

CASE 3800: Application of DEPCO,
INC. FOR SALT WATER DISPOSAL,
EDDY COUNTY, NEW MEXICO.

Case Number

3800

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

July 15, 1968

Mr. Booker Kelly
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: Case No. 3800
Order No. R-3454
Applicant:
DEPCO, INC.

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

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC X

Artesia OCC X

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. 3800
Order No. R-3454

APPLICATION OF DEPCO, INC.,
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 10, 1968,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 15th day of July, 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, Depco, Inc., is the owner and oper-
ator of the State 647 Well No. 82, located in Unit F of Section
27, Township 18 South, Range 28 East, NMPM, Artesia Pool, Eddy
County, New Mexico.

(3) That the applicant proposes to utilize said well to
dispose of produced salt water into the Grayburg and San Andres
formations in the open-hole interval from approximately 2471
feet to 2926 feet.

(4) That the injection should be accomplished through
2 3/8-inch internally plastic-coated tubing installed in a
packer set at approximately 2450 feet; that the casing-tubing
annulus should be filled with an inert fluid; and that a pressure

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CASE No. 3800

Order No. R-3454

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:

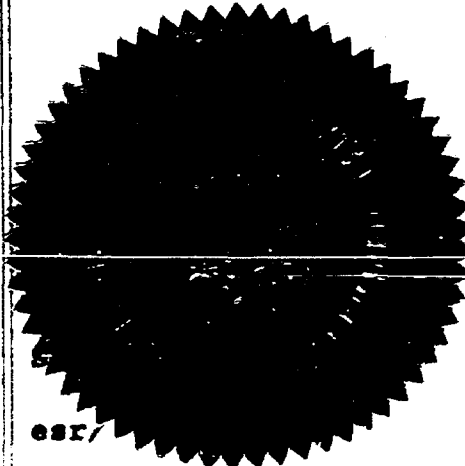
(1) That the applicant, Depco, Inc., is hereby authorized to utilize its State 647 Well No. 82, located in Unit F of Section 27, Township 18 South, Range 28 East, NMPM, Artesia Pool, Eddy County, New Mexico, to dispose of produced salt water into the Grayburg and San Andres formations, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 2450 feet, with injection in the open-hole interval from approximately 2471 feet to 2926 feet;

PROVIDED HOWEVER, that the tubing shall be internally plastic-coated; 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 F. Cargo
DAVID F. CARGO, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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

esr/

Case: 3880

Heard 7-10-68

Rec. 7-10-68

Grant. Deftos, permission to
convert their State 647 # 82 - F - 27 -
185 - 28 E to a Salt Water disposal
well in the (Artemis) - Queen, High-
S.A. oil Pool. Response to be in
open from 2471 - 2926 into the
Hayburg & San Andreas formation. Injection
to be thru 2 7/8" P.C. internally P.C.
tubing & under a packer set at 2450.
approx.

Thrust. W.
P.S. inhibited fluid to be used
in annulus & open or pressure
gauge at surface.

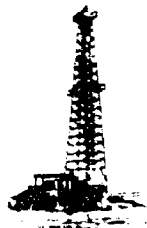
Ed. W.
Kelly's request for a waterflood
should not be granted i.e.

1. Not advertised.
2. only one injection well.
& no Pattern.
3. Cannot be an extension to
the Am. Petroleum in sec. 21
as it is in a different zone.

Ed. W.

DEPCO, Inc.

Exploration & Production



800 Central
ODessa, TEXAS 79700

June 11, 1968

are 3800

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico 87501

Re: Permit for Injection
State 647 Well No. 82
Artesia (Queen, Grayburg,
San Andres) Field
Eddy County, New Mexico

Gentlemen:

This is to apply for a hearing of our request for the original authority to dispose of salt water in the San Andres formation. It is desirable to convert State 647 No. 82 for this purpose.

Attached are an ownership map showing the proposed injector and other wells within a two-mile plus radius, and a diagrammatic sketch of the injector. An electric log is not available.

It is proposed to dispose of 120 BWPD initially, which is the average total water production of San Andres wells owned by DEPCO in the vicinity of Well No. 82 (see plat).

Yours very truly,

R. D. Yeates
R. D. Yeates
District Engineer

RDY/km
Attachments (2)

cc: Mr. J. M. Strader

Date 6-27-68

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 10, 1968

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

The following cases will be heard before Elvis A. Utz, Examiner, or
A. L. Porter, Jr., Alternate Examiner:

- CASE 3800: Application of Depco, Inc. for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres and possibly other formations in its State 647 Well No. 82 located in Unit F of Section 27, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico, in the open-hole interval from 2421 feet to 2926 feet.
- CASE 3801: Application of H & S Oil Company for an amendment to Order No. R-3357, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3357, which authorized a waterflood project in the West Artesia Grayburg Unit Area, Artesia Pool, Eddy County, New Mexico, to delete the water injection wells previously authorized in Units H and P of Section 7, Units D, F, H, J, and L of Section 8, and Unit D of Section 17, and to authorize for water injection certain wells in Unit I of Section 7 and Units C, E, G, K, and M, of Section 8, all in Township 19 South, Range 28 East.
- CASE 3802: Application of Atlantic Richfield Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Red Lake Unit Area comprising 1,237 acres, more or less, of Federal and Fee lands in Township 18 South, Range 27 East, Red Lake Queen-Grayburg-San Andres Pool, Eddy County, New Mexico.
- CASE 3803: Application of Gulf Oil Corporation for an amendment to Order No. R-3345, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3345, which authorized a waterflood project in its Stuart Langlie Mattix Unit Area, Langlie-Mattix Pool, Lea County, New Mexico, to delete the water injection wells previously authorized in Unit M of Section 2, Units A, C, & I of Section 10, and Unit C of Section 11, all in Township 25 South, Range 37 East, and to authorize for water injection four wells at the following unorthodox locations in Section 10: a well 100' from the North line and 1650' from the West line; a well 100' from the North line and 660' from the East line; a well 1315' from the North line and 100' from the West line; and a well 1420' from the South line and 100' from the East line.

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July 10, 1968

Docket No. 20-68 - Examiner Hearing

CASE 3804: Application of Pan American Petroleum Corporation for a pressure maintenance project, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the San Andres formation through two wells located in Units K and M of Section 29, Township 8 South, Range 35 East, Milnesand-San Andres Pool, Roosevelt County, New Mexico. Applicant further seeks the designation of a project area and the promulgation of rules governing said project, and the reclassification of the well in Unit M of Section 29 from a salt water disposal well to a pressure maintenance project injection well.

CASE 3805: 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.

dearnley-meier reporting service, inc.

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

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



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 10, 1968

EXAMINER HEARING

IN THE MATTER OF:)
)
)

Application of Depco, Inc. for)
salt water disposal, Eddy County,)
New Mexico.)

Case No. 3800

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

NEW MEXICO OIL CONSERVATION COMMISSION

Examiner Hearing

Santa Fe, NEW MEXICOHearing Date JULY 10, 1968TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
Borles Kelly	White Hall Oil & Gas	S. F.
GUY T. BUELL	PAN AM	FT. WORTH
GEORGE FORD	✓ ✓	✓ ✓
E. m. Pangle	Atlantic Richfield Co.	Roswell
Jack Baird	" " "	Roswell
James H. Hinkle	" " "	Roswell
A DuHammie	RW Byram	SF
Q. L. Loeel	H & S Oil	Artesia
Q. L. Heinsch	H & S Oil	Artesia
Bill Kessler	Gulf	Roswell
Lorrie C. Smith	"	"

MR. UTZ: Case 3800.

MR. HATCH: Case 3800: Application of Depco, Inc.
for salt water disposal, Eddy County, New Mexico.

MR. KELLY: Booker Kelly of White, Gilbert, Koch
and Kelly, Santa Fe, on behalf of the applicant. I have one
witness and ask that he be sworn.

(Witness sworn.)

(Whereupon, Applicant's
Exhibits 1 & 2 were marked
for identification.)

MR. UTZ: Are there other appearances? You may
proceed.

R. D. YATES

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

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position and employer,
please?

A My name is R. D. Yates. I am employed by Depco,
Incorporated as the District Engineer, which is in the Southern
Region of our company, of this area, Southeast New Mexico is
included in this area.

Q Have you previously qualified as an expert witness
before this Commission?

A No, sir, I have not.

Q Would you give the Examiner a brief sketch of your educational and professional background?

A Yes, sir. I hold a B. S. degree in geological engineering from Texas A & M University. I am a registered professional engineer in the State of Texas. I have been employed by Standard Oil Company of Texas for some seven years prior to my working with Depco, which has been approximately four months. This total time or tenure of work in the oil fields is approximately nine years.

Q As part of your professional background are you familiar with the Artesia Field in Eddy County, New Mexico?

A Yes, I am.

MR. KELLY: Are the witness's qualifications acceptable, Mr. Examiner?

MR. UTZ: Yes, sir, they are.

Q (By Mr. Kelly) Would you briefly state the purpose of this application?

A It is to secure the original authority for disposal of produced salt water in the well designated State 647 No. 82, which is located in Unit F of Section 27, Township 18 South, Range 28 East in Eddy County.

Q Is it possible that this injection well could be

treated as a pilot waterflood if future tests and studies show response in adjoining wells?

A Yes, sir. Although salt water disposal is our immediate objective, Depco is interested, of course, in the efficient and effective production of oil and gas. When we have additional field history related to this, if this project is approved, then we might pursue water injection.

Q Do you ask that this operation qualify as a waterflood under Rule 701 of the Commission rules?

A Yes, sir. I feel that it should qualify in the event that response is evident after this study.

Q Going on to what has been marked Exhibit No. 1, would you explain the plat and the various symbols thereon for the Examiner?

A Yes, sir. This is a typical lease ownership map which includes more than the two-mile area around the particular well. The proposed injector or salt water disposal well is colored red in the triangle in the center of Section 27, as you see, and the wells encircled are other San Andres producers.

Q Does the plat show all offset operators?

A Yes, sir, it does.

Q Now, you have listed the wells as San Andres, these actually are wells completed in the designated Artesia Field,

which includes San Andres, Grayburg and Queen, is that correct?

A That is correct.

Q Referring to the injection well, itself, what is its present status?

A It is presently making or producing, I should say, approximately one barrel of oil per day, or less, and two barrels of water. It is in a stripper state of completion.

Q Is this a quite old well?

A Yes, sir, it was completed in 1947. I might add that this is the general age of the San Andres wells in this area.

Q Now, what is the source of the water that you plan to inject?

A This will be produced salt water from these wells encircled on the plat, which comes from Queen, Grayburg, San Andres formations.

Q And what will be your initial volume of water you will be injecting?

A We expect to dispose of approximately 120 barrels of water per day and we expect this to increase as the produced water increases because or as a result of completion.

Q Do you have an idea of about how high you might go in volumes?

A I think that the maximum rate will approach 1,000 barrels per day.

Q Do you expect to have any difficulty with that well taking that much water?

A No, sir, we have experienced in five units on waterflood projects in this general area that we have put as much as 600 to a thousand barrels in wells with literally no pressure.

Q How about your pressure on this, what would be the top pressure?

A The top pressure we expect to be about 2,000 p.s.i. I sincerely doubt that it will approach this.

Q That will be assuming that you get up as high as a thousand barrels per day?

A Yes, sir.

Q What do you do with your water now?

A We are, I would say, storing it in unlined surface pits and it is to eliminate these according to the State Director, that we wish to secure a disposal well.

Q Going on to what has been marked Exhibit Number 2, which is your diagrammatic sketch, would you explain the proposed installation in full to the Examiner?

A Yes, sir. I would like to say that the casing is

as it is at the present time. The tubing and packer will be placed in the well when and if approval is granted. The surface casing is set at 624 feet and it is 8-5/8ths pipe cemented with 50 sacks of cement. The top of the cement is approximately 300 feet. The production casing is landed at 2471, it was cemented with 100 sacks of cement, and the top is calculated to be at 1900 feet. The total depth of the well is 2926 and it being an open hole completion, as you can see.

The total interval open is from, of course, 2471 to 2926. This includes the Lower Grayburg formation and the Upper San Andres. The tubing which we propose to put in the well will be plastic-coated for corrosion control and it will have a Hookwall packer set at approximately 2450. This annulus, the tubing annulus will be filled with an inhibited fluid and I believe it is, well, it is my opinion that this will protect the other zones.

Q Now, all of your open hole is within the designated limits of the Artesia Field, is that correct?

A Yes, it is. The field, as identified, is Queen, Grayburg and San Andres and, as I mentioned a moment ago, the sections opened here include Lower Grayburg and Upper San Andres.

Q Will you either take periodic checks on the annulus to see if there's no leakage or have some kind of a pressure

gauge?

A Yes, sir. We will observe the pressure, and also when and if this mechanism is inplaced, as we have described it here, we will conduct a tracer survey or a temperature survey and this will indicate the effectiveness of our completion.

Q Do you know of the existence of any fresh water in this area?

A No, sir, I don't.

Q Well, assuming that there may be some fresh water, in your opinion, will this proposed installation protect that water and also prevent migration of fluids, injected fluids to any other zone?

A Yes, sir.

Q Assuming that the Commission would treat this application as one for a pilot waterflood project, are the Depco wells surrounding the injection well classified as stripper wells or in advanced stages of depletion?

A Yes, they are.

Q What would you say would be the average daily production from your surrounding wells?

A Two to four barrels per day per well.

Q Can you at this time give any estimate of the additional recovery you would get as a result of pilot

waterflood?

A No, sir. This is indeterminate at this particular time.

Q You feel you would have to have additional field studies?

A Right.

Q In your opinion would the reinjection of this produced salt water have any adverse effect on the correlative rights of any adjoining operators?

A No, sir.

Q Do you have a log on this proposed injection well at the present time?

A No, sir, I do not. When and if we get to work over this well and recompleat it, we will secure a log at that time and it will be provided to the State.

Q Were Exhibits 1 and 2 prepared by you or under your supervision?

A They were prepared by me, yes, sir.

MR. KELLY: I would move the introduction of Depco's Exhibits 1 and 2.

MR. UTZ: Without objection, Exhibits 1 and 2 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 & 2 were offered and admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q You did say you were going to use inhibited fluid in the annulus, Mr. Yates?

A Yes.

Q Did you say whether you were going to use a pressure gauge or leave it open?

A We will use a pressure gauge.

Q Do you have any idea whether this was new casing in 1947 or not?

A I don't know.

Q But you do intend to test the casing?

A Yes, sir.

Q Do you have any idea what the chloride content of the deposited water would be?

A No, sir, I do not.

Q Is it pretty salty?

A I think probably that it would be on the low side of the salinity, so it would probably be fifty to seventy thousand parts per million chloride.

Q But you are going to use plastic-coated, internally plastic-coated tubing?

A Yes, sir. To my knowledge there has been no

difficulty resulting from this salinity.

Q I notice a series of triangles around some wells over in Section 28, is that a waterflood now?

A Yes.

Q Whose waterflood is it?

A That is American Petrofina, I believe, and they are flooding the Loco Hills member of the Grayburg formation, as I understand it, which is, incidentally, behind casing in our wells to the east.

Q The chances are you won't get much response from their flood, will you not?

A Not a chance.

Q In regard to your request for waterflood here, I don't believe that our advertisement will allow us to do so.

A All right.

Q On top of that you only have one injection well. I think you probably need a pattern.

MR. KELLY: Mr. Examiner, just on that point, in the last several months I have seen it go the other way where we have applied for a salt water disposal well and the Commission has advertised it as a secondary pilot recovery project. It seems to me that the requirements as far as jurisdiction are the same and I would think the Commission

would have jurisdiction to treat this either way because it would be the same requirements set forth as far as other parties are concerned.

MR. UTZ: To do what now, Booker?

MR. KELLY: I can't remember exactly who it was, but I remember on two occasions in the last three or four months where the application was actually for a salt water disposal well and it was advertised as a secondary recovery application and the hearing or the order came out on that basis even though that wasn't the submitted application. In those situations the companies had no objection.

MR. UTZ: I don't know the particular cases. But I think there was probably some discussion between the person who was writing the ad and the people who submitted the application. When we receive such a notification we treat it that way in the advertisement, salt water disposal.

MR. KELLY: I can remember one where it was one of my cases where as far as I was aware it was a surprise, but we had no objection to it. I mean they're both under the same rule and I think they are both jurisdictionally, I don't see that there would be any difference.

MR. UTZ: I don't think offset operators have been notified properly of waterflood project here to treat this as a

waterflood project.

Are there any other questions of the witness?

MR. PORTER: I have one or two.

CROSS EXAMINATION

BY MR. PORTER:

Q Mr. Yates, are you going to use one disposal well here at the present time?

A Yes, sir.

Q Do you think that eventually you may inject up to a thousand barrels a day?

A Yes.

Q And you are currently producing about 120 barrels from the wells that would be injected into this?

A Yes, sir.

Q How many, approximately how many wells does that represent?

A The wells, first I will just have to plead ignorance --

Q Does it represent all these wells that you have circled?

A I can tell you this, to my knowledge, in Section 33 approximately, oh, in this northeast part of the section here we have battery location there which gathers all of the water

that Depco wells produce.

Q I see.

A And that will be the initial point for our water source, and I must say that I do not know actually the number of wells that produce into that battery.

Q Now, when you say that you think your volume may increase from 120 barrels up to a thousand barrels, were you thinking possibly of putting more wells on this injection system or the water production increasing to that extent?

A Both.

Q From the individual wells?

A Both.

Q You would have more wells plus an increase in your depletion?

A Yes, sir.

Q You also said as far as you knew there was no fresh water in this particular area?

A That is correct.

Q Are you talking about an area of several townships perhaps or just in the vicinity of the disposal well?

A Just in this immediate vicinity here.

MR. PORTER: That's all I have.

MR. UTZ: Are there any other questions? The witness

may be excused.

(Witness excused.)

MR. UTZ: Any other statements in this case?

The case will be taken under advisement.

I N D E X

<u>WITNESS</u>		<u>PAGE</u>
R. D. YATES		
Direct Examination by Mr. Kelly		2
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Cross Examination by Mr. Porter		13
 <u>EXHIBIT</u>	 <u>MARKED</u>	 <u>OFFERED AND ADMITTED</u>
Applicant's 1 & 2	2	9

STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

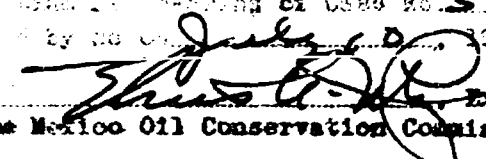
I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings,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

Witness my Hand and Seal this 17th day of July, 1968.


 NOTARY PUBLIC

My Commission Expires:

June 19, 1971.

I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the hearing of Case No. 3800,
 held by me on July 10, 1968.

 Notary Public
 New Mexico Oil Conservation Commission

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Appl. EXHIBIT NO. 2
CASE NO. 3800

STATE 641 No. 82
F Sec 17 T18S R28E
Eddy Co. N.M.

EXHIBIT 2

