

CASE 4284: Appli. of CONTINENTAL
OIL CO. FOR SALT WATER DISPOSAL,
EDDY COUNTY, NEW MEXICO.

Case 4284

Case Number

4284

Application

Transcripts.

Small Exhibits

ETC.

dearnley-meier recording service, inc.

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

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 17, 1969

IN THE MATTER OF:

Application of Continental Oil)
Company for salt water disposal,)
Eddy County, New Mexico.)

Case No. 4284

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 4284.

MR. HATCH: Case 4284, Application of Continental Oil Company for salt water disposal, Eddy County, New Mexico.

(Whereupon, Applicant's Exhibits 1 through 9 were marked for identification.)

(Witness sworn.)

VICTOR T. LYON,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Victor T. Lyon, L-y-o-n.

Q Are you the same Mr. Lyon who testified in the previous cases?

A Yes, I am.

Q Mr. Lyon, what is proposed by the Applicant in Case 4284?

A Case 4284 is the application of Continental Oil Company for authority to inject water produced from its Levers Federal Number One, located in Section 2 of Township 21, South Range 25 East, Eddy County, New Mexico, into either or both of two wells to be designated as Springs SWD Wells Numbers One

and Two, located in Unit F of Section 3 and Unit A of Section 4, respectively, all in Township 21 South, Range 25 East, Eddy County, New Mexico.

Q Now, you say either one or both, you're asking for approval of salt water disposal into both wells; is that right?

A Yes, sir.

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

A Exhibit Number One is a location and ownership plat showing the location of the two proposed injection wells by the red circles. The Springs SWD Well Number One is shown to be in Unit F of Section 3, and a Springs SWD Well Number Two is shown to be located in Unit A of Section 4.

The Continental Oil Company Levers Federal Number One is shown in Unit E of Section 2. There is also shown on the exhibit an area at least two miles in radius surrounding the two injection wells, and the ownership, the formation from which the other wells produced.

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

A Exhibit Number Two is a copy of the form C-108, showing pertinent data for Springs SWD Number One. As it indicates, the proposed injection interval is from 2700 to 8350,

-- an open hole interval. We propose to inject through tubing, which will be plastic-coated internally. And let's see. There will be a packer set in the casing at 2650. The annular space above the casing will be filled with an inner fluid. This is further explained on the next exhibit.

Q How much water do you propose will be injected into this well?

A We anticipate a maximum of one thousand barrels per day.

Q And what pressure would you anticipate will be realized on this well?

A Seven hundred pounds maximum is what --

Q Would that be the maximum?

A Yes, sir.

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

A Exhibit Number 3 is a copy of the schematic diagram for this well. It shows the casing size, setting depth.

MR. NUTTER: It shows the lack of casing.

THE WITNESS: Well, there is some casing in there. It shows 13 3/8 inch casing set at 205, cemented to surface 8 5/8 inch casing set at 2700 feet. It shows the total depth of the well at 8350, and the interval between 8350 and 2700 feet is open hole.

Now, this well has been plugged. We propose to re-enter the well, clean it out to total depth, and equip it as is shown on this exhibit.

Q (By Mr. Kellahin) Now, in connection with the lack of casing that appears in this well, are there any of those formations that are in the open-hole interval that have produced?

A Yes, the lowest formation, the Cisco Canyon, produces in the Springs Zephyr Pennsylvania Pool. The Wolfcamp and Bone Springs, which are also exposed, to my knowledge, have not produced in this area.

Q And the Cisco is the lower zone; is that correct?

A Yes, sir.

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

A Exhibit Number 4 is a copy of a log of the Marathon Oil Company, Federal Gas Comp Well Number One, which was drilled as a development well in the Spring Upper Penn Gas Field. It was found water productive, and was plugged and abandoned.

This well we propose to redesignate as Springs SWD Well Number 1. We have shown on the exhibit the top of the Bone Spring at approximately 2836, it looks like, at the top

of the Wolfcamp at 7639; the top of the Cisco at 8180.

Q Now, referring to what has been marked as Exhibit Number 5, would you identify that exhibit?

A Exhibit Number 5 is a copy of the form C-108 of the Springs SWD Well Number 2, which shows the pertinent data to this application. The proposed injection interval in this well is through perforation 8300 to 8400, which is in the Cisco formation, and this is the formation which is producing in our Levers Federal Number One.

Q Now, what volumes of water will you inject in this well if it's used?

A Well, we have shown the same one thousand barrels maximum here, as was shown for the Number One Well. At this time, we do not have rights to either of these wells. We are negotiating to secure one or both. And for this reason, we have filed the application for both of the wells. I do not think that we will use both wells, but we would like to have approval to use both wells.

MR. NUTTER: Is the SWD Number 2, which is the old Gulf Well, is it presently producing, or how long has it been since it has produced?

THE WITNESS: I don't believe that it's producing right now. I'm informed that it has reached its economic limit. Gulf is at the point of plugging the well, and if we

cannot secure the Springs SWD Number One, then we'll go to this well and purchase the well from Gulf and secure a special land use permit from the Bureau of Land Management in order to use the well.

MR. NUTTER: Are both wells on Federal land?

THE WITNESS: Yes, sir. There are some steps involved in getting approval to use the well. We have to go through the oil and gas lessee before we can apply to the Bureau of Land Management, as well as getting this Commission's approval to use this.

MR. NUTTER: Well, now, I presume that Gulf still has the lease on their well?

THE WITNESS: Yes, sir.

MR. NUTTER: Does Marathon still have the lease on the other one?

THE WITNESS: Yes, sir.

MR. NUTTER: They do?

THE WITNESS: And Marathon's well was drilled under a communitization, and there are six parties involved. I don't know the identity of all these parties, but Marathon feels that they must get these people's approval before they can give us approval to use the well.

Q (By Mr. Kelliher) Referring to what has been marked as Exhibit Number 6, would you identify that exhibit?

A Exhibit Number 6 is a copy of a schematic diagram for the Springs SWD Number 2, formerly the Gulf Oil Corporation Seven Rivers Hill Unit Number 4. It shows that 13 3/8-inch casing was set at 126 feet, and cemented to surface; 9 5/8 inch-casing was set at 2820 and cemented to surface; 5 1/2-inch casing was set at 10,123 and cemented back; top of cement was 7400.

The perforations are proposed to be 8300 to 8400. The other perforations in the well either have been squeezed or will be squeezed.

Q Now, will you use an internally coated tubing?

A Yes, sir.

Q Will you fill the casing tubing annulus with an inner fluid?

A Yes, sir; we will.

Q And put a pressure gauge at the surface?

A Yes, sir.

Q Referring to what has been marked as Exhibit Number 7, would you identify that exhibit?

A Exhibit Number 7 is a copy of the log of the Gulf Seven Rivers Unit Number 4, to be redesignated Springs SWD Number 2. It shows the top of the Cisco at about 8145 and the base of the Cisco at approximately 8775. The proposed

perforated interval is shown from 8300 to 8400.

Q Now, referring to Exhibit Number 8, would you discuss that exhibit?

A Exhibit Number 8 is a copy of a water analysis of the water produced from our Levers Federal Number One. As shown, the chloride content in the water is really quite low, as compared to many other waters, but the hydrogen sulfide content is quite high, and the water is quite corrosive.

Q What disposition is being made of the water at the present time?

A At the present time the water is being hauled at a considerable expense.

Q Will approval of this application enable you to reduce your operation costs on the Levers Federal Number One?

A Yes, sir.

Q Would that prolong the productive life of that well, in your opinion?

A Certainly will.

Q And, in your opinion, would that result in the prevention of waste?

A Yes, sir.

Q Mr. Lyon, in connection with this application, in your opinion, would the approval of this application in any

way cause any damage to any producing formation in this area, in either of the two wells?

A No, sir. I do not believe that it would. As I pointed out, there is no production in this area from the Wolfcamp or Bone Spring, and the water injected into the Cisco should have the effect of assisting to maintain reservoir pressure. If there is communication between the point of injection and the producing wells.

Q Would it result in any waste, in your opinion?

A No, sir, I do not believe it would.

Q Would correlative rights be protected?

A Yes, sir.

Q Were Exhibits 1 through 9 prepared by you or under your supervision?

A Yes; they were.

MR. KELLAHIN: At this time, I would like to offer into evidence Exhibits 1 through 9, inclusive.

MR. NUTTER: Applicant's Exhibits 1 through 9 will be admitted into evidence.

(Whereupon, Applicant's Exhibits 1 through 9 were admitted into evidence.)

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Lyon, where is this with respect to the town

way cause any damage to any producing formation in this area, in either of the two wells?

A No, sir. I do not believe that it would. As I pointed out, there is no production in this area from the Wolfcamp or Bone Spring, and the water injected into the Cisco should have the effect of assisting to maintain reservoir pressure. If there is communication between the point of injection and the producing wells.

Q Would it result in any waste, in your opinion?

A No, sir, I do not believe it would.

Q Would correlative rights be protected?

A Yes, sir.

Q Were Exhibits 1 through 9 prepared by you or under your supervision?

A Yes; they were.

MR. KELLAHIN: At this time, I would like to offer into evidence Exhibits 1 through 9, inclusive.

MR. NUTTER: Applicant's Exhibits 1 through 9 will be admitted into evidence.

(Whereupon, Applicant's Exhibits 1 through 9 were admitted into evidence.)

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Lyon, where is this with respect to the town

of Carlsbad?

A This is approximately -- let's see -- I believe it's twelve miles north and west of Carlsbad.

Q Where is it with respect to the Indian Basin Pool?

A The Indian Basin Pool is, well, if you will notice, the highway that comes across over here on the right hand side.

Q That's Highway 285?

A Yes, sir; between Carlsbad and Artesia. The turn-off that you see just to the east of SWD Number One is the turn-off to the Indian Basin area.

Q Now, is this the Pecos River over here in the north-east corner of the plat?

A Yes; it is.

Q There is no possibility of -- in the event this one well that doesn't have much casing, is there any possibility of any of this water getting into the Capitan Reef down there? Do you know what the depth of the Reef is down there?

A No, I do not.

Q Of course, it's a major -- it provides water for --

A Yes, sir. I might point out that Gulf is using the Springs Unit Number 3 in Unit L of Section 34, Township 20 South, Range 26 East as a disposal well.

Q That's a disposal well?

A Yes, sir.

Q Where are they disposing water?

A They are injecting into the Bone Spring Formation.

I can give you the exact interval as soon as I find it, (indicating). From 2644 to 4580.

Q 2644 to 4580?

A Yes, sir.

Q I was noticing on the form Number 9330 for the Marathon Well that a flow of Bone Springs salt water was reported at 3729 in this well. Do you have any knowledge of what the quality of the water in the Bone Spring Formation is in this area?

A No, I do not.

Q But Gulf is using the Bone Spring for a disposal zone?

A Yes, sir.

Q What water are they disposing of? Where is it produced?

A It's produced from the same reservoir as our Levers.

Q So, it would have approximately the same chloride content and probably the same H₂S content, too, then?

A Yes, sir.

Q How much water is your Levers Federal Number 1

making?

A I believe it's producing right now at about one hundred barrels per day.

Q Well, now, you mentioned that you dispose of up to a thousand barrels. Were you contemplating on taking water from some other source, or just in the event that the Levers will increase to that amount?

A We expect the Levers to continue to increase its water production.

Q I see.

A And the one thousand barrels is approximately what we would guess would be the economic limit.

Q Now, would it be possible in the case of that Marathon Well, to run another string of casing in that well after it's been cleaned out?

A It could be. The casing could be run. I'm not sure that it can run to total depth, but it would be quite an expensive --

Q It could be run, though?

A Yes, sir.

Q Also formation packer could be run on tubing and disposal made below the formation packer?

A Yes, sir.

MR. NUTTER: Are there any further questions of Mr.

Lyon?

MR. KELLAHIN: I would like to bring out one point, Mr. Lyon, in connection with the question just asked you about running casing in the Marathon Well. Do you know whether there had been casing in there when it was shot and pulled, or what the condition of the well is?

THE WITNESS: I'm not certain. The Commission's records will probably show it. I'm looking at the various prospects for injection in here; there was some consideration to going into some of the other wells. I believe it was a Gulf well. And in case they cut that tubing, cut the casing and pulled it before we were able to negotiate some agreement with them, and we had concluded that if they do this, it would not be practical to tie back into that casing. So, if we use it, we would like to --

MR. NUTTER: You've started preliminary negotiations with both companies for these wells, I presume?

THE WITNESS: Yes.

MR. NUTTER: So, both companies are aware of your desire to use either or both of them?

THE WITNESS: Yes.

MR. NUTTER: Does anyone else have any questions of Mr. Lyon? He may be excused.

Do you have anything further in Case 4284, Mr.

Kellahin?

MR. KELLAHIN: That's all.

MR. NUTTER: We'll take the case under advisement
and call Case Number 4265, reactivated.

I N D E X

WITNESS

PAGE

VICTOR T. LYON

Direct Examination by Mr. Kellahin
Cross Examination by Mr. Nutter

2
10

E X H I B I T S

MARKED

ADMITTED

Applicant's Exhibits 1-9

2

10

STATE OF NEW MEXICO)
)
 COUNTY OF BERNALILLO)

I, DAVID BINGHAM, Court Reporter 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.

David Bingham
 COURT REPORTER

I do hereby certify that the foregoing is a true and correct record of the proceedings in the hearing of Case No. 4284, heard by me on 12/17, 1969.

[Signature]
 Examiner
 New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87801

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMJO
MEMBER

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

February 3, 1970

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

Re: Case No. 4284
Order No. R-3916
Applicant:
CONTINENTAL OIL COMPANY

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.
Secretary-Director

ALP/ir

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. 4284
Order No. R-3916

APPLICATION OF CONTINENTAL OIL COMPANY
FOR SALT WATER DISPOSAL, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:30 a.m. on December 17, 1969, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 3rd day of February, 1970, 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, seeks authority to utilize the Springs SWD Wells Nos. 1 and 2, located in Unit F of Section 3 and Unit A of Section 4, respectively, Township 21 South, Range 25 East, NMPM, Springs-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico, to dispose of produced salt water as follows:

Into the Bone Spring, Wolfcamp, and Upper Pennsylvanian formations in the open-hole interval from approximately 2700 feet to 8350 feet in the Springs SWD Well No. 1, and

-2-

CASE No. 4284

Order No. R-3916

Into the Upper Pennsylvanian formation in the perforated interval from approximately 8300 feet to 8400 feet in the Springs SWD Well No. 2.

(3) That the applicant should be authorized to utilize the Springs SWD Well No. 2 to inject produced salt water into the Upper Pennsylvanian formation through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 7500 feet, provided the casing-tubing annulus is filled with an inert fluid and a pressure gauge is attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

(4) That the applicant should be authorized to utilize the Springs SWD Well No. 1 to inject produced salt water into the Upper Pennsylvanian formation only and then only if the disposal is accomplished in one of the following manners:

- (a) Disposal is through plastic-lined tubing set in a packer in casing, and said casing is set in the subject well at a depth sufficient to ensure that disposal will be only into the Upper Pennsylvanian formation, or
- (b) Disposal is through plastic-lined tubing set in a formation packer at a depth sufficient to ensure that disposal will be only into the Upper Pennsylvanian formation and tests adequate to determine the efficacy of the formation packer are taken upon completion and semiannually thereafter. The Artesia Office of the Commission shall be consulted as to the type of tests to be conducted and shall be notified of the time such tests are to be commenced so that they may be witnessed.

IT IS THEREFORE ORDERED:

(1) That the applicant, Continental Oil Company, is hereby authorized to utilize the Springs SWD Well No. 2, located in Unit A of Section 4, Township 21 South, Range 25 East, NMPM, Springs-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico, to dispose of produced salt water into the Upper Pennsylvanian formation,

-3-

CASE No. 4284

Order No. R-3916

injection to be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 7500 feet, with injection into the perforated interval from approximately 8300 feet to 8400 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 at the surface in order to determine leakage in the casing, tubing, or packer.

(2) That the applicant is hereby authorized to utilize the Springs SWD Well No. 1, located in Unit F of Section 3, Township 21 South, Range 25 East, NMPM, Springs-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico, to dispose of produced salt water into the Upper Pennsylvanian formation, provided disposal is to be in one of the following manners:

- (a) Disposal is through plastic-lined tubing set in a packer in casing, and said casing is set in the subject well at a depth sufficient to ensure that disposal will be only into the Upper Pennsylvanian formation, or
- (b) Disposal is through plastic-lined tubing set in a formation packer at a depth sufficient to ensure that disposal will be only into the Upper Pennsylvanian formation and tests adequate to determine the efficacy of the formation packer are taken upon completion and semiannually thereafter. The Artesia Office of the Commission shall be consulted as to the type of tests to be conducted and shall be notified of the time such tests are to be commenced so that they may be witnessed.

PROVIDED HOWEVER, that in (a), above, the casing-tubing annulus shall be filled with an inert fluid; that a pressure gauge shall be attached to the annulus in order to determine leakage in the casing, tubing, or packer; and that Form C-103 setting forth the additional cementing program is submitted to the Artesia Office of the Commission.

(3) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

-4-

CASE No. 4284

Order No. M-3916

(4) 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, Chairman


ALEX J. ARMILLO, Member


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

esr/

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

OPERATOR Continental Oil Company		ADDRESS Box 460, Hobbs, New Mexico			
LEASE NAME Springs SWD	WELL NO. 1	FIELD Springs Upper Penn	COUNTY Eddy		
LOCATION UNIT LETTER F ; WELL IS LOCATED 1919 FEET FROM THE N LINE AND 1849 FEET FROM THE W LINE, SECTION 3 TOWNSHIP 21S RANGE 25E NMPM.					
CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8"	205	300	surface	circ.
INTERMEDIATE	8 5/8"	2700	1400	surface	circ.
LONG STRING					
TUBING	2 3/8"	2650'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Lok-Set or equivalent at 2650		
NAME OF PROPOSED INJECTION FORMATION Bone Springs - Cisco		TOP OF FORMATION 2700	BOTTOM OF FORMATION 8350		
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? tubing		PERFORATIONS OR OPEN HOLE? open hole	PROPOSED INTERVAL(S) OF INJECTION 2700 - 8350		
IS THIS A NEW WELL DRILLED FOR DISPOSAL? no	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? producing gas well		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? no		
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH none					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 2700' (est)		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA none		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 10,000 (est)	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) 140	MINIMUM 1000	MAXIMUM 1000	OPEN OR CLOSED TYPE SYSTEM closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? pressure	APPROX. PRESSURE (PSI) 700 psi
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 - yes			WATER TO BE DISPOSED OF yes		
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) William Truett, Carlsbad, New Mexico			NATURAL WATER IN DISPOSAL ZONE yes		
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Gulf Oil Corporation, Box 670, Hobbs, New Mexico			ARE WATER ANALYSES ATTACHED? yes		
Cities Service Oil Company, Box 69, Hobbs, New Mexico			<div style="border: 1px solid black; padding: 5px;">BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION FILE NO. 2 CASE NO. 4284</div>		
Atlantic Richfield Company, Box 1978, Roswell, New Mexico					
Pan American Petroleum Corporation, Box 68, Hobbs, New Mexico					
E. A. Hanson, Box 1515, Roswell, New Mexico					
Marathon Oil Company, Box 220, Hobbs, New Mexico					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER No		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL No		THE NEW MEXICO STATE ENGINEER No
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-3)	PLAT OF AREA Yes		ELECTRICAL LOG Yes		DIAGRAMMATIC SKETCH OF WELL Yes

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

(Signature)

Division Manager

(Title)

11-26-69

(Date)

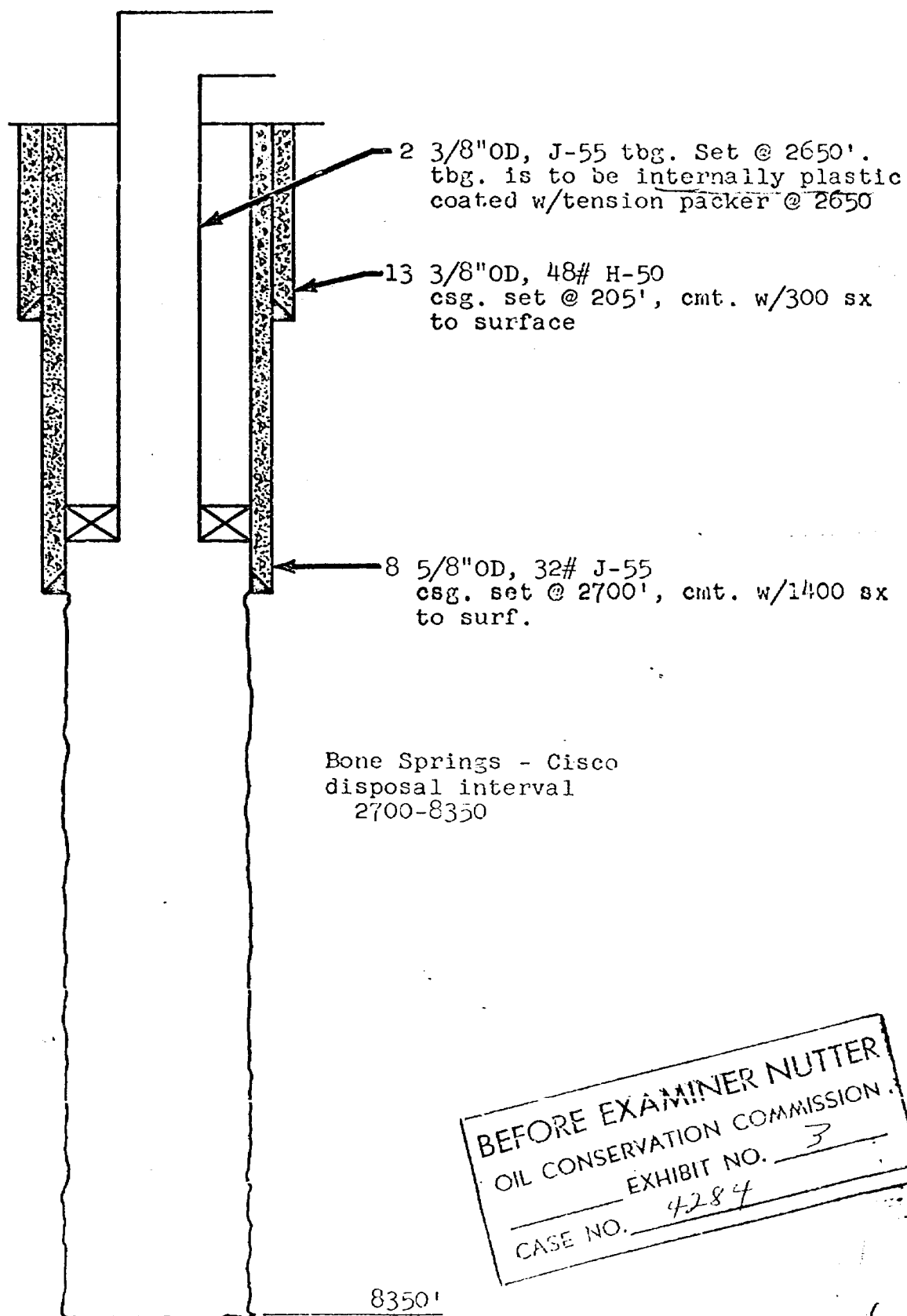
NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's 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.

COMPENHALL OIL COMPANY
SPRINGS SED NO. 1

(Formerly Marathon Oil
Company No. 1 Federal Gas
Comm.)

1919' FWL, 1849' FWL, Sec. 3, T-21S, R-25N

EDDY COUNTY, NEW MEXICO



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 4284

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

OPERATOR Continental Oil Company		ADDRESS Box 460, Hobbs, New Mexico			
LEASE NAME Springs SWD	WELL NO. 2	FIELD Springs Upper Penn	COUNTY Eddy		
LOCATION UNIT LETTER A ; WELL IS LOCATED 600 FEET FROM THE N LINE AND 830 FEET FROM THE E LINE, SECTION 4 TOWNSHIP 21S RANGE 25E NMPM.					
CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED B.I.
SURFACE CASING	13 3/8"	126'	250	surface	circ.
INTERMEDIATE	9 5/8"	2820'	725	surface	circ.
LONG STRING	5 1/2"	10,213'	600	7400'	temp. survey
TUBING	2 3/8"	7,500'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Lok-set or equivalent @ 7500'		
NAME OF PROPOSED INJECTION FORMATION Cisco		TOP OF FORMATION 8150		BOTTOM OF FORMATION 8775	
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? tubing		PERFORATIONS OR OPEN HOLE? perforations		PROPOSED INTERVAL(S) OF INJECTION 8300-8400	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? producing gas well		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? yes	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH 8566-8586 (125); 8312-8322, 8350-8368 (85 sx); 10,096 (est 100 sx)					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 2850' (est)		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA none		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 10,020	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.)	MINIMUM 140	MAXIMUM 1000	OPEN OR CLOSED TYPE SYSTEM closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? pressure	APPROX. PRESSURE (PSI) 600 psi
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 - yes			WATER TO BE DISPOSED OF yes		
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) William T. Truett, Carlsbad, New Mexico			NATURAL WATER IN DISPOSAL ZONE yes		
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Gulf Oil Corporation, Box 670, Hobbs, New Mexico			ARE WATER ANALYSES ATTACHED? yes		
E. A. Hanson, Box 1515, Roswell, New Mexico			<div style="border: 1px solid black; padding: 5px;">BEFORE EXAMINER OIL CONSERVATION COM. EXHIBIT NO. 5 CASE NO. 4284</div>		
Cities Service Oil Company, Box 69, Hobbs, New Mexico					
Marathon Oil Company, Box 220, Hobbs, New Mexico					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER No		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL No		THE NEW MEXICO STATE ENGINEER No
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)?	PLAT OF AREA Yes		ELECTRICAL LOG Yes		DIAGRAMMATIC SKETCH OF WELL Yes

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

WALTER L. M. DICKSON-5844

Division Manager

11-26-69

(Signature)

(Title)

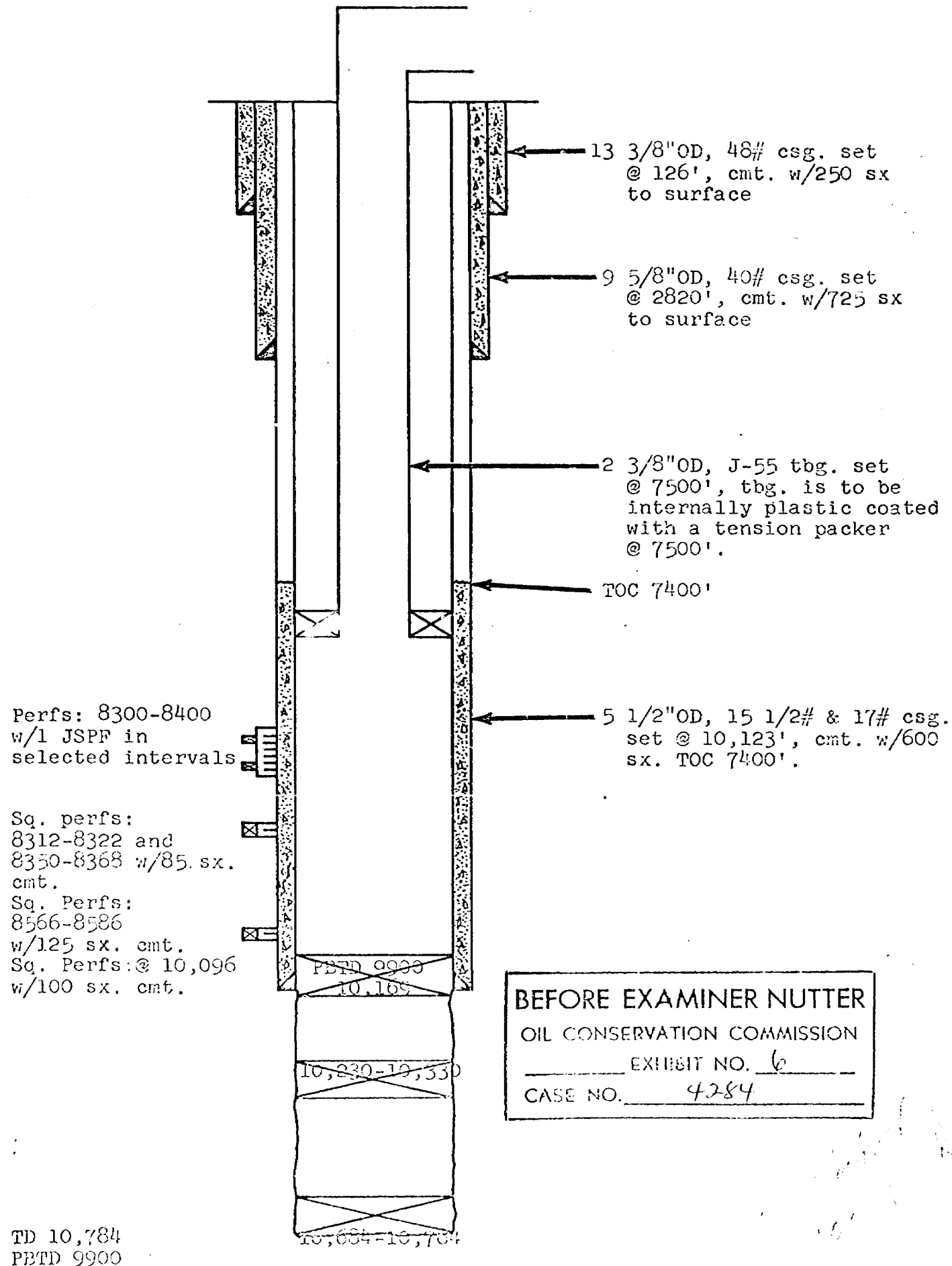
(Date)

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.

CONVENTIONAL OIL COMPANY
 SPRINGS FIELD NO. 2
 (Formerly Gulf Oil Corp. 7 Rivers Field Unit No. 4)

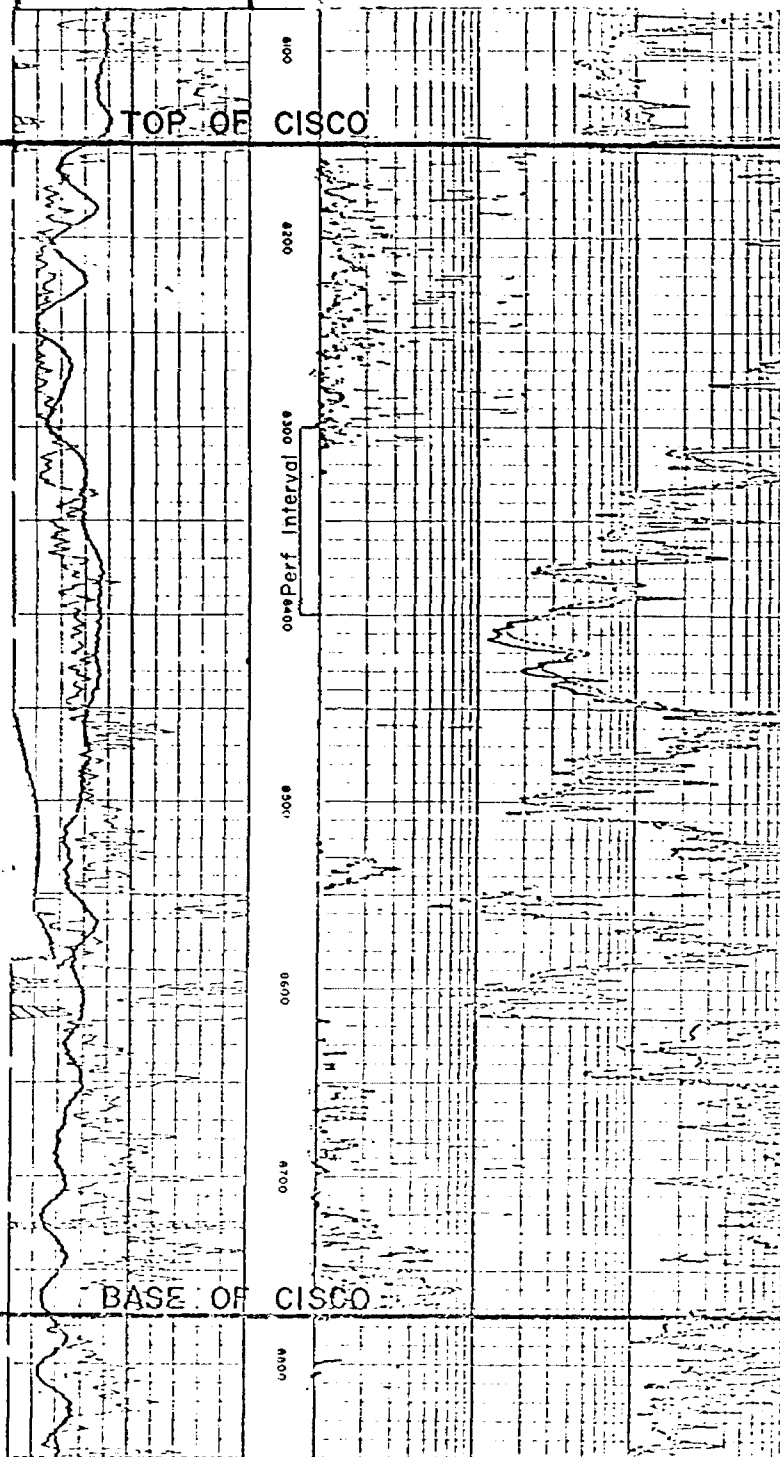
600' FHL, 830' FHL, Sec. 4, T-21S, R-25E

EDDY COUNTY, NEW MEXICO



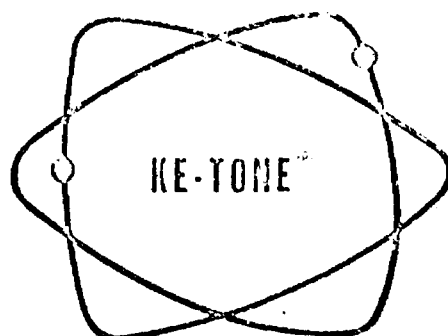
SUNLUMBER CO.		WELL NO. 101	
COMPANY, GULF OIL CORPORATION			
WELL, GULF SEVEN RIVERS UNIT #4			
FIELD, WILDCAT			
COUNTY, EGGY		STATE, NEW MEXICO	
LOCATION		Other Services	
600' FRL		PL, GRN, SCR,	
830' FRL		CUH, SES	
Sec. 4		Twp. 21S	
R. 35E		Elev. K.B. 3107	
Permanent Column		Elev. 3290	
Log Measured From		17 ft. Above Perm. Datum	
Driller Measured From		D.F. 3104	
		G.A. 3290	

SPONTANEOUS POTENTIAL millivolts	Depth	RESISTIVITY ohms. m ² /m
- 15.1 + GAMMA RAY 0 — 100 — 6		LATEROLOG — 8
		1000 10 100 1000
		6FF40 INDUCTION LOG
		1000 10000 100000 1000



BEFORE EXAMINED BY NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 7
CASE NO. 4284

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 Springs Upper Penn

Lease Levers Federal #1

Sampling Date 9-25-69

Type of Sample _____

WATER ANALYSIS

IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	27.35	548
Magnesium (Mg++)	9.95	121
Sodium (Na+) <u>Calculated</u>	174.68	4,016
Bicarbonate (HCO ₃)	14.20	866
Carbonate (CO ₃ -)	NOT	FOUND
Hydroxide (OH-)	NOT	FOUND
Sulphate (SO ₄ -)	42.68	2,050
Chloride (Cl -)	155.10	5,500
<u>H₂S</u>		<u>407 ppm</u>
7.3 ph c 68 °F		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO ₃	37.30	1,865
Carbonate Hardness as CaCO ₃ (temporary)	14.20	710
Non-Carbonate Hardness as CaCO ₃ (permanent)	23.10	1,155
Alkalinity as CaCO ₃	14.20	710
Specific Gravity c 68° F	1.010	

* mg/l = milligrams per Liter

* me/l = milliequivalents per Liter

BEFORE EXAMINER NUTTER

OIL COMMISSION COMMISSION

EXAM. NO. 8

CASE NO. 7284

Makes Water Work



DEC 1 1969

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

November 26, 1969

1001 NORTH TURNER
TELEPHONE 393-4141

Can 4284

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

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

Gentlemen:

Subject: Application for Authority to Inject
Produced Water into Applicant's
Springs SWD Wells Nos. 1 and 2,
located in Sections 3 and 4, Respec-
tively, Township 21 South, Range 25
East, Eddy County, New Mexico

Forwarded herewith are Forms C-108 for authority to inject water produced from the Springs Upper Pennsylvanian Pool into Continental Oil Company's Springs SWD Wells Nos. 1 and 2. Well No. 1 is located 1919 feet from the north line, and 1849 feet from the west line of Section 3 and Well No. 2 is located 600 feet from the north line and 830 feet from the east line of Section 4, both in Township 21 South, Range 25 East, Eddy County, New Mexico. Continental proposes to inject water in No. 1 into the open hole interval 2700-8350' which includes the Cisco Canyon horizon, which is the producing interval in our producing well, Levers Federal No. 1. It is proposed to inject water into the interval 8300-8400 in Well No. 2, which interval is the producing formation in our above-mentioned producing well.

It is respectfully requested that a hearing be scheduled for your December 17, 1969 docket.

Yours very truly,

L. P. Thompson

VTL-JS

CC: RLA JJB JWK
Enc.

DOCKET MAILED

Date 12-5269

Case 4284
Form C-108
Revised 1-1-65

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

OPERATOR Continental Oil Company		ADDRESS Box 460, Hobbs, New Mexico	
LEASE NAME Springs SWD	WELL NO. 1	FIELD Springs Upper Penn	COUNTY Eddy
LOCATION UNIT LETTER F ; WELL IS LOCATED 1919 FEET FROM THE N LINE AND 1849 FEET FROM THE W LINE, SECTION 3 TOWNSHIP 21S RANGE 25E NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	13 3/8"	205	300
INTERMEDIATE	8 5/8"	2700	1400
LONG STRING			
TUBING	2 3/8"	2650'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Lok-Set or equivalent at 2650
NAME OF PROPOSED INJECTION FORMATION Bone Springs - Cisco		TOP OF FORMATION 2700	BOTTOM OF FORMATION 8350
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? tubing		PERFORATIONS OR OPEN HOLE? open hole	PROPOSED INTERVAL(S) OF INJECTION 2700 - 8350
IS THIS A NEW WELL DRILLED FOR DISPOSAL? no	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? producing gas well		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? no
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH none			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 2700' (est)		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA none	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 10,000 (est)
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) 140	MINIMUM 1000	MAXIMUM closed	OPEN OR CLOSED TYPE SYSTEM pressure
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 - yes		WATER TO BE DISPOSED OF yes	IS INJECTION TO BE BY GRAVITY OR PRESSURE? pressure
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) William Truett, Carlsbad, New Mexico		APPROX. PRESSURE (PSI) 700 psi	
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL			
Gulf Oil Corporation, Box 670, Hobbs, New Mexico			
Cities Service Oil Company, Box 69, Hobbs, New Mexico			
Atlantic Richfield Company, Box 1978, Roswell, New Mexico			
Pan American Petroleum Corporation, Box 68, Hobbs, New Mexico			
E. A. Hanson, Box 1515, Roswell, New Mexico			
Marathon Oil Company, Box 220, Hobbs, New Mexico			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER No	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL No	THE NEW MEXICO STATE ENGINEER No
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-3)	PLAT OF AREA Yes	ELECTRICAL LOG Yes	DIAGRAMMATIC SKETCH OF WELL Yes

I hereby certify that the information above is true and complete to the best of my knowledge and belief.
[Signature] Division Manager 11-26-69
(Signature) (Title) (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.

Form 1-1-1-15

Case 4284

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

OPERATOR Continental Oil Company		ADDRESS Box 460, Hobbs, New Mexico	
LEASE NAME Springs SWD	WELL NO. 1	FIELD Springs Upper Penn	COUNTY Eddy
LOCATION UNIT LETTER F WELL 1 st LOCATED 1919 FEET FROM THE N LINE AND 1849 FEET FROM THE W LINE, SECTION 3 TOWNSHIP 21S RANGE 25E NMPM.			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8"	205	300	surface	circ.
INTERMEDIATE	8 5/8"	2700	1400	surface	circ.
LONG STRING					
TUBING	2 3/8"	2650'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Lok-Set or equivalent at 2650		

NAME OF PROPOSED INJECTION FORMATION Bone Springs - Cisco		TOP OF FORMATION 2700	BOTTOM OF FORMATION 8350
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? tubing	PERFORATIONS OR OPEN HOLE? open hole	PROPOSED INTERVAL(S) OF INJECTION 2700 - 8350	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? no	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? producing gas well		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? no
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH none			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 2700' (est)	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA none	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 10,000 (est)	
ANTICIPATED DAILY INJECTION VOLUME (BBL'S.) 140	MINIMUM 1000	MAXIMUM 1000	OPEN OR CLOSED TYPE SYSTEM closed
		IS INJECTION TO BE BY GRAVITY OR PRESSURE? pressure	APPROX. PRESSURE (PSI) 700 psi
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 - yes		WATER TO BE DISPOSED OF yes	NATURAL WATER IN DISPOSAL ZONE yes
ARE WATER ANALYSES ATTACHED? yes			
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) William Truett, Carlsbad, New Mexico			
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL			
Gulf Oil Corporation, Box 670, Hobbs, New Mexico			
Cities Service Oil Company, Box 69, Hobbs, New Mexico			
Atlantic Richfield Company, Box 1978, Roswell, New Mexico			
Pan American Petroleum Corporation, Box 68, Hobbs, New Mexico			
E. A. Hanson, Box 1515, Roswell, New Mexico			
Marathon Oil Company, Box 220, Hobbs, New Mexico			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER No	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL No	THE NEW MEXICO STATE ENGINEER No
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)?	PLAT OF AREA Yes	ELECTRICAL LOG Yes	DIAGRAMMATIC SKETCH OF WELL Yes

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

William L. A. Anderson

Division Manager

11-26-69

(Signature)

(Title)

(Date)

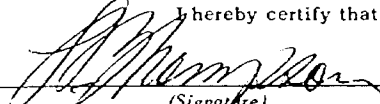
NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's 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.

Case 4284
Form C-108
Revised 1-1-65

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

OPERATOR Continental Oil Company		ADDRESS Box 460, Hobbs, New Mexico	
LEASE NAME Springs SWD	WELL NO. 2	FIELD Springs Upper Penn	COUNTY Eddy
LOCATION UNIT LETTER A ; WELL IS LOCATED 600 FEET FROM THE N LINE AND 830 FEET FROM THE E LINE, SECTION 4 TOWNSHIP 21S RANGE 25E NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	13 3/8"	126'	250
INTERMEDIATE	9 5/8"	2820'	725
LONG STRING	5 1/2"	10,213'	600
TUBING	2 3/8"	7,500'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Lok-set or equivalent @ 7500'
NAME OF PROPOSED INJECTION FORMATION Cisco		TOP OF FORMATION 8150	BOTTOM OF FORMATION 8775
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? tubing		PERFORATIONS OR OPEN HOLE? perforations	PROPOSED INTERVAL(S) OF INJECTION 8300-8400
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? producing gas well		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? yes
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH 8566-8586 (125); 8312-8322, 8350-8368 (85 sx); 10,096 (est 100 sx)			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 2850' (est)		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA none	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 10,020
ANTICIPATED DAILY INJECTION VOLUME (BBL/S.) 140	MINIMUM 140	MAXIMUM 1000	OPEN OR CLOSED TYPE SYSTEM closed
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 - yes		WATER TO BE DISPOSED OF yes	IS INJECTION TO BE BY GRAVITY OR PRESSURE? pressure
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) William T. Truett, Carlsbad, New Mexico		APPROX. PRESSURE (PSI) 600 psi	
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL			
Gulf Oil Corporation, Box 670, Hobbs, New Mexico			
E. A. Hanson, Box 1515, Roswell, New Mexico			
Cities Service Oil Company, Box 69, Hobbs, New Mexico			
Marathon Oil Company, Box 220, Hobbs, New Mexico			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER No	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL No	THE NEW MEXICO STATE ENGINEER No
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	PLAT OF AREA Yes	ELECTRICAL LOG Yes	DIAGRAMMATIC SKETCH OF WELL Yes

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


(Signature)

Division Manager

11-26-69

(Title)

(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.

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

Case 4284

OPERATOR Continental Oil Company		ADDRESS Box 460, Hobbs, New Mexico	
LEASE NAME Springs SWD	WELL NO. 2	FIELD Springs Upper Penn	COUNTY Eddy
LOCATION UNIT LETTER <u>A</u> ; WELL IS LOCATED <u>600</u> FEET FROM THE <u>N</u> LINE AND <u>830</u> FEET FROM THE <u>E</u> LINE, SECTION <u>4</u> TOWNSHIP <u>21S</u> RANGE <u>25E</u> NMPM.			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8"	126'	250	surface	circ.
INTERMEDIATE	9 5/8"	2820'	725	surface	circ.
LONG STRING	5 1/2"	10,213'	600	7400'	temp. survey
TUBING	2 3/8"	7,500'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Lok-set or equivalent @ 7500'		
NAME OF PROPOSED INJECTION FORMATION Cisco			TOP OF FORMATION 8150		BOTTOM OF FORMATION 8775
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? tubing		PERFORATIONS OR OPEN HOLE? perforations		PROPOSED INTERVAL(S) OF INJECTION 8300-8400	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? producing gas well		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? yes	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH 8566-8586 (125); 8312-8322, 8350-8368 (85 sx); 10,096 (est 100 sx)					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 2850' (est)		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA none		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 10,020	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.)	MINIMUM 140	MAXIMUM 1000	OPEN OR CLOSED TYPE SYSTEM closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? pressure	APPROX. PRESSURE (PSI) 600 psi
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 -			WATER TO BE DISPOSED OF yes	NATURAL WATER IN DISPOSAL ZONE yes	ARE WATER ANALYSES ATTACHED? yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) William T. Truett, Carlsbad, New Mexico					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Gulf Oil Corporation, Box 670, Hobbs, New Mexico E. A. Hanson, Box 1515, Roswell, New Mexico Cities Service Oil Company, Box 69, Hobbs, New Mexico Marathon Oil Company, Box 220, Hobbs, New Mexico					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER No		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL No	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAT OF AREA Yes		ELECTRICAL LOG Yes	
				THE NEW MEXICO STATE ENGINEER No	
				DIAGRAMMATIC SKETCH OF WELL Yes	

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

SIGNED: L. P. THOMPSON

Division Manager

11-26-69

(Signature)

(Title)

(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.

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

OPERATOR Continental Oil Company		ADDRESS Box 460, Hobbs, New Mexico	
LEASE NAME Springs SWD	WELL NO. 2	FIELD Springs Upper Penn	COUNTY Eddy
LOCATION UNIT, LETTER A ; WELL IS LOCATED 600 FEET FROM THE N LINE AND 830 FEET FROM THE E LINE, SECTION 4 TOWNSHIP 21S RANGE 25E NMPM.			

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8"	126'	250	surface	circ.
INTERMEDIATE	9 5/8"	2820'	725	surface	circ.
LONG STRING	5 1/2"	10,213'	600	7400'	temp. survey
TUBING	2 3/8"	7,500'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Lok-set or equivalent @ 7500'		
NAME OF PROPOSED INJECTION FORMATION Cisco			TOP OF FORMATION 8150		BOTTOM OF FORMATION 8775
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? tubing		PERFORATIONS OR OPEN HOLE? perforations		PROPOSED INTERVAL(S) OF INJECTION 8300-8400	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? producing gas well				HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? yes
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH 8566-8586 (125); 8312-8322, 8350-8368 (85 sx); 10,096 (est 100 sx)					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 2850' (est)		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA none		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 10,020	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) 140	MINIMUM 1000	MAXIMUM closed	OPEN OR CLOSED TYPE SYSTEM pressure	IS INJECTION TO BE BY GRAVITY OR PRESSURE? pressure	APPROX. PRESSURE (PSI) 600 psi
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 yes			WATER TO BE DISPOSED OF yes		NATURAL WATER IN DISPOSAL ZONE yes
ARE WATER ANALYSES ATTACHED? yes					
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) William T. Truett, Carlsbad, New Mexico					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Gulf Oil Corporation, Box 67C, Hobbs, New Mexico					
E. A. Hanson, Box 1515, Roswell, New Mexico					
Cities Service Oil Company, Box 69, Hobbs, New Mexico					
Marathon Oil Company, Box 220, Hobbs, New Mexico					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER No		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL No	
THE NEW MEXICO STATE ENGINEER No		ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		ELECTRICAL LOG Yes	
PLAT OF AREA Yes		DIAGRAMMATIC SKETCH OF WELL Yes			

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

WILLIAM T. TRUETT

Division Manager

11-26-69

(Signature)

(Title)

(Date)

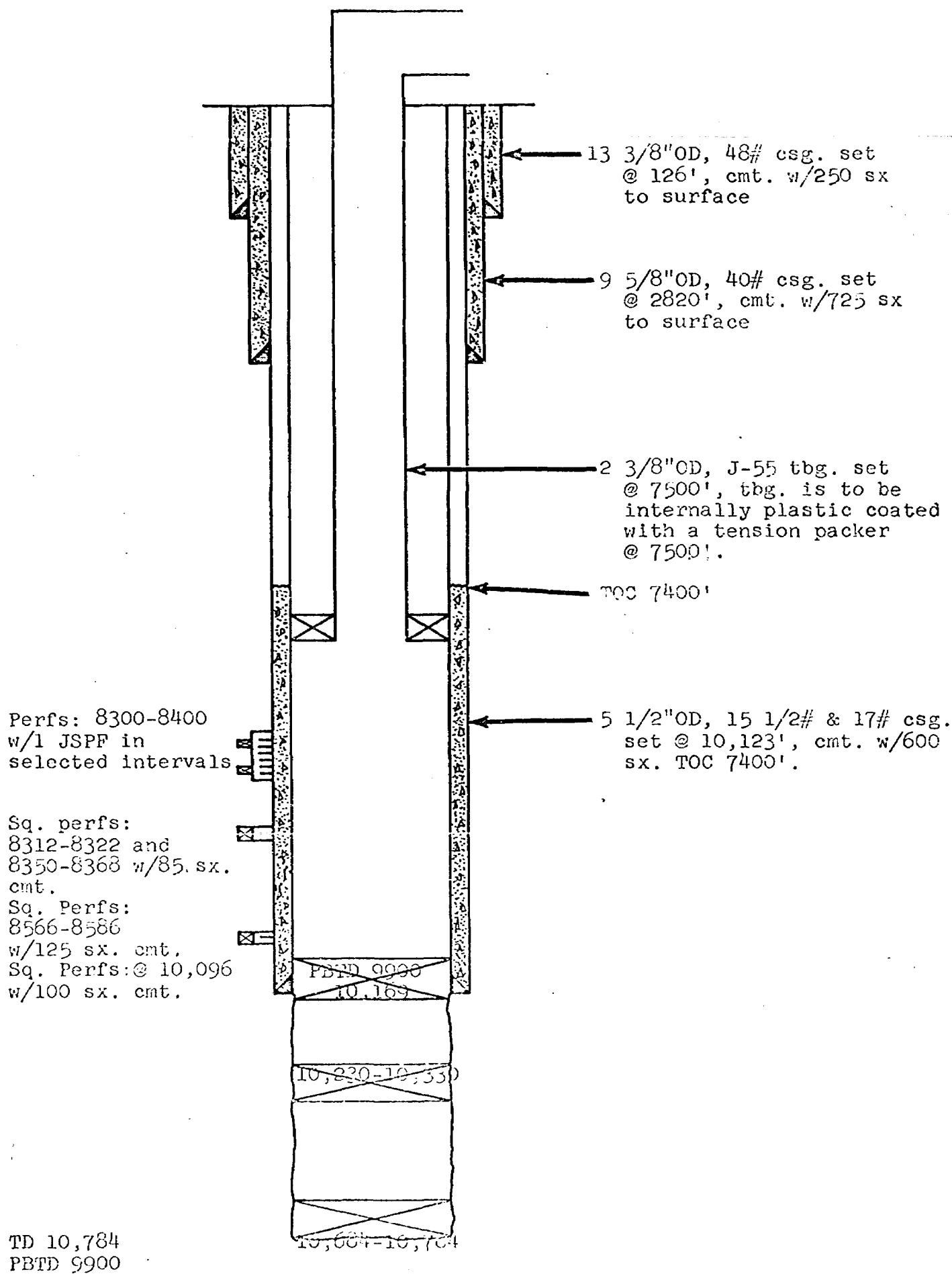
NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's 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.

CONTINENTAL OIL COMPANY
 SPRING S.D. No. 2
 (Formerly Gulf Oil Corp. 7 Rivers Hills Unit No. 4)

600' FNL, 830' FNL, Sec. 4, T-21S, R-25E

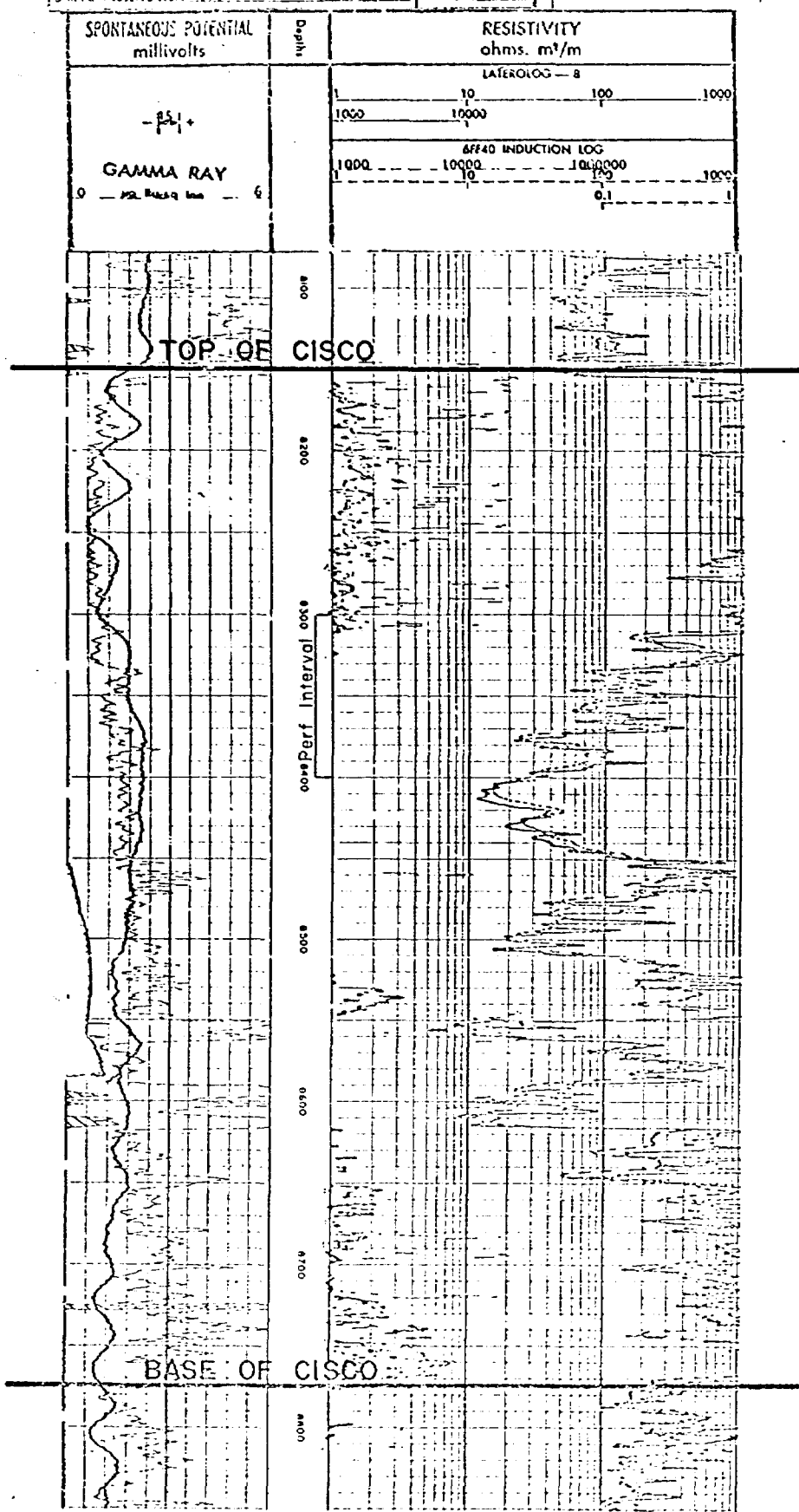
Case 4284

EDDY COUNTY, NEW MEXICO



Case
4284

SUNBELT ENERGY	
COMPANY GULF OIL CORPORATION	
WELL GULF SEVEN RIVERS UNIT #4	
FIELD WILLCAT	
COUNTY ENSO STATE NEW MEXICO	
LOCATION	Other Services
600' FNL	PL, GSN, SGR,
830' FEL	CDH, SRS
Sec. 4 Twp. 21S R. 2E S. 35E	
Point of Datum: G.L.	Elev. 3290
Log Measured from: 12 ft. Above Perm. Datum	Elev. K.B. 3307
Depth Measured from: K.B.	D.F. 3304
	G.L. 3290



DRAFT

GMH/esr
1-16-70

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. 4284

Order No. R-3916

APPLICATION OF CONTINENTAL OIL COMPANY
FOR SALT WATER DISPOSAL, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

9:30

This cause came on for hearing at 9 a.m. on December 17, 1969,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this Feb. day of January, 19670, 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, seeks
authority to utilize the Springs SWD Wells Nos. 1 and 2, located
in Unit F of Section 3 and Unit A of Section 4, respectively,
Township 21 South, Range 25 East, NMPM, Springs-Upper Pennsyl-
vanian Gas Pool, Eddy County, New Mexico, to dispose of produced
salt water as follows:

Into the Bone Spring, Wolfcamp, and Upper
Pennsylvanian formations in the open-hole
interval from approximately 2700 feet to
8350 feet in the Springs SWD Well No. 1,
and

Into the Upper Pennsylvanian formation in
the perforated interval from approximately
8300 feet to 8400 feet in the Springs SWD
Well No. 2.

(3) That the applicant should be authorized to utilize the Springs SWD Well No. 2 to inject produced salt water into the Upper Pennsylvanian formation through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 7500 feet, provided the casing-tubing annulus is filled with an inert fluid and a pressure gauge is attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

(4) That the applicant should be authorized to utilize the Springs SWD Well No. 1 to inject produced salt water into the Upper Pennsylvanian formation only and then only if the disposal is accomplished in one of the following manners:

(a) Disposal is through plastic-lined tubing set in a packer ^{in casing, and said} casing is set in the subject well at a depth sufficient to ensure that disposal will be only into the Upper Pennsylvanian formation, or

(b) Disposal is through plastic-lined tubing set in a formation packer at a depth sufficient to ensure that disposal will be only into the Upper Pennsylvanian formation and tests adequate to determine the efficacy of the formation packer are taken upon completion and semiannually thereafter. The Artesia ^{consulted as to the type of tests to be conducted and shall be} Office of the Commission shall be notified of the time such tests are to be commenced so that they may be witnessed.

IT IS THEREFORE ORDERED:

(1) That the applicant, Continental Oil Company, is hereby authorized to utilize the Springs SWD Well No. 2, located in Unit A of Section 4, Township 21 South, Range 25 East, NMPM, Springs-

Upper Pennsylvanian Gas Pool, Eddy County, New Mexico, to dispose of produced salt water into the Upper Pennsylvanian formation, injection to be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately ⁷⁵⁰⁰~~7400~~ feet, with injection into the perforated interval from approximately 8300 feet to 8400 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 at the surface in order to determine leakage in the casing, tubing or packer.

(2) That the applicant is hereby authorized to utilize the Springs SWD Well No. 1, located in Unit F of Section 3, ^{Township 21 South,} ~~Range 26 East, NMPM, Springs, Pennsylvanian Gas Pool Eddy County, New Mexico,~~ ^{said} ~~Township, Range, and Pool,~~ to dispose of produced salt water into the Upper Pennsylvanian formation, provided disposal is to be in one of the following manners:

(a) Disposal is through plastic-lined tubing set ^{in casing, and said} in a packer ~~and~~ casing is set in the subject well at a depth sufficient to ensure that disposal will be only into the Upper Pennsylvanian formation, or

(b) Disposal is through plastic-lined tubing set in a formation packer at a depth sufficient to ensure that disposal will be only into the Upper Pennsylvanian formation and tests adequate to determine the efficacy of the formation packer are taken upon completion

and semiannually thereafter. The Artesia ^{consented as to the type of tests to be conducted and shall be} Office of the Commission shall be notified ^A of the time such tests are to be commenced so that they may be witnessed.

(3) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) 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.

Provided However, that in (a), above, the casing - tubing annulus shall be filled with an inert fluid; that a pressure gauge shall be attached to the annulus in order to determine leakage in the casing, tubing, or packer; and that the Form C-103 setting forth the additional cementing program is submitted to the District Office of the Commission.

Case 4284

Continental Oil Co.

inj prod wtr

Springs SWD Nos 1 & 2

1:F 3 → 2:A 4

21S 25E

Springs-Upper Perm

open hole 2700-8350

BS & WE
4H Pa

perfs 8300-8400

Perm.

map 1000 bwpd both wells

all marathon wree
and Gulf wree