

CASE 2707: Application of NEARBURG
AND INGRAM for permission to dispose
of salt water, Lea County, N. M.

Received
of the
D. A.
M. S.
Ingram

2707

Index, Transcript,
Exhibits, Etc.

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

December 5, 1962

C
O
P
Y

Mr. John F. Russell
Campbell & Russell
Attorneys at Law
P. O. Box 640
Roswell, New Mexico

Dear Mr. Russell:

Enclosed herewith is Commission Order R-2387 entered on December 5, 1962, in Case No. 2707, authorizing Nearburg and Ingram to dispose of produced salt water.

You will note that the order requires that the open-hole annulus be filled with heavy mud-laden fluid. This is in accordance with the testimony of your witness at the hearing. He further testified that in his opinion the use of a pressure gauge on the bradenhead would help to indicate if a down-hole leak occurred. While the installation of the pressure gauge is not specifically required by this order, it is expected that such a gauge be installed permanently, and that the Commission's Hobbs Office be notified of the time that the required pressure test of the casing will be conducted.

Very truly yours,

DANIEL S. NUTTER
Chief Engineer

A
DSN/ir

Enclosures

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. 2707
Order No. R-2387

APPLICATION OF NEARBURG AND INGRAM
FOR PERMISSION TO DISPOSE OF SALT
WATER, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 20, 1962, at Santa Fe, New Mexico, before Elvis A. Utz, 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 5th day of December, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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 applicants, Nearburg and Ingram, are the owners and operators of the Nearburg and Ingram Keating Well No. 1, located in Unit H of Section 34, Township 12 South, Range 37 East, NMPM, Southwest Gladiola Pool, Lea County, New Mexico.

(3) That the applicants propose to utilize the said Nearburg and Ingram Keating Well No. 1 to dispose of produced salt water into the Pennsylvanian formation through 3 1/2-inch internally plastic-coated tubing installed in a packer set at approximately 9735 feet, with the injection interval from 9740 feet to 9753 feet.

(4) That, in order to protect all other formations from possible contamination, the annulus between the tubing and casing should be filled with heavy mud to the surface and the packer should be tested to assure an effective packer seal prior to injection of salt water.

-2-

CASE No. 2707
Order No. R-2387

(5) That all fresh water supplies in the vicinity of the injection well will be adequately protected from contamination by the 13 3/8-inch casing that has been set at approximately 402 feet with cement circulated to the surface and the 8 5/8-inch casing that has been set at approximately 4495 feet and cemented to approximately 1200 feet.

(6) That the water being disposed of is not suitable for either domestic or agricultural usage, and that the disposal will not impair production of oil, gas, or fresh water, nor will it impair correlative rights.

IT IS THEREFORE ORDERED:

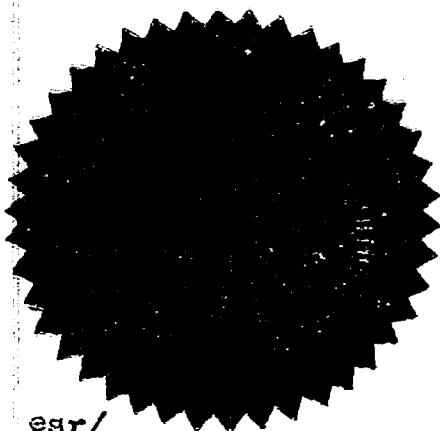
(1) That the applicants, Nearburg and Ingram, are hereby authorized to dispose of produced salt water into the Pennsylvanian formation through the Nearburg and Ingram Keating Well No. 1, located in Unit H of Section 34, Township 12 South, Range 37 East, NMPM, Southwest Gladiola Pool, Lea County, New Mexico, injection to be accomplished through 3 1/2-inch internally plastic-coated tubing installed in a packer set at approximately 9735 feet with the injection interval from 9740 to 9753 feet.

PROVIDED HOWEVER, That the annulus between the casing and tubing shall be filled with heavy mud to the surface, and that the packer shall be tested to assure an effective seal prior to injection of water.

(2) That the applicants shall submit monthly reports of their disposal operations in accordance with Rules 704 and 1119 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

[Signature]
TOM BOLACK, Chairman

[Signature]
E. S. WALKER, Member

[Signature]
A. L. PORTER, Jr., Member & Secretary

esr/

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
NEARBURG & INGRAM FOR AN ORDER)
AUTHORIZING THE DISPOSAL OF SALT WATER)
INTO THE WOLFCAMP ZONE OF THE SOUTHWEST)
GLADIOLA FIELD IN SECTION 34, TOWNSHIP)
12 SOUTH, RANGE 37 EAST, N.M.P.M., LEA)
COUNTY, NEW MEXICO.)

NO. 2707

A P P L I C A T I O N

COMES NOW Nearburg & Ingram by their attorneys,
Campbell & Russell, and state:

1. Applicant, Nearburg & Ingram, are the owners and operators of the Nearburg & Ingram No. 1 Keating Well located 1830 feet from the North line and 660 feet from the East line of Section 34, Township 12 South, Range 37 East, N.M.P.M., Lea County, New Mexico shown on Exhibit 1.

2. Applicant proposes to commence the disposal of produced salt water from the Southwest Gladiola Field into the Wolfcamp horizon using the above described well as an injection well with an injection interval of 9740 feet to 9753 feet.

3. That the water being disposed of is not suitable for domestic or agricultural purposes and the disposal of said water will not impair production of oil, gas or fresh water from the reservoir nor will it impair correlative rights.

4. Applicant attaches hereto as Exhibit 2 a copy of the well log of the proposed injection well.

5. Applicant attaches hereto as Exhibit 3 a record of the casing program of the proposed injection well.

WHEREFORE Applicant requests that the Commission set this matter down for hearing before its examiner, publish notice as required by law and after hearing issue its order authorizing the disposal of salt water as aforesaid.

Respectfully submitted,

NEARBURG & INGRAM

BY: John D. Russell
Campbell & Russell
Post Office Box 640
Roswell, New Mexico

Applicant's Attorneys

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

1201 (4-60)

SYMBOLS

DL=Day Letter
NL=Night Letter
LT=International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

BA458 SSC253

1962 NOV 19 PM 4 14

L HBA101 PD=HOBBS NMEX 19 400P MST=

NEW MEXICO OIL CONSERVATION COMM=

BOX 871 SANTA FE NMEX=

ATTN A L PORTER JR: CITIES SERVICE PETROLEUM CO RECOMMENDS
APPROVAL OF CASE #2707 RELATING TO NEARBURG AND INGRAM'S
APPLICATION FOR PERMISSION TO DISPOSE SALT WATER INTO
WOLF CAMP FORMATION KEATING #1 SOUTH WEST GLADIOLA FIELD
LEA COUNTY NEW MEXICO=

E F MOTTER DIVN ENGINEER CITIES SERVICE PETROLEUM CO.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE



SKELLY OIL COMPANY

P. O. Box 1650
TULSA 2, OKLAHOMA

PRODUCTION DEPARTMENT

C. L. BLACKSHER, VICE PRESIDENT
W. P. WHITMORE, MGR. PRODUCTION
W. D. CARSON, MGR. TECHNICAL SERVICES
ROBERT G. HILTZ, MGR. JOINT OPERATIONS
GEORGE W. SELINGER, MGR. CONSERVATION

November 2, 1962

Re: Salt Water Disposal Well
Southwest Gladiola Field
Lea County, New Mexico

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

Dear Mr. Porter:

Skelly Oil Company has no objections to the application of Nearburg & Ingram to dispose of salt water into the Southwest Gladiola Devonian and Gladiola Wolfcamp as set forth in their application, a copy of which is herewith acknowledged.

Yours very truly,

GWS:br

cc-Nearburg & Ingram
100 South Kentucky Avenue
Roswell, New Mexico



CITIES SERVICE PETROLEUM COMPANY

D. D. Bodie
Division Superintendent

BOX 97, 500 BROADMOOR BLDG.
HOBBS, NEW MEXICO

November 13, 1962

State of New Mexico
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr.

Re: Case No. 2707, Application of
Nearburg & Ingram for a salt
water disposal well, Southwest
Gladiola Field, Lea County,
New Mexico.

Gentlemen:

Cities Service Petroleum Company, as an operator in the Southwest
Gladiola Field, has no objection to Nearburg & Ingram's application
for disposal of salt water into their Keating No. 1.

We do urge that this application be approved so that produced water
can be efficiently disposed.

Very truly yours,

CITIES SERVICE PETROLEUM COMPANY


D. D. Bodie
Division Superintendent

EHF/sjb

Page 2707

AMERADA PETROLEUM CORPORATION

P. O. BOX 2040

TELSA 2, OKLA.

October 30, 1962

AIR MAIL

State of New Mexico
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

We have been advised by Nearburg and Ingram they propose to convert their No. 1 Keating, located in Section 34-12S-37E, Lea County, New Mexico, into a salt water disposal well.

As a lease owner in the area, Amerada Petroleum Corporation has no objection to this application.

Very truly yours,

R. S. Christie
R. S. Christie

RSC:dw

cc: Nearburg and Ingram
100 South Kentucky Avenue
Roswell, New Mexico

DOCKET MAILED

Date _____

WARREN Y. PICKERING
PETROLEUM GEOLOGIST
FIRST NATIONAL BUILDING
OKLAHOMA CITY, OKLAHOMA

October 29, 1962

(Case 2707)

New Mexico State Oil Conservation Commissioner
P. O. Box 871
Santa Fe, New Mexico

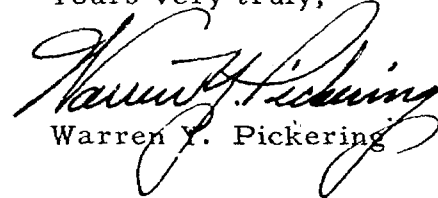
Re: Salt Water Disposal Application
Nearburg & Ingram #1 Keating
Unit H, Section 34-12S-37E
Lea County, New Mexico

Dear Sir:

This is to advise that Mr. Max Pray as owner and operator of the Zealan Craig #1 Well, Unit K, Section 27-12N-37E, has been advised of the Nearburg & Ingram request for approval to recomplete the subject well as a salt water disposal well in the Wolfcamp formation.

Mr. Pray is in complete accord with this application as submitted. In addition, he has agreed to join with the applicant, by helping to defray the cost of this installation, in order to dispose of the salt water currently being produced from the Zealan Craig well.

Yours very truly,


Warren Y. Pickering

WYP:bh

cc: Mr. Max Pray
Mr. Tom Ingram

DOCKET MAILED

Date _____

MOSS PETROLEUM COMPANY
FIRST NATIONAL BANK BUILDING
DALLAS 2, TEXAS

October 25, 1962

Case 2707

Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

We are in receipt of copy of application by Nearburg
& Ingram, Roswell, New Mexico, for salt water
disposal well, located in Unit H, Sec 34-12S-37E,
Lea County, New Mexico.

This letter is to inform you we have no objections to
the application.

Very truly yours,

MOSS PETROLEUM COMPANY

JML/vl

John M. Little, Jr.
By
John M. Little, Jr.

cc-OCC, Hobbs, New Mexico
Nearburg & Ingram

DOCKET M-125

Date _____

JACK M. CAMPBELL
JOHN F. RUSSELL

LAW OFFICES OF
CAMPBELL & RUSSELL
SUITE 1010 SECURITY NATIONAL BANK BUILDING
P. O. DRAWER 640
ROSWELL, NEW MEXICO

TELEPHONE 622-4641
AREA CODE 505

October 25, 1962

Oil Conservation Commission
Post Office Box 871
Roswell, New Mexico

RE: Nearburg & Ingram Application to Dispose
of Salt Water

Gentlemen:

We transmit herewith in triplicate the Application of Nearburg & Ingram for an order authorizing the disposal of salt water in the Wolfcamp Horizon of the Southwest Gladiola Field.

Very truly yours,

CAMPBELL & RUSSELL

John F. Russell
John F. Russell

JFR:sah

cc: State Engineer's Office

DOCKET MAILED

Date _____

Case 2207

Heard 11-20-62

Rec. 11-21-62

1. Grant Hearshing & Ingram authority to complete a S & D well known as their #1 Keating, 1130/N-660/E lines sec. 34-12S-37E.
2. All fresh waters are adequately protected by the 8 7/8 casing set at 4425 and the 13 7/8 set at 4521.
3. A packer shall be set at approx. 9735 and salt water shall be injected thru 3 1/2 inch internally plastic coated tubing below the packer and into the Pennsylvanian formation.
4. Packer shall be tested for effective seal prior to injecting salt water.
5. The annulus shall be filled with heavy mud and a gauge installed at the surface so that salt water leaking into the annulus ~~may~~ ^{can} be detected.

W. A. R.

Rochester 2240'

Vares 3080'

San Andres 4470'

San Andres 4470'

Glorieta 5922'

Abco 7895'

Mucco 9230'

Penn 9535'

Devonian 12,263'

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 3
CASE NO. 2707

Devonian 12,263'

12,263' depth of oil
Devonian 12,263'

6-870' depth of oil
Devonian 12,263'

6-870' depth of oil
Devonian 12,263'

Devonian 12,263'

Devonian 12,263'

Devonian 12,263'

Plug Back 11,265'

Devonian 12,263'

Total Depth 12,263'

HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY

LOVINGTON, NEW MEXICO

LABORATORY REPORT

No. WL-452-62

Date 11/2/62

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

To Skelly Oil Co.

Box 62 38

Hobbs, New Mex.

Date Received 11/2/62

Well & Lease M. A. Foster

Depth

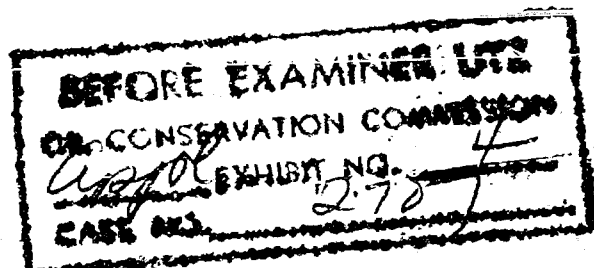
Formation

Location

Field

Source Submitted By Bob Burchfield

Specific gravity	1.070
60/60 °F	
Color, filtrate	colorless
pH	6.0
Resistivity	
°F	
ppm (mpl)	
Chlorides, Cl	59,400
Sulfates, SO ₄	2200
Alkalinity, HCO ₃	143
Calcium, Ca	4480
Magnesium, Mg	790
Iron, Fe	slt. tr.
Sodium, Na*	32,980
Sulfides, H ₂ S	nehl.



Remarks:

ppm equals Parts per million uncorrected or milligrams per liter.
* includes Potassium as Na.

Laboratory Analyst
Sutton

Respectfully submitted

HALLIBURTON COMPANY

By

Dave Sutton; Division Chemist

HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY
LOVINGTON, NEW MEXICO

LABORATORY REPORT

RECEIVED NOV 16 1962

Date November 15, 1962

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or persons and employees thereof receiving such report from Halliburton Company.

To: Mustang & Ington

Box 47

Roswell, New Mexico

Date Received 11-15-62

Well & Lease	As Marked	Depth	Formation
Location	Field	Source	
	U & F Midhurst Lease	Cities Ser. Turner D Lease	Max Pray Craig Lease
Specific gravity 60/60 °F	1.043	1.032	1.033
Color, filtrate			
pH	6.4	7.2	6.5
Resistivity °F			
	ppm (mml)		
Chlorides, Cl	35,400	26,400	28,400
Sulfates, SO ₄	Med (2000)	Lt (1500)	Hvy (3500+)
Alkalinity, HCO ₃	500	563	544
Calcium, Ca	2,390	1,630	1,670
Magnesium, Mg	622	510	645
Iron, Fe	Negl.	Negl.	Negl.
Sodium, Na*	21,400	17,100	14,820
Sulfides, H ₂ S	70	Negl.	70

Remarks:

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 2707

ppm equals Parts per million uncorrected or milligrams per liter
* includes Potassium as Na.

Laboratory Analyst

Brewer

Respectfully submitted

HALLIBURTON COMPANY

By

Dave Sutton, Division Chemist

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,
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.

CASE 2707

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.

FARMINGTON, N. M.
PHONE 325-1192

SAN ANTONIO, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691



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,



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.



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



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



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1112

SAN ANTONIO, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691

PAGE 3

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 13-3/4" casing at 402 feet. The cement was circulated in this interval to cover all fresh water sands. Then we set 3-5/8" 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



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.



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



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 these 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?



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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?



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.



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PAGE 15

(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 Fray 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.



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PAGE 16

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*.
Thurston G. Hall, Examiner
New Mexico Oil Conservation Commission

