Caprock Queen Unit No. 12-30

Plugged And Abandoned March 24, 1972



PLUG No. 2.

5 SKS at surface in 5 1/2" casing.

8 5/8" casing set at 207' cmt'd w/ 130 SKS, circulated.

Cement Top outside 5 1/2" casing calculated at 1676'.

PLUG No. 1

25 sacks cmt in 5 1/2" casing from 2900' - 2953'.

Perforations

Queen Sand 2982-2989 w/ 6 spf.

5 1/2" casing set at 3009', cemented w/ 175 SKS.

TD: 3010'

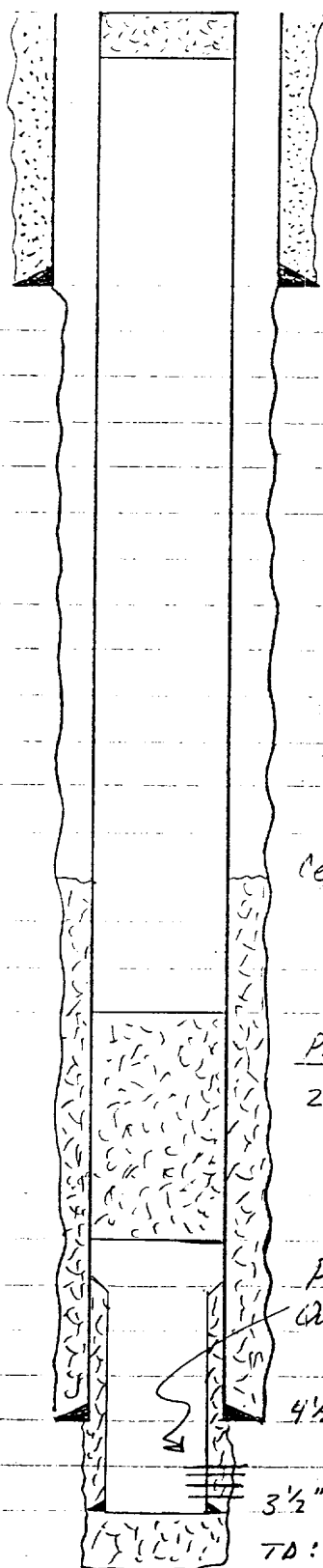
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O.C.D.
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South Caprock Queen Unit Well No. 13-30

Plugged and Abandoned March 24, 1972.



Plug No. 2

5 SKs cement at surface in 4 1/2" casing.

8-5/8" casing set at 208' cmt'd w/ 150 sacks, circulated

Cement top outside 4 1/2" casing calculated at 2134'

Plug No. 1

25 SKs cement inside 4 1/2" casing from 2900' - 2938'

Perforations

Queen Sand 2990 - 3004' w/ 4 spots per foot

4 1/2" casing set at 2901' cmt'd w/ 75 SKs.

3 1/2" liner set from 2837 - 3008' cmt'd w/ 25 SKs

TD: 3060'

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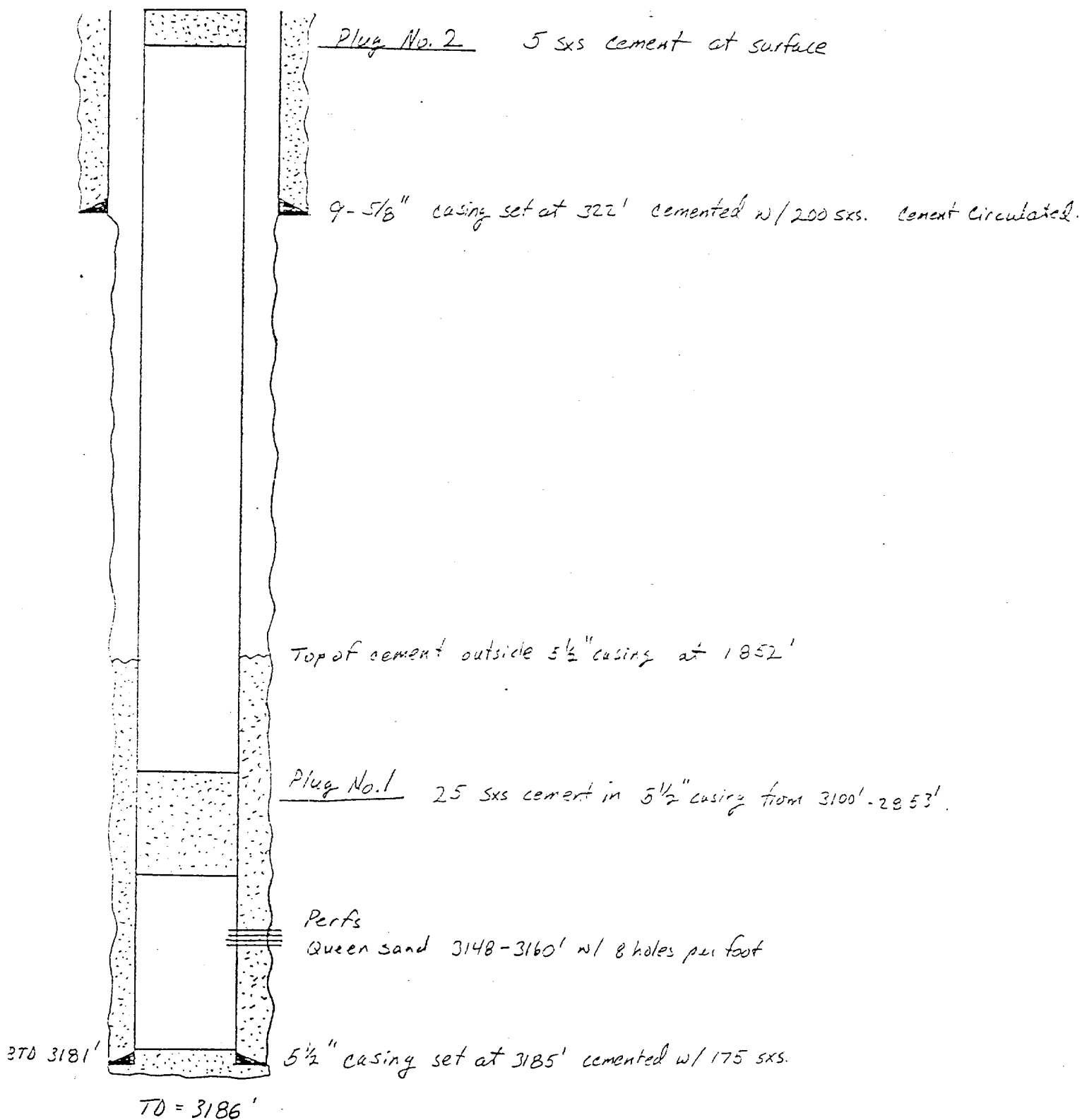
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O.C.D.
HOBBS OFFICE

South Caprock Queen Unit Well No. 14-30

Plugged 3/24/72

Current wellbore schematic



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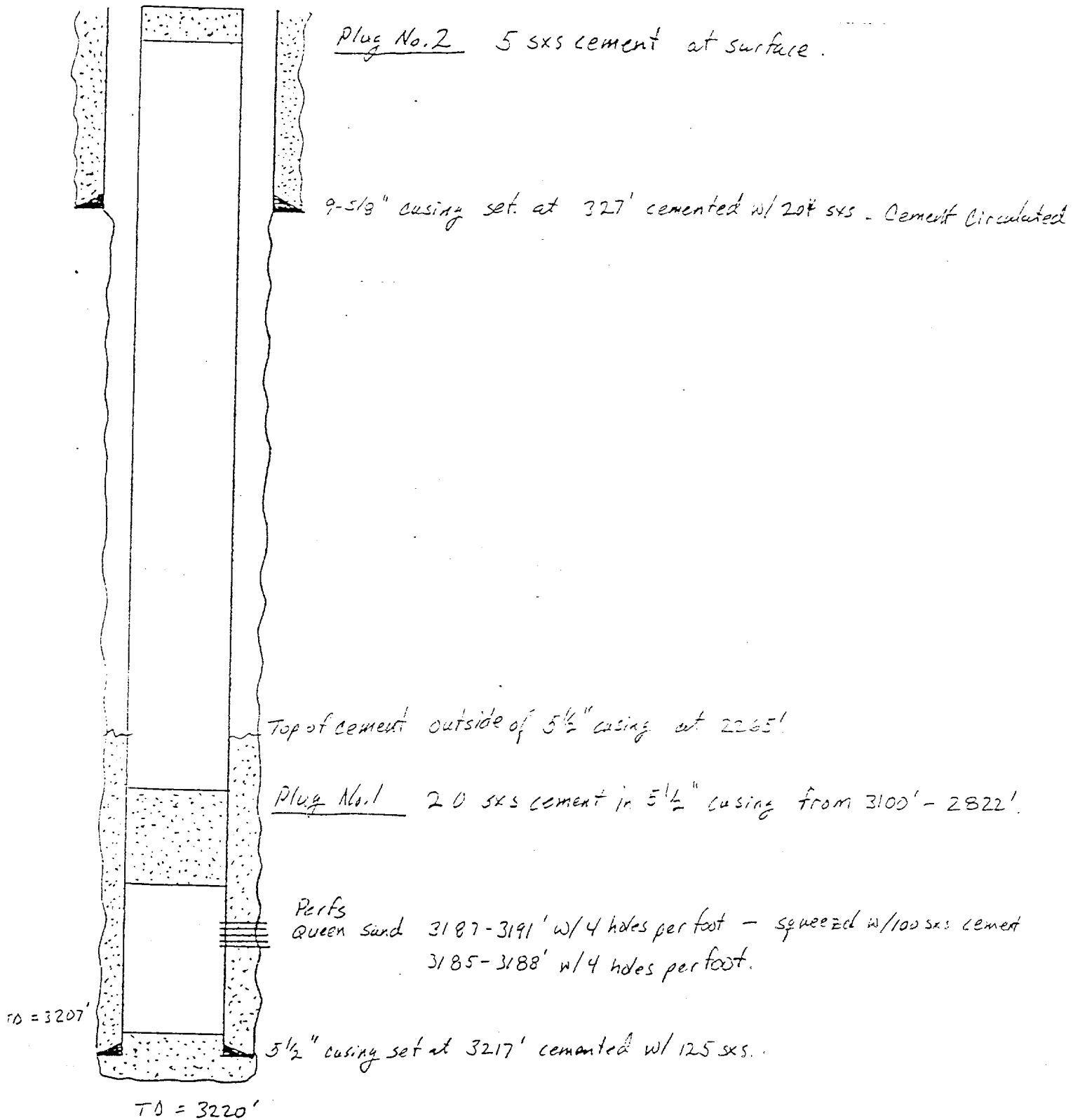
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South Caprock Queen Unit No. 1-31

Plugged 8/12/71

Current Wellbore Schematic



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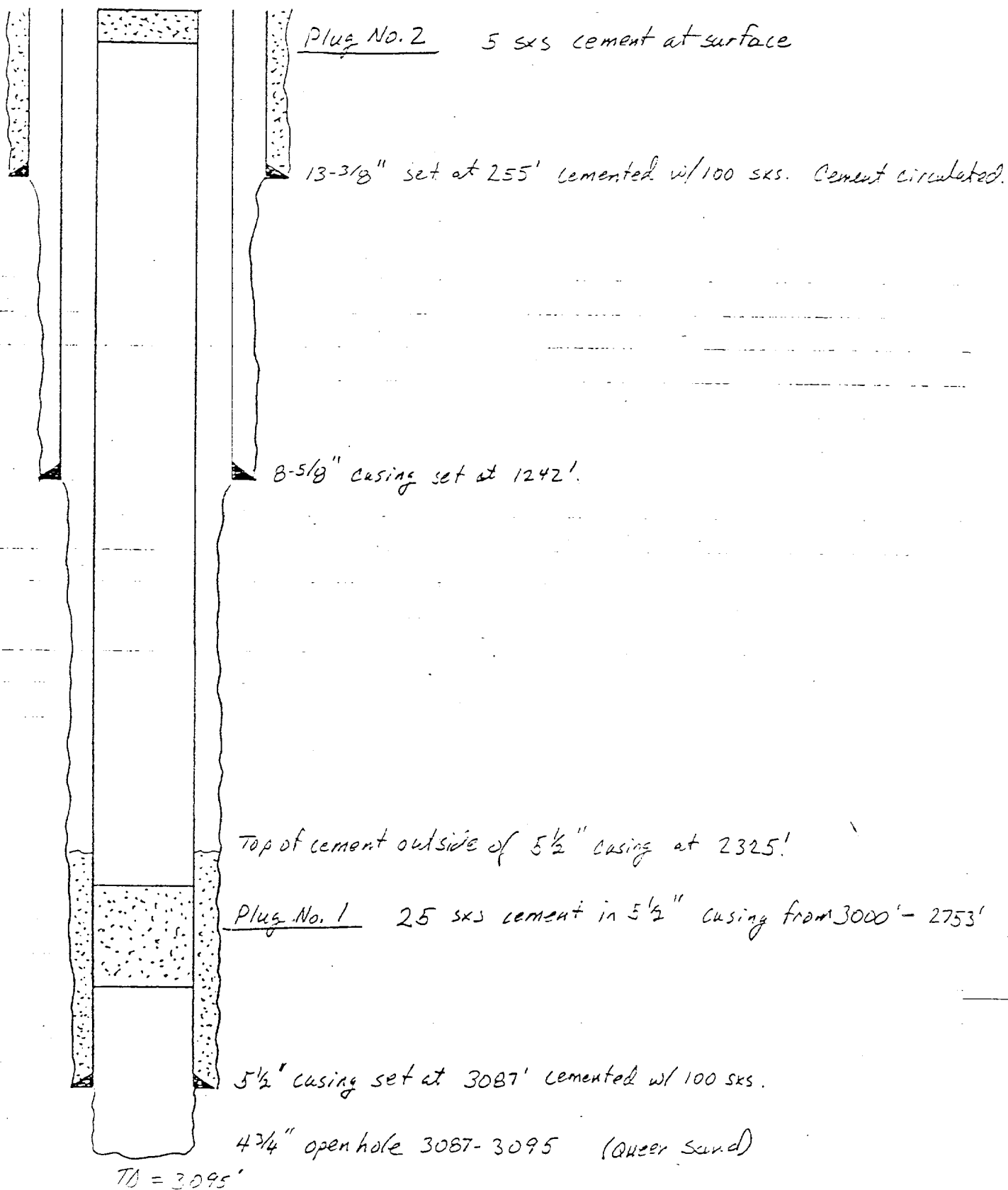
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South Caprock Queen Unit Well No. 2-31

Plugged 3/72

Current well bore schematic



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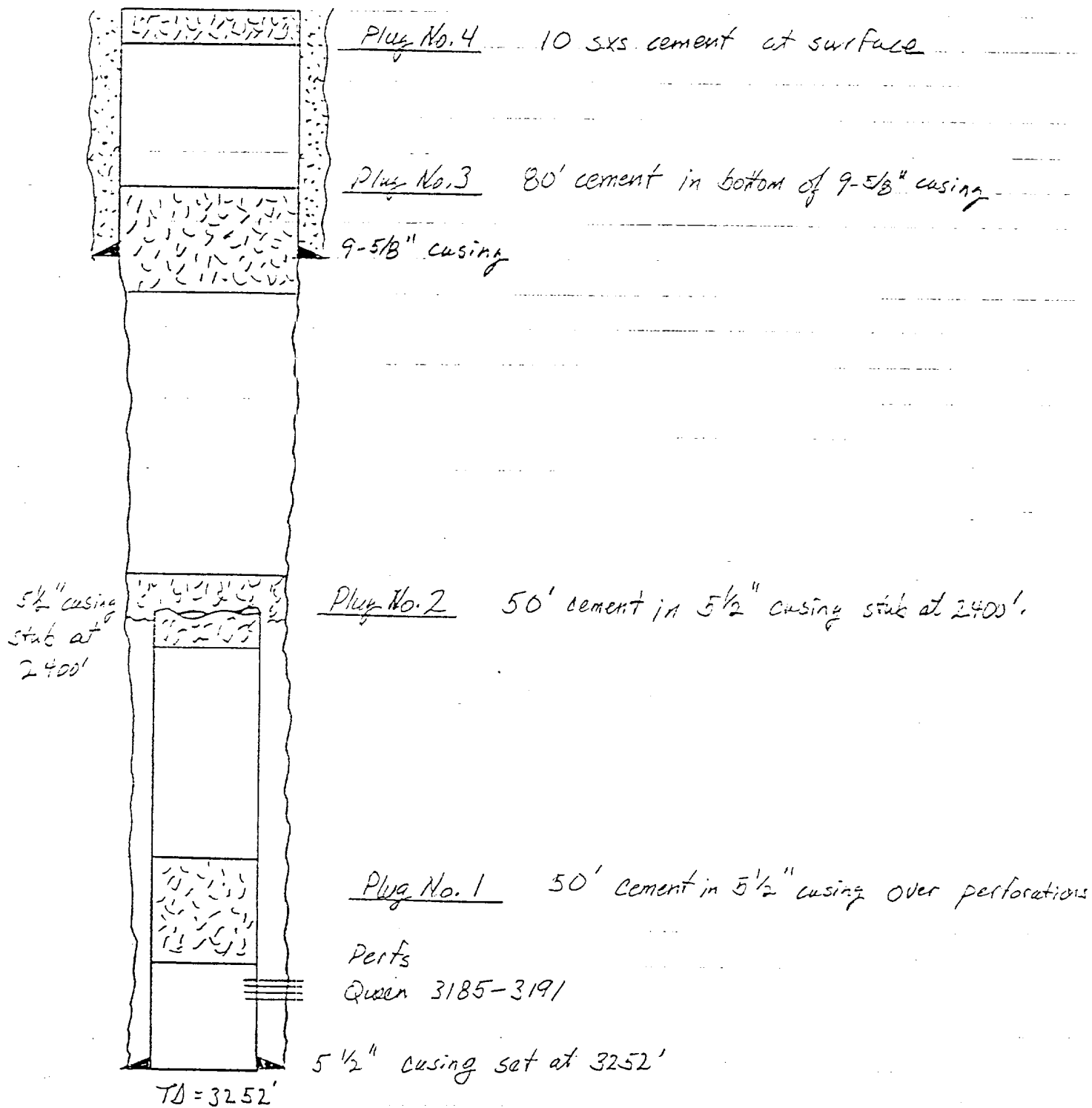
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Subco Dickey - State Well No. 3-A

plugged 6/30/56

Current Wellbore Schematic



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G.C.O.
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VII. Proposed Operation

1. Proposed average daily injection rate - 600 BWPD
Proposed maximum daily injection rate - 800 BWPD
2. This will be a closed system
3. Proposed average injection pressure - 1000 psi
Proposed maximum injection pressure - 1200 psi
4. Source of injected fluid is Queen Sand formation. Analysis of produced water is attached.
5. Injection is for waterflood purposes, with fluids being injected into the same zone they are produced from.

VIII. The proposed injection zone in the South Caprock Queen No. 10-30, Section 30, T-15-S, R-31-E, Chaves County, New Mexico, is in the Shattuck (Sandstone) member of the Permian Queen formation, which is the uppermost 100' of the Queen formation. The top of the Queen formation is at 3150' (+1300') and the bottom of the sand is at 3170' (+1280'). The proposed injection zone is in the interval 3153' to 3165'. The proposed injection is in an arkosic sandstone and siltstone with small amounts of sandy anhydrite and sandy dolomite, which was deposited in a shallow marine, shelf-lagoon environment. There are no apparent faults or fractures in the field which would permit the migration of oil out of the Shattuck reservoir.

The only known source of drinking water in the area is at a very shallow depth, less than 300' in the Tertiary "Ogallala" formation, of the Lea County underground basin.

IX. Proposed Stimulation Program

The formation will be acidized with 1500 gal 15% HCl with an aromatic solvent. Maximum treating pressure will be 2000 psi.

- X. Electric log of subject well is attached.
- XI. Analysis from fresh water well attached. Well is located in N/2 of NE/4, Section 32, T-15-S, R-31-E, Chaves County, New Mexico (only one well within one mile).
- XII. We have examined available geologic and engineering data and find no evidence of open faults or other hydrologic connection between the injection zone and any underground source of drinking water.
- XIII. Proof of notice to offset operators and surface owner is attached. Also attached is a copy of publication and affidavit by the publisher.

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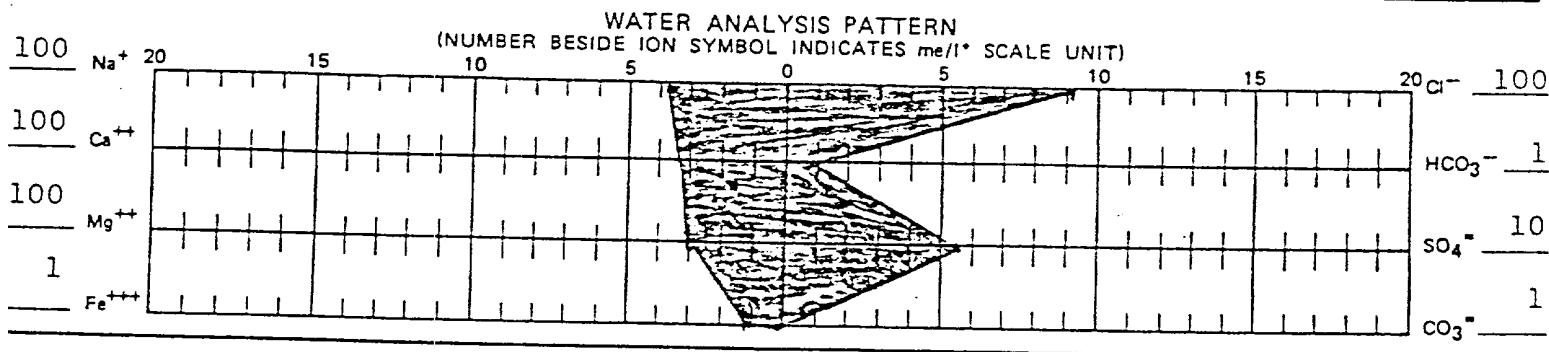
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HOBBS OFFICE



WATER ANALYSIS REPORT

COMPANY Union Oil of California		ANALYSIS NUMBER 0527	
COMPANY ADDRESS		DATE 9/26/84	
FIELD CAPROCK QUEEN		COUNTY OR PARISH CHAVES CO.	STATE N.M.
LEAFLET OR UNIT SOUTH	WELL(S) NAME OR NO. #15-30	WATER SOURCE (FORMATION) QUEEN SAND	
DEPTH, FT.	BHT, °F	SAMPLE SOURCE	TEMP, °F
DATE SAMPLED 9/26/84		TYPE OF WATER <input checked="" type="checkbox"/> PRODUCED <input type="checkbox"/> SUPPLY <input type="checkbox"/> WATERFLOOD <input type="checkbox"/> SALT WATER DISPOSAL	



DISSOLVED SOLIDS

CATIONS	me/l*	mg/l*
Total Hardness	636	
Calcium, Ca ++	334	6680
Magnesium, Mg ++	302	3684.4
Iron (Total) Fe +++	1.2	22
Barium, Ba ++		
Sodium, Na +(calc.)	358	8142
ANIONS		
Chloride, Cl -	935.2	33200
Sulfate, SO4 =	55.2	2650
Carbonate, CO3 =	-0-	-0-
Bicarbonate, HCO3 -	8	48.8
Hydroxyl, OH -	-0-	-0-
Sulfide, S =		

DISSOLVED GASES

Hydrogen Sulfide, H ₂ S	-0- mg/l*
Carbon Dioxide, CO ₂	190.1 mg/l*
Oxygen, O ₂	1± mg/l*

PHYSICAL PROPERTIES

pH	6.95
Specific Gravity	1.147
Total Dissolved Solids (calc.)	54405.2 mg/l*
Stability Index @ 20 °C	-0.46
CaSO ₄ Solubility @ 20 °C	31.2 me/l*
	me/l*
Max. CaSO ₄ Possible (calc.)	55.2 me/l*
Max. CaSO ₄ Possible (calc.)	me/l*

Residual Hydrocarbons _____ ppm(Vol/Vol)

TOTAL SOLIDS (QUANTITATIVE)

54427.2

REMARKS AND RECOMMENDATIONS:

20° C SLIGHTLY CORROSIVE TENDENCY IS INDICATED
20° C CALCIUM SULFATE SCALING IS POSSIBLE

*NOTE: me/l and mg/l are commonly used interchangeably for epm and ppm respectively. Where epm and ppm are used, corrections should be made for specific gravity.

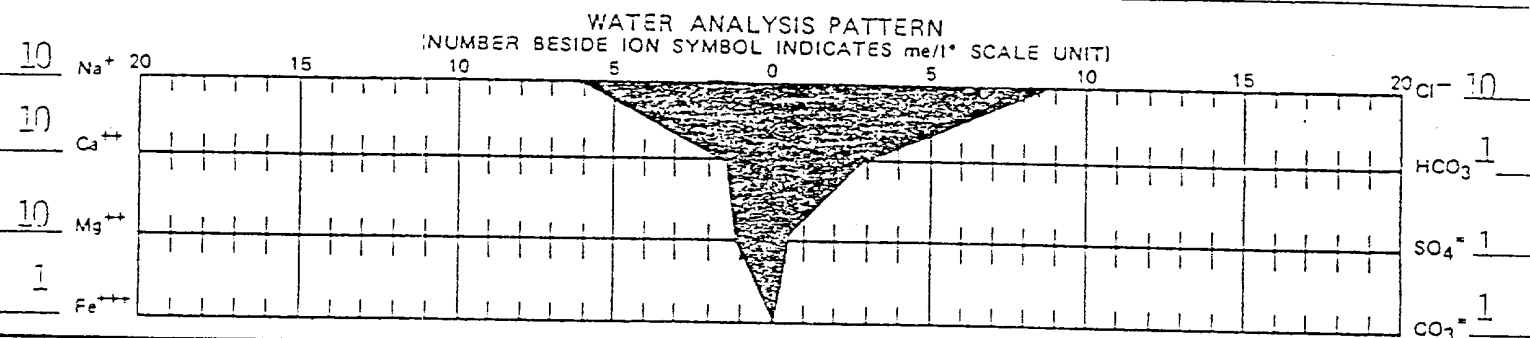
BAKER OIL TREATING REPRESENTATIVE F. LEWIS	ADDRESS	TELEPHONE	RES:
ANALYZED BY:		OFF:	

RECEIVED

DEC 5 - 1985

O.C.D.
HOBBY OFFICE

COMPANY UNION OIL OF CALIFORNIA		ANALYSIS NUMBER 0564	
COMPANY ADDRESS		DATE 10/22/84	
FIELD CAPROCK QUEEN		COUNTY OR PARISH CHAVES CO.	STATE N.M.
LEASE OR UNIT SOUTH CAPROCK QUEEN UNIT	WELL(S) NAME OR NO. Fresh Water Stock Well in NE 1/4 Sec. 32 T-15-S R-31-E	WATER SOURCE (FORMATION)	
DEPTH, FT.	BHT, OF	SAMPLE SOURCE WATER PUMP	TEMP, OF
		WATER, BBL/DAY	OIL BBL/DAY
		GAS, MMCF/DAY	
DATE SAMPLED 10/22/84		TYPE OF WATER	
		<input type="checkbox"/> PRODUCED <input type="checkbox"/> SUPPLY <input type="checkbox"/> WATERFLOOD <input type="checkbox"/> SALT WATER DISPOSAL	



DISSOLVED SOLIDS

CATIONS	me/l*	mg/l*
Total Hardness	26	
Calcium, Ca ⁺⁺	14	280
Magnesium, Mg ⁺⁺	12	146.4
Iron (Total) Fe ⁺⁺⁺	-0-	-0-
Barium, Ba ⁺⁺	---	---
Sodium, Na ⁺ (calc.)	61.9	1424.2
ANIONS		
Chloride, Cl ⁻	84.5	3000
Sulfate, SO ₄ ⁼	42	20
Carbonate, CO ₃ ⁼	-0-	-0-
Bicarbonate, HCO ₃ ⁼	3.0	183
Hydroxyl, OH ⁻	-0-	-0-
Sulfide, S ⁼	-0-	-0-

DISSOLVED GASES

Hydrogen Sulfide, H ₂ S	-0-	mg/l*
Carbon Dioxide, CO ₂	4.0	mg/l*
Oxygen, O ₂	5.0	mg/l*

PHYSICAL PROPERTIES

pH	6.70
Specific Gravity	1.012
Total Dissolved Solids (calc.)	5053.6 mg/l*
Stability Index @ 20 °C	-5.54
CaSO ₄ Solubility @ 20 °C	27.4 me/l*
Max. CaSO ₄ Possible (calc.)	42 me/l*
Max. CaSO ₄ Possible (calc.)	me/l*

Residual Hydrocarbons _____ ppm (Vol/Vol)

TOTAL SOLIDS (QUANTITATIVE)

5053.6

REMARKS AND RECOMMENDATIONS:

a 20° C MODERATELY CORROSIVE TENDENCY IS INDICATED.
a 20° C CALCIUM SULFATE SCALING IS UNLIKELY.

*NOTE: me/l and mg/l are commonly used interchangeably for epm and ppm respectively. Where epm and ppm are used, corrections should be made for specific gravity.

BAKER OIL TREATING REPRESENTATIVE J. LEWIS	ADDRESS	TELEPHONE	RES:
ANALYZED BY RITA BETTY	DATE 10/22/84	OFF:	
DISTRIBUTION			

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DEC 5-1985

O.C.D.
HOSSS OFFICE

Union Oil and Gas Division: Central Region

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



Midland District

November 22, 1985

State of New Mexico
P. O. Box 1148
Santa Fe, New Mexico 87501

SUBJECT:

Reentry of Union Oil Company of California's
South Caprock Queen Unit Well No. 10-30
To Inject Produced Water

Gentlemen:

This is notification to you, as owner of the surface land and as a leasehold operator within one-half mile of the proposed injection well location, that Union Oil Company of California proposes to reenter the South Caprock Queen Unit Well No. 10-30, Section 30, T-15-S, R-31-E, 1980' FSL and 1980' FEL of section, Chaves County, New Mexico, and use it to inject produced water. Injection will be into the Queen Sand through perforations from 3152' to 3165', with water produced from the Queen Sand. The well was being used in this manner prior to abandonment in 1972. Attached are copies of the applications for approval to inject. Any objections or requests for hearing of administrative application must be filed with Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501, within 15 days from the date this application was mailed to you.

Very truly yours,

A handwritten signature in black ink, appearing to read "L. F. Thompson".

FOR L. F. Thompson
District Operations Manager

TLP:ggc
Enclosures

mailed "certified, return receipt requested"
No. P 167 350 579

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DEC 5- 1985

O.C.D.
HOBBS OFFICE

Union Oil and Gas Division: Central Region

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



Midland District

November 22, 1985

Zip Franklin
P. O. Box 545
Lovington, New Mexico 88260

SUBJECT:

Reentry of Union Oil Company of California's
South Caprock Queen Unit Well No. 10-30
To Inject Produced Water

Gentlemen:

This is notification to you, as lessee of the surface lands containing the proposed injection well location, that Union Oil Company of California proposes to reenter the South Caprock Queen Unit Well No. 10-30, Section 30, T-15-S, R-31-E, 1980 ' FSL and 1980' FEL of section, Chaves County, New Mexico, and use it to inject produced water. Injection will be into the Queen Sand through perforations from 3152' to 3165', with water produced from the Queen Sand. The well was being used in this manner prior to abandonment in 1972. Attached are copies of the applications for approval to inject. Any objections or requests for hearing of administrative application must be filed with Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501, within 15 days from the date this application was mailed to you.

Very truly yours,

JCA Jernit

FOR L. F. Thompson
District Operations Manager

TLP:ggc
Enclosures

mailed "certified, return receipt requested"
No. P 167 350 578

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DEC 5- 1985

O.C.D.
HOBBS OFFICE

Union Oil and Gas Division: Central Region

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



Midland District

November 22, 1985

Sun Exploration and Production Company
P. O. Box 1861
Midland, Texas 79702

SUBJECT:

Reentry of Union Oil Company of California's
South Caprock Queen Unit Well No. 10-30
To Inject Produced Water

Gentlemen:

This is notification to you, as a leasehold operator within one-half mile of the proposed injection well location, that Union Oil Company of California proposes to reenter the South Caprock Queen Unit Well No. 10-30, Section 30, T-15-S, R-31-E, 1980' FSL and 1980' FEL of section, Chaves County, New Mexico, and use it to inject produced water. Injection will be into the Queen Sand through perforations from 3152' to 3165', with water produced from the Queen Sand. The well was being used in this manner prior to abandonment in 1972. Attached are copies of the applications for approval to inject. Any objections or requests for hearing of administrative application must be filed with Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501, within 15 days from the date this application was mailed to you.

Very truly yours,

A handwritten signature in dark ink, appearing to read "L. F. Thompson", with a stylized flourish at the end.

FOR L. F. Thompson
District Operations Manager

TLP:ggc
Enclosures

mailed "certified, return receipt requested"
No. P 167 350 576

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G.D.
HOBBS OFFICE

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Zip Franklin
P. O. Box 545
Lovington, New Mexico 88260

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X *Valencia Franklin*

6. Signature - Agent
X

7. Date of Delivery
NOV 25 1985

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, July 1983

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Sun Expl. & Prod. Co.
P. O. Box 1861
Midland, Texas 79702

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X *Bob Egge*

6. Signature - Agent
X

7. Date of Delivery
NOV 25 1985

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, July 1983

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
State of New Mexico
P. O. Box 1148
Santa Fe, New Mexico 87501

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X *Mario Macciano*

6. Signature - Agent
X

7. Date of Delivery
NOV 25 1985

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, July 1983

DOMESTIC RETURN RECEIPT

RECEIVED

DEC 5 - 1985

O.C.D.
HOBBS OFFICE

AFFIDAVIT OF PUBLICATION

County of Chaves

State of New Mexico,

I, R.M. Higginsbotham,

manager

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

of one day

for one weeks

beginning with the issue dated

November 29, 1985

and ending with the issue dated

November 29, 1985

Sworn and subscribed to before me

this 29th day of

November, 1985

John Bae Petre
Notary Public

My commission expires

(Seal)

Publish November 29, 1985

NOTICE

TO WHOM IT MAY
CONCERN:

Union Oil Company of California proposes to re-enter the following well and use it to inject produced water:

South Caprock Queen Unit Well
No. 10-30, Section 30, T-15-S, R-31-E, 1980' FSL and 1980' FEL,
Chaves County, New Mexico.

The intended purpose for the injection well is to provide secondary oil recovery through pressure maintenance by injecting produced water from the Queen Sand Formation into the Queen Sand through perforations from 3152' to 3165' in depth. The expected maximum injection rate and pressure will be 800 BWPD and 1200 psi, respectively. Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501, within fifteen days.

For further information, contact D.L. Watkins at Union Oil Company of California, P.O. Box 671, Midland, Texas 79702, or telephone (915) 682-9731.

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DEC 5 - 1985

C.C.D.
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