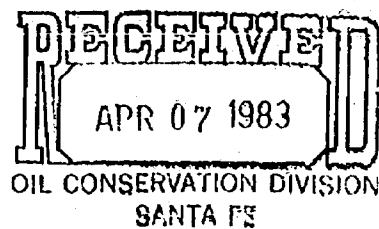


CASE 3872: Application of UNION
OIL CO. FOR A DUAL AND SALT WATER
DISPOSAL, LEA COUNTY, N. M.

Case No.

3872

Application, Transcript,
Small Exhibits, Etc.



Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

union

April 5, 1983

Mr. Joe D. Ramey
Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Case 3872

SUBJECT:
Corrosion Rate in the Salt Water
Disposal System, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico

Dear Mr. Ramey:

Please be advised that a corrosion rate of 0.1 MPY was measured, using coupons, for the first quarter of 1983 on the subject salt water disposal system. This system was authorized by order No. R-3531.

Sincerely,

D. K. Spradlin

D. K. Spradlin
Area Production Superintendent

DKS/gl

cc: Lon Pardue

Union Oil and Gas Division, Central Region
Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608
RECEIVED
JAN 29 1981
OIL CONSERVATION DIVISION
SANTA FE

union 76

January 27, 1981

3872

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

SUBJECT:
Corrosion Rate in the Salt Water
Disposal System, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Gentlemen:

Please be advised that a corrosion rate of 1.3 MPY was measured, using coupons,
for the 4th quarter of 1980 on the subject salt water disposal system. This system
was authorized by order No. R-3531.

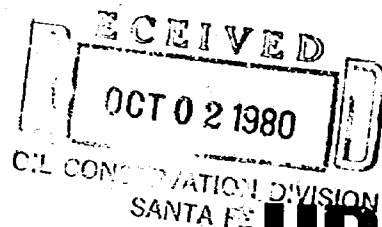
File Case

Yours very truly,
UNION OIL COMPANY OF CALIFORNIA

D.K. Spradlin

D.K. Spradlin
Area Superintendent

DKS:cs
cc: Robert Shurtleff



Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

union 76

September 25, 1980

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

*File
Core 3872*

SUBJECT:

Corrosion Rate in the Salt Water
Disposal System, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Gentlemen:

Please be advised that a corrosion rate of 0.03 MPY was measured, using coupons,
for the 2nd quarter of 1980 on the subject salt water disposal system. This system
was authorized by order No. R-3531.

Yours very truly,
UNION OIL COMPANY OF CALIFORNIA

D.K. Spradlin
D.K. Spradlin
Area Superintendent

DKS:cs

cc: Robert Shortieff

OCT 02 1980

Union Oil and Gas Division: Central Region

OIL CONSERVATION DIVISION

SANTA FE

Union Oil Company of California

Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608



September 25, 1980

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

SUBJECT:

Corrosion Rate in the Salt Water
Disposal System, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Gentlemen:

Please be advised that a corrosion rate of 0.09 MPY was measured, using coupons,
for the 1st quarter of 1980 on the subject salt water disposal system. This system
was authorized by order No. R-3531.

Yours very truly,
UNION OIL COMPANY OF CALIFORNIA

D.K. Spradlin

D.K. Spradlin
Area Superintendent

DKS:cs

cc: Robert Shurtleff

RECEIVED
OCT 02 1980
Union Oil and Gas Division: Central Region
Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608
CALIFORNIA
SANTA FE



September 25, 1980

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

SUBJECT:

Corrosion Rate in the Salt Water
Disposal System, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Gentlemen:

Please be advised that a corrosion rate of 0.2 MPY was measured, using coupons,
for the 4th quarter of 1979 on the subject salt water disposal system. This system
is authorized by order No. R-3531.

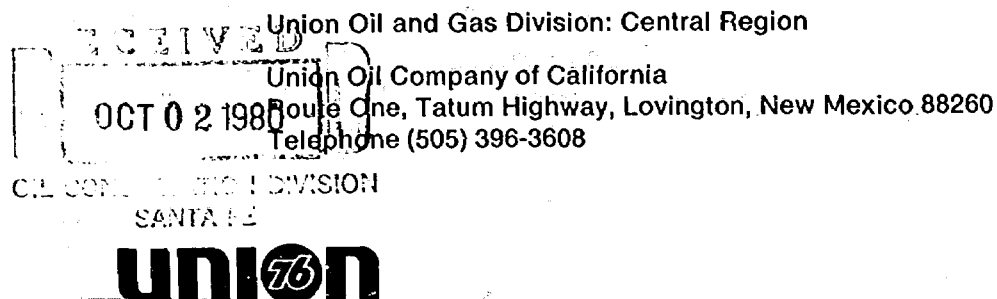
Yours very truly,
UNION OIL COMPANY OF CALIFORNIA

D.K. Spradlin

D.K. Spradlin
Area Superintendent

DKS:cs

cc: Robert Shurtleff



September 25, 1980

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

SUBJECT:

Corrosion Rate in the Salt Water
Disposal System, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Gentlemen:

Please be advised that a corrosion rate of 0.2 MPY was measured, using coupons,
for the 3rd quarter of 1980 on the subject salt water disposal system. This system
was authorized by order No. R-3531.

Yours very truly,
UNION OIL COMPANY OF CALIFORNIA

D.K. Spradlin

D.K. Spradlin
Area Superintendent

DKS:cs

cc: Robert Shurtleff

dearnley-meier reporting 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

October 9, 1968

EXAMINER HEARING

IN THE MATTER OF:)

Application of Union Oil Company of)
California for a dual completion and)
salt water disposal, Lea County,)
New Mexico.)

Case 3872

BEFORE: Elvis Utz, Examiner

TRANSCRIPT OF HEARING

(Whereupon, Applicant's Exhibits Numbers 1 through 4, inclusive, were marked for identification.)

MR. UTZ: Case 3872.

MR. HATCH: Case 3872, application of Union Oil Company of California for a dual completion and salt water disposal, Lea County, New Mexico.

MR. RUSSELL: John F. Russell, Roswell, representing the applicant, and I have one witness, Mr. Jimmie Hughes.

(Witness sworn.)

MR. UTZ: Are there any other appearances in this case? There are none. You may proceed.

JIMMIE HUGHES,

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

DIRECT EXAMINATION

BY MR. RUSSELL:

Q Will you please state your name, address, name of your employer and in what capacity you are employed?

A Jimmie Hughes. I work for Union Oil Company of California, Midland, Texas, District Production Engineer.

Q You have previously qualified to give testimony before the Commission?

A I have.

Q Are you familiar with the application of Union Oil Company of California in Case 3872?

A Yes, sir.

Q What does this application seek?

A It seeks approval to dual-complete this well in such a fashion that we can produce production from the Wolfcamp formation and dispose of the produced water from this formation into the San Andres formation.

Q I refer you to what has been identified as Applicant's Exhibit Number 1 and ask you what that shows.

A Yes, sir. This is a plat showing our subject well marked in the red circle and all the other producing wells in this field in a two-mile radius.

Q And the circled well represents your present production well?

A Yes, sir.

Q I will refer you to Applicant's Exhibit Number 2 and ask you to explain that to the Commission.

A Yes. This is a schematic diagram of the subject well showing all the casing strings, the perforations, the cement tops and so forth.

Q Now, will you, following this diagram, explain exactly how you intend to carry out the project you propose.

A Yes. Subject well is producing from the Wolfcamp

perforations at 10335 to 10369 through two-inch tubing, and we propose to dispose of the water production from this well in the annulus between the eight and five-eighths intermediate casing and the five and a half-inch production casing into the San Andres formation.

Q Now, as I understand it, you are treating this water prior to injection?

A Yes, sir. We'll be continuously treating it with both a scale and a corrosion chemical before it goes into the well.

Q Just give the entire details of the operation from the time the water is produced until it is reinjected, and what, in your opinion, will protect the various formations from this disposed water.

A Well, the water will be separated in a heater-treater on the surface from the oil and then it will be dumped into 500 barrel tanks, skimming tank to remove all the oil that may come out with it; but prior to this, it will be treated with a corrosion inhibitor and a scale inhibitor. Then, it will go into a second tank and out of the second 500 barrel tank into the annulus of the well on gravity injection for disposal.

Q Now, you have several wells in this particular area, do you not?

A Yes, sir.

Q Will you identify the wells from which you plan to dispose of the produced water into this particular well?

A We'd like to eventually dispose of all of our water in the Morton Field. We have a well, the Arreguy #1 in Section 13. This well makes no water at the present. And then we have another well, two more wells in Section 12, the Reef, which is in the Southwest quarter of Section 12 and the Gulf Federal 112 which is just north of this proposed disposal well. Then we have one other well in Section 7 of the northwest quarter.

These other wells in the field make less than 30 barrels a day of water at present, and we don't expect this water to increase appreciably from here until the wells are depleted.

Q How many barrels of water per day is the subject well producing?

A It makes 250 barrels a day.

Q Much higher than any of the rest of them?

A Yes.

Q Now, you are going to dispose of this into the Devonian formation, is that correct?

A Into the San Andres.

Q Into the San Andres?

A That's correct.

Q Now, have you any information which indicates that

the formation will take this water?

A Yes. All the wells in this immediate vicinity, when they drilled through the San Andres, had real bad lost circulation in the San Andres porosity and, also, we've tested this well with four injectivities and it will take all the water or up to 2,000 barrels a day on vacuum.

Q And what is the total amount of water which you anticipate disposing through this well?

A Subsequently, possibly 5 to 600 barrels a day.

Q And it will be gravity injection, will it not?

A Yes, sir.

Q Now, I refer you to what has been marked as Exhibit 3 and ask you what that reflects.

A That's a water analysis of the subject well's produced water. It shows the specific gravity, the calcium, the magnesium, chlorides and total solids of this produced water.

Q Now, I refer you to what has been marked as Applicant's Exhibit Number 4. I will ask you to identify that.

A That's a sonic gamma ray log of the subject well which is a porosity and natural radioactivity log of the formations in this well.

Q Now, am I correct that you have previously received and filed with the Commission waivers from all of the operators in this area consenting or showing they have no

objection to this procedure?

A All of the offset operators of the three offset wells, offsetting this proposed disposal well, have signed waivers agreeing to the disposal application.

Q One of which is Mr. Huber?

A Yes, sir, J. E. Huber.

Q And he also owns an interest in the subject well, isn't that right?

A That's true.

Q Now, is there anything further you would like to bring out in connection with this salt water disposal project that has not been brought out, particularly, with reference to Exhibit Number 2 in the manner in which you plan to proceed?

A Yes. I'd like to point out, first of all, that the disposal of this water down the annulus would be no threat to damaging, as far as collapse or burst is concerned, subject casing strings in this well. The five and a half-inch production casing was designed for ten pounds per gallon mud, and this water only weighs, the calculated weight of the water, is only eight and a half pounds per gallon; for example, at the top of the cement on a five and a half-inch casing, is 7350.

The pressure exerted there with a ten pound mud would be 3860 or the pressure required for collapse, and the pressure exerted at this point with our subject disposed water would only be 2660 pounds or 1200 pounds less, and we don't propose to put any surface pressure on this well, so we would be well below the collapse pressure of the production string. And, also, this well is a flowing well and the annulus between the tubing string and the five and a half-inch production string is filled with Lee-sol, so that's giving added safety factor for collapse.

Q Now, in drilling this well, there was some water encountered above where you will be injecting, was there not?

A The Ogallala fresh water sands, according to the log, the electric log, bottoms up or the top of the red bed, are at 222 feet below the surface.

We drilled on down to 356 feet and cemented our eleven and three-quarter-inch surface casing and circulated cement back to surface.

Q Now, am I correct that in the drilling of this well, the State Engineer's office approved your cement program for protection of the water?

A Yes, sir.

Q And in between the formation where you are injecting this water and the upper strata of the Ogallala, there is

intervening red beds?

A Yes, sir.

Q Are they impermeable?

A There's 130 feet of impermeable red bed between the bottom of the surface casing and the bottom of the fresh water bearing sand.

Q Now, referring back again to Exhibit Number 4 which is your log, what have you marked on there for the information of the Examiner?

A We have marked the bottom, or the top of the red bed which is also the bottom of the Ogallala fresh water sand at 222 feet. Of course, our intermediate casing is shown on the log at 4615, and then we marked the top of the Wolfcamp formation, the --

MR. UTZ: Where did you say the water was?

THE WITNESS: 222. 222 feet.

Q (By Mr. Russell) That's the top of the red bed, which would be the bottom of the Ogallala, is that correct?

A That's true. And then we have the top of the Wolfcamp marked at 9500 feet, which is the producing formation in this field. The subject well is perforated at 10335 to 10369 and the top of the cement behind the five and a half-inch casing is calculated at 7350.

MR. RUSSELL: I have no further questions of this witness.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Hughes, would you give me the top of the San Andres and also the bottom?

THE WITNESS: Bud, would you --

MR. JORDAN: The top of the San Andres would be 45, 48. The bottom is at 6222.

MR. RUSSELL: Can you repeat that for the record?

MR. JORDAN: Buddy Jordan, J. B. Jordan.

MR. RUSSELL: No. Will you repeat the information, please?

A Oh, okay. 6222 is the bottom. Let's see.

Q (By Mr. Utz) 4548?

A 4548, yes, is the top.

Q Then, from the base of the San Andres, 6222 to 7350 will be open to the water you intend to inject?

A Yes, sir.

Q What formation is that? What characteristics do you have?

MR. RUSSELL: I have another witness here that may be better prepared to answer that, if you want me to put him on.

MR. UTZ: We probably should know what formation this water is going into besides the San Andres. Let's see if I have any more questions of this witness.

Q (By M. Utz) You did state that you didn't intend to put any pressure on this. You thought it would take it by gravity?

A That's true. That's true.

Q Now, did you say that other than this well, there would be four more wells that you would eventually want to dispose of water in and --

A Yes, sir, four other wells operated by Union in this field. Of course, the water production on those is quite a bit less than the water production in this proposed field.

Q And that was in the order of how much, did you say?

A 20 barrels a day right at the present. We expect it eventually will be in the neighborhood of 50 to 60 barrels a day.

Q From all wells?

A From all of these other four wells. And from the total five wells, eventually, 500 or 600 barrels a day.

MR. UTZ: Are there any other questions of the witness? You may be excused.

MR. RUSSELL: I have one more witness, Mr. Buddy Jordan.

(Witness sworn.)

J. B. JORDAN,

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

DIRECT EXAMINATION

BY MR. RUSSELL:

Q Will you please state your name, address, name of your employer and capacity in which you are employed?

A My name is J. B. Jordan, employed by Union Oil Company of California in Roswell, New Mexico, as Development Geologist.

Q Mr. Jordan, you are familiar with this well which is under discussion here?

A I am.

Q You were on that well when it was drilled, were you not?

A Right.

MR. RUSSELL: The Examiner, I believe, has some questions on formation where the water will be injected.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Jordan, I think we cleared up where the top and the bottom of the San Andres was, which was, I believe, your application or as your application stated, was where you would

inject the water.

Now, there's two things I would like to know; that is, where is this lost circulation zone in the San Andres, and what formation is between 6222 and 7350?

A Lost circulation zone in the San Andres is at approximately 5670. There is a good porous zone in there right at 200 feet. The formation below the San Andres is the Glorieta, the top of which would be 6222. It goes to 6655.

Then, we have the clear fork or the Yeaso and --

Q 5625 would be the --

A 6625 is the top of the clear fork -- no. 6655.

Q All right, sir.

A And then the top of the Tubb sand is at 7285, and I believe that the cement is calculated to come up into the Tubb.

Q Is there any production in the area from either the Glorieta or the Tubb in this area?

A No, sir. The closest production that I know of from any of these formations is approximately 14 miles away.

Q You think there's enough porosity in either of these zones that would take this water?

A I seriously doubt that there's enough below the San Andres.

MR. UTZ: Are there any other questions of the witness? You may be excused.

MR. RUSSELL: I would like to offer into evidence Applicant's Exhibits 1 through 4, inclusive.

MR. UTZ: Without objection, Exhibits 1 through 4 will be entered into the record in this case.

(Whereupon, Applicant's Exhibits 1 through 4, inclusive, were entered into the record.)

MR. UTZ: Do we have any statements in this case?
The case will be taken under advisement.

I N D E XWITNESSPAGE

JIMMIE HUGHES

Direct Examination by Mr. Russell

2

Cross Examination by Mr. Utz

10

J. B. JORDAN

Direct Examination by Mr. Russell

12

Cross Examination by Mr. Utz

12

EXHIBITMARKEDOFFERED AND
ADMITTEDApplicant's Exhibits
1 through 4

2

14

STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, CHARLOTTE J. MACIAS, 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.

Charlotte Macias
 Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Executive hearing of Case No. 3822 heard by me on 10-8-65. 19 65.
Thos. W. [Signature] Chairman
 New Mexico Oil Conservation Commission

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

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

P. O. BOX 2068
SANTA FE

October 22, 1968

Mr. John Russell
Attorney at Law
P. O. Drawer 640
Roswell, New Mexico 88201

Re: Case No. 3872
Order No. R-3531
Applicant:
Union Oil Company of Calif.

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

Aztec OCC

Other Bureau of Land Management - Santa Fe, New Mexico
State Engineer Office - Santa Fe, New Mexico

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. 3872
Order No. R-3531

APPLICATION OF UNION OIL COMPANY
OF CALIFORNIA FOR A DUAL COMPLE-
TION AND 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 October 9, 1968,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 22nd day of October, 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, Union Oil Company of California,
seeks authority to complete its Federal "A" Well No. 1, located
in Unit P of Section 12, Township 15 South, Range 34 East, NMPM,
Morton-Wolfcamp Pool, Lea County, New Mexico, as a dual completion
to produce oil from the Morton-Wolfcamp Pool through 2-inch tubing
and to dispose of produced salt water down the annulus between the
5 1/2-inch production casing string and the 8 5/8-inch intermediate
casing string into the San Andres, Glorieta, Yeso, and Tubb forma-
tions in the open-hole interval from approximately 4620 feet to
7350 feet.

(3) That the produced salt water should be continuously
treated prior to injection to prevent casing corrosion and coupon
corrosion tests shall be conducted continuously on said well and
the results thereof filed quarterly with the Commission until
further notice from the Secretary-Director of the Commission.

-2-

CASE No. 3872
Order No. R-3531

(4) That the casing-tubing annulus should be filled with an inert fluid and that a pressure gauge should be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

(5) That approval of the dual completion and salt water disposal as set out above will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

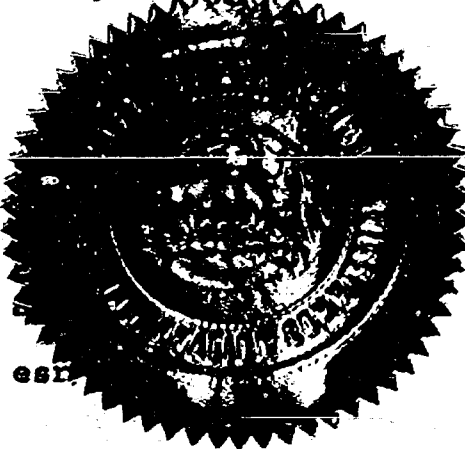
(1) That the applicant, Union Oil Company of California, is hereby authorized to complete its Federal "A" Well No. 1, located in Unit P of Section 12, Township 15 South, Range 34 East, NMPM, Morton-Wolfcamp Pool, Lea County, New Mexico, as a dual completion to produce oil from the Morton-Wolfcamp Pool through 2-inch tubing and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the San Andres, Glorieta, Yeso, and Tubb formations in the open-hole interval from approximately 4620 feet to 7350 feet;

PROVIDED HOWEVER, that the produced salt water shall be continuously treated prior to injection to prevent casing corrosion; that coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission; that the casing-tubing annulus shall be filled with an inert fluid and that a pressure gauge shall be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

PROVIDED FURTHER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(2) 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. CARCO, Chairman

GUYTON B. HAYS, Member

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

3872

Heard 10-9-68

Rec. 10-10-68

Grant Union Oil & Cal. permission to
convert their Ditch #1 P-12-15-S-34E.
Morton - W.C. pool - ~~Annular~~ 5 1/2" X 8 7/8"
Annulus to a SWP well in
the S.A. zone from 4628 - ~~622~~ 7350
open hole.

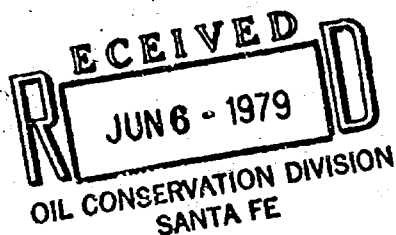
The 2" tubing X 5 1/2" casing annulus
to be filled with non-corrosive
fluid.

Production from Morton W.C.
shall be thru the 2" tubing. A packer
to be set at 10,100. ft.

Thos. J. Mc

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608



union

Case 3872

R-3531

May 25, 1979

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.1 MPY was measured, using coupons,
for the 1st. quarter of 1979 on the subject salt water disposal system. This
system was authorized by order No. R-3531.

Yours very truly,

A handwritten signature in dark ink, appearing to read "D. K. Spradlin".

D. K. Spradlin
Area Superintendent

DKS/mrf
cc: John Tyler

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

Case 3872

OCT 26 1978

union

CONSERVATION COMMISSION
Santa Fe

October 25, 1978

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.04 MPY was measured, using coupons,
for the 2nd quarter of 1978 on the subject salt water disposal system. This
system was authorized by order No. R-3531.

Yours very truly,

D. K. Spradlin

D. K. Spradlin
Area Superintendent

DKS/mrf
cc: J. Tyler

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608



March 10, 1978
Lovington, New Mexico

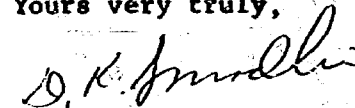
Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

Corrosion rate in the salt water
Disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.01 MPY was measured, using coupons,
for the 4th quarter of 1977 on the subject salt water disposal system. This
system was authorized by order No. R-3531.

Yours very truly,

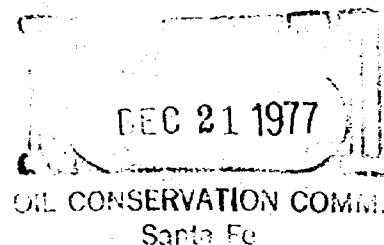
A handwritten signature in cursive script, appearing to read "D. K. Spradlin".

D. K. Spradlin
Area Superintendent

DKS/mrf
cc: J. Tyler

Union Oil and Gas Division: Central Region
Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

union 76



December 20, 1977
Lovington, New Mexico

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

Corrosion rate in the salt water
Disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.002 MPY was measured, using coupons,
for the 3rd. quarter of 1977 on the subject salt water disposal system. This
system was authorized by order No. R-3531.

Yours very truly,

D. K. Spradlin
D. K. Spradlin
Area Superintendent

DKS/mrf
cc: J. Tyler

*File
Case 3872*

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

Case no. 3872

R-3531



August 22, 1977
Lovington, New Mexico

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

Corrosion rate in the salt water
Disposal system, Federal "A" No. 1,
Morton (Weifcamp) Field, Lea County,
New Mexico

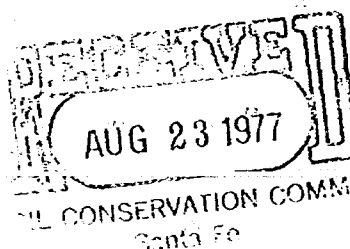
Please be advised that a corrosion rate of 0.002 MPY was measured, using coupons,
for the 2nd quarter of 1977 on the subject salt water disposal system. This
system was authorized by order No. R-3531.

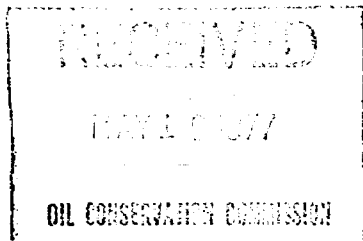
Yours very truly,

A handwritten signature in dark ink, appearing to read "D. K. Spradlin".

D. K. Spradlin
Area Superintendent

DKS/mrf
cc: J. Tyler





Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608



*Case File
3872*

May 13, 1977

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.04 MPY was measured, using coupons,
for the 1th quarter of 1977 on the subject salt water disposal system. This
system was authorized by order No. R-3531.

Yours very truly,

D. K. Spradlin
Area Superintendent

DKS/mrf
cc: J. Tyler

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608



OFFICE OF THE OIL CONSERVATION COMMISSION
Santa Fe

December 9, 1976

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Case 3872

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.02 MPY was measured, using coupons,
for the 4th quarter of 1976 on the subject salt water disposal system. This
system was authorized by order No. R-3531.

Yours very truly,

A handwritten signature in dark ink, appearing to read "D. K. Spradlin".

D. K. Spradlin
Area Superintendent

DKS/mrf
cc: J. Tyler

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

*File
Case 3872*

UNION



June 29, 1976

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.03 MPY was measured, using
coupons, for the 2nd quarter of 1976 on the subject salt water disposal
system. This system was authorized by order No. R-3531.

Yours very truly,

D. K. Spradlin
D. K. Spradlin
Area Superintendent

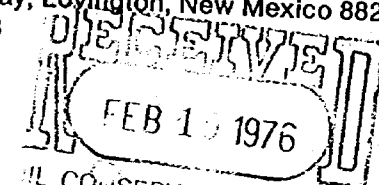
OK

DKS/gds
cc: J. Tyler

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

union



February 17, 1975

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.1 MPY was measured, using
coupons, for the last quarter of 1975 on the subject salt water disposal
system. This system was authorized by order No.R-3531.

Yours very truly,

D. K. Spradlin
Area Production Superintendent

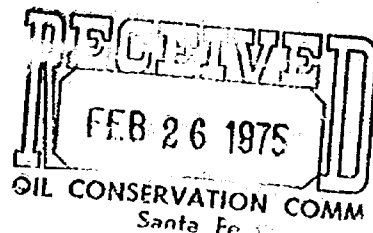
DKS:gds
cc: J. Tyler

Case 3672

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

UNION 76



February 26, 1975

Mr. L. A. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.1 MPV was measured, using
coupons, for the first quarter of 1975 on the subject salt water disposal
system. This system was authorized by Order No. R-3531.

Yours very truly,

D. K. Spradlin

D. K. Spradlin
Area Prod. Superintendent

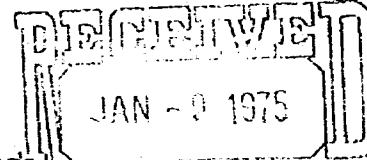
DKS:rm
cc: J. Tyler

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

Case # 3872

union



January 8, 1975

OIL CONSERVATION COMM
Santa Fe

Mr. L. A. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico.

Please be advised that a corrosion rate of 0.3 MPV was measured, using
coupons, for the last quarter of 1974 on the subject salt water disposal
system. This system was authorized by Order No. R-3531.

Yours very truly,

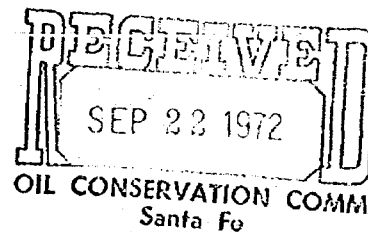
D. K. Spradlin
Area Production Superintendent

DKS:rm
cc: J. Tyler

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

*File
Case 3872*
UNION ⁷⁶



September 21, 1972

Mr. A. L. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water
disposal system, Federal "A" No. 1,
Morton (Wolfcamp) Field, Lea County,
New Mexico

Please be advised that a corrosion rate of 0.1 MPY was measured, using
coupons, for the third quarter of 1972 on the subject salt water disposal
system. This system was authorized by Order No. P-3531.

Yours very truly,

D.K. Spradlin

D. K. Spradlin
Area Superintendent

DKS:rm

Union Oil and Gas Division: Central Region

Union Oil Company of California
Route One, Tatum Highway, Lovington, New Mexico 88260
Telephone (505) 396-3608

UNION 76

*File
Case 3872*

February 11, 1972

Mr. A. L. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

Gentlemen: RECEIVED
FEB 14 1972
OIL CONSERVATION COMM.
SANTA FE

Corrosion rate in the salt water disposal system,
Federal "A" No. 1., Morton (Wolfcamp) Field,
Lea County, New Mexico

Please be advised that a corrosion rate of 0.7 MPY was measured, using
coupons, for the first quarter of 1972 on the subject salt water disposal
system. This system was authorized by Order No. R-3531.

Yours very truly,

D. K. Spradlin
D. K. Spradlin
Area Superintendent

DKS:rm

Union Oil Company of California

210 East Avenue "O," Lovington, New Mexico 88260
Telephone (505) 396-3608

union

July 13, 1971

File
Case 3872

Mr. A. L. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water disposal
system, Owens No. 2, East Morton (Wolfcamp)
Field, Lea County, New Mexico

Please be advised that a corrosion rate of .9 MPY was measured, using
coupons, for the second quarter of 1971 on the subject salt water disposal
system. This system was authorized by letter dated November 24, 1969.

Yours very truly,

R. E. Hedges
R. E. Hedges
Area Engineer

REH:rm

Union Oil Company of California
210 East Avenue "O," Lovington, New Mexico 88260
Telephone (505) 396-3608

71 JUL 15 PM 1:05



July 13, 1971

Mr. A. L. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico

Gentlemen:

*See
File 3872*

Corrosion rate in the salt water disposal
system, Federal "A" #1, Morton (Wolfcamp)
Field, Lea County, New Mexico

Please be advised that a corrosion rate of 0.5 MPY was measured, using
coupons, for the second quarter of 1971 on the subject salt water disposal
system. This system was authorized by Order No. R-3531.

Yours very truly,

R. E. Hedges

R. E. Hedges
Area Engineer

REH:rm

SEP 29 AM 9 34

Union Oil Company of California

210 East Avenue "O," Lovington, New Mexico 88260
Telephone (505) 396-3608

UNION 76

September 28, 1970

Mr. A. L. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

*File
Case 3892*

Corrosion rate in the salt water disposal
system, Federal "A" #1, Morton (Wolfcamp)
Field, Lea County, New Mexico

Please be advised that a corrosion rate of 0.3 MPY was measured, using coupons,
for the third quarter of 1970 on the subject salt water disposal system. This
system was authorized by Order No. R-3531.

Yours very truly,

D. K. Spradlin

D. K. Spradlin
Area Superintendent

DKS/jj

Union Oil Company of California

210 East Avenue "O," Lovington, New Mexico 88260
Telephone (505) 396-3608

SEP 29 AM 9 34
union 76

September 28, 1970

Mr. A. L. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Corrosion rate in the salt water disposal
system, Owens No. 2, East Morton (Wolfcamp)
Field, Lea County, New Mexico

Please be advised that a corrosion rate of 2.2 MPY was measured, using coupons,
for the third quarter of 1970 on the subject salt water disposal system. This
system was authorized by letter dated November 24, 1969.

Yours very truly,

D. K. Spradlin

D. K. Spradlin
Area Superintendent

DKS/jj

Union Oil Company of California
210 East Avenue "O" Lovington, New Mexico 88260
Telephone (505) 396-8608



April 1, 1970

Mr. A. L. Porter, Jr.
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

File
Corrosion rate in the annular salt water disposal system, Federal "A" Well No. 1, Morton Wolfcamp Field, Lea County, New Mexico

Please be advised that a corrosion rate of 2.3 MPY was measured for the first quarter of 1970 on the subject salt water disposal system. Letter permit from U.S.G.S. dated October 22, 1968, and Order No. B-3531, Case 3872 N.M.O.C.C. dated October 22, 1968.

Yours very truly,

D. K. Spradlin
D. K. Spradlin
Area Superintendent

DKS/jj

Union Oil Company of California
210 East Avenue "O," Leasington, New Mexico 88260
Telephone (505) 396-3600

UNION

MAIN OFFICE

70 APR 7 AM

April 6, 1970

Mr. A. L. Porter, Jr., Secretary-Director
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

*File
Case 3872*

Corrosion rate in the salt water disposal
system, Owens No. 2, East Morton (Wolfcamp)
Field, Lea County, New Mexico

Please be advised that a corrosion rate of 0.6 MPY was measured, using coupons,
for the first quarter of 1970 on the subject salt water disposal system. This
system was authorized by letter dated November 24, 1969.

Yours very truly,

D. K. Spradlin
D. K. Spradlin
Area Superintendent

DKS/JJ

Union Oil Company of California

210 East Avenue "O," Lovington, New Mexico 88260
Telephone (505) 396-3608

DEC 15 1969

UNION 76

File

December 12, 1969

Mr. A. L. Porter, Jr.
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Corrosion rate in annular salt
water disposal system Federal "A"
Well No. 1, Morton Wolfcamp Field,
Lea County, New Mexico.

Gentlemen:

Please be advised that a corrosion rate of 10.12 MPY was measured for the fourth quarter of 1969 on the subject salt water disposal system. Letter permit from U.S.G.S. dated October 22, 1968, and Order #B-3531, Case 3872 N.M.O.C.C. dated October 22, 1968.

Yours very truly
D. K. Spradlin
D. K. Spradlin
Area Superintendent

DKS/jj

Attachment

DEC 15 1969



COUPON REPORT

Company **Union Oil of California**
Address **Lovington, New Mexico**

Date **12-8-69**
Report No. **69C-744**

COUPON LOCATION	PERIOD EXPOSED	CHEMICAL IN USE	COUPON NUMBER	WEIGHT LOSS (mg)	CORROSION RATE (mpy)	TYPE OF CORROSION
Federal A#1	9-1-69/ 12-1-69		13120	2605.1	10.12	Pitting

cc: **W. McLain (5)**
L. R. Pounds

bb

$$\text{MPY} = \frac{(\text{Area factor}) \times (\text{wt. loss in mg})}{(\text{Days exposure})}$$

One mpy = 0.001 inch per year

NALCO CHEMICAL COMPANY
VISCO DIVISION

P.O. BOX 87 • SUGAR LAND, TEXAS 77478

Docket No. 29-68

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 9, 1968

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

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

- CASE 3872: Application of Union Oil Company of California for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to finally complete its Federal "A" Well No. 1 located in Unit P of Section 12, Township 15 South, Range 34 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Morton-Wolfcamp Pool and the disposal of produced salt water through the intermediate casing-production casing annulus into the San Andres and such other formations as may occur in the open-hole interval from approximately 4620 to 7350 feet.
- CASE 3873: Application of R. G. McPherson for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the open-hole interval from approximately 5250 feet to 5854 feet in his S. P. Johnson Well No. 1 located 990 feet from the West line and 1650 feet from the South line of Section 5, Township 18 South, Range 39 East, South Carter-San Andres Pool, Lea County, New Mexico.
- CASE 3874: Application of Gulf Oil Company - U. S. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Paddock and Blinbry Oil Pools in the well-bore of its C. L. Hardy Well No. 2 located in Unit N of Section 20, Township 21 South, Range 37 East, Lea County, New Mexico, with the provision that no more than one single allowable well be produced from said well.
- CASE 3875: Application of Pan American Petroleum Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well in exception to the Fowler-Ellenburger Rules at an unorthodox location 910 feet from the North line and 1980 feet from the West line of Section 15, Township 24 South, Range 37 East, Lea County, New Mexico.

- CASE 3876: Application of Newmont Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Young (Queen) Unit Area comprising 1320 acres, more or less, of federal and state lands in Township 18 South, Range 32 East, Young (Queen) Pool, Lea County, New Mexico.
- CASE 3877: Application of Newmont Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Young (Queen) Unit Area by the injection of water into the Queen formation through 17 wells located in Sections 9, 16, 17, 19, 20, 21, and 29, Township 18 South, Range 32 East, Young (Queen) Pool, Lea County, New Mexico.
- CASE 3878: Application of General American Oil Company of Texas for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Premier sand through two injection wells located in Unit M of Section 8, and Unit G of Section 17, Township 16 South, Range 30 East, West Henshaw-Grayburg Pool, Eddy County, New Mexico.
- CASE 3879: Application of Walter Duncan Oil Properties for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox oil well location 1000 feet from the North line and 1242 feet from the East line of Section 36, Township 32 North, Range 18 West, San Juan County, New Mexico. Said well would be projected to the Dakota formation.
- CASE 3880: Application of Anne Burnett Windfohr, dba Windfohr Oil Company, for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the perforated interval from approximately 6970 feet to 7028 feet in the Windfohr Oil Company Jackson "B" Well No. 23 located in Unit J of Section 24, Township 17 South, Range 30 East, Jackson-Abo Pool, Eddy County, New Mexico.
- CASE 3881: Application of J. M. Huber Corporation for the creation of a new oil pool and for special pool rules, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Devonian oil pool for its Lone Star Federal Well No. 1 located in the NE/4 NE/4 of Section 20, Township 8 South, Range 36 East, Roosevelt County, New Mexico, and for the promulgation of special rules therefor including a provision for 80-acre proration units.

- CASE 3882: Application of Solar Oil Company for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6,000 cubic feet of gas per barrel of oil in the Teague Blinebry Pool, Lea County, New Mexico.
- CASE 3883: Application of Solar Oil Company for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6,000 cubic feet of gas per barrel of oil in the Imperial Tubb-Drinkard Pool, Lea County, New Mexico.
- CASE 3884: Application of Marathon Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Miller Ranch Unit Area comprising 5,276 acres, more or less, of State, Federal and Fee lands in Townships 21 and 22 South, Range 25 East, Eddy County, New Mexico.
- CASE 3885: Application of Sinclair Oil & Gas Company for a waterflood expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Turner "B" Grayburg-Jackson Waterflood Project, Grayburg-Jackson Pool, by the conversion to water injection of 12 additional injection wells located in Sections 20, 29, and 30, Township 17 South, Range 31 East, Eddy County, New Mexico.
- CASE 3886: Application of Sinclair Oil & Gas Company for the amendment of a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks amendment of its Guadalupe Ridge Unit Agreement, unitizing certain lands in Eddy County, New Mexico, and approved by Order No. R-3471, to conform to certain requirements of the Director of the United States Geological Survey. In the absence of objection, the case will be submitted and an order issued upon the basis of the application and exhibits attached thereto.
- CASE 3887: Application of Kersey & Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Premier sand of the Grayburg formation through two wells to be located in Units E and K of Section 12, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico. Applicant further proposes to produce oil from the Upper Grayburg through parallel strings of tubing, if said zones are productive in the subject wells.

- CASE 3888: Application of Amerada Petroleum Corporation for a dual completion, salt water disposal and tubing exception, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its State E "B" Well No. 1 located in Unit E of Section 27, Township 10 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the North Echols-Devonian Pool and the disposal of produced salt water through the tubing-casing annulus into the San Andres formation through perforations in said casing from approximately 5220 feet to 5250 feet. Applicant also seeks an exception to the tubing requirements of Commission Rule 107 in that said tubing would be set more than 250 feet above the upper most Devonian perforation.
- CASE 3889: Application of BTA Oil Producers for the creation of a new pool and special pool rules, Lea and Roosevelt Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the Bough C zone of the Pennsylvanian formation for its well located in Section 5, Township 9 South, Range 36 East, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 160-acre proration units and for the assignment of an 80-acre allowable factor of 4.77.
- CASE 3890: Application of Pan American Petroleum Corporation for special pool rules and a non-standard gas proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico, including a provision for 320-acre spacing units with wells to be located in either the northwest quarter or the southeast quarter of the section. Applicant further seeks approval of a 280-acre non-standard gas proration unit comprising the SE/4, S/2 SW/4, and the NW/4 SW/4 of Section 30, Township 17 South, Range 28 East, Empire-Pennsylvanian Gas Pool, to be dedicated to its State V Com Well No. 1 located 990 feet from the South and East lines of said Section 30.

Union Oil Company of California
500 N. Marienfeld, Midland, Texas 79701
Telephone (915) MU 2-9731

union 76

Midland District

August 22, 1968

Case 3892

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Dear Mr. Porter:

Annulus Disposal of Produced Water
in the Federal "A" Well No. 1,
Morton Wolfcamp Field, Lea County,
New Mexico

Union Oil Company of California, as operator of the Federal "A" Well No. 1, Morton Wolfcamp Field, Lea County, New Mexico, respectfully requests Administrative approval to dispose of produced water from this well in the annulus between the 5-1/2" production and 8-5/8" intermediate casing strings. Disposal will be confined to open hole interval between the 8-5/8" casing shoe at 4620' and top of cement behind the 5-1/2" production casing at approximately 7350'. It is anticipated that disposal will be by gravity injection because of severe lost circulation encountered in the San Andres porosity at 5800-6000' when drilling the well. All water will be treated by chemical injection with corrosion and scale inhibitors to protect the casing strings from possible corrosion.

In support of this application, the following are attached:

1. Application for Disposal of Salt Water Into a Porous Formation
2. Plat showing location of subject well and all offset wells in the field. Subject well is identified on the plat.
3. Analysis of the produced water
4. Diagrammatic sketch of the well showing casing string details, cement tops and perforations.
5. Electric log on subject well
6. Application for multiple completion
7. Copy of the letter sent to offset operators notifying them of this application.

DOCKET NO. 1150 SEP 9 AM 8 15

Date 9-26-68

Mr. A. L. Porter, Jr.

- 2 -

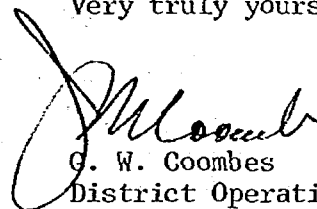
August 22, 1968

Subject well is producing from the Wolfcamp formation, as is all wells in this field, and is perforated at 10,335-10,369'. Production is flowing through 2" tubing with the packer set at 10,100'. The annulus between the tubing and 5-1/2" production casing is filled with lease oil. The open hole section at 4620-7350' is not productive in any well drilled in this field.

Injection of produced water in the casing annulus will present no danger of collapse or burst to the casing strings. The 5-1/2" production casing was designed for collapse resistance using 10 pounds per gallon mud, which would give a hydrostatic pressure at 7350' (top of cement) of 3820 psig. By comparison, the hydrostatic pressure at 7350' with subject produced water (8.45#/gallon) would be only 3220 psig. Also, the casing-tubing annulus is filled with oil and internal pressure would partially balance external hydrostatic pressure. Internal burst pressure of the 8-5/8" J-55 casing is over 2900 psig, compared to hydrostatic pressure of the water column at 2500' (top of cement) of only 1100 psig.

By copy of this application, Mr. Irby of the State Engineer office is being advised of the proposed annulus disposal. A copy of the transmittal letter to Mr. Irby is attached. Please contact this office if any additional data is required in support of this application.

Very truly yours,


G. W. Coombes
District Operations Superintendent

GWC:JRH/bMc

Attachments

cc: Mr. Frank Irby
State Engineer Office
State Capitol Building
Santa Fe, New Mexico

Mr. Joe Ramey
New Mexico Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico 88240

NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
APPLICATION FOR MULTIPLE COMPLETION

Form C-107
5-1-61

Case 3872

Operator Union Oil Company of California		County Lea	Date August 22, 1968
Address P.O. Box 671, Midland, Texas 79701		Lease Federal "A"	Well No. 1
Location of Well P	Unit 12	Township 15-S	Range 34-E

1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in the same zones within one mile of the subject well? YES _____ NO ☒ **X**
2. If answer is yes, identify one such instance: Order No. _____; Operator Lease, and Well No.: _____

3. The following facts are submitted:	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	San Andres		Wolfcamp
b. Top and Bottom of Pay Section (Perforations)	5800-6500 Open hole		10,335-10,369' 10,335-10,369'
c. Type of production (Oil or Gas)	Water disposal		Oil
d. Method of Production (Flowing or Artificial Lift)	Gravity injection		Flowing

4. The following are attached. (Please check YES or NO)

Yes	No	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	a. Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Waivers consenting to such multiple completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.*
<input checked="" type="checkbox"/>	<input type="checkbox"/>	d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed it shall be submitted as provided by Rule 112-A.)

5. List all offset operators to the lease on which this well is located together with their correct mailing address.


J. M. Huber Corporation, Vaughn Bldg., Midland, Texas 79701

Great Western Drilling Co., P. O. Box 1659, Midland, Texas 79701

Cabot Corporation, P. O. Box 4395, Midland, Texas 79701

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ☒ NO _____. If answer is yes, give date of such notification **8-26-68**.

CERTIFICATE: I, the undersigned, state that I am the **Dist. Production Supt.** of the **Union Oil Company of California** (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.


John Tyler
Signature

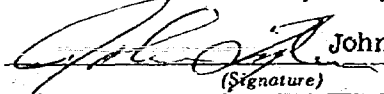
*Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard perforation unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

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

OPERATOR Union Oil Company of California		ADDRESS P. O. Box 671, Midland, Texas 79701	
LEASE NAME Federal "A"	WELL NO. 1	FIELD Morton Wolfcamp	COUNTY Lea
LOCATION UNIT LETTER P ; WELL IS LOCATED 766' FEET FROM THE South LINE AND 766 FEET FROM THE East LINE, SECTION 12 TOWNSHIP 15-S RANGE 34-E NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	11-3/4"	355.70'	300
INTERMEDIATE	8-5/8"	4620.00'	400
LONG STRING	5-1/2"	10450.00'	400
TUBING	2-3/8"	10100.00'	NAME, MODEL AND DEPTH OF TUBING PACKER Guiberson Model L-30 at 10,100'
NAME OF PROPOSED INJECTION FORMATION San Andres		TOP OF FORMATION 4,580'	BOTTOM OF FORMATION 7,300'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Annulus		PERFORATIONS OR OPEN HOLE? Open Hole	PROPOSED INTERVAL(S) OF INJECTION 5800' - 6500'
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil Production		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 10,335' - 10,369' - Open and producing			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 267'		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 10,250'
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) 300	MINIMUM 200	MAXIMUM 500	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		IS INJECTION TO BE BY GRAVITY OR PRESSURE? Gravity	APPROX. PRESSURE (PSI) Vacuum
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) Mrs. Mary Lee Roddy, 3310 32nd St. Lubbock, Texas 79400		LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL J. M. Huber Corp., Vaughn Bldg., Midland, Texas 79701 Great Western Drilling Co., P. O. Box 1659, Midland, Texas 79701 Cabot Corporation, P. O. Box 4395, Midland, Texas 79701	
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	THE NEW MEXICO STATE ENGINEER
Yes	Yes	Yes	Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	FLAT OF AREA	ELECTRICAL LOG	DIAGRAMMATIC SKETCH OF WELL
Yes	Yes	Yes	Yes

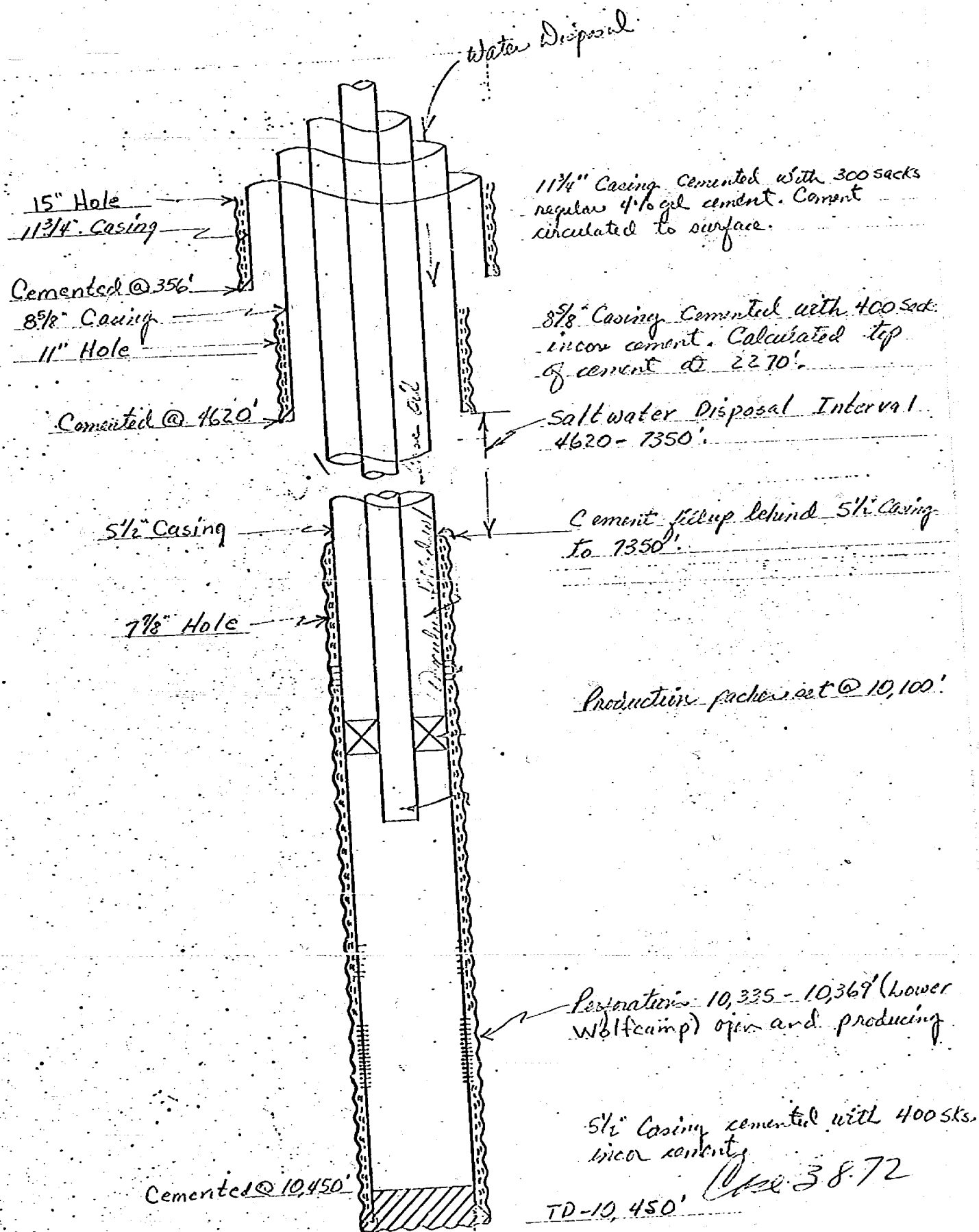
I hereby certify that the information above is true and complete to the best of my knowledge and belief.

 **John Tyler** District Production Supt. August 22, 1968
(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 3872

DIAGRAMATIC SKETCH
PROPOSED COMPLETION FOR SWD SERVICE
UNION OIL COMPANY OF CALIFORNIA
Federal "A" No. 1



W A I V E R O F O B J E C T I O N

Great Western Drilling Company has been notified that Union Oil Company of California intends to inject salt water into 8 5/8" x 5 1/2" casing annulus in their Federal "A" Well No.1, located 766' FSL and 766' FEL Section 12, T-15-S, R-34-E, Morton Wolfcamp Field, Lea County, New Mexico. As offset operator we waive objection to Union injecting produced salt water as indicated above.

Great Western Drilling Company

By

C. J. Hampton

Date

8-30-68

Case 3872

W A I V E R O F O B J E C T I O N

Cabot Corporation has been notified that Union Oil Company of California intends to inject salt water into 8 5/8" x 5 1/2" casing annulus in their Federal "A" Well No.1, located 766' FSL and 766' FEL Section 12, T-15-S, R-34-E, Morton Wolfcamp Field, Lea County, New Mexico. As offset operator we waive objection to Union injecting produced salt water as indicated above.

Cabot Corporation

By

Perry C. Oginnin

Date

8-29-68

Case 3872

W A I V E R O F O B J E C T I O N

J. M. Huber Corporation has been notified that Union Oil Company of California intends to inject salt water into 8 5/8" x 5 1/2" casing annulus in their Federal "A" Well No.1, located 766' FSL and 766' FEL Section 12, T-15-S, R-34-E, Morton Wolfcamp Field, Lea County, New Mexico. As offset operator we waive objection to Union injecting produced salt water as indicated above.

J. M. Huber Corporation

By

Floyd H. Mendenhall

Date

7/4/68

Attachment

cc: Mr. A. L. Porter, Jr. (3)

Case 3872

Case 3872

Union Oil Company of California
500 N. Marienfeld, Midland, Texas 79701
Telephone (915) MU 2-9731



August 22, 1968

Midland District

Mr. Frank Irby
Chief of Water Rights Division
State Engineer Office
State Capitol Building
Santa Fe, New Mexico

Dear Mr. Irby:

Disposal of Produced Water in the
Casing Annulus of the Federal "A" Well
No. 1, Morton Wolfcamp Field, Lea County,
New Mexico

Attached is a copy of an application submitted by Union Oil Company of California to the New Mexico Oil Conservation Commission requesting administrative approval to dispose of produced water from the captioned well in the annulus between the 5-1/2" production and 8-5/8" intermediate casing strings. This application is submitted in accordance with the provisions of Rule 701-A of the Rules and Regulations of the New Mexico Oil Conservation Commission.

The Federal "A" Well No. 1 has 11-3/4" surface casing set at 356' (see enclosed diagrammatic sketch) with cement circulated to surface. Red beds were encountered at 267', which is also base of the Ogallala Sand formation. Consequently, if a leak should develop in the 8-5/8" intermediate casing, water would have to penetrate some 89' of impervious Red Beds to enter fresh water bearing sands. As explained in the application to the Oil Commission, no surface pressure will be required for this injection.

All water disposed of in this well will be treated by constant chemical injection with both scale and corrosion inhibitors. However, two years of production history indicates the produced water is actually not too corrosive.

If you are in agreement with this proposal, we would appreciate your so notifying the Secretary-Director of the New Mexico Oil Conservation Commission as soon as possible. Thank you for your consideration in this matter.

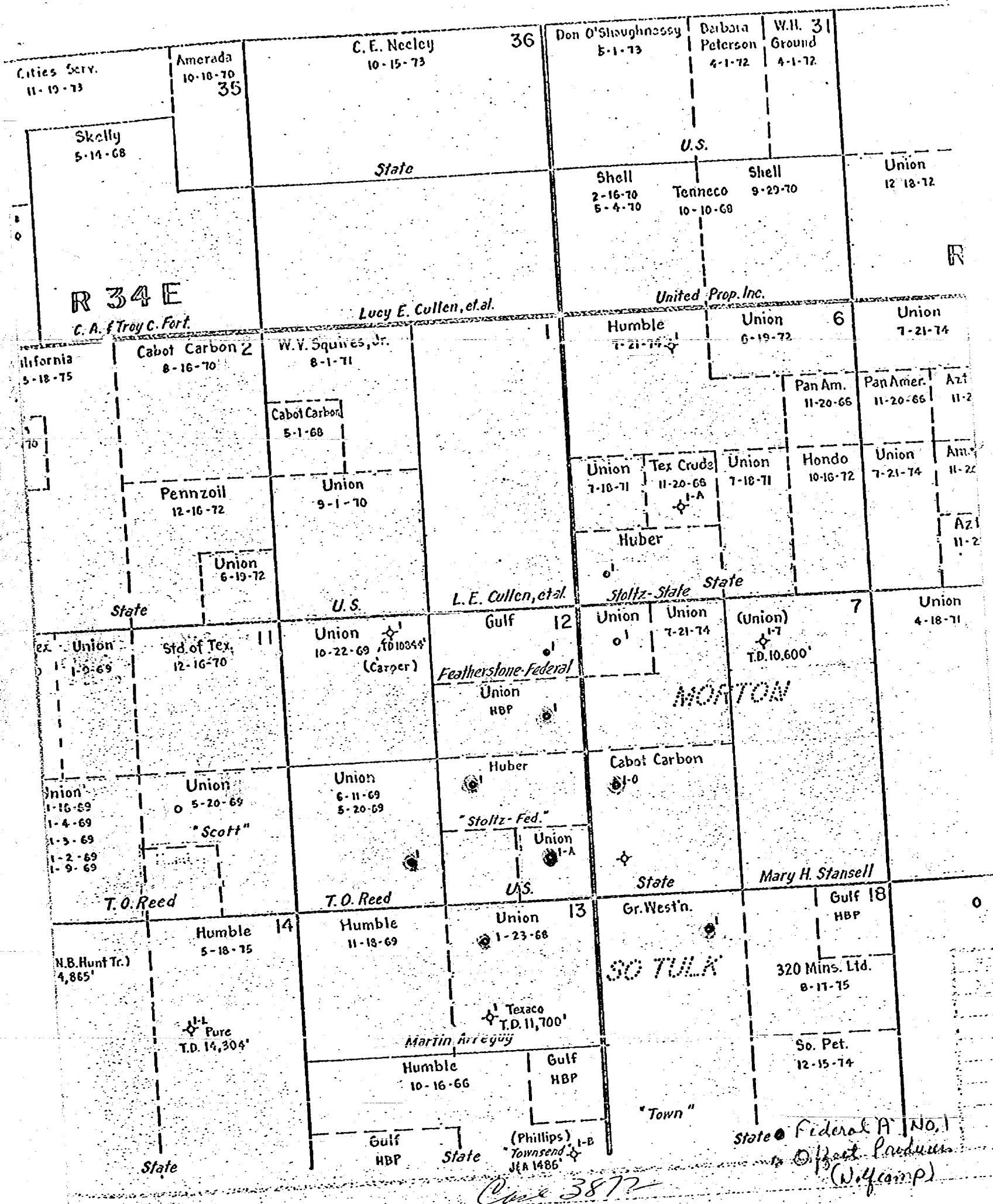
Very truly yours,

A handwritten signature in dark ink, appearing to read "G. W. Coombes".

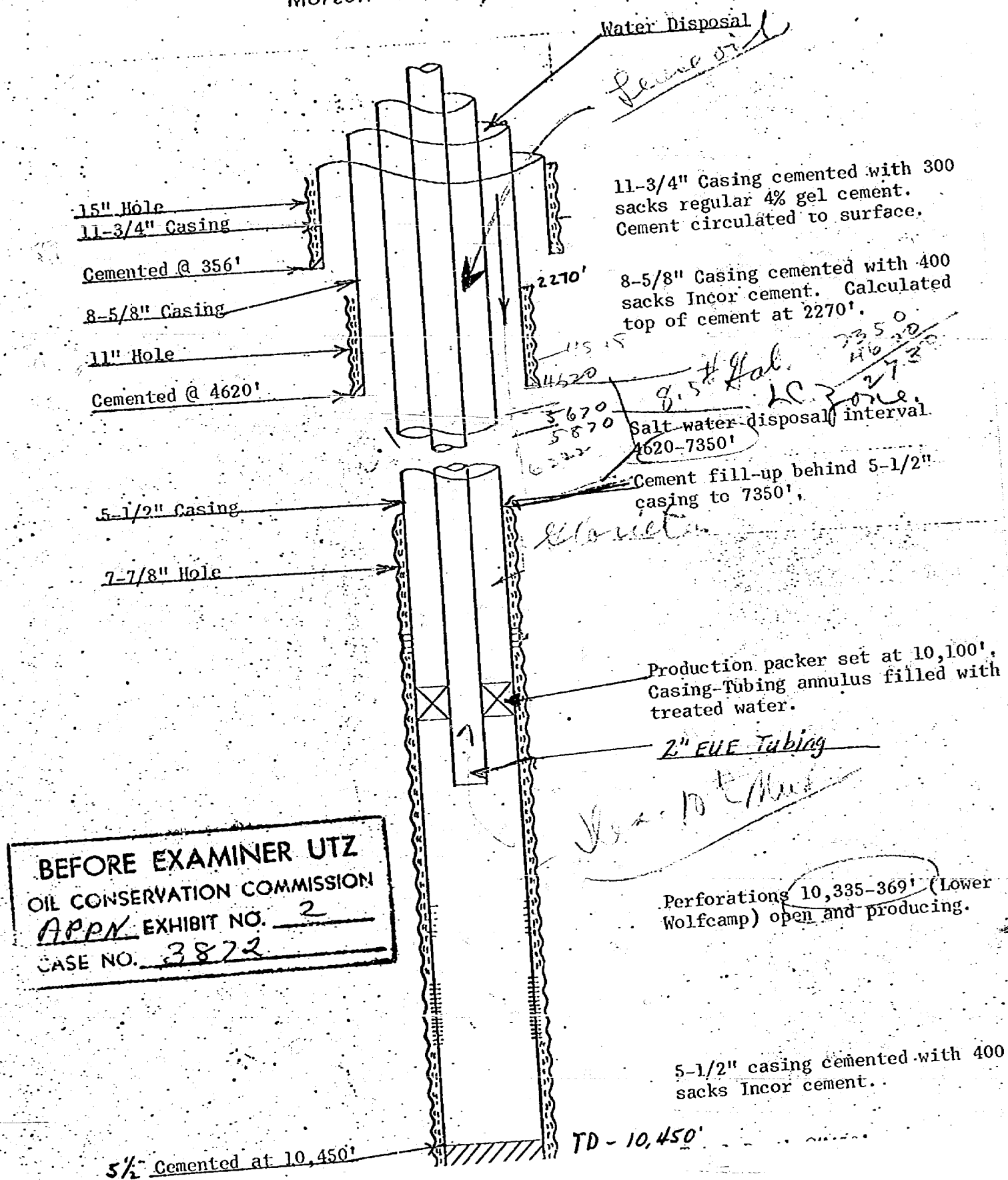
G. W. Coombes
District Operations Superintendent

GWC:JRH/bMc
Attachment
cc: Mr. A. L. Porter, Jr. (3)

Case 3872



FEDERAL "A" WELL NO. 1
Morton Wolfcamp Field



1342

Set
At. Palmer
File

HALLIBURTON DIVISION LABORATORY
HALLIBURTON COMPANY
MIDLAND DIVISION

Morton
Field *File*

LABORATORY WATER ANALYSIS

No. 21-509-66To Union Oil of Calif.Date November 20, 1966205 Washington Ave.Lovington, New Mexico

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

Submitted by Mr. Don BellDate Rec. 11-19-66Well No. Patrol A Depth 10,300'Formation WolfcampCounty _____ Field Morton

Source _____

Resistivity .262 @ 80 F.Specific Gravity 1.016pH 8.0Calcium (Ca) 1230

*MPL

Magnesium (Mg) 120Chlorides (Cl) 16,000 ✓Sulfates (SO₄) 3,000Bicarbonates (HCO₃) 740Soluble Iron (Fe) NilTotal Solids 21,140

Remarks:

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
APPN EXHIBIT NO. 3
CASE NO. 3872

*Milligrams per liter

Respectfully submitted,

Analyst: Whitfield
cc: Mr. Charlie Cox

HALLIBURTON COMPANY

By Frank P. White
DIVISION CHEMIST

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable

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. 3872

Order No. R-3521

APPLICATION OF UNION OIL COMPANY
OF CALIFORNIA FOR A DUAL COMPLE-
TION AND 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 October 9, 1968,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this day of October, 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, Union Oil Company of California,
seeks authority to complete its Federal "A" Well No. 1, located
in Unit P of Section 12, Township 15 South, Range 34 East, NMPM,
Morton-Wolfcamp Pool, Lea County, New Mexico, as a dual completion
to produce oil from the Morton-Wolfcamp Pool through 2-
inch tubing and to dispose of produced salt water down the
annulus between the 5 1/2-inch production casing string and
the 8 5/8-inch intermediate casing string into the San Andres,
Glorieta, yes, and Tubb formations
~~and such other formations as may occur~~ in the open-hole interval
from approximately 4620 feet to 7350 feet.

(3) That the produced salt water should be continuously treated prior to injection to prevent casing corrosion and coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission.

(5) That approval of the dual completion and salt water disposal as set out above will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Union Oil Company of California, is hereby authorized to complete its Federal "A" Well No. 1, located in Unit P of Section 12, Township 15 South, Range 34 East, NMPM, Morton-Wolfcamp Pool, Lea County, New Mexico, as a dual completion to produce oil from the Morton-Wolfcamp Pool through 2-inch tubing and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the San Andres, ~~and such other~~ ^{Maricopa, Yaso, and Tubo} formations as may occur in the open-hole interval from approximately 4620 feet to 7350 feet;

PROVIDED HOWEVER, that the produced salt water shall be continuously treated prior to injection to prevent casing corrosion; and ~~provided further~~ that coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the

Secretary-Director of the Commission; *that the casing-tubing annulus shall be filled with an inert fluid and that a pressure gauge shall be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.*

(2) 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.

(4) That the casing-tubing annulus should be filled with an inert fluid and that a pressure gauge should be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

under →