

CASE 3978: Application of TEXAS
PACIFIC OIL COMPANY FOR SALT
WATER DISPOSAL, LEA COUNTY.

Case Number

3978

Application

Transcripts.

Small Exhibits

ETC.

dearnley-meier

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 2, 1968

EXAMINER HEARING

IN THE MATTER OF:)

Application of Texas)
Pacific Oil Company for)
salt water disposal, Lea)
County, New Mexico.)

Case No. 3978

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Case No. 3978.

MR. HATCH: Application of Texas Pacific Oil Company for salt water disposal, Lea County, New Mexico.

MR. RUSSELL: John F. Russell, representing the applicant, and I have one witness, the same witness who previously testified.

(Whereupon, Applicant's Exhibits Numbers 1 through 6, inclusive, were marked for identification.)

JOHN WALTERS

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

DIRECT EXAMINATION

BY MR. RUSSELL:

Q You are the same John Walters who testified in the prior case?

A Yes, I am.

Q Are you acquainted with Texas Pacific application in Case 3978?

A Yes, I am.

Q What do you seek by that application?

A Texas Pacific Oil Company seeks authority to dispose of produced salt water into the Seven Rivers-Queen Formation in the perforated interval from 3,148 feet to 3,450 feet in its

McKinney Well No. 1, located in Unit A of Section 36, Township 24 South, Range 36 East, Langley-Mattix Pool, Lea County, New Mexico.

Q Have you prepared exhibits in connection with this application?

A I have a number of exhibits.

Q Identify the exhibits as you go along, and explain what they portray.

A Exhibit Number 1 is a plat showing the well location, and the well is located 660 feet from the north line and 660 feet from the east line, in Unit A, Section 36, Township 24 South, Range 36 East. It is marked on the map by a triangle colored in yellow. The plat includes an area of a radius of two miles, showing all wells within the area, and the legend on the map shows the particular interval or pool in which these wells are completed.

Q While you are on Exhibit 1, will you explain what wells you will be taking water from to dispose into the McKinney well?

A We plan primarily to dispose of water from the Watkins Lease.

Q Can you identify it?

A It is located in Section 35, directly one mile to the

south. On the map, it is shown as Woolworth, but this is actually Watkins. It consists of the east half of the northeast quarter.

We also intend to dispose of water from our Woolworth Lease located in Section 26. It consists of the south half of the southeast quarter. Therefore, these leases are contiguous. The Woolworth Lease has one producing well, and the Watkins Lease has two producing wells.

Q All right. Continue.

A Texas Pacific Exhibit Number 2 is a well bore sketch, showing the proposed completion method of the well. The well has a ten and three-quarter-inch casing, cemented at 298 feet with 200 sacks circulated to the surface. Seven-inch casing is set at 3,148, with 500 sacks. The top of the cement is calculated at 2,085 feet. The well bore sketch also shows formation tops, and it shows that our procedure for completion as a water injection well will be to run a packer on either two-inch or two and a half-inch plastic-coated tubing to a depth of approximately 3,130 feet, which is approximately 18 to 20 feet above the shoe of the casing.

Our original application shows that we applied for injection into the interval 3148 to 3450. However, a check of our records has shown that the well had been plugged back at an

earlier date, and the interval that we propose to use will be 3,148 to 3,210, the current plug-back depth, this being an open-hole disposal.

Q That is within the interval covered by the application?

A Yes, it is within the interval.

Q And you ask at this time that your application be amended to show this change?

A Yes.

MR. NUTTER: In other words, the interval will be lessened, and it will be into the open-hole interval rather than the perforated interval?

THE WITNESS: Right.

MR. NUTTER: The application will be so amended.

Q Will there be any fluids placed in the tubing or casing annulus here?

A We intend to load the tubing casing annulus with an inert treated fluid, and we will monitor the tube and casing annulus pressure with a pressure gauge to be installed at the time the well is completed as an injection well.

Q Now, this particular disposal, do you anticipate the leases will have a longer life than in the prior case?

A Yes, these leases have a life of approximately six years or longer, and we feel that the expenditure can be justified

at this time. In addition to the Watkins Woolworth Leases, we would -- we intend to make this well available for other operators in the area, should they desire to use this well for disposal purposes.

Q Did you take an injectivity test on this well?

A This well had an injectivity test run on it on November 8, 1968. It took 200 barrels per hour on a vacuum, which will give an approximate capacity of 4,800 barrels per day, which is well above the anticipated volumes that we have planned for injection at this time.

Our Woolworth Lease produces approximately 775 barrels of water per month. Our Watkins Lease produces approximately 27,000, so we anticipate approximately 1,000 barrels a day for the well at this time. Of course, this may be increased, at which time we plan for disposal of other leases, either those belonging to Texas Pacific or other operators in the area.

Exhibit 3 is a production curve for the well, showing oil and water production from the date the well was completed in 1949 until the date it was temporarily abandoned in 1968. The well has a cumulative oil production of 23,360 barrels of oil. The last production for the well was experienced in May of 1968.

Q What was the rate at that time?

A Forty barrels of oil per month, and 279 barrels of water.

Exhibit 4 is a gamma ray neutron log of the well, and also shows formation tops, and the location of the casing shoe, as well as a proposed interval for injection.

Exhibits 5 and 6 are water analysis from the Watkins and Woolworth Leases, and these analyses show a chloride content of approximately 3,000 parts per million, not considered potable for human or animal consumption, and that is a mineralized water. Tests show that the water has a slightly positive scaline index, and that it is compatible with the formation.

Q Would the granting of this application prevent waste due to premature abandonment of wells, and protect correlative rights?

A Yes.

Q Were Exhibits 1 through 6 prepared by you or under your supervision and direction?

A Yes, they were.

MR. RUSSELL: I move the introduction of Applicant's Exhibits 1 through 6.

MR. NUTTER: Applicant's Exhibits 1 through 6 will be admitted in evidence.

MR. RUSSELL: No further questions.

(Whereupon, Applicant's Exhibits Numbers 1 through 6, inclusive, were admitted in evidence.)

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Walters, as I understand, the two leases that will be contributing to this injection program are your Woolworth Lease in the south half of the southeast quarter of Section 26 --

A Yes.

Q And then the 40-acre lease being northeast of northeast of Section 45?

A It would be -- there is an 80-acre lease. It would be the east half of that quarter.

Q East half of the northeast?

A Right. There are two 40-acre locations.

Q Those are all Jalmat wells that are completed on these two leases?

A That's correct.

Q You will be injecting into the producing interval of the Langley-Mattix Pool in this McKinney No. 1 Well?

A Yes, sir.

Q Now, this is a Langley-Mattix well directly southeast, is it not?

A The Shell?

Q Well, that would be this reserve oil -- southeast?

A Yes, it is.

Q That would be that Reserve No. 2?

A Yes.

Q And that is the nearest Langley-Mattix well. Do you know what the perforated interval is of that well?

A No, I do not have that information. Let me point out that I did talk to Shell about their location. They had no objection to us injecting into that well.

Q You mentioned that you would run two or two and a half-inch tubing. That depends on how well the two-inch will handle it, I guess.

A In the availability of company stock.

Q Now, the annulus would be loaded with an inert fluid?

A Yes.

Q And equipped with a gauge at the surface?

A Yes.

MR. NUTTER: Any further questions of Mr. Walters? You may be excused. Do you have anything further?

MR. RUSSELL: I have nothing further.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3978? We will take the case under advisement.

I N D E XWITNESSPAGE

JOHN WALTERS

Direct Examination by Mr. Russell 2

Cross Examination by Mr. Nutter 8

EXHIBITSMARKEDOFFERED AND
ADMITTEDApplicant's Exhibits
Numbers 1 through 6

2

8

STATE OF NEW MEXICO)
) ss
 CCUNTY OF BERNALILLO)

I, SAMUEL MORTELETTE, 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.

Samuel Mortelette
 COURT REPORTER

I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the December hearing of Case No. 378
 heard by me on 12/2, 1968.

James, Examiner
 New Mexico Oil Conservation Commission

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. 3978
Order No. R-3621

APPLICATION OF TEXAS PACIFIC OIL
COMPANY FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 2, 1968, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 9th day of December, 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, Texas Pacific Oil Company, is the owner and operator of the McKinney Well No. 1, located in Unit A of Section 36, Township 24 South, Range 36 East, NMPM, Langlie-Mattix Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Seven Rivers formation, with injection into the open-hole interval from approximately 3148 feet to 3210 feet.

(4) That the injection should be accomplished through 2 or 2 1/2-inch plastic-lined tubing installed in a packer set at approximately 3130 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should

-2-

CASE No. 3978
Order No. R-3621

be attached to the annulus at the surface in order to determine leakage in the casing, 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:

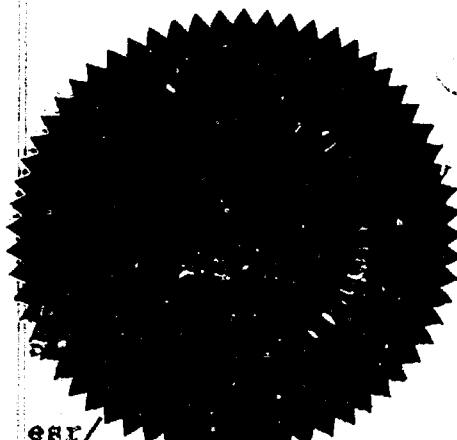
(1) That the applicant, Texas Pacific Oil Company, is hereby authorized to utilize its McKinney Well No. 1, located in Unit A of Section 36, Township 24 South, Range 36 East, NMPM, Langlie-Mattix Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers formation, injection to be accomplished through 2 or 2 1/2-inch tubing installed in a packer set at approximately 3130 feet, with injection into the open-hole interval from approximately 3148 feet to 3210 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 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

ERE/

CASE 3978: Application of Texas Pacific Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers-Queen formations in the perforated interval from 3148 feet to 3450 feet in its McKinney Well No. 1 located in Unit A of Section 36, Township 24 South, Range 36 East, Langlie-Mattix Pool, Lea County, New Mexico.

CASE 3979: Application of Consolidated Oil & Gas, Inc., for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the perforated and open-hole interval from 8500 feet to 9200 feet in its Shipp Well No. 2 located in the NE/4 SE/4 of Section 17, Township 17 South, Range 37 East, Midway-Abo Pool, Lea County, New Mexico.

CASE 3980: Application of Coastal States Gas Producing Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Upper Pennsylvanian formation in the perforated interval from approximately 9791 feet to 9954 feet in its State "22" Well No. 1 located in Unit I of Section 22, Township 14 South, Range 32 East, Tulk-Pennsylvanian Pool, Lea County, New Mexico.

CASE 3981: Application of Texaco, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates-Seven Rivers formations, Lynch Yates-Seven Rivers Pool, Lea County, New Mexico, through the following two wells located in Section 34, Township 20 South, Range 34 East:

B. V. Lynch "A" Federal Well No. 8 in Unit I;
Disposal Interval - 3690 feet to 3753 feet;

B. V. Lynch "A" Federal Well No. 11 in Unit G;
Disposal Interval - 3538 feet to 3617 feet.

CASE 3982: Application of Texaco, Inc. for a dual completion and water injection, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its C. C. Fristoe "A" Federal NCT-1 Well No. 6 located in Unit D of Section 35, Township 24 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas through the casing-tubing annulus from the Jalmat Gas Pool in the perforated interval from 2708 feet to 2796 feet and

10-3/4" Csg. @ 298' w/200 sx.
Cement circulated to surface

Top of cement @ 2085'

Packer set @ 3130'

7" Csg. @ 3148' w/500 sx.

TD: 3490'
PBD: 3210'

Vates @ 2848'

Seven Rivers @ 3008'

BEFORE EXAMINATION BY NUTTER
OIL CONSERVATION COMMISSION

APPN EXHIBIT NO. 2

3978

TEXAS PACIFIC OIL COMPANY

McKinney No. 1 Unit "A"
Elevation 3269'
660' FNL & 660' FEL
Sec. 36, T-24-S, R-36-E
Langlie Mattix Pool
Lea County, New Mexico

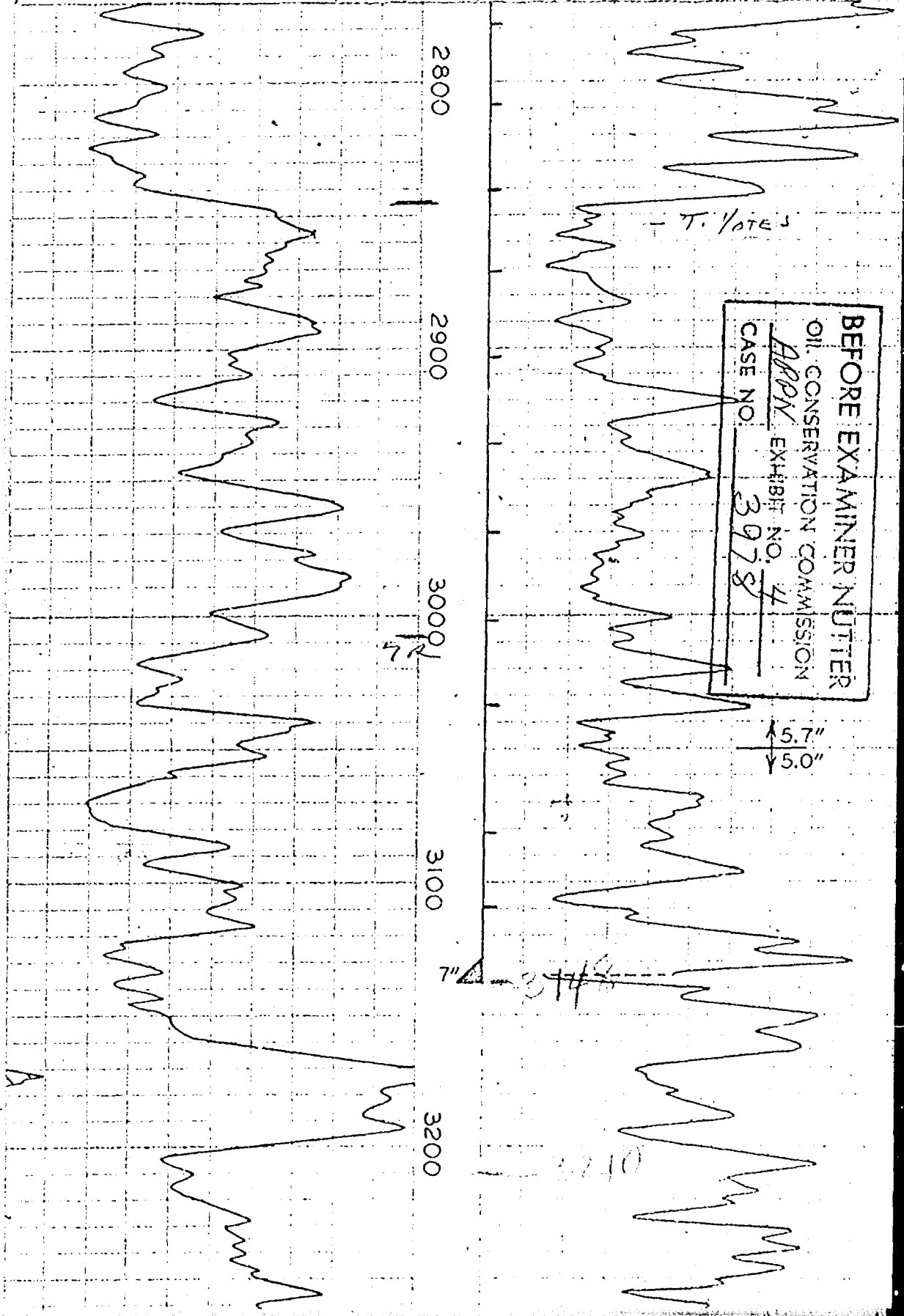
Rotary 7"
McKinney
Cooper JAL
State N.M.

COMPANY: R. OLSEN OIL CO.
WELL: McKinney NO. 1
FIELD: COOPER JAL
COUNTY: LEA STATE: N.M.
LOCATION: *

COMPANY: R. OLSEN OIL CO.
WELL: McKinney NO. 1
FIELD: COOPER JAL
COUNTY: LEA STATE: N.M.
LOCATION: *

LOG MEASURED FROM TUBING SPOOL ELEVATION *
DRILLING MEASURED FROM T. SPOOL ELEVATION *
TUBING SPOOL IS 4'
PERMANENT DATUM BELOW OLD ROTARY ELEVATION *

RUN NUMBER	1	1
TYPE OF LOG	GAMMA RAY	NEUTRON
DATE	7-1-49	7-1-49
COMPANY DEPTH	3490'	3490'
STRAIN		





UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Texas PacificField Jalmat Yates 7 RiversLease Watkins #1Sampling Date 10/31/68

Type of Sample _____

WATER ANALYSIS

IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	31.94	640
Magnesium (Mg++)	21.71	264
Sodium (Na+) Calculated	109.08	2508
Iron		2
Bicarbonate (HCO ₃ ⁻)	15.80	963
Carbonate (CO ₃ ⁻)	NOT	FOUND
Hydroxide (OH ⁻)	NOT	FOUND
Sulphate (SO ₄ ⁻)	70.79	3400
Chloride (Cl ⁻)	76.14	2700 ✓
7.2 ph c 68 °F		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO ₃	53.65	2683 ✓
Carbonate Hardness as CaCO ₃ (temporary)	15.80	790
Non-Carbonate Hardness as CaCO ₃ (permanent)	37.85	1893
Alkalinity as CaCO ₃	15.80	790
Specific Gravity c 68° F 1.000		

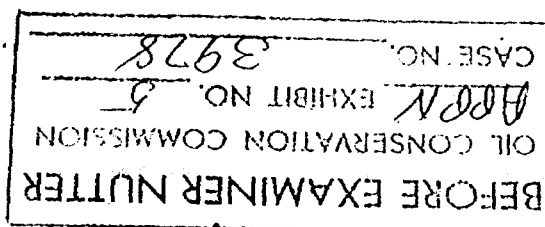
MOORE BUSINESS FORMS INC. LA

* mg/l = milligrams per Liter

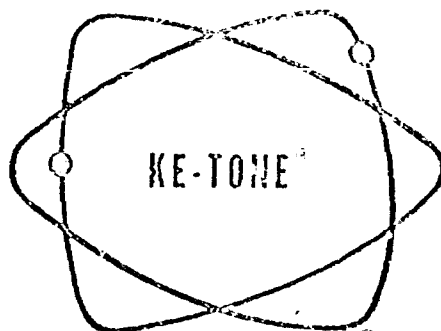
* me/l = milliequivalents per Liter

Calcium carbonate scaling index positive at 86° F

Calcium sulfate scaling index positive



~~~~~ *Makes Water Work* ~~~~~



## UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company

Texas Pacific Oil Company

Field

Lease

C. D. Woolworth #1

Sampling Date

11/15/68

Type of Sample

Well head

## WATER ANALYSIS

| IONIC FORM                                              | me/l * | mg/l *    |
|---------------------------------------------------------|--------|-----------|
| Calcium (Ca++)                                          | 39.32  | 783       |
| Magnesium (Mg++)                                        | 16.28  | 198       |
| Sodium (Na+) (calculated)                               | 62.39  | 1434      |
| Iron                                                    |        | 0.89      |
| Bicarbonate (HCO <sub>3</sub> )                         | 22.31  | 1361      |
| Carbonate (CO <sub>3</sub> <sup>-</sup> )               |        | Not Found |
| Hydroxide (OH <sup>-</sup> )                            |        | Not Found |
| Sulphate (SO <sub>4</sub> <sup>-</sup> )                | 31.92  | 1533      |
| Chloride (Cl <sup>-</sup> )                             | 63.76  | 2261      |
| 7.3 pH c 68° F                                          |        |           |
| Dissolved Solids on Evap. at 103° - 105° C              |        |           |
| Hardness as Ca CO <sub>3</sub>                          | 55.60  | 2780      |
| Carbonate Hardness, as CaCO <sub>3</sub> (temporary)    | 22.31  | 1116      |
| Non-Carbonate Hardness as CaCO <sub>3</sub> (permanent) | 33.29  | 1665      |
| Alkalinity as CaCO <sub>3</sub>                         | 22.31  | 1116      |
| Specific Gravity c 68° F                                | 1.005  |           |

\* mg/l - milligrams per Liter

\* me/l - milliequivalents per Liter

Calcium Carbonate scaling index - positive at 86° F

Calcium Sulfate scaling index - negative

BEFORE EXAMINER NUTT

OIL CONSERVATION COMMISSION

APPX EXHIBIT NO. 6

CASE NO. 3978

Makes Water Work

NOV 15 1968

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF )  
TEXAS PACIFIC OIL COMPANY FOR PER- )  
MISSION TO DISPOSE OF PRODUCED SALT )  
WATER INTO THE SEVEN RIVERS, QUEEN )  
FORMATIONS THROUGH THE OPEN HOLE )  
INTERVAL FROM APPROXIMATELY 3148 )  
FEET TO 3450 FEET IN ITS MCKINNEY )  
WELL NO. 1, LOCATED IN UNIT "A" OF )  
SECTION 36, TOWNSHIP 24 SOUTH, )  
RANGE 36 EAST, LANGLIE MATTIX POOL, )  
LEA COUNTY, NEW MEXICO. )

No. 3976

APPLICATION

COMES NOW Texas Pacific Oil Company, a division of Joseph E. Seagram & Sons, Inc., by its Attorney, John F. Russell, and states:

1. Applicant proposes to commence the disposal of salt water produced from the Tansil, Yates and Seven Rivers Formations by injection into the Seven Rivers and Queen Formations through open hole interval from approximately 3148 feet to <sup>3340</sup> ~~3450~~ feet in its McKinney Well No. 1, located in Unit "A" of Section 36, Township 24 South, Range 36 East, Langlie Mattix Pool, Lea County, New Mexico.

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

3. Applicant attaches hereto as Exhibit "1" a plat showing the location of the proposed injection well and all wells within two miles of said proposed injection well and the names of the lessees.

4. Applicant attaches hereto as Exhibit "2" a diagramatic

DOCKET 11-21-68

sketch showing the manner of completing the proposed injection well.

5. Applicant attaches hereto as Exhibit "3" a graph showing the production history of the aforesaid well.

6. Applicant will present at the time of the hearing the well log of the proposed injection well.

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

Respectfully submitted,

TEXAS PACIFIC OIL COMPANY,  
A division of  
Joseph E. Seagram & Sons, Inc.

Applicant's Attorney

By John F. Russell  
John F. Russell  
P. O. Drawer 640  
Roswell, New Mexico 88201

DATED:

10-3/4" Csg. @ 298' w/200 sx.  
Cement circulated to surface

Top of cement @ 2085'

Yates @ 2848'

Seven Rivers @ 3008'

Packer set @ 3130'

7" Csg. @ 3148' w/500 sx.

TD: 3490'  
PBD: 3210'

TEXAS PACIFIC OIL COMPANY

McKinney No. 1 Unit "A"  
Elevation 3269'  
660' FNL & 660' FEL  
Sec. 36, T-24-S, R-36-E  
Langlie Mattix Pool  
Lea County, New Mexico

*Exhibit II*

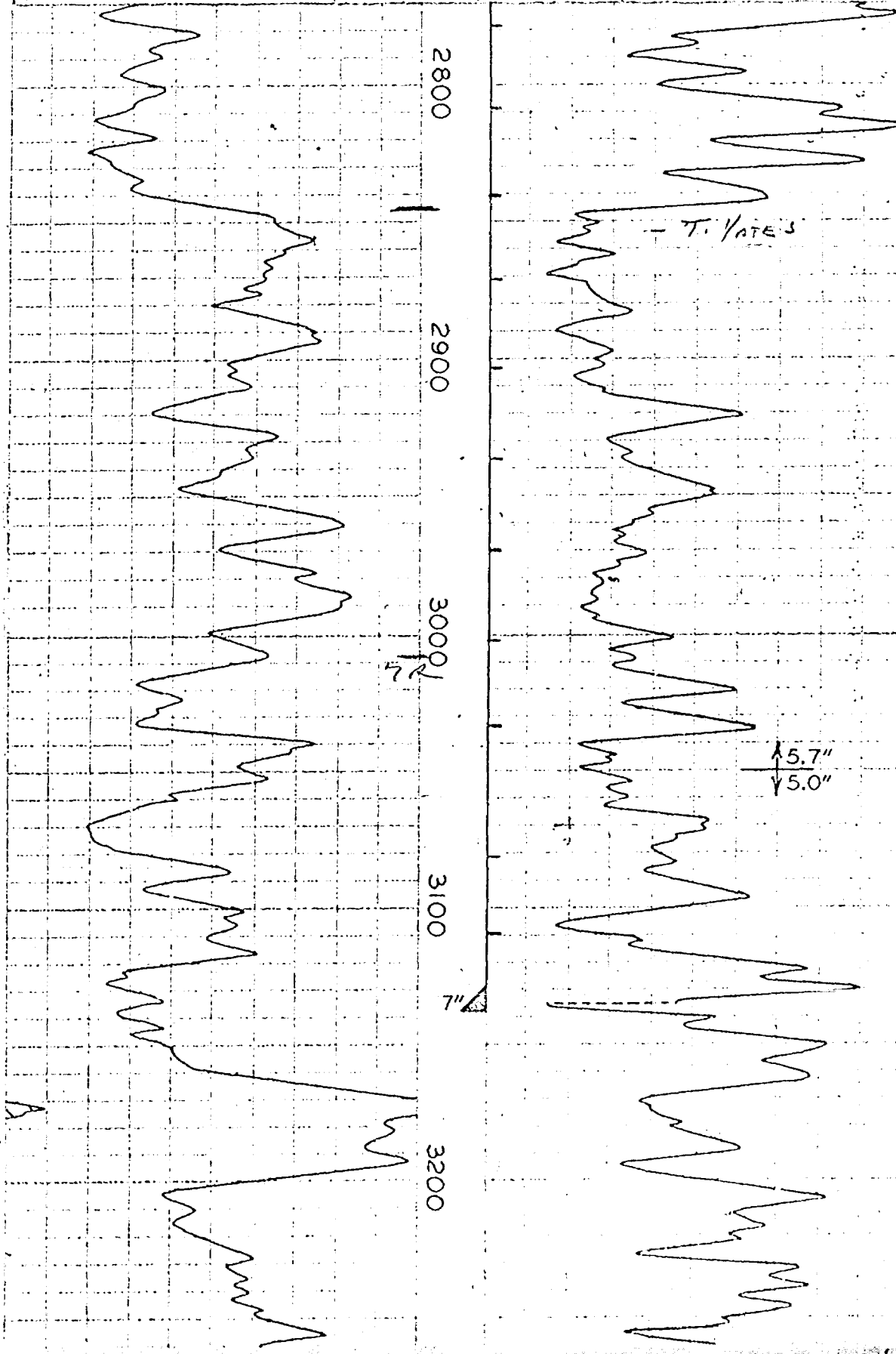
Revised 7-20-49  
McKinney No. 1  
Cooper JAL  
Lea Co., N.M.

COMPANY: R. OLSEN OIL CO.  
WELL: ~~McKENNEY~~ <sup>McKinney</sup> NO. 1  
FIELD: COOPER JAL  
COUNTY: LEA STATE: N.M.  
LOCATION: \*

COMPANY: R. OLSEN OIL CO.  
WELL: ~~McKENNEY~~ <sup>McKinney</sup> NO. 1  
FIELD: COOPER JAL  
COUNTY: LEA STATE: N.M.  
LOCATION: \*

LOG MEASURED FROM TUBING SPOOL ELEVATION \*  
DRILLING MEASURED FROM T. SPOOL ELEVATION \*  
TUBING SPOOL IS 4'  
PERMANENT DATUM BELOW OLD ROTARY ELEVATION \*

|               |           |         |
|---------------|-----------|---------|
| RUN NUMBER    | 1         | 1       |
| TYPE OF LOG   | GAMMA RAY | NEUTRON |
| DATE          | 7-1-49    | 7-1-49  |
| COMPANY DEPTH | 3490'     | 3490'   |
| STRAIN        |           |         |







# UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Texas PacificField Jalmat Yates 7 RiversLease Watkins #1Sampling Date 10/31/68

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

## WATER ANALYSIS

| IONIC FORM                                              | me/l *     | mg/l * |
|---------------------------------------------------------|------------|--------|
| Calcium (Ca++)                                          | 31.94      | 640    |
| Magnesium (Mg++)                                        | 21.71      | 264    |
| Sodium (Na+)                                            | Calculated | 109.08 |
| Iron                                                    |            | 2      |
| Bicarbonate (HCO <sub>3</sub> -)                        | 15.80      | 963    |
| Carbonate (CO <sub>3</sub> -)                           | NOT        | FOUND  |
| Hydroxide (OH-)                                         | NOT        | FOUND  |
| Sulphate (SO <sub>4</sub> -)                            | 70.79      | 3400   |
| Chloride (Cl-)                                          | 76.14      | 2700   |
| 7.2 ph c 68 °F                                          |            |        |
| Dissolved Solids on Evap. at 103° - 105° C              |            |        |
| Hardness as Ca CO <sub>3</sub>                          | 53.65      | 2683   |
| Carbonate Hardness as CaCO <sub>3</sub> (temporary)     | 15.80      | 790    |
| Non-Carbonate Hardness as CaCO <sub>3</sub> (permanent) | 37.85      | 1893   |
| Alkalinity as CaCO <sub>3</sub>                         | 15.80      | 790    |
| Specific Gravity c 68° F                                | 1.000      |        |

MOORE BUSINESS FORMS INC. LA

\* mg/l = milligrams per liter

\* me/l = milliequivalents per liter

Calcium carbonate scaling index positive at 86° F

Calcium sulfate scaling index positive

//////////////////////////////////// *Makes Water Work* //////////////////////////////////////



# UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Texas Pacific Oil Company

Field \_\_\_\_\_

Lease C. D. Woolworth #1 Sampling Date 11/15/68

Type of Sample Well head

## WATER ANALYSIS

| IONIC FORM                                              | me/l *    | mg/l * |
|---------------------------------------------------------|-----------|--------|
| Calcium (Ca++)                                          | 39.32     | 788    |
| Magnesium (Mg++)                                        | 16.28     | 198    |
| Sodium (Na+) (calculated)                               | 62.39     | 1434   |
| Iron                                                    |           | 0.89   |
| Bicarbonate (HCO <sub>3</sub> )                         | 22.31     | 1361   |
| Carbonate (CO <sub>3</sub> --)                          | Not Found |        |
| Hydroxide (OH--)                                        | Not Found |        |
| Sulphate (SO <sub>4</sub> --)                           | 31.92     | 1533   |
| Chloride (Cl--)                                         | 63.76     | 2261   |
|                                                         |           |        |
| 7.3 pH @ 68° F                                          |           |        |
| Dissolved Solids on Evap. at 103° - 105° C              |           |        |
| Hardness as Ca CO <sub>3</sub>                          | 55.60     | 2780   |
| Carbonate Hardness, as CaCO <sub>3</sub> (temporary)    | 22.31     | 1116   |
| Non-Carbonate Hardness as CaCO <sub>3</sub> (permanent) | 33.29     | 1665   |
| Alkalinity as CaCO <sub>3</sub>                         | 22.31     | 1116   |
| Specific Gravity @ 68° F                                | 1.005     |        |

\* mg/l = milligrams per Liter

\* me/l = milliequivalents per Liter

Calcium Carbonate scaling Index - positive at 86°F

Calcium Sulfate scaling Index - negative

//////////////////////////////////// *Makes Water Work* //////////////////////////////////////

DRAFT

GMH/esr

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. 3978

Order No. R- 3621

APPLICATION OF TEXAS PACIFIC OIL  
COMPANY FOR SALT WATER DISPOSAL,  
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 2, 1968,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this \_\_\_\_\_ day of December, 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, Texas Pacific Oil Company,  
is the owner and operator of the McKinney Well No. 1,  
located in Unit A of Section 36, Township 24 South, Range  
36 East, NMPM, Langlie-Mattix Pool, Lea  
County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Seven Rivers and Queen  
formations with injection into the open-hole ~~perforated~~ interval  
from approximately 3148 feet to 3210 ~~3450~~ feet.

(4) That the injection should be accomplished through  
2 or 2 1/2-inch plastic-lined tubing installed in a packer set at

approximately 3130 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 casing, 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, Texas Pacific Oil Company, is hereby authorized to utilize its McKinney Well No. 1 located in Unit A of Section 36, Township 24 South, Range 36 East, NMPM, Langlie-Mattix Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers and Queen formations, injection to be accomplished through 2 or 2 1/2-inch tubing installed in a packer set at approximately 3130 feet, with injection into the open hole ~~perforated~~ interval from approximately 3148 feet to 3210 ~~3450~~ 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 casing, 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 hereinafter designated.

Mr. Russell

**Date** \_\_\_\_\_