

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 20, 1962

EXAMINER HEARING

IN THE MATTER OF:)

Application of Nearburg and Ingram for)
permission to dispose of salt water,) CASE 2707
Lea County, New Mexico. Applicant, in)
the above-styled cause, seeks authority)
to dispose of produced salt water into)
the Wolfcamp formation through its)
Keating Well No. 1, located in Unit H)
of Section 34, Township 12 South, Range)
37 East, Southwest Gladiola Field,)
Lea County, New Mexico.)

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: We'll take up next Case 2707.

MR. DURRETT: Application of Nearburg and Ingram for
permission to dispose of salt water, Lea County, New Mexico.

MR. RUSSELL: John F. Russell, Campbell and Russell,
Roswell, appearing on behalf of Nearburg and Ingram. I have one
witness.

(Witness sworn.)

TOM L. INGRAM

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

DEARNLEY-MEIER REPORTING SERVICE, Inc.

SANTA FE, N. M.
FARMINGTON, N. M.
PHONE 325.1112

SANTA FE, N. M.
PHONE 983.3971

ALBUQUERQUE, N. M.
PHONE 243.6641



DIRECT EXAMINATION

BY MR. RUSSELL:

Q Will you state your name, address and occupation, please?

A Tom L. Ingram, Roswell, New Mexico, partner and geological engineer for Nearburg and Ingram.

Q Have you previously qualified to testify before the Commission?

A I have.

Q Are you familiar with the application which was filed by you in Case No. 2707?

A I am.

Q What does that application seek to obtain?

A That application seeks to allow permission to dispose of salt water produced from the Southwest Gladiola Devonian and Gladiola Wolfcamp into the Wolfcamp formation in the Nearburg and Ingram No. 1 Keating.

Q Have you prepared an exhibit showing the location of that proposed injection well?

A I have.

(Whereupon, Applicant's Exhibit No. 1 was marked for identification.)

Q Referring you to what has been marked Exhibit 1,

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325.1112

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243 6691



will you explain what that exhibit represents?

A Exhibit 1 is a location map showing all of the wells producing in the Southwest Gladiola area. The legend down at the bottom indicates those producing from the Wolfcamp, the Atoka sand and the Devonian.

Q Also there is a line showing all the wells within a two-mile radius. Just what is the location of the proposed injection well?

A 660 feet from the East and 1330 feet from the North lines of Section 34, 12 South, Range 37 East.

Q Mr. Ingram, have you previously notified the lessees within the two-mile radius of your proposed project?

A We have.

Q Have you received copies of their replies?

A We have received copies of the replies from Moss, Amerada, Max Pray, Cities Service and Fred Skelly.

Q Now, the originals of those letters were directed to the Commission, were they not?

A That is correct. We have also notified the State Engineer's Office along with a copy of all of our exhibits.

Q Mr. Ingram, the lease that you own covered the Northeast Quarter of Section 34, did it not?

A That is correct.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1187

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6641



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1187SANTA FE, N. M.
PHONE 983-397ALBUQUERQUE, N. M.
PHONE 243-6691

Q Is that mineral lease still in effect or has it expired?

A The lease has expired, the mineral lease.

Q Mr. Ingram, in your opinion is the Northeast Quarter of this Section 34 productive of oil, gas or water?

A To the best of my knowledge it is not productive.

Q Go ahead and give the reason.

A Prior to acquisition of the lease by Nearburg and Ingram, Moss drilled a Devonian test in the Northwest of the Northwest Quarter of Section 34, the Northwest Quarter of the Northeast Quarter. This well was drilled to the Devonian and tests were made in the Devonian and Wolfcamp and other zones and was non-productive. Then after Devonian production was found over in Section 26, we acquired the lease and drilled the No. 1 Keating. This well was drilled to the Devonian and found to be water-bearing in the Devonian.

Initial completion was made in the Pennsylvanian zone at approximately 11,134 feet. This zone produced for only a very short time and then was abandoned. No other commercial production was found in this particular well.

Q What is your reason for picking the Keating No. 1 well as your injection well instead of the well which had previously been drilled by Moss?

A Upon abandoning the Pennsylvanian zone in this well we



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1152SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6691

realized that there would be a water problem in the not too distant future, so we received permission to temporarily abandon this well for use down the line as a disposal well, and its location, while not exactly in the center, is better located than any of the other holes for the disposal of water from Max Pray's well, Cities Service well, the Skelly wells and the Nearburg and Ingram wells.

Q It would be much more economical to use this well than any of the others?

A That's correct.

Q Have you any estimate of the difference in cost?

A It would cost approximately twice as much to use any other well. They have been permanently abandoned, the pipe has been pulled in them.

Q At what interval do you propose to inject the salt water into the formation?

A Well, after tests we originally attempted to inject water into the San Andres and found that to be unsatisfactory, and we tried the Pennsylvanian zone which had previously been producing in the well, and that was unsatisfactory both from the standpoint of high pressures and low volumes that we get in, and then we perforated the Wolfcamp zone from 9740 to 43 and 9743 to 53. This is the interval that we propose to inject water into.



On the basis of tests it would take a large volume of water on a vacuum.

Q In your opinion is there any communication between the Wolfcamp formation and the formation overlaying it?

A No, sir. This particular interval is separated by shale bodies on either side which should act as a seal.

Q The same holds true for any communication between the Wolfcamp on the lower formation?

A That is correct, yes, sir.

Q Have you a log of this Keating No. 1 Well, the proposed injection well?

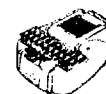
A Yes, I have.

(Whereupon, Applicant's Exhibit No. 2 was marked for identification.)

Q Referring to the log as shown on Exhibit 2, would you briefly describe the formations encountered, and so forth, in that well?

A Exhibit No. 2 is a gamma ray neutron of the Nearburg and Ingram No. 1 Keating. Indicated on this log are all of the formation tops, the casing, the initial completion on it. The interval at 9735 to 9755 shows the shale bodies on either side of the particular zone that we propose to inject water into.

The entire interval we feel is porous and would take water, but



we have had actually selected only the most permeable for this original work.

Q Have you prepared an exhibit showing the casing program which you intend using in the proposed injection well?

A We have.

(Whereupon, Applicant's Exhibit No. 3 was marked for identification.)

Q Referring you to Exhibit No. 3, will you please explain to the Examiner the casing program contemplated in this injection well?

A Exhibit No. 3 shows that originally when the well was drilled that we set 13-3/8" casing at 402 feet. The cement was circulated in this interval to cover all fresh water sands. Then we set 8-5/8" casing at 495 feet and cemented it with 300 sacks. The top of the cement by survey was found to be at 1200 feet in this particular zone.

Now, this includes all of those formations from the surface of the ground down to the top of the San Andres. The 5-1/2" casing originally was set at 11,393 feet. Upon abandoning the Pennsylvanian zone the 5-1/2" was removed from 353 feet up. We propose in this, as indicated, to set 3-1/2" plastic-lined tubing which will be set down into the 5-1/2" stub with a packer at 9735 feet. The water then would be injected down the plastic-lined

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 326-1107

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6631



tubing below the packer and would then go out into the Wolfcamp formation.

As an added precaution, to keep any fluid from going down into the hole, we propose to set a bridge plug at 1100 feet and put cement on top of that.

MR. UTZ: You mean 11,000 feet?

A 11,000 feet, yes, sir.

Q In your opinion would this proposed program prevent any communication of the salt water into any of the upper zones?

A Yes, it would. The annulus between the 3-5/8" casing and the 3-1/2" tubing would be loaded with heavy mud.

Q Have you an analysis of any of the waters which you intend to dispose into this formation?

A Yes, sir, we have two analyses prepared by Halliburton of the water produced in the Nearburg, the Turner lease and the Max Pray lease and the Skelly Foster. This being all of the leases that we would be disposing of the water.

(Whereupon, Applicant's Exhibit No. 4 was marked for identification.)

Q On this Exhibit No. 4 what is the total chlorides in that particular water?

A The range of chlorides is from 26,400 parts permillion in the City Service well to 59,400 in the Skelly well.



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1167

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6641

Q The Skelly well is the 59,400 represented on Exhibit No. 4?

A That is correct.

(Whereupon, Applicant's Exhibit No. 5 was marked for identification.)

Q What did you say it was on the Cities Service, 26,400?

A That is correct. With a lower range.

Q What is it on the Nearburg and Ingram and Midhurst lease?

A The Nearburg and Ingram Midhurst lease is 45,000 parts per hundred.

Q The Max Pray lease?

A 25,400.

Q Is this water good for domestic or agriculture purposes?

A No, sir, it is not.

Q Mr. Ingram, in your opinion will the proposed disposal of salt water into this Wolfcamp formation impair production of oil, gas or fresh water from the reservoir or will it impair correlative rights?

A No, sir, in my opinion it will not.

Q You testified, in your opinion, that the entire Northeast Quarter is not productive of oil, gas or water, is



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1142

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6641

that correct?

A That is correct.

Q Where do you intend to obtain this salt water from?

A The salt water will be obtained from the batteries of Max Pray's Craig, Cities Service Turner, Skelly Foster, Nearburg and Ingram Midhurst.

Q Those are the various leases that are reflected in the water samples on Exhibits 4 and 5, are they not?

A That is correct.

Q You did not necessarily intend that your disposal program will be confined to those particular wells?

A No, sir.

Q You are going to run pipelines from them to the disposal well?

A Yes, we plan to install cement lined flow lines from the batteries that I have just named to the injection well.

Q At the present time are you negotiating a lease with the surface owners for the use of this well for this purpose, and for the construction of your pipelines?

A Yes, sir, we have verbal approval with the Lowes for this lease.

MR. RUSSELL: If the Examiner please, I would like to offer in evidence Exhibits 1 through 5.



MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record.

(Whereupon, Applicant's Exhibits Nos. 1 through 5 were admitted in evidence.)

MR. RUSSELL: That concludes our case in chief.

MR. UTZ: Are there any questions of the witness? Mr. Irby.

MR. IRBY: Frank Irby, State Engineer's Office.

CROSS EXAMINATION

BY MR. IRBY:

Q I notice on your exhibit, which is the map showing the Southwest Gladiola area, that this isn't given a pool name. Is this the name of the pool or does it have a name?

A The Devonian and Pennsylvanian production is carried in the Southwest Gladiola Pool. The Wolfcamp production on the Skelly Foster, the Moss Peck and Pan American Shell is actually carried in Gladiola-Wolfcamp. The Gladiola-Wolfcamp being in the main field and to the Northeast of us.

Q It's your plan to use this well for the disposal of any salt water developed within the area circled on this Exhibit No. 1, that is provided the people desire to use this system?

A Yes.

Q You will take care of them?

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1142

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6641



A Yes.

Q One other question, on your Exhibit No. 3 you have an indication here of a 3- $\frac{1}{2}$ " casing, and I believe your testimony says this will be plastic tubing?

A Well, that is correct. It will be 3- $\frac{1}{2}$ " non-upset tubing.

MR. IRBY: Thank you, that's all I have.

BY MR. UTZ:

Q That will be plastic-coated?

A Yes, sir.

Q How much salt water is this pool producing at the present time?

A Approximately 400 barrels at the present time. Ultimately we feel that will probably go to 3500 barrels a day, something of that magnitude.

Q In your opinion will this well be able to dispose of 3500 barrels a day?

A Yes, sir.

Q What type of packer do you intend to use?

A This is a sweet Fred hook wall packer which will be set in our casing.

Q Will you be able to test the packer for effective seal before you inject?

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6641



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 326-1167SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6641

A Yes, sir. The hole is static now, or at least the part above the packer is static, and we will have it filled with heavy mud and actually have pressure gauges on the annulus so that any change in pressure we would be able to indicate.

Q And you'll fill the annulus with mud to the surface?

A That is correct. Yes.

Q In that manner you will be able to detect whether or not your tubing is leaking at any time?

A Yes.

Q By using your gauge on the annulus?

A Yes.

Q Will you take coupon tests on this salt water or do you think the plastic-coated tubing will be enough protection that you won't have to worry about it?

A We feel that the plastic coating will actually take care of it. It has on our various flow lines that we have now.

MR. UTZ: Are there any other questions of the witness?

A This zone that we are proposing to inject fluid into is the same as the Pan American is using now in the No. 1 or the No. 3 Wingard in the Southeast of the Southeast of Section 24, 12, 37. Pan American's well is some two miles to the Northeast of our proposed well.

MR. UTZ: The witness may be excused.



(Witness excused.)

MR. UTZ: Are there any other statements to be made in this case?

MR. DURRETT: If the Examiner please, I would like to state for the record that the Commission does have in its official file letters in the form of waivers of any objection from the following parties or companies: Skelly Oil Company, Cities Service Petroleum Company, Amerada Petroleum Corporation, Mr. Max Pray and Moss Petroleum Company. All of these letters state that they have no objection to the granting of the application. I would like the Examiner to take administrative notice of the entire contents of these letters.

MR. UTZ: The administrative notice has already been taken of that. Any other statements? The case will be taken under advisement and the hearing is adjourned.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1112

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691



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 21st day of December, 1962.

Ada Dearnley
 Notary Public-Court Reporter

My commission expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2707, heard by me on *Nov. 20* 19*62*.
Justin G. [Signature], Examiner
 New Mexico Oil Conservation Commission

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
 PHONE 325-1112

SANTA FE, N. M.
 PHONE 983-3971

ALBUQUERQUE, N. M.
 PHONE 243-6691

