

CASE 3839: Appli. of Continental  
for a waterflood project, Lea  
County, New Mexico.

Case Number

3839

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 2068  
SANTA FE

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

September 9, 1968

3818 3848  
3826 3838  
3839 ✓ 3817  
3840  
3842  
3843

Mr. Jason Kellahin  
Kellahin & Fox  
Attorneys at Law  
post office Box 1769  
Santa Fe, New Mexico

Re: Case No. 3843  
Order No. R-3482, 3483, 3484.  
Applicant: 3485, 3487, 3488,  
3489, 3490, 3491  
Continental & Eugene Nearburg

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 R-3483 & R-3489

Aztec OCC

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. 3839  
Order No. R-3484

APPLICATION OF CONTINENTAL OIL COMPANY  
FOR A WATERFLOOD PROJECT, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 21, 1968, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 9th day of September, 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, Continental Oil Company, is the owner and operator of the Fields Well No. 2, located in Unit M of Section 25, Township 23 South, Range 32 East, NMPM, Lea County, New Mexico.

(3) That the applicant seeks authority to institute a waterflood project in the Triste Draw-Delaware Pool by the injection of water into the Delaware formation in the perforated interval from approximately 5073 feet to 5145 feet in its Fields Well No. 2. In the alternative, the applicant seeks to have said well authorized for salt water disposal.

(4) That the subject application was amended at the hearing to show the subject well as a Triste Draw-Delaware rather than a Cruz-Delaware well.

-2-

CASE No. 3839  
Order No. R-3484

(5) That the subject well should be classified as a salt water disposal well.

(6) That the injection should be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 5050 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

(7) That approval of the subject application for salt water disposal will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

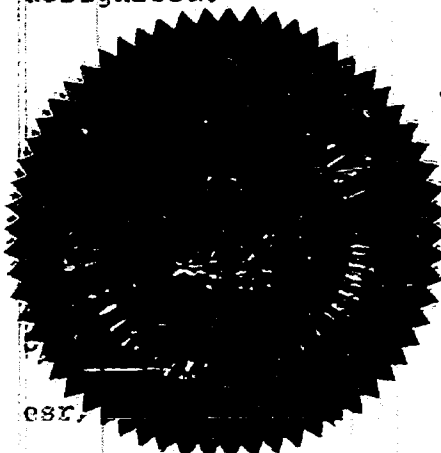
(1) That the applicant, Continental Oil Company, is hereby authorized to utilize its Fields Well No. 2, located in Unit M of Section 25, Township 23 South, Range 32 East, NMPM, Triste Draw-Delaware Pool, Lea County, New Mexico, to dispose of produced salt water into the Delaware formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 5050 feet, with injection into the perforated interval from approximately 5073 feet to 5145 feet;

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

*Clayton E. Hays*  
CLAYTON E. HAYS, Member

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

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 21, 1968

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

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The following cases will be heard before Daniel S. Nutter, Examiner, or Elvis A. Utz, Alternate Examiner:

CASE 3825: Application of Pan American Petroleum Corporation for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval of the East Buffalo Valley Unit Area comprising 15,350 acres, more or less, of Federal, State and Fee lands in Township 14 South, Ranges 28 and 29 East, Chaves County, New Mexico.

CASE 3826: Application of Eugene E. Nearburg for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the open-hole interval from approximately 7965 feet to 8015 feet in his Magnolia Burt Federal Well No. 1 located in Unit P, Section 5, Township 8 South, Range 30 East, Cato Field, Chaves County, New Mexico.

CASE 3837: Application of Continental Oil Company for the consolidation of three non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a 640-acre standard gas proration unit comprising all of Section 26, Township 23 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to be simultaneously dedicated to its Lynn B-1 Wells Nos. 1, 3, and 4 located in Units J, C, and M, respectively, of said Section 26, and authority to produce the allowable assigned to the unit from the subject wells in any proportion. Said Well No. 1 is presently dedicated to a 320-acre unit comprising the E/2 of said Section 26, said Well No. 3 is presently dedicated to a 160-acre unit comprising the NW/4 of said Section 26, and said Well No. 4 is presently dedicated to a 160-acre unit comprising the SW/4 of said Section 26.

In the alternative, Applicant seeks the consolidation of the non-standard units comprising the E/2 and the SW/4 of said Section 26 into one 480-acre non-standard unit to be dedicated to said Well No. 1.

CASE 3838: Application of Continental Oil Company for an amendment to Order No. R-872 and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-872 to permit the dedication of the non-standard proration unit authorized therein to its Lockhart "B" Well No. 4 located in Unit H of Section 14 and its Lockhart "B" Well No. 7 located at an unorthodox location 330 feet from the North line and 330 feet from the West line of Section 13, both in Township 21 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.

CASE 3839: Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks

(Case 2839 continued)

authority to institute a waterflood project by the injection of water into the Delaware formation in the perforated interval from 5073 feet to 5145 feet in its Fields Well No. 2 located in Unit M of Section 25, Township 23 South, Range 32 East, Cruz-Delaware Pool, Lea County, New Mexico. In the alternative, applicant seeks to have said well authorized for salt water disposal.

CASE 3840: 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 by the injection of water into the Seven Rivers formation in the perforated interval from 3450 feet to 3600 feet in its Lynn "A-27" Well No. 1 located in Unit D of Section 27, Township 23 South, Range 36 East, Jalmat Pool, Lea County, New Mexico. In the alternative, applicant seeks to have said well authorized for salt water disposal.

CASE 3841: 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 by the injection of water into the Delaware formation in the perforated intervals from 4497 feet to 4507 feet in its Wilder Well No. 24 and from 4529 feet to 4535 feet in its Wilder Well No. 27 located in Units L and F, respectively, Section 26, Township 26 South, Range 32 East, El Mar-Delaware Pool, Lea County, New Mexico. In the alternative, applicant seeks to have said wells authorized for salt water disposal.

CASE 3842: Application of Continental Oil Company for a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the Seven Rivers formation in the perforated interval from 3208 feet to 3255 feet in its Eaves "A" Well No. 10 located in Unit P of Section 19, Township 26 South, Range 37 East, Scarborough Yates-Seven Rivers Pool, Lea County, New Mexico, and promulgation of special rules for said project. In the alternative, applicant seeks to have said well authorized for salt water disposal.

CASE 3843: Application of Continental Oil Company for a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the Seven Rivers formation in the perforated interval from 3012 feet to 3110 feet in its Sholes "B-25" Well No. 5 located in Unit G of Section 25, Township 25 South, Range 36 East, Jalmat Pool, Lea County, New Mexico, and promulgation of special rules for said project. In the alternative, applicant seeks to have said well authorized for salt water disposal.



Case 3839  
JUL 22 AM 1968

# CONTINENTAL OIL COMPANY

P. O. Box 460

HOBBS, NEW MEXICO 88240

PRODUCTION DEPARTMENT  
HOBBS DIVISION  
L. P. THOMPSON  
Division Manager  
G. C. JAMIESON  
Assistant Division Manager

1001 NORTH TURNER  
TELEPHONE 393-4141

July 19, 1968

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

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

Re: Applications for Pressure  
Maintenance and/or Water-  
flood Projects

Gentlemen:

Forwarded herewith in triplicate are applications to inject water into six wells in various pools in Lea County, New Mexico. Each of these projects involves injection of water into a formation which is productive of oil and/or gas and consequently will require a hearing. It would appear to be appropriate to designate the following as pilot waterflood projects.

*Thistle Draw*

Well Designation	Field	Location
Fields No. 2	<u>Cruz</u> Delaware	Section 25, 23S, 32E
Lynn A-27 No. 1	Jalmat	Section 27, 23S, 36E
Wilder No. 24	El Mar - Delaware	Section 26, 26S, 32E
Wilder No. 27	El Mar - Delaware	Section 26, 26S, 32E

DOCKET MAILED

Date 8-8-68



The following wells would be classified as pressure maintenance projects.

Well Designation	Field	Location
Sholes B-25 No. 2	Jalmat	Section 25, 25S, 36E
Eaves "A" No. 10	Scarborough	Section 19, 26S, 37E

We have made these applications on the salt water disposal form because the principle purpose of these applications is to dispose of produced water. Since a hearing will be required, we have not attached water analyses, logs and diagrammatic sketches which will be presented at the hearing. We have not notified the surface owner or offset operators since published notice will be given.

Please set these matters for hearing at the earliest examiner hearing.

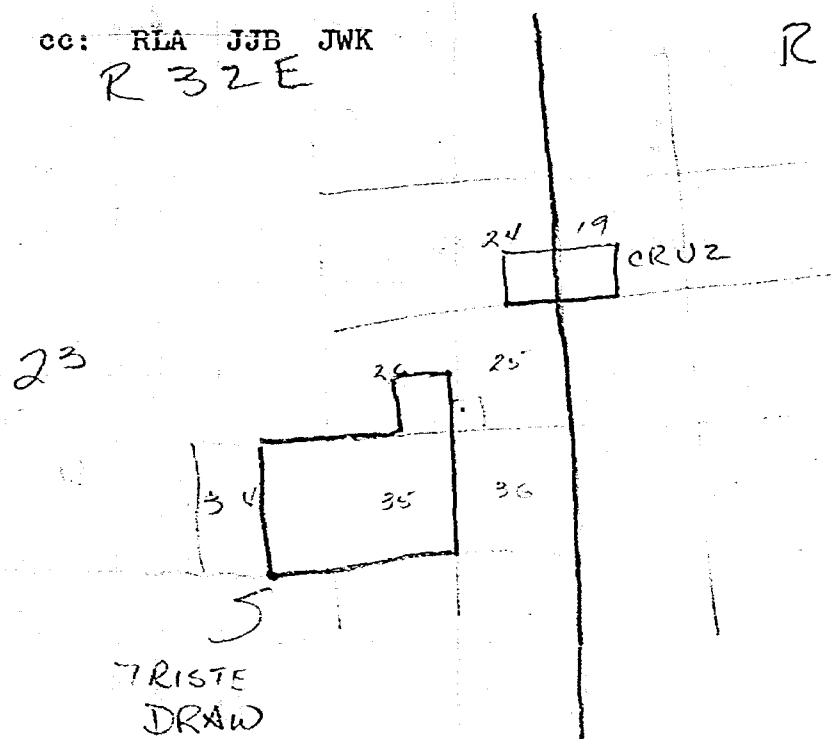
Yours very truly,

*J. Thompson*

VTL-JS

cc: RLA JJB JWK  
R 32 E

R 33 E



dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6491 • ALBUQUERQUE, NEW MEXICO



BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 21, 1968

IN THE MATTER OF:

Application of Continental Oil  
Company for a waterflood project,  
Lea County, New Mexico.

Case No. 3839

BEFORE: D. S. NUTTER,  
Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 3939.

MR. HATCH: Application of Continental Oil Company  
for a waterflood project, Lea County, New Mexico.

MR. KELLAHIN: I would like to call as a witness  
Mr. Roger Porter.

(Applicant's Exhibits 1 through  
5 marked for identification.)

\* \* \* \* \*

J. ROGER PORTER, called as a witness, having been  
first previously duly sworn, was examined and testified as  
follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A J. Roger Porter.

Q By whom are you employed and in what position, Mr.  
Porter?

A I'm employed by Continental Oil Company as a Production  
Engineer.

Q Where are you located?

A In Hobbs, New Mexico.

Q Mr. Porter, have you ever testified before the Oil  
Conservation Commission?

A No, I haven't.

Q For the benefit of the Examiner, would you briefly

outline your education and experience as an engineer?

A I graduated from Marietta College in 1966 with a Bachelor of Science in Petroleum Engineering and ever since that time, have been employed with Continental Oil Company in their Hobbs Division, in the Production Engineering section.

Q In connection with your work as an engineer at Hobbs, have you had anything to do with the problems of salt water disposal?

A My specific assignment for the last few months has been to look into the Continental operated leases within the Hobbs Division and arrive at the disposal method.

Q In connection with that, did you prepare projects for salt water disposal which are covered by this application and the following application affecting salt water disposal?

A Yes, I did.

MR. KELLAHIN: Are the witness's qualifications acceptable?

MR. NUTTER: Yes, they are.

Q (By Mr. Kellahin) Mr. Porter, briefly what is proposed by Continental Oil Company in Case 3839?

A Case 3839 is the application of Continental Oil Company for authority to inject water into its Fields No. 2 well in the Triste Draw Delaware.

MR. NUTTER: Before we get too far in this case, I believe that this subject well is a direct offset to the Triste Draw Delaware Pool and it's almost a mile away from the nearest boundaries of the Cruz Delaware. I think we ought to be referring to this as the Triste Draw rather than Cruz Delaware.

Q (By Mr. Kellahin) You refer to this as the Triste Draw Delaware well, do you not?

A That is correct. It is classified in the Cruz Delaware Pool, but from looking at the map it does look like it should be classified in the Triste Draw Delaware.

MR. NUTTER: Do you want to amend the application?

MR. KELLAHIN: At this time, I move to amend the application to show the designation of this well as being a Triste Draw Delaware well rather than a Cruz Delaware well as has been designated by the Commission.

MR. NUTTER: The application is so amended. The location of the well is given in the legal notice and it is correctly defined as far as the specific location is concerned, so we will consider that proper notice has been given.

Q (By Mr. Kellahin) Referring to what has been marked as Exhibit No. 1, will you discuss that exhibit?

A Exhibit No. 1 is a copy of the plat showing the proposed injection well circled in red at a location 490 feet from the south line and 330 feet from the west line of Section

25, Township 23 South, Range 32 East, Lea County, New Mexico. The Fields Lease is shown outlined in red and is described as the east half of Section 24, the east half of the south half of the southwest quarter, the southeast quarter of the northwest quarter in Section 25, Township 23 South, Range 32 East, Lea County, New Mexico. The plat shows the location and ownership of all leases and wells within a radius of two miles from the injection well.

Q Now, referring to what has been marked as Exhibit No. 2, would you identify that exhibit?

A Exhibit No. 2 is a copy of the form C-108 for Fields No. 2. As shown on the form, we propose to inject produced water into the Delaware formation in the interval 5,073 to 6,076 feet, from 5,090 to 5,145 feet, through two and three-eighths-inch O. K. Plastic-lined tubing below a packer to be set at approximately 5,050 feet. The top and bottom of the formation shown on the form reflect the top and bottom of the Bell Canyon member of the Delaware series. The specific interval into which we are proposing to inject is locally called the Ramsey Sand, which is the upper sand body in the Delaware series.

Q Now, referring to what has been marked as Exhibit 3, would you identify that exhibit?

A Exhibit No. 3 is a schematic diagram of the well showing the seven and five-eighths-inch casing set at 395 feet, four and one-half-inch casing set at 5206 feet, two and three-eighths-inch plastic-lined tubing set on a packer at 5050 feet and the injection intervals, 5,073 to 5,076 feet, 5,090 to 5,145 feet.

Q Referring to what has been marked as Exhibit 4, would you identify that exhibit?

A Exhibit No. 4 is a copy of the sonic log on the Fields No. 2. The top of the Ramsey Sand is indicated at approximately 5,066 feet. The perforated interval into which water is proposed to be injected is shown at 5,073 to 5,076 feet and 5,090 to 5,195 feet.

Q Referring to what has been marked as Exhibit No. 5, would you describe what it shows?

A Exhibit No. 5 is an analysis of water produced on this lease.

Q Is that a potable water?

A No, it is not.

Q Is the water comparable to the water found in the injection formation?

A It should be identical since it was produced from the same formation.

Q In other words, you are disposing of water produced

from the Triste Draw Delaware Pool?

A It is from the Triste Draw Pool and the Cruz Delaware Pool.

Q Is the Triste Draw Delaware Pool considered to be a waterflood project?

A We have not studied the reservoir for waterflooding, but there appears to be no reason to consider it less prospective for waterflooding than any other Delaware sand reservoir. It is handicapped by its small areal extent and few producing wells.

Q You are proposing to inject the water into the Delaware formation, is that correct?

A That is correct.

Q What will be the effect of injecting water into the Delaware?

A The injection of produced water back into the Delaware formation will have the effect of restoring pressure in that formation, and probably of sweeping some oil to the producing wells.

Q Do you expect this to have any effect on the recovery of oil in the area?

A In view of the large injection interval and an injection volume of 200 to 300 barrels of water per day, we do



not expect any effect of major consequence on oil recovery as a result of this injection.

Q What is the status of the Fields No. 2 well at the present time?

A It is presently producing at a rate of 185 barrels of oil and 83 mcf of gas per month according to the June 1968 production, in 30 days.

Q Now, that is a producing well at the present time, will the approval of this application result in waste, in your opinion?

A It will result in the loss of the Fields No. 2 current production although some additional oil may be recovered from the offset wells by repressuring the reservoir. The result of this application will also be that produced water which is presently produced into pits on the lease will be injected underground.

Q That would be in compliance with the orders of this Commission, effective January 1st?

A That is correct.

Q That is the one reason for this application, is it not?

A That is correct.

Q Will the granting of this application result in any impairment of correlative rights?

A In my opinion, there will be no impairment of correlative rights.

Q You say the water is coming from the Triste Draw Delaware and the Cruz Delaware pools, is this correct?

A Yes.

Q Approximately what volumes?

A Approximately 200 to 300 barrels of water a day is now being produced from the two wells on the Fields lease and the three producing wells on our Marshall lease.

Q Were Exhibits 1 through 5 prepared by you or under your supervision?

A Yes, they were.

MR. KELLAHIN: At this time, I move the introduction of Exhibits 1 through 5.

MR. NUTTER: Applicant's Exhibits 1 through 5 will be admitted in evidence.

(Whereupon, Applicant's Exhibits 1 through 5 offered and admitted in evidence.)

MR. KELLAHIN: That's all I have on direct examination.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Porter, now, as I understand it, up here in Section 19, on your Marshall Lease, you have three producing wells on the Cruz Delaware?

A That is correct.

Q In Section 24 you have two producing wells on your Fields lease?

A We have one producing well and Hugh Johnson has the other producing well.

Q On the Fields lease?

A That is correct.

Q So there are five producing wells up there in the Cruz Delaware?

A Yes, sir.

Q And the water that is being injected or proposed to be injected into the Fields No. 2 down in the southwest southwest of Section 25 is produced up here from these five wells?

A From the four wells.

Q You are not taking Johnson's water then?

A He has not contacted us as yet, and I believe his well is not producing any water.

Q So the water will be coming from the four Continental wells in Section 19, 24?

A That is correct.

Q You mentioned that this injection of water here might stimulate production. You don't have any wells down in the Triste Draw to have stimulated, however, do you?

A No, sir.

Q So you might be doing someone else a favor, but not yourself?

A The west offset, I would like to add right now, the south offset to this Fields No. 2 is currently shut in, the southwest offset, and the west offset is currently a very marginal well, so it might stimulate either one of those wells. The production I have from the well in Unit P according to the April production report, was 30 barrels of oil and 180 barrels of water during the month.

Q Which one was that?

A The one in Unit P, Section 26.

Q That was 30 barrels of oil?

A That was during the month of April, according to their report.

Q How much was it?

A 180 barrels of water, 45 mcf gas.

Q What did your No. 2 make in June, 185 barrels of oil, and how much water?

A I don't have the exact water production. It is making approximately on test, 60 barrels of water a day.

Q And roughly six barrels of oil?

A That is correct.

Q Now this will be a waterflood project in which there

won't be any project area, I presume you will have one injection well and no offsetting producing wells?

A The primary purpose of this project is to dispose of the produced water.

MR. KELLAHIN: If the Examiner please, under the present rules, Rule 701, there's really no provision in there as to utilizing the producing formation for salt water disposal. I know that numerous cases have been filed seeking salt water disposal in a producing formation but the question will be whether it's a waterflood or a water disposal and these were filed as waterflood applications although primarily, these and the following cases are for water disposal.

MR. NUTTER: This one is unique in itself, however, because it doesn't have any offsetting producing wells and I think the other cases will.

MR. KELLAHIN: That's right.

MR. NUTTER: I guess you will have some wells that might be stimulated.

MR. KELLAHIN: And if they are, we would get an increase allowable.

Q (By Mr. Nutter) Mr. Porter, referring to your Exhibit No. 3, diagrammatic sketch, what provision will be made here in the annulus? You have a plastic-lined tubing and a packer, what do you propose

as far as the annulus is concerned?

A There will be a treated brine water.

Q You will have a corrosion inhibited fluid in there?

A That is correct.

Q And the annulus can be left open or equipped with a gauge?

A That is correct.

MR. NUTTER: Are there any further questions of the witness? He may be excused.

(Witness excused.)

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

MR. KELLAHIN: That's all in Case 3839.

MR. NUTTER: Anyone have anything to offer in this case? If not, we will take the case under advisement.

I N D E X

WITNESS	PAGE
<u>J. ROGER PORTER</u>	
Direct Examination by Mr. Kellahin	2
Cross Examination by Mr. Nutter	9

<u>EXHIBITS</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
Applicant's 1 through 5	2	9

STATE OF NEW MEXICO )  
 ) ss  
 COUNTY OF BERNALILLO )

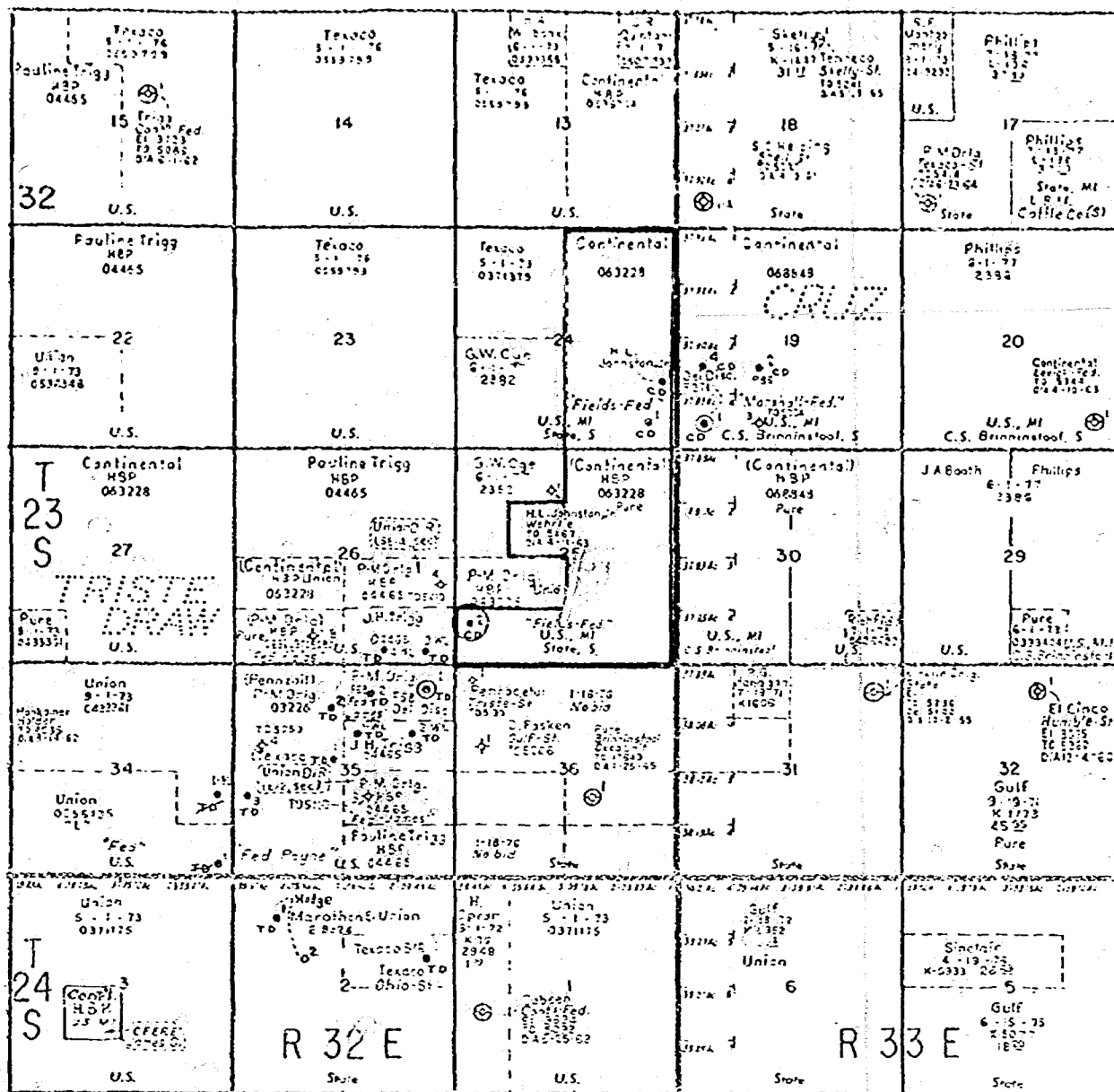
I, ADA DEARNLEY, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record to the best of my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

WITNESS my hand and seal this 5th day of September, 1968.

Ada Dearnley  
 ADA DEARNLEY

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing of Case No. 3837, held by me on 8/21, 1968.  
James, Examiner  
 New Mexico Oil Conservation Commission





BEFORE EXAMINER MUTTER  
 CASE NO. \_\_\_\_\_

EXAMINER MUTTER  
 EXHIBIT NO. 1  
 CASE NO. \_\_\_\_\_

*Application Amended  
 as a Triste Draw well  
 rather than Cruz Delaware*

CONTINENTAL OIL COMPANY  
 PRODUCTION DEPARTMENT—HOBBS DIVISION  
 LOCATION PLAT  
 LEA COUNTY, NEW MEXICO  
 LEGEND  
 D - Triste Draw  
 CD - Cruz Delaware  
 / - SI or Plugged

BEFORE EXAMINER NUTTER  
C.I.L. EXHIBIT NO. 2  
CASE NO. 3839

Form C-103  
Revised 1-1-65

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

OPERATOR <b>Continental Oil Company</b>		ADDRESS <b>Box 460, Hobbs, New Mexico</b>	
LEASE NAME <b>Fields</b>	WELL NO. <b>2</b>	FIELD <b>Cruz Delaware</b>	COUNTY <b>Lea</b>
LOCATION UNIT LETTER <b>M</b> WELL IS LOCATED <b>330</b> FEET FROM THE <b>W</b> LINE AND <b>990</b> FEET FROM THE <b>South</b> LINE, SECTION <b>25</b> TOWNSHIP <b>23S</b> RANGE <b>32E</b> NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	<b>7 5/8</b>	<b>395'</b>	<b>200</b>
INTERMEDIATE			
LONG STRING	<b>4 1/2</b>	<b>5206'</b>	<b>200</b>
TUBING	<b>2 3/8</b>	<b>5050'</b>	NAME, MODEL AND DEPTH OF TUBING PACKER <b>Baker Tension Model AD or equivalent @ 5050'</b>
NAME OF PROPOSED INJECTION FORMATION <b>Delaware</b>		TOP OF FORMATION <b>5013</b>	BOTTOM OF FORMATION <b>Approx. 6100</b>
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? <b>Tubing</b>		PERFORATIONS OR OPEN HOLES? <b>Perfs.</b>	PROPOSED INTERVAL(S) OF INJECTION <b>5073-76 5090'-5145'</b>
IS THIS A NEW WELL DRILLED FOR DISPOSAL? <b>No</b>	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? <b>Producing oil well</b>		HAS WELL EVER BEEN PERFORMED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? <b>No</b>
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA <b>600</b>		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA <b>None</b>	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA <b>None</b>
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) <b>200</b>	MINIMUM <b>200</b>	MAXIMUM <b>300</b>	OPEN OR CLOSED TYPE SYSTEM <b>closed</b>
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE - <b>yes</b>		WATER TO BE DISPOSED OF <b>yes</b>	IS INJECTION TO BE BY GRAVITY OR PRESSURE? <b>Pressure</b>
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) <b>USA - Charlie F. &amp; Robert E. James, 1025 N. Mesa, Carlsbad, N.M. 88220</b>		NATURAL WATER IN DISPOSAL ZONE <b>yes</b>	APPROX. PRESSURE (PSI) <b>est. 500 psi.</b>
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL			
<b>P-M Drilg. Co. 2900 N. Big Spring, Midland, Texas</b>			
<b>John H. Trigg 110 E. Third, Roswell, New Mexico</b>			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING? <b>No</b>		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL <b>No</b>	THE NEW MEXICO STATE ENGINEER <b>No</b>
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B) <b>Yes</b>		ELECTRICAL LOG <b>No</b>	DIAGRAMMATIC SKETCH OF WELL <b>No</b>

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

  
(Signature)

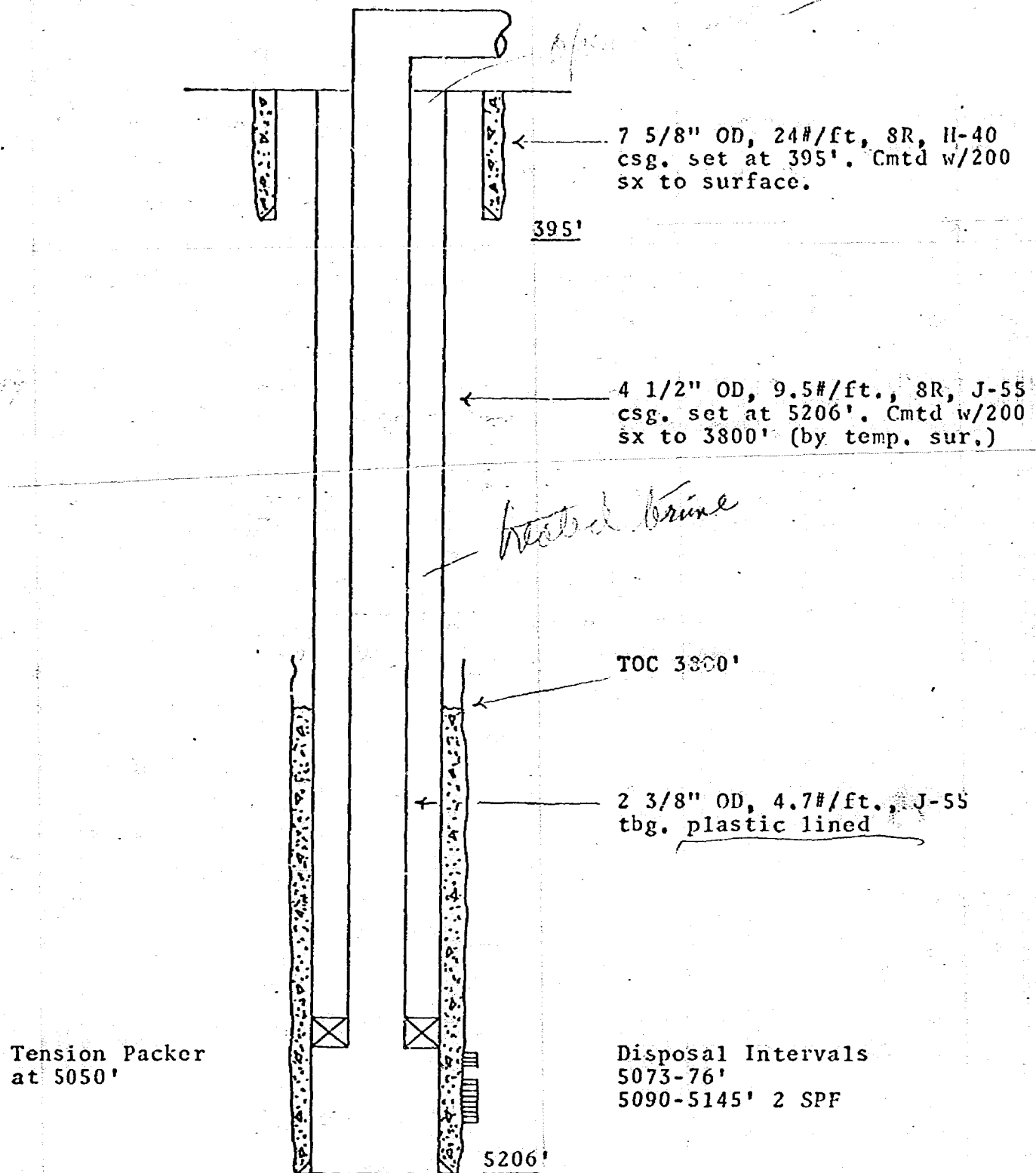
Assistant Division Manager  
(Title)

7-19-68  
(Date)

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

EXHIBIT NO. 2

Fields No. 2  
330' FSL & 990' FSL, Sec. 25, T-23S, R-32E  
Lea County, New Mexico



BEFORE EXAMINER MUTTER  
OIL FIELD NO. 3  
CASE NO. 3839

T.R.P. 5100  
T.D. 5203

## FIELDS NO. 2

REPORT SECTION

TOP OF LAMAR

TOP OF RAMSEY

TOP OF OLDS

5073  
5076  
INTERVALS  
TO BE  
PERF'D

5090

5100

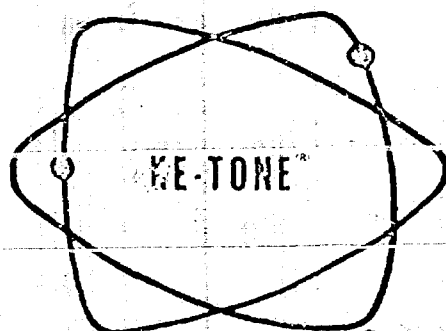
5145

P.E.C. EXAMINER LIMITED	
1. CORRECTION	
4/10	EX. 111 N
CAV. NO.	5237

EXHIBIT NO. 4

STANDARD TONE CHECK Before Log

TELEPHONE: HOBBS 393-6215



# UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil Company

Field Marshall

Lease Cruz Delaware Sand

Sampling Date 6/24/68

Type of Sample \_\_\_\_\_

## WATER ANALYSIS

IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	1157.68	23,200
Magnesium (Mg++)	239.48	2912
Sodium (Na+) (cal.)	3039.28	69,873
Bicarbonate (HCO <sub>3</sub> )	0.50	30
Carbonate (CO <sub>3</sub> -)	NOT	FOUND
Hydroxide (OH-)	NOT	FOUND
Sulphate (SO <sub>4</sub> -)	8.54	410
Chloride (Cl-)	4427.40	157,000
5.4 pH @ 68° F		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO <sub>3</sub>	1397.16	69,858
Carbonate Hardness, as CaCO <sub>3</sub> (temporary)	0.50	25
Non-Carbonate Hardness as CaCO <sub>3</sub> (permanent)	1396.66	69,833
Alkalinity as CaCO <sub>3</sub>	0.50	25
Specific Gravity @ 68° F	1.165	

\* mg/l = milligrams per Liter

\* me/l = milliequivalents per Liter

BEFORE EXAMINER NUTTER

OIL CONSERVATION CO.

EXHIBIT NO. 5

CASE NO. 4839

EXHIBIT NO. 5

*Makes Water Work*