

CASE 3815: Application of HUMBLE
OIL & RFG. CO. FOR SALT WATER
DISPOSAL, EDDY COUNTY, N. MEX.

Case Number

3815

Application
Transcripts.

Small Exhibits

ETC.

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

August 1, 1968

Mr. Clarence Hinkle
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Re: Case No. 3814
Order No. 3815
Applicant:
HUMBLE OIL & RFG. CO.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC x (R-3463)
Aztec OCC _____
Other STATE ENGINEER OFFICE

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3815
Order No. R-3463

APPLICATION OF HUMBLE OIL & REFINING
COMPANY FOR SALT WATER DISPOSAL, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 24, 1968,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 1st day of August, 1968, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Humble Oil & Refining Company, is
the owner and operator of the Chalk Bluff Draw Unit (A) Well
No. 19, located 990 feet from the South line and 1650 feet from
the West line of Section 16, Township 18 South, Range 27 East,
NMPM, Empire-Abo Pool, Eddy County, New Mexico.

(3) That the applicant proposes to utilize said well to
dispose of produced salt water into the Abo formation in the
perforated and open-hole interval from approximately 5670 feet
to 6030 feet.

(4) That the injection should be accomplished through
2 3/8-inch plastic-lined tubing installed in a packer set at
approximately 5650 feet; that the casing-tubing annulus

-2-

CASE No. 3815
Order No. R-3463

should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

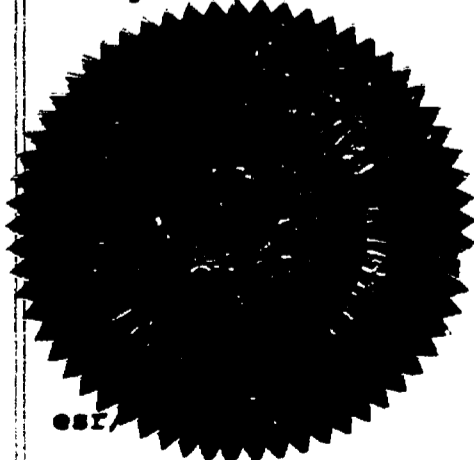
(1) That the applicant, Humble Oil & Refining Company, is hereby authorized to utilize its Chalk Bluff Draw Unit (A) Well No. 19, located 990 feet from the South line and 1650 feet from the West line of Section 16, Township 18 South, Range 27 East, NMPM, Empire-Abo Pool, Eddy County, New Mexico, to dispose of produced salt water into the Abo formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 5650 feet, with injection into the perforated and open-hole interval from approximately 5670 feet to 6030 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

David E. Cargo
DAVID E. CARGO, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

Docket No. 22-68

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 24, 1968

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or
A. L. Porter, Jr., Alternate Examiner:

- CASE 3809: Application of Solar Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Travis Well No. 2 located in Unit J of Section 21, Township 23 South, Range 37 East, Lea County, New Mexico, to produce oil from the Teague-Blinebry and undesignated Tubb-Drinkard pools through parallel strings of tubing.
- CASE 3810: Application of Bronco Oil Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Saltmount Well No. 2 located in Unit O of Section 21, Township 23 South, Range 37 East, Lea County, New Mexico, to produce oil from the Teague-Blinebry and undesignated Tubb-Drinkard pools through parallel strings of tubing.
- CASE 3811: Application of Charles B. Read for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill his Marathon State Well No. 1 at a location 1980 feet from the South line and 660 feet from the West line of Section 7, Township 19 South, Range 35 East, Scharb-Bone Springs Pool, Lea County, New Mexico, in exception to the pool rules which require the first well drilled on a unit to be located in the NE/4 or the SW/4 of the quarter section.
- CASE 3812: Application of Tenneco Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Southwest Henshaw (Premier) Unit Area comprising 1720 acres, more or less, of Federal lands in Township 16 South, Range 30 East, West Henshaw-Grayburg Pool, Eddy County, New Mexico.
- CASE 3813: Application of Tenneco Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Southwest Henshaw (Premier) Unit Area by the injection of water into the Premier sand through nine injection wells in Sections 7, 8, 17, 18 and 19, Township 16 South, Range 30 East, West Henshaw-Grayburg Pool, Eddy County, New Mexico.

- CASE 3814: Application of Humble Oil & Refining Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Penrose zone of the Queen formation in the perforated interval from 3818 feet to 3838 feet in its New Mexico "G" State Well No. 17 located 330 feet from the South line and 1850 feet from the West line of Section 23, Township 21 South, Range 36 East, Bumont Gas Pool, Lea County, New Mexico. If said Penrose zone does not prove satisfactory, then the applicant proposes to deepen said well and dispose into the San Andres formation.
- CASE 3815: Application of Humble Oil & Refining Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the interval from 5670 feet to 6030 feet in its Chalk Bluff Draw Unit (A) Well No. 19 located 990 feet from the South line and 1650 feet from the West line of Section 16, Township 18 South, Range 27 East, Empire Abo Pool, Eddy County, New Mexico.
- CASE 3816: Application of Humble Oil & Refining Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Wolfcamp formation in the interval from 10,199 feet to 10,530 feet in its H. A. Townsend Well No. 6 located 1980 feet from the North and East lines of Section 9, Township 16 South, Range 35 East, Townsend Wolfcamp Pool, Lea County, New Mexico.
- CASE 3817: Application of Continental Oil Company for reinstatement of cancelled underproduction, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the general rules and regulations for prorated gas pools of Southeastern New Mexico promulgated by Order No. R-1670, as amended, to permit the reinstatement of underproduction accumulated by its Stevens A-35 Well No. 2 located in Unit J of Section 35, Township 23 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, cancelled December 31, 1967. Applicant requests that its Stevens A-35 Well No. 1 located in Unit L and its Stevens A-35 Well No. 2 located in Unit J, both in the aforesaid Section 35 and dedicated to the same non-standard gas proration unit, be permitted to produce the aforesaid cancelled underproduction.

- CASE 3818: Application of Continental Oil Company for an exception to Rule 506, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the statewide limiting gas-oil ratio of 2,000 feet of gas per barrel of oil as promulgated by Commission Rule 506 for its Warren Unit Well No. 11, located in Unit A of Section 35, Township 20 South, Range 38 East, Warren-Drinkard Pool, Lea County, New Mexico.
- CASE 3819: Application of Cities Service Oil Company for the institution of gas prorationing in the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the limitation of gas production from the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to reasonable market demand and to the capacity of gas transportation facilities, and that the subject pool be governed by the general rules and regulations for the prorated gas pools of Southeastern New Mexico insofar as said general rules and regulations are not inconsistent with the special rules and regulations governing the subject pool. Further, the applicant proposes that the allowable production from the pool be allocated among the wells in the pool on a 100% surface acreage basis.
- CASE 3820: Application of El Paso Natural Gas Company for an unorthodox gas well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Harvey "A" Well No. 3 at a point 890 feet from the South line and 1650 feet from the East line of Section 32, Township 27 North, Range 7 West, Blanco-Mesaverde Pool, Rio Arriba County, New Mexico, in exception to the pool rules which require locations to be in either the Northeast or Southwest quarter of the section.
- CASE 3821: Application of Marathon Oil Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp formation underlying the SE/4 of Section 22, Township 20 South, Range 35 East, Lea County, New Mexico. Said acreage to be dedicated to a well to be drilled 660 feet from the South and East lines of said Section 22, and within one mile of the Southeast Lea-Wolfcamp Gas Pool.

Case 3822: Application of Aztec Oil & Gas Company for commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle San Andres production from its State "AJ" lease comprising the SW/4 and the W/2 NE/4 of Section 1 and its Amerada State lease comprising the N/2 NW/4 of Section 12, all in Township 18 South, Range 36 East, Arkansas Junction-San Andres Pool, Lea County, New Mexico, allocating production to each lease on the basis of periodic well tests.

CASE 3805: CONTINUED FROM THE JULY 10, 1968, EXAMINER HEARING

Application of Benson-Montin-Greer Drilling Corporation and Lloyd B. Taylor for Pressure Interference Tests and Back Allowable, San Juan County, New Mexico. Applicants, in the above-styled cause, seek authority to extend for an additional 60-day period from July 8, 1968, the shut-in test period authorized for one well in the La Plata Gallup Oil Pool, San Juan County, New Mexico, by Commission Order No. R-3399 and to also extend the back allowable make-up period for said well. Applicants further seek authority to drill three additional La Plata oil wells in Section 6 of Township 31 North, Range 13 West, and Sections 31 and 32, Township 32 North, Range 13 West, and to shut said wells in immediately after recovery of load oil and the establishment of initial potentials, for a period of up to 180 days for the purpose of conducting pressure interference tests, and to make-up the production lost during said test period at a later date. Applicants further seek a provision for administrative extension of the shut-in test period and the make-up period.

HUMBLE OIL & REFINING COMPANY

P. O. Box 1600
Midland, Texas 79701

Case 3815

22-5: Chalk Bluff Draw Unit (A)
Proposed Salt Water Disposal Well

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

Attention: Mr. A. L. Porter, Jr., Secretary-Director

60 JUN 25 AM 8 46

Dear Sir:

Humble Oil & Refining Company respectfully requests a Hearing before the Commission to consider its application to convert Chalk Bluff Draw Unit (A) 19 to a salt water disposal well. It is located in Unit N, Section 16, T-18-S, R-27-E, Eddy County, New Mexico.


Chalk Bluff Draw Unit (A) 19 was completed in January, 1961. The zones 5910-5922, 5850-5878, 5792-5806, 5776-5786, and 5740-5750' tested dry after heavy acid stimulation. The zone 5670-5680 feet was stimulated with 15,000 gallons acid in three stages, after which it produced 6,851 barrels of oil before depletion. It was plugged and abandoned in May, 1965 with the oil string casing in place.

It is proposed to clean out the well to 5,930 feet, reperforate and stimulate the zone 5670-5680 feet. All the previously perforated intervals will be reopened, if necessary. If these intervals prove unsatisfactory for disposal purposes, it is proposed to deepen this well approximately 100 feet in search of porosity in the lower Abo reef.

The system to be connected to this well will serve the Chalk Bluff Draw Unit (A), operated by Humble, 21 wells; BTA's "Gulf" State, 1 well; Gulf's "BU" State, 1 well; and Humble's "BF" State, 2 wells. Rice Engineering and Operating, Inc. has been contracted to build the system.

Yours very truly,

HUMBLE OIL & REFINING COMPANY


L. H. Byrd

BKB/mcb

DOCKET MAILED


Date 7-11-68

NEW MEXICO OIL CONSERVATION COMMISSION
APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

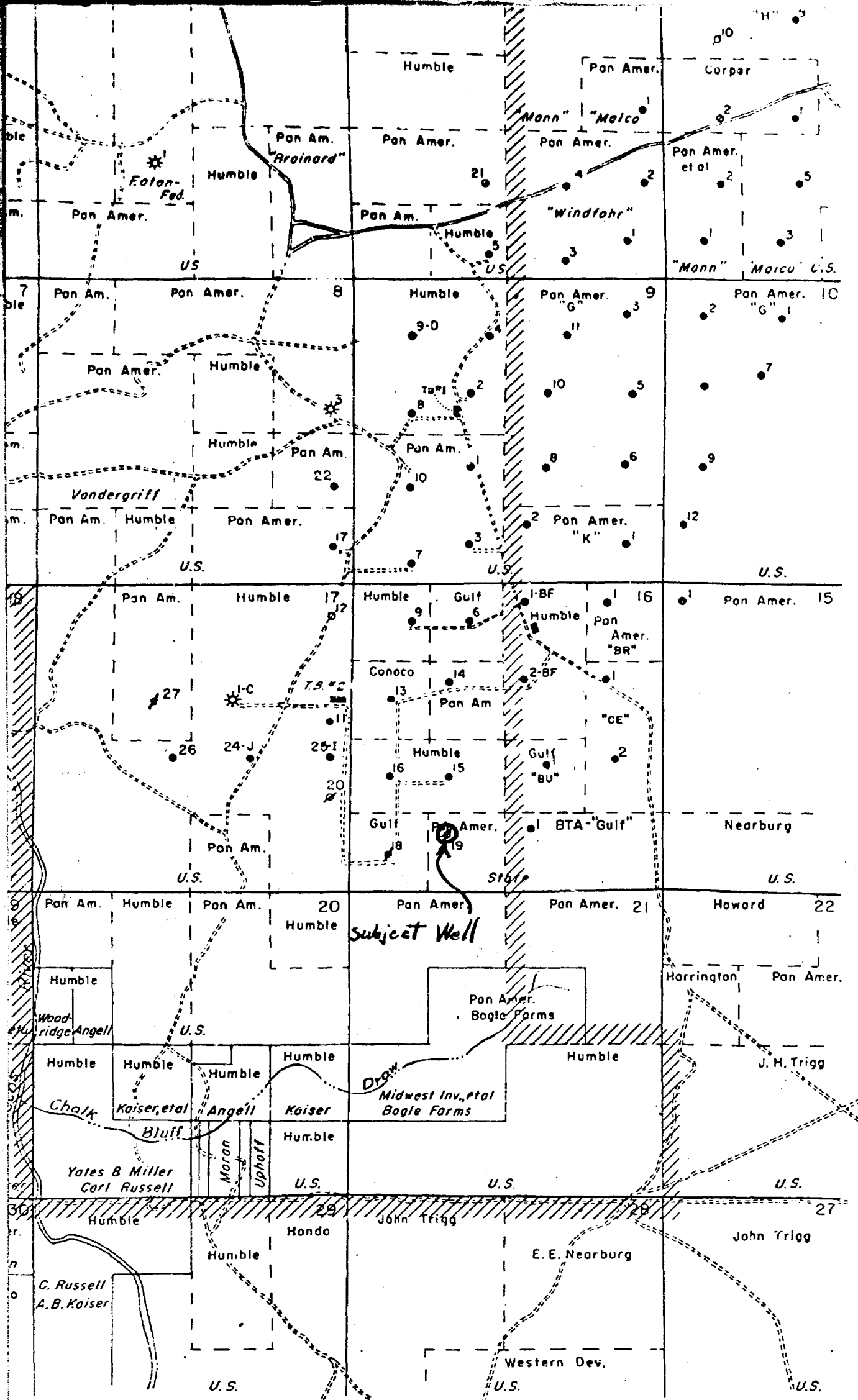
Page 3815

OPERATOR Humble Oil and Refining Company		ADDRESS Box 2100, Hobbs, New Mexico 88240	
LEASE NAME Chalk Bluff Draw Unit (A)	WELL NO. 19	FIELD Empire Abo	COUNTY Eddy
LOCATION UNIT LETTER <u>N</u> WELL IS LOCATED <u>990</u> FEET FROM THE <u>South</u> LINE AND <u>1650</u> FEET FROM THE <u>West</u> LINE, SECTION <u>16</u> TOWNSHIP <u>18S</u> RANGE <u>27E</u> NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	8-5/8"	1522	800
INTERMEDIATE			
LONG STRING	4-1/2"	5970	800
TUBING	2"	5650	NAME, MODEL AND DEPTH OF TUBING PACKER Retrievable hookwall packer @ 5650 feet.
NAME OF PROPOSED INJECTION FORMATION Abo		TOP OF FORMATION 5663	BOTTOM OF FORMATION 5970
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLES Perforated	PROPOSED INTERVAL(S) OF INJECTION 5670-5922 feet
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? No
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH 5850-5922' squeezed with 100 sacks; 5740-5806' squeezed with 200 sacks; 5670-5680' squeezed with 25 sacks.			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 215		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA None
ANTICIPATED DAILY INJECTION VOLUME (BBL'S.) 175	MINIMUM 5200 Est.	MAXIMUM Closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Gravity
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -		WATER TO BE DISPOSED OF Yes	NATURAL WATER IN DISPOSAL ZONE Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) Bogle Farms, Inc., Hagerman, New Mexico		APPROX. PRESSURE (PSI) -	
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL			
Gulf Oil Corporation, P. O. Box 670, Hobbs, New Mexico 88240			
BTA Oil Company, 104 S. Pecos, Midland, Texas 79701			
Pan American Petroleum Corp., P. O. Box 68, Hobbs, New Mexico 88240			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER Yes	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	THE NEW MEXICO STATE ENGINEER -
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	PLAT OF AREA Yes	ELECTRICAL LOG Yes	DIAGRAMMATIC SKETCH OF WELL Yes

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

 District Superintendent 6/21/68
(Signature) (Title) (Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.



OPERATION MAP

Chalk 3815

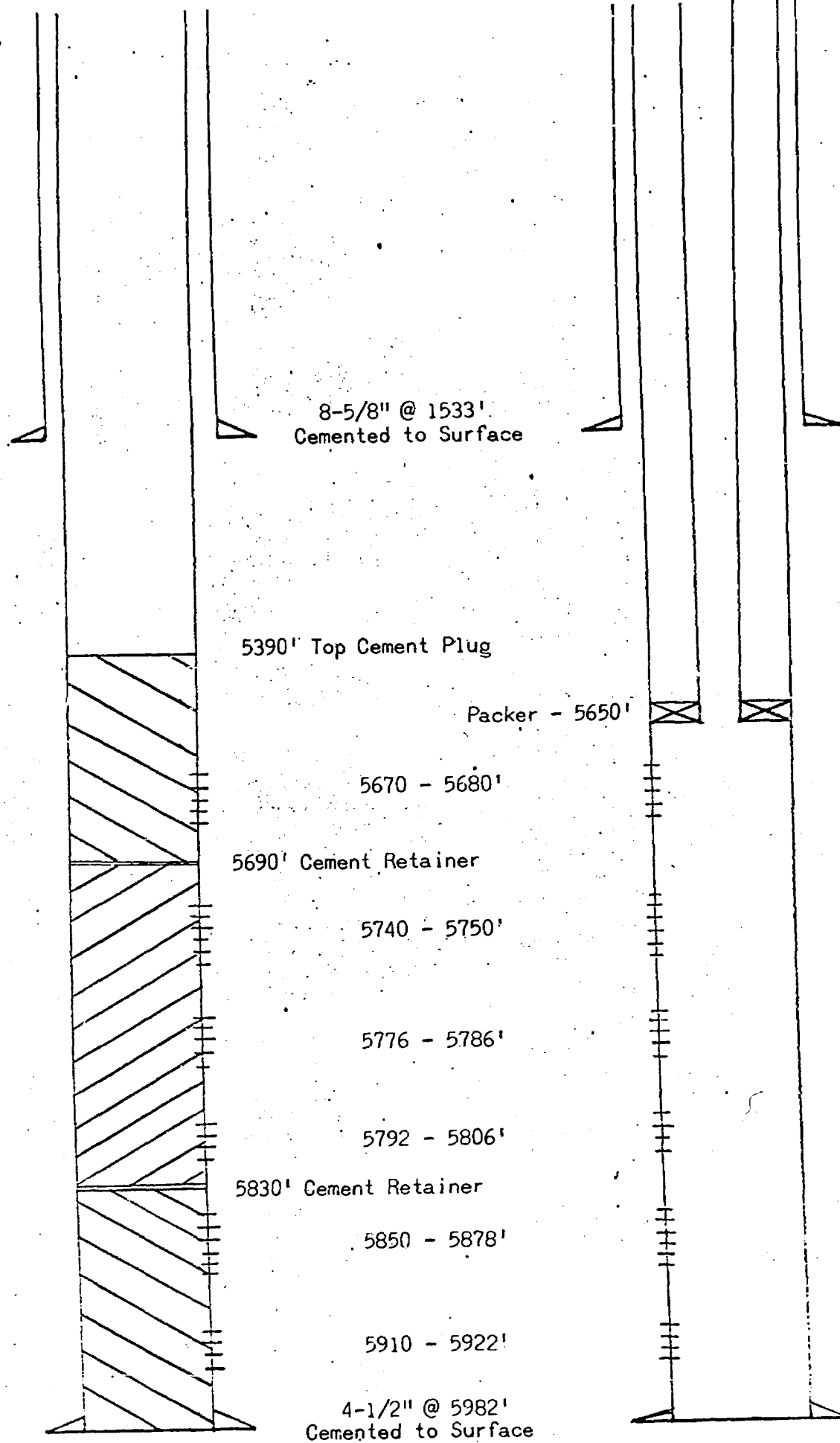
CHALK BLUFF DRAW UNIT

T-17-S, T-18-S, R-27-E, EDDY CO., N.M.

CHALK BLUFF DRAW UNIT (A) 19
EMPIRE ABO POOL
EDDY COUNTY, NEW MEXICO

PRESENT COMPLETION

PROPOSED COMPLETION



Case 3815

HUMBLE OIL & REFINING COMPANY

EMPIRE ABO POOL

WATER ANALYSIS

Source: Chalk Bluff Draw Unit (A), Battery 1, Abo formation

Sodium	72,591 ppm
Calcium	7,718 ppm
Magnesium	4,541 ppm
Chloride	137,700 ppm
Sulfate	1,600 ppm
Bicarbonate	199 ppm
Carbonate	None
Hydrogen Sulfide	63 ppm
Iron	18 ppm
Specific Gravity	1.150 @ 74°F
pH	7.0

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-4491 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 24, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Humble Oil & Refining Company)
for Salt Water Disposal, Eddy County,)
New Mexico.)

Case No.
3815

BEFORE: Daniel S. Nutter
Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case Number 3815.

MR. HATCH: Case 3815. Application of Humble Oil & Refining Company for salt water disposal, Eddy County, New Mexico.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant and Christy, Roswell, appearing on behalf of Humble in Case 3815. We have one witness, Mr. Bevell, who has previously been sworn in Case 3814.

This is the same way, 1 through 4.

(Whereupon, Applicant's Exhibits 1, 2, 3 and 4 were marked for identification.)

B. K. BEVELL

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, by whom you are employed and in what capacity.

A B. K. Bevell, Humble Oil and Refining Company, Senior Production Engineer.

Q Have you previously testified before the New Mexico Oil Conservation Commission?

A Yes, sir, I have.

Q And your qualifications as a petroleum engineer are

a matter of record with the Commission?

A Yes, sir.

Q Are you familiar with the application of Humble in Case 3815?

A Yes, sir.

Q What is Humble seeking to accomplish by this application?

A We're requesting permission to convert our Chalk Bluff Unit A Number 19 to a salt water disposal well.

Q Have you prepared certain exhibits for introduction into this case?

A Yes, sir.

Q Refer to Humble's Exhibit 1 and explain what this shows.

A Exhibit Number 1 is a plat of the area. You will notice the black hashmark line running north and south. Everything to the west of that line is the Chalk Bluff Draw Unit which the Humble operates and which is owned by Humble, Gulf, Pan American and Continental. There are three other leases to be involved in this disposal system. You will note enclosed in green will be Humble's wholly-owned New Mexico State BF Lease, Gulf Oil Company's State BU Lease and BTA Oil Company's Gulf State Lease. Encircled in red is the subject well. It was

drilled some time in 1961 and plugged and abandoned in 1965.

Q Does this show all the wells drilled within about two miles of the proposed injection well?

A Yes, sir, in the Abo Formation.

Q All producing from the Abo Formation?

A Yes, sir.

Q Also shows the acreage ownership in the area?

A Yes, sir.

Q Now, refer to Humble's Exhibit Number 2 and explain what this shows.

A Exhibit Number 2, on the left, shows the well as it presently is. You will note that there are one, two, three, four, five, six sets of perforations, all have been squeezed off with cement. All these perforations, these intervals were stimulated and tested during the initial completion and finally made a small oil well in the top zone from 5670 to 5680.

MR. NUTTER: Were the other zones productive?

THE WITNESS: There were one or two of them that produced a small amount of water.

Q Did this well produce very long as an oil well?

A No, sir. It was a marginal well when it was completed and depleted very rapidly.

Q So all the perforations have been cemented off?

A Yes, sir.

Q Now, explain the proposed completion.

A On the right is the proposed completion. We propose to drill out all the cement plugs and the cement retainers down below all of the present perforated intervals and tube the well with tubing and packer as shown. In the event that this well doesn't take water satisfactorily and on a gravity, we request permission to deepen this well in the Abo Reef in search of a pore zone that might be more receptive of water.

Q Now, how much water do you anticipate will be disposed of in this well?

A Ultimately, we estimate 5,000 barrels a day. That's strictly a guess.

Q Where will this water come from?

A We propose that it all come from the produced water on the leases that we've mentioned.

Q Now, refer to Exhibit Number 3 and explain what this shows.

A Exhibit Number 3 is a well, a section well log of the Abo Reef, Well Number 19. It also shows on the left, the perforated intervals and the top of the reef.

Q Is this a copy of the same log that was filed with the application?

A Yes, sir, it is.

Q Did you also file with the application, Oil Conservation Commission Form C-108?

A Yes, sir.

Q Now, refer to Exhibit Number 4 and explain what this shows.

A Exhibit Number 4 is a water analysis of the produced water from the Abo Formation. It was taken from our Chalk Bluff Draw Unit Battery A Number 1. You can see that the water is almost saturated with dissolved solids of chlorides of 137,000 parts per million. It also contains some hydrogen sulfides and solution.

Q In your opinion, by completing this proposed injection well in the manner in which you've testified, will injected water be confined to the Abo Formation?

A Yes, sir.

Q In your opinion, will it be in the interest of conservation and prevention of waste?

A Yes, sir.

MR. HINKLE: We would like to offer in evidence Exhibits 1 through 4, inclusive.

MR. NUTTER: Applicant's Exhibits 1 through 4 will be admitted.

(Whereupon, Applicant's Exhibits 1, 2, 3 and 4 were admitted.)

MR. HINKLE: That's all on direct.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Bevell, what's the current rate of production on the Humble operated wells? Water production.

A Water production? The unit produces 91 barrels of water a day.

Q And how about these other three leases?

A Our State BF Lease produces three barrels of water per day, and the Gulf State Lease produces thirteen barrels of water per day, and the BTA Oil Company Lease produces 74 barrels of water per day.

Q So at the present time, you are only talking about two or 300 barrels?

A That is correct. Less than 200 barrels and the ultimate estimate is strictly a wild guess. We don't know what is going to happen.

Q Or when.

A In that Abo. I suspect before anything, any of our guesses take place, why, it will be completely unitized under flood conditions but we are designing this system to ultimately handle 5,000 barrels per day. It could be, possibly, converted to water system lines that are used in some way.

Q Now, you mentioned in the event that these zones here wouldn't take the water, that you'd deepen it to another zone. In the letter of application which was filed, it was stated that you proposed to clean out to 5930 and possibly deepen another 100 feet, so the notice was given for a disposal interval from 5670 to 6030 which would include the --

A Additional.

Q -- possible deepening of the well then.

A Yes, sir.

Q Now, what about the mechanics here on Page 2 of your Exhibit 2, Mr. Bevell? Will this annulus be loaded?

A It will be loaded with an inhibited fluid; water.

Q And left open or equipped with a gauge?

A Yes, sir.

Q And what size tubing will that be?

A Two and three-eighths inch.

Q Plastic coated?

A Plastic lined.

Q And the four and a half inch pipe in this well is cemented to the surface?

A Yes, sir.

Q As well as the eight and five-eighths inch surface casing?

A Yes, sir.

MR. NUTTER: Are there any other questions of Mr. Bevell? He may be excused. Do you have anything further in this case?

MR. HINKLE: That's all.

MR. NUTTER: Does anyone have anything to offer in Case 3815? We'll take the case under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
B. K. BEVELL	
Direct Examination by Mr. Hinkle	2
Cross Examination by Mr. Nutter	7

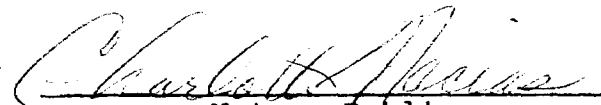
E X H I B I T S

<u>Number</u>	<u>Marked for Identification</u>	<u>Received in Evidence</u>
Applicant's Exhibits 1, 2, 3 & 4	2	6

STATE OF NEW MEXICO)
) ss.
 COUNTY OF BERNALILLO)

I, CHARLOTTE MACIAS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

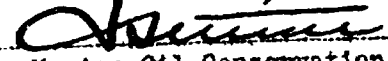
Witness my Hand and Seal this 16th day of September, 1968.


 Notary Public

My Commission Expires:

February 10, 1971.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2815 heard by me on 7/24, 1968.


 Examiner
 New Mexico Oil Conservation Commission

CHALK BLUFF DRAW UNIT (A) 19

EMPIRE ABO POOL

EDDY COUNTY, NEW MEXICO

PRESENT COMPLETION

PROPOSED COMPLETION

8-5/8" @ 1533'
Cemented to Surface

5390' Top Cement Plug

Packer - 5650'

5670 - 5680'

5690' Cement Retainer

5740 - 5750'

5776 - 5786'

5792 - 5806'

5830' Cement Retainer

5850 - 5878'

5910 - 5922'

4-1/2" @ 5982'
Cemented to Surface

BEFORE EXAMINER NUTTER
OCCUPATION COUNTY ID#
CASE NO. 13215

2

HUMBLE OIL & REFINING COMPANY

EMPIRE ABO POOL

WATER ANALYSIS

Source: Chalk Bluff Draw Unit (A), Battery 1, Abo formation

Sodium	72,591 ppm
Calcium	7,718 ppm
Magnesium	4,541 ppm
Chloride	137,700 ppm
Sulfate	1,600 ppm
Bicarbonate	199 ppm
Carbonate	None
Hydrogen Sulfide	63 ppm
Iron	18 ppm
Specific Gravity	1.150 @ 74°F
pH	7.0

4

BEFORE EXAMINER NUTTER
EXHIBIT NO. 4
CASE NO. 3815