CASE 2998: Application of TENNECO for a gas well-water injection well, San Juan County, N. Mex.

CASE NO. 2998

Application,
Transcripts,
Small Exhibits
ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 11, 1964

EXAMINER HEARING

(Cont. from Feb. 19, 1964 Examiner Hearing)
IN THE MATTER OF: Application of Tenneco Oil Company for a gas well-water injection well, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Central Totah Unit Well No. 24 located in Unit O of Section 11, Township 28 North, Range 13 West, San Juan County, New Mexico, to produce gas from the Basin-Dakota Gas Pool through 1 1/2 inch tubing and to inject water into the Gallup formation, Totah-Gallup Oil Pool, through 2 1/16 inch tubing with separation of the zones by a packer set at 5766 feet.

Case No. 2998

BEFORE: DANIEL S. NUTTER, EXAMINER.

TRANSCRIPT OF HEARING

DEARNLEY, MEIER, WILKINS and CROWNOVER
General Court Reporting Service
Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

MR. NUTTER: We'll call Case 2998.

MR. DURRETT: Application of Tenneco Oil Company for a gas well-water injection well, San Juan County, New Mexico.

MR. MORRIS: If the Examiner please, I am Richard Morris of Seth, Montgomery, Federici and Andrews, Santa Fe, appearing on behalf of the Applicant, Tenneco Oil Company. We will have one witness in this case, Mr. J. J. Lacey of Durango, Colorado, and ask that he be sworn at this time.

(Witness sworn.)

(Whereupon, Applicant's Exhibits Nos. 1 through 6 were marked for identification.)

JOHN J. LACEY

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

DIRECT EXAMINATION

BY MR. MORRIS:

Q Mr. Lacey, please state your name, by whom you are employed, and in what position.

A My name is John J. Lacey. I'm employed by Tenneco Oil Company in Durango, Colorado as Senior Petroleum Engineer.

Q Mr. Lacey, have you previously testified before the Commission or one of its Examiners and had your qualifications as a petroleum engineer accepted?

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Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

A Yes, I have.

Q Are you familiar with the application of Tenneco Oil Company in Case 2998?

A Yes, I am.

Q What is it that Tenneco seeks by this application?

A Briefly Tenneco Oil Company is seeking permission to inject water in the Gallup zone of a well which is completed as a Gallup-Dakota dual completion.

Q Refer now to what we have marked as Exhibit 1 in this case and state what that is and what it shows.

A Exhibit 1 is a plat showing the outline of the Central Totah Unit, the participating area within the unit, the location of all of the Dakota and Gallup wells in the unit, and in the surrounding area. It also shows the injection wells or those wells proposed to be injected within the unit and surrounding the unit, and shows the subject well circled in blue.

Q You referred to the unit, the Central Total Unit, Mr. Lacey, is that the unit that has been approved by the New Mexico Oil Conservation Commission?

A Yes, it is. It was the pressure maintenance for the unit has been approved previously by the Commission in R-2190, and the unit was approved by the Commission in R-2457.

Q How is the subject well designated on the plat and

what number is given to it there?

A The well is designated on Exhibit 1 by being circled in blue and is designated by the number 24, which is its unit number, Central Totah Unit Well 24.

Q Still referring to this plat, Mr. Lacey, I notice a row of injection wells along the west side of this unit boundary with wells offsetting those injection wells just outside the unit boundary. Are those wells presently on injection?

A Yes, they are. The wells designated by numbers 1, 3 and 5 within the unit and the two wells designated by the numbers 1 and 3 in the Aztec-Totah Unit have been converted to water injection wells and are currently being used and water is being injected into them.

Q There are no other injection wells in this Central Totah Unit until you get over to the three wells on the east flank of the unit, is that correct?

A That is correct. However, there is, currently there is no water being injected on the east line of the unit pending approval of this application.

Q I notice that there are three wells within the Central Totah Unit on the east side of the unit, and those three wells are offset by two injection wells outside of the unit. Is there some agreement between operators on how those wells are to be operated?

A The Central Totah Unit pressure maintenance program is set up as a double-ended line drive which necessitated negotiation of cooperative line agreement with offset operators along the east side of the unit where we are currently injecting water. Line agreement was negotiated with Aztec along the west side of the unit. The Central-Totah Unit working interest operators have negotiated a line agreement along the east line with Pan American, who is operator of the Gallegos Canyon Unit, which includes all five wells designated on the exhibit.

Q Including the subject well?

A It does the Well No. 24.

Q Assuming hopefully, Mr. Lacey, that we obtain approval here today, what would be the plan as to putting these five wells on injection?

A The facilities for supplying water and injecting water into these five wells have been completed, and pending approval of this application, we plan to commence water injection immediately or in the very, very near future.

Q Would all five wells go on injection at the same time?

A Yes, they would.

Q Referring now to what have been marked Exhibits 2 and 3, would you state what they are?

A Exhibits 2 and 3 are copies of letters dated January

the 29th and February the 5th of 1964, Exhibit 2 being a letter to the Commission requesting administrative approval to convert the Central Totah Unit Well No. 24 to water injection, with copies being sent to operators of offset Gallup wells in the area. The Exhibit 3 is a letter dated February 5th notifying the working interest owners of the Dakota zone in the subject well, the Central Totah Unit No. 24, that we plan to convert it, the Gallup zone, which is owned by the unit, to water injection.

Q Have you received any objection either from your offset operators or working interest in this well to this proposal?

A No, we have not.

Q Turn now to what has been marked as Exhibit 4. State what that shows.

A Exhibit 4 is a small-scale copy of the electric log of the subject well showing the intervals from which the well is presently being produced in both the Dakcta and Gallup zones.

Q In Well No. 24, Mr. Lacey, what is your present installation?

A The present installation, dual completion installation in the well is shown on Exhibit 5, which basically includes a Baker Model D production packer set at 5766, a string of inch and a half non-upset tubing being seated in the packer through which the Dakota is produced, and a string of 2-1/16" tubing set at 5680

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from which the Gallup is being produced.

Q Nothing particularly unusual about this completion?

A No. This completion is a standard of which many of a similar type are being done in the San Juan Basin and in the Totah-Gallup field have been done in the past.

Q In connection with your proposed application to convert the Gallup zone to water injection, would you use the installation as it presently exists or do you plan certain modifications?

A No, we do not plan to use the installation as it is shown on Exhibit 5, but plan to modify it in order that we might better protect both the Gallup and the Dakota zones in the well.

Q Would you describe by what means and in what method you propose to use in modifying this well for water injection?

A Exhibit 6 is a diagrammatic sketch of the installation we propose to install in the well, which we feel will give adequate protection to both zones. Basically it provides for a second string of 3-½" tubing and a second packer set immediately below the Gallup perforation and immediately above the Baker Model D presently installed in the well.

From the colors on this exhibit you can see that the Dakota production and the Gallup water injection will be separated by some dead annular space such that if leakage occurs in the Dakota producing string or packer or leakage occurs in the annular

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space between the five and a half casing and three and a half inch tubing and the Baker Model FA packer, it would be immediately apparent in this dead annular area. We feel that this installation offers several distinct advantages, the first being that the dead annular area colored in yellow provides a continuous test for leakage of either of the two, the Dakota production or the Gallup water injection into it. Secondly, if leakage into this dead annular space is indicated, it does not necessarily mean that communication exists between the Gallup and the Dakota, since in order to have actual communication between the two zones it would require a double failure of both tubing strings or both packer strings or combination of both.

Third, the mechanical strength of the materials being used in this installation are such that they are all greater, their strength is greater than the maximum anticipated pressure of hydrostatic to the point of 5742, and the anticipated injection pressure of 2,000 pounds which would make a total of 4490 pounds. Another distinct advantage to this installation is that the Dakota zone can be worked over without exposing it to the Gallup water injection. In other words, this installation provides remedial operations on the Dakota just as easily as it now exists, the presently existing installation shown on Exhibit 5. Since this minimum restricted diameter is the bore, the ID diameter of the

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Baker Model D set at 5756.

Q Have you compared your installation as proposed here to installations previously submitted to the Commission in other cases, and especially turning your attention to cases that the Commission has approved?

A Yes, I have.

Q What cases have you examined where the Commission has approved similar installations?

A I have examined two cases where the Commission has granted approval for salt water, produced water disposal between an oil production string and an intermediate casing string.

Q What were those cases?

A They are Cases 2762 and 2798.

Q Do you remember who the applicant was in those two cases?

A I believe Pan American Petroleum Corporation.

Q Have you examined the exhibits offered in each of those two cases showing the diagrammatic sketch of the installation?

A Yes, I have.

Q Could you say that the mechanical installation approved in those two cases afford to the lower zone approximately the same degree of protection as in the installation that we propose here today?

A Yes, I would. The installation, as we propose on Exhibit 6, essentially provides the same degree of protection. The difference primarily being we are using a Baker Model FA production packer where in the two mentioned cases they have used cement on the outside of the oil production casing string as the protection between the salt water disposal and the production from their lower zones.

Q Mr. Lacey, have you also looked at some cases that the Commission has denied where the proposal was to inject water into an upper zone?

A Yes, I have.

Q I would refer you to Case 1420 which was application of Caulkins Oil Company heard by the Commission on July 15, 1959, resulting in order No. R-1191-B, which order denied the Caulkins proposal. Are you familiar with that case and with the transcript of hearing in that case?

A Yes, I am.

Q Would you compare your proposed installation here to the installation proposed by Caulkins in that case?

A Basically the installation we propose as shown on Exhibit 6 has a considerable, a better degree of protection of the lower producing zone for two reasons, one, in the Caulkins case there was no way actually to detect communication or small

communication in the Dakota production string between the two packers or failure of the lower packer, and if there was evidence of communication at the surface, or leakage, it was almost sure that communication was existing between the two zones. Where in our case evidence of leakage from either the one zone does not necessarily mean that communication is occurring.

Q In other words, we have, as you said before, the feature of our proposal is that we have double protection?

A Yes.

Q Whereas, at least in the Caulkins case they only had a single protection?

A This is essentially correct.

Q Mr. Lacey, were Exhibits 1 through 6, was the information shown thereon prepared by you or at your direction?

A Yes, they were.

MR. MORRIS: We offer Exhibits 1 through 6 in evidence.

MR. NUTTER: Tenneco's Exhibits 1 through 6 will be admitted in evidence.

(Whereupon, Applicant's Exhibits 1 through 6 were offered and admitted in evidence.)

MR. MORRIS: That's all I have at this time.

MR. NUTTER: Any questions of Mr. Lacey?

CROSS EXAMINATION

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BY MR. NUTTER:

Q What did you say your hydrostatic head would be expected?

A Approximately 2500 pounds.

Q And you anticipate an injection pressure of about 2,000 pounds?

A This is all the surface equipment is designed for.

Q This Model D packer at 5766 is a permanent type packer, is the FA a permanent type packer also?

A Yes, it is. They are very similar packers except the Model FA has a larger internal bore.

Q Now the 5-½" pipe was cemented with 200 sacks. Do you have the top of the cement on that?

A No, I do not. This well was not drilled and completed by Tenneco Oil Company, but came under our operation on the effective date of the unit the first of this year, and the well file supplied to us by the former operator of the well are not complete in this respect.

Q He didn't give you the top of the cement then?

A No, he did not.

Q I note that it was two-staged with a collar at 1860 feet and 50 sacks of cement there. Have you attempted to calculate what the fillup would have been with 200 sacks at the shoe of the 5-½" pipe?

A No, I have not. I believe the shoe at the base of 5-½ is 150 sacks rather than 200. One exhibit might be in error.

Q That's correct, one shows 200 and the other shows 150 --

A The five, the 200 sacks is erroneous, the Exhibit 6 showing 150 is correct. The 200 sacks was the 50 and the 150.

Q Does the Dakota formation produce water?

A Yes, it does.

Q What type of water will be injected in the annular space here, will that be fresh water, salt water?

A Our source of water supply is the San Juan River, so it will be fresh water.

MR. NUTTER: Are there any other questions of Mr. Lacey? Mr. Arnold.

BY MR. ARNOLD:

Q As you know, there is a corrosion problem over in that area in the Menefee and the Cliff House, have you studied the problem to try to decide whether or not you have that zone covered with cement? Do you think that a stage tool at 1800, this is probably above that zone?

A Right. The stage tool was probably set within 50 feet of the base of the Pictured Cliff formation.

Q If you should have a corrosion problem and develop a hole in the casing, how would you realize that this had happened

to you?

A After injection is started on the well and the well has, the pressure then has built up on the well, any leak that might occur in the 5-½ casing I think would be, if it was of any sizeable magnitude, would become apparent through the pressure and injection rates in the well. In other words, if a hole appeared in the 5-½ casing and started taking water, you would start putting large quantities of water at the same or lower pressures, which would be indicative of a failure of the type you are talking about.

Q Of course, you don't know that the pressure would be a great deal different than the injection pressure into the Gallup, do you?

A No, actually no. However, this well being, its location within the field has a small amount of pay, this well is going to pressure up fairly quickly, and other operators experience of water injection in the Totah and Cha Cha fields is that the wells with thin pay pressure up very quickly and you have to go above a thousand pounds within a short time, which you could probably, I feel that you could put water into the Menefee or water would escape through the 5-½" casing at a pressure considerably lower than this.

I don't know if I'm making myself clear. If the well

pressures up to say above a thousand pounds at a certain injection rate, if the injection pressure begins to fall off or if you increase the injection rate and the pressure does not increase, you will know that something might be wrong.

Q I was just asking you a question to find out if you were at all concerned about the corrosive zone being open behind that pipe.

A We recently ran a log on one of our Gallup producing wells within the unit which indicated we had no corrosion in that particular well and that the casing was in very good shape, this Central Totah Unit Well No. 4.

BY MR. NUTTER:

Q How near is the nearest production from the Menefee to the Cliff House production of gas or hydrocarbons?

A Well, the Pictured Cliff in this area is productive, and I would say that is the nearest producing zone.

Q How about the Menefee and Cliff House?

A They're water-bearing in this area. I don't know how far east you have to go before they become productive. It would be quite a few miles.

MR. NUTTER: Are there any further questions? The witness may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Morris?

MR. MORRIS: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2998?

MR. IRBY: I think the Examiner and the Commission are aware of any possibility of threat to fresh water which may occur from this installation and feel that they will take care of it without any questions or comments from me.

MR. NUTTER: Does anyone have anything further? We will take the case under advisement.

STATE OF NEW MEXICO)
) SS
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 20th day of March, 1964.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2998 heard by me on 3/11 1964.

....., Examiner
New Mexico Oil Conservation Commission

DEARNLEY, MEIER, WILKINS and CROWNOVER
General Court Reporting Service
Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

DRAFT

JMD/esr
March 18, 1964

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. 2998

Order No. R-2682

APPLICATION OF TENNECO OIL COMPANY
FOR A GAS WELL-WATER INJECTION WELL,
SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on March 11, 1964, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter. ~~Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.~~

NOW, on this _____ day of March, 1964, the Commission, a quorum being present, having considered the ~~application,~~ testimony, the record, ~~evidence adduced~~ 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, Tenneco Oil Company, seeks authority to dually complete its Central Totah Unit Well No. 24, located in Unit O of Section 11, Township 28 North, Range 13 West, NMPM, San Juan County, New Mexico, to produce gas from the Basin-Dakota Gas Pool and to inject water into the Totah-Gallup Oil Pool.

(3) That the applicant proposes to install 3 1/2-inch tubing in a packer set at approximately 5742 feet, to install 1 1/2-inch tubing within the 3 1/2-inch tubing in a packer set at approximately 5766 feet, to produce ~~the~~ Dakota gas through

the 1 1/2-inch tubing, and to inject water into the Gallup formation through the annulus between the 3 1/2-inch tubing and 5 1/2-inch casing.

(4) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.

(5) That approval of the subject application will implement the Totah-Gallup Pressure Maintenance Project authorized by Order No. R-2190 and should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That approval of the subject application will protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to complete its Central Totah Unit Well No. 24, located in Unit O of Section 11, Township 28 North, Range 13 West, NMPM, San Juan County, New Mexico, as a dual completion (conventional) to produce gas from the Basin-Dakota Gas Pool and to inject water into the Totah-Gallup Oil Pool;

PROVIDED HOWEVER, that 3 1/2-inch tubing shall be installed in a packer set at approximately 5742 feet, that 1 1/2-inch tubing shall be installed within the 3 1/2-inch tubing in a packer set at approximately 5766 feet, that the Dakota gas ~~is~~ shall be produced through the 1 1/2-inch tubing below the lower packer, and that water injection ~~shall be~~ ~~water is injected~~ shall be into the Gallup formation through the annulus between the 5 1/2-inch casing and the 3 1/2-inch tubing;

PROVIDED FURTHER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order;

PROVIDED FURTHER, that the applicant shall take packer-leakage tests upon completion and annually thereafter during the Annual Deliverability Test Period for the Basin-Dakota Gas Pool.

(2) 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.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 19, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company for a gas well-water injection well, San Juan County, New Mexico.

Cont'd to Mar. 11th

Case No. 2998

BEFORE: ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

DEARNLEY, MEIER, WILKINS and CROWNOVER
General Court Reporting Service
Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 19, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company for a gas well-water injection well, San Juan County, New Mexico.) CASE NO. 2998

BEFORE: ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

MR. UTZ: Case 2998.

MR. DURRETT: Application of Tenneco Oil Company for a gas well-water injection well, San Juan County, New Mexico.

MR. MORRIS: Mr. Examiner, Tenneco Oil Company requests that this application be deferred until the next examiner hearing, which I understand will be March 11th, and we request that it be, or I move that it be continued until that time.

MR. UTZ: Without objection, Case 2998 will be continued to the March 11th Examiner Hearing.

* * * * *

DEARNLEY, MEIER, WILKINS and CROWNOVER
General Court Reporting Service
Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

STATE OF NEW MEXICO }

COUNTY OF BERNALILLO }

I, ROY D. WILKINS, 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 of Office, this 24th day of February, 1964.

My Commission Expires:

September 6, 1967.

NOTARY PUBLIC

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2985, heard by me on Feb. 19, 1964.

....., Examiner
New Mexico Oil Conservation Commission

Docket No. 7-64

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 11, 1964

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 Elvis A. Utz, Alternate Examiner:

CASE 2988 (Continued from the February 5, 1964 Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit George E. Willett and all other interested parties to appear and show cause why the SDD Hare Well No. 7, located 600 feet from the South line and 1360 feet from the East line of Section 14, Township 29 North, Range 11 West, San Juan County, New Mexico, should not be plugged in accordance with a Commission-approved plugging program.

CASE 2998 (Continued from the February 19, 1964 Examiner Hearing)

Application of Tenneco Oil Company for a gas well-water injection well, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Central Totah Unit Well No. 24 located in Unit O of Section 11, Township 28 North, Range 13 West, San Juan County, New Mexico, to produce gas from the Basin-Dakota Gas Pool through 1 1/2 inch tubing and to inject water into the Gallup formation, Totah-Gallup Oil Pool, through 2 1/16 inch tubing with separation of the zones by a packer set at 5766 feet.

CASE 3001: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit O. A. Peters and all interested parties to appear and show cause why the Peters State Well No. 1, located 860 feet from the South line and 660 feet from the East line of Section 2, Township 1 North, Range 20 East, De Baca County, New Mexico, should not be plugged in accordance with a Commission-approved plugging program.

CASE 3002: Application of Pan American Petroleum Corporation for the creation of a new gas pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Lower Paddock Gas Pool for its SMU Well No. 16, located in Unit O of Section 15, Township 24 South, Range 37 East, and the establishment of special pool rules therefor, including a provision for 320-acre spacing. Lea County, New Mexico.

CASE 2737 (Reopened): In the matter of Case No. 2737 being reopened pursuant to the provisions of Order No. R-2429-A, which order established temporary 640-acre spacing units for the White City-Pennsylvanian Gas Pool, Eddy County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 160-acre spacing units.

CASE 3003: Application of Cabot Corporation for the creation of a new oil pool and for special pool rules, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Bough "C" Oil Pool for its Signal State Well No. 1, located in Unit A of Section 29, Township 8 South, Range 33 East, Chaves County, New Mexico, and for the establishment of temporary pool rules therefor, including a provision for 80-acre proration units.

MARCH 11, 1964 EXAMINER HEARING

CASE 3004: Application of Ambassador Oil Corporation for a unit agreement Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Pearsall Queen Sand Unit comprising 960 acres of State and Federal land in Townships 17 and 18 South, Range 32 East, Lea County, New Mexico.

CASE 3005: Application of Ambassador Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Pearsall (Queen) Pool, Lea County New Mexico, by the injection of water into the Queen formation through 5 wells, located in Sections 4 and 5 Township 18 South, Range 32 East.

CASE 3006: Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant in the above-styled cause, seeks authority to institute a waterflood project in the Pearsall (Queen) Pool, Lea County, New Mexico, by the injection of water into the Queen formation through one well located in Unit M of Section 33, Township 17 South, Range 32 East.

CASE 3007: Application of Consolidated Oil & Gas, Inc. for a triple completion, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval of the triple completion (conventional) of its Hoyt Well No. 2-5, located in Unit L of Section 5, Township 26 North, Range 4 West, Rio Arriba County, New Mexico, to produce gas from the Basin-Dakota and Blanco Mesaverde Gas Pools and oil from an undesignated Gallup oil pool through parallel strings of 2 1/16 inch, 1 1/2 inch, and one inch tubing, respectively.

CASE 3008: Application of Phillips Petroleum Company for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the triple completion (conventional) of its Santa Fe Well No. 87, located in Unit L of Section 31, Township 17 South, Range 35 East, Lea County, New Mexico, to produce oil from the North Vacuum-Abo, Vacuum-Wolfcamp and Vacuum-Glorieta Pools through parallel strings of 2 3/8-inch OD tubing.

CASE 3009: Application of Cities Service Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Owen No. 1 Well located in Unit P of Section 35, Township 21 South, Range 37 East, Lea County, New Mexico, to produce oil from the Blinebry and Drinkard Oil Pools through parallel strings of 1½-inch and 2 1/16-inch tubing, respectively.

CASE 3010: Application of R. C. Davoust for the expansion of a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, as successor to Stanton Oil Company, Ltd., seeks to expand the Turkey Track Pool Waterflood Project authorized by Order No. R-1524. Said expansion would be effected by the drilling of 11 water injection wells to the Queen formation at certain unorthodox locations no nearer than 5 feet distance from any 40-acre lot line in Section 34, Township 18 South, Range 29 East, and Section 3, Township 19 South, Range 29 East, Eddy County, New Mexico.

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

P. O. BOX 871
SANTA FE

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

March 31, 1964

Re: Case No. 2998
Order No. R-2682
Applicant:
Tenneco Oil Company

Mr. Richard Morris
Seth, Montgomery, Federici & Andrews
Post Office Box 2307
Santa Fe, New Mexico

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.

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC x
OTHER

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. 2998
Order No. R-2682

APPLICATION OF TENNECO OIL COMPANY
FOR A GAS WELL-WATER INJECTION WELL,
SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on March 11, 1964, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 31st day of March, 1964, 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, Tenneco Oil Company, seeks authority to dually complete its Central Totah Unit Well No. 24, located in Unit O of Section 11, Township 28 North, Range 13 West, NMPM, San Juan County, New Mexico, to produce gas from the Basin-Dakota Gas Pool and to inject water into the Totah-Gallup Oil Pool.

(3) That the applicant proposes to install 3 1/2-inch tubing in a packer set at approximately 5742 feet, to install 1 1/2-inch tubing within the 3 1/2-inch tubing in a packer set at approximately 5766 feet, to produce Dakota gas through the 1 1/2-inch tubing, and to inject water into the Gallup formation through the annulus between the 3 1/2-inch tubing and 5 1/2-inch casing.

(4) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.

(5) That approval of the subject application will implement the Totah-Gallup Pressure Maintenance Project authorized by Order

No. R-2190 and should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That approval of the subject application will protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to complete its Central Totah Unit Well No. 24, located in Unit O of Section 11, Township 28 North, Range 13 West, NMPM, San Juan County, New Mexico, as a dual completion (conventional) to produce gas from the Basin-Dakota Gas Pool and to inject water into the Totah-Gallup Oil Pool;

PROVIDED HOWEVER, that 3 1/2-inch tubing shall be installed in a packer set at approximately 5742 feet, that 1 1/2-inch tubing shall be installed within the 3 1/2-inch tubing in a packer set at approximately 5766 feet, that the Dakota gas shall be produced through the 1 1/2-inch tubing below the lower packer, and that the water injection into the Gallup formation shall be through the annulus between the 5 1/2-inch casing and the 3 1/2-inch tubing;

PROVIDED FURTHER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order;

PROVIDED FURTHER, that the applicant shall take packer-leakage tests upon completion and annually thereafter during the Annual Deliverability Test Period for the Basin-Dakota Gas Pool.

(2) 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

JACK M. CAMPBELL, Chairman

E. S. WALKER, Member

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

esr/

Case 2998

TENNECO

TENNECO OIL COMPANY · P. O. BOX 1714 · 835 SECOND AVENUE · DURANGO, COLORADO

January 29, 1964

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

Re: Proposed Water Injection Well
Central Totah Unit, Totah Gallup Field

We request that permission be granted to convert Central Totah Unit No. 24 from a producing well to a water injection well as provided for under the Rules and Regulations of Order Nos. R-2190 and R-2457 governing the Central Totah Unit in the Totah Gallup field. We are submitting a copy of this application to all offset operators which includes only Pan American Petroleum Corporation.

Attached are a plat showing the location of the proposed injection well and schematic drawing showing that the water injection will be confined to the Totah Gallup pay.

Yours very truly,

TENNECO OIL COMPANY

Robert E. Siverson

Robert E. Siverson
District Production Superintendent

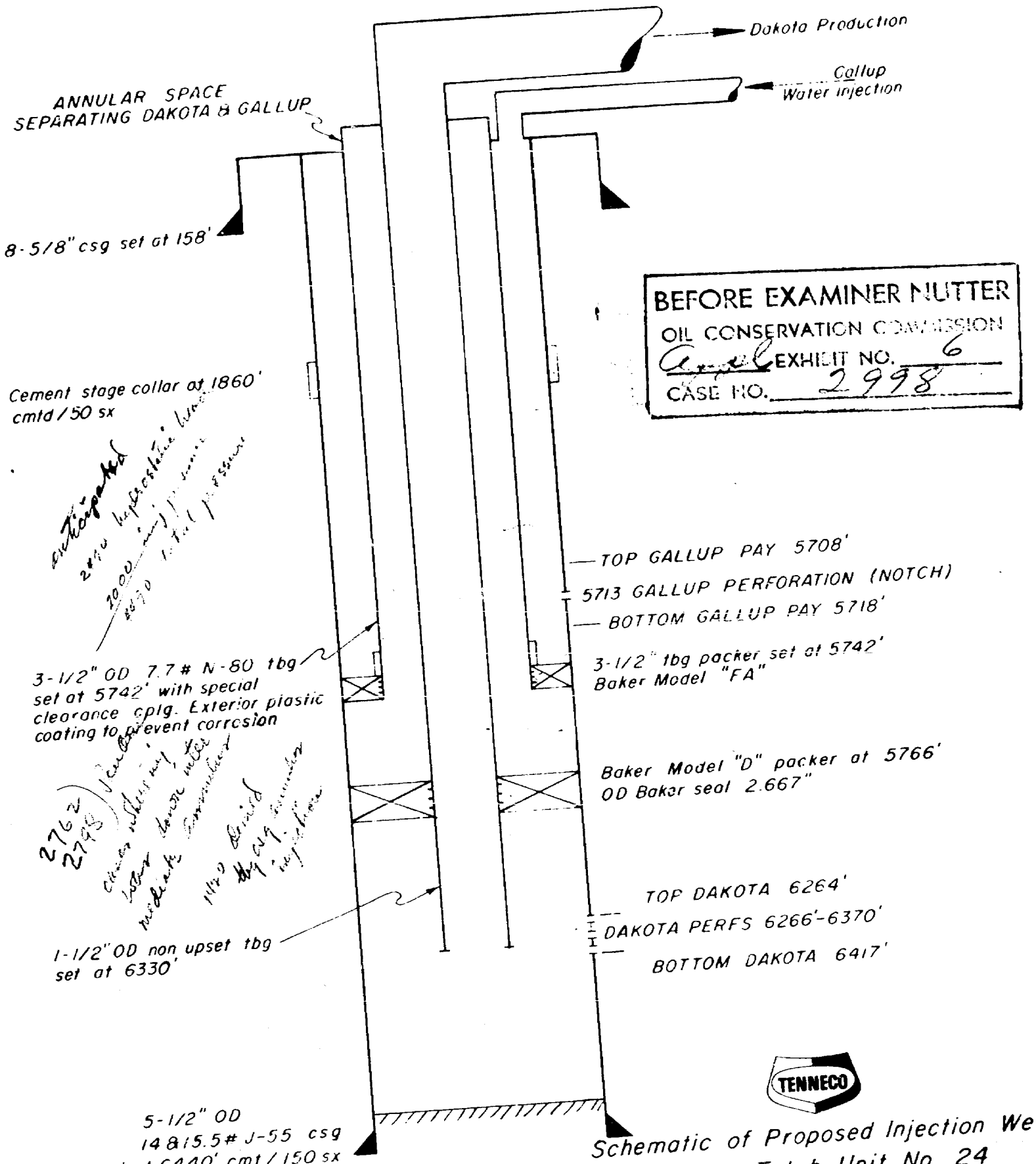
JJL:bjo

Attach.

cc: Pan American Petroleum Company
New Mexico Oil Conservation Commission, Aztec

DOCKET MAILED
Date 2-10-64

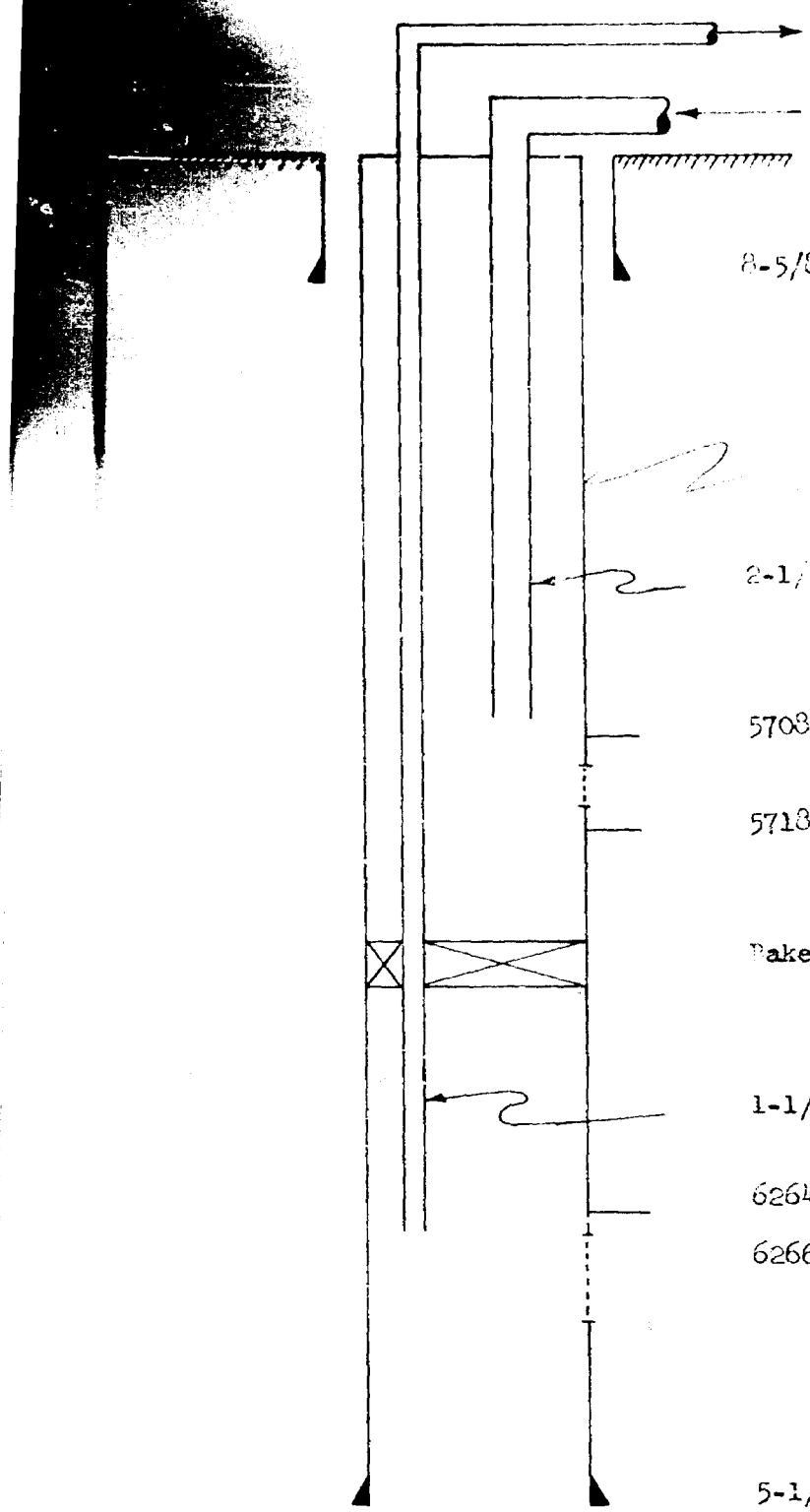
DOCKET MAILED
Date 2-28-64



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 2998

TENNECO

Schematic of Proposed Injection Well
Central Totah Unit No. 24
(Formerly Roy L. Cook Federal No 2-11)



Schematic of Proposed Injection Well
Central Totah Unit No. 24, Totah Gallup Field
(Formerly Roy L. Cook Federal No. 2-11)
Location: 1190' FSL, 2210' FEL, Section 11,
T. 28 N., R. 13 W., N.M.P.M.

ATTACHMENT II

TENNECO

TENNECO OIL COMPANY · P O BOX 1714 · 835 SECOND AVENUE · DURANGO, COLORADO

February 5, 1964

Mr. Ray Cook
P. O. Box 699
Albuquerque, New Mexico

Pan American Petroleum Corp.
P. O. Box 480
Farmington, New Mexico

Re: Proposed Water Injection Well
Central Totah Unit #24
Totah Gallup Field
Dual Completion
Ray Cook Federal 2-11
Basin Dakota Field
Section 11, T-20N, R-13W

Gentlemen:

Our records indicate that you are the working interest owners of the non-unitized Dakota zone in the subject well. This letter is our notification to you of the work we propose to do.

As operator of the Central Totah Unit, which has a 100% working interest in the Gallup zone of the subject well, we plan to convert the Gallup zone in this well to water injection. This operation will consist of injecting water down the 2-1/16" Gallup tubing. Prior to injecting water in the Gallup zone we will take a packer leakage test to make sure that communication does not exist between the Gallup and Dakota formations and do not anticipate any other work on the well other than making surface connections.

Yours very truly,

TENNECO OIL COMPANY

ORIGINAL SIGNED BY
ROBERT E. SIVERSON

Robert E. Siverson
District Production Superintendent

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 3
CASE NO. 2928

JJLibes

January 29, 1964

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

Re: Proposed Water Injection Well
Central Totah Unit, Totah Gallup Field

We request that permission be granted to convert Central Totah Unit No. 24 from a producing well to a water injection well as provided for under the Rules and Regulations of Order Nos. R-2190 and R-2457 governing the Central Totah Unit in the Totah Gallup Field. We are submitting a copy of this application to all offset operators which includes only Pan American Petroleum Corporation.

Attached are a plat showing the location of the proposed injection well and schematic drawing showing that the water injection will be confined to the Totah Gallup pay.

Yours very truly,

TENNECO OIL COMPANY

ORIGINAL SIGNED BY
ROBERT E. SIVERSON

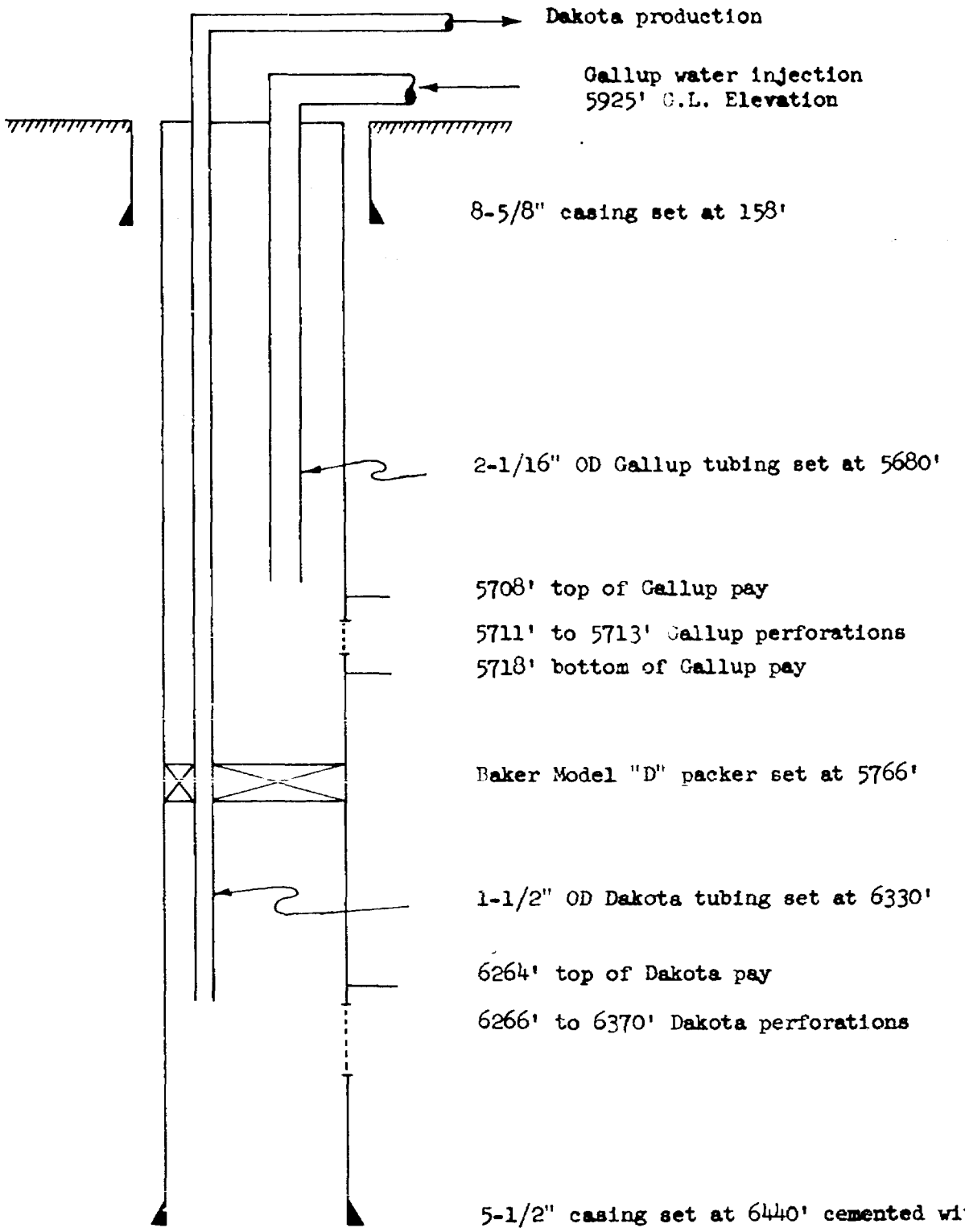
Robert E. Siverson
District Production Superintendent

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Appl. EXHIBIT NO. 2
CASE NO. 2998

JJL:bjo

Attach.

cc: Pan American Petroleum Company
New Mexico Oil Conservation Commission, Aztec
bcc: Mr. W. T. Wells, Jr.



Schematic of Proposed Injection Well
Central Totah Unit No. 24, Totah Gallup Field
(Formerly Roy L. Cook Federal No. 2-11)
Location: 1190' FSL, 2210' FEL, Section 11,
T. 28 N., R. 13 W., N.M.P.M.

ATTACHMENT II

Cause 3998