

Case Number

4225

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  
October 8, 1969

EXAMINER HEARING

-----  
IN THE MATTER OF: )

Application of S. P. Yates for a )  
pressure maintenance project, Eddy )  
County, New Mexico. )

Case No.  
4225

-----  
BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 4225.

MR. HATCH: Case 4225. Application of S. P. Yates for a pressure maintenance project, Eddy County, New Mexico.

MR. LOSEE: A. J. Losee, of Artesia, New Mexico, representing the Applicant. I have one witness, Mr. Mahfood, to be sworn.

(Witness sworn.)

EDDIE MAHFOOD

the witness, called by Mr. Losee, having first been duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. LOSEE:

Q State your name, residence and occupation, please.

A Eddie Mahfood, Artesia, New Mexico, consulting engineer, working for the Yates'.

Q Have you previously testified before this Commission as a petroleum engineer and had your qualifications made a part of this record?

A Yes, sir.

Q Would you briefly explain the purposes of S. P. Yates' application in this case?

A We are seeking permission to inject water in the Queen formation at the West Pool -- it's a pressure maintenance project.

Q Please refer to what's been marked as Exhibit One and explain what is portrayed in that exhibit?

A Exhibit One is a lease map of the McMillan area. It shows the Anderson lease, circled in red.

The triangles -- there is one triangle, representing the input well, the proposed input well, and the circle -- the circles will be producing wells.

At the current time, only one well is producing, and that is the Anderson Number One. That would be northeast of the northwest of the southeast.

Q Of Section 11?

A Of Section 11.

Q Now that same circle also has a four above it, with a PR --

A Yes.

Q Would you explain that?

A Yes -- that was a deep well picture of a deep well unit -- that has been plugged and abandoned.

Q So actually, the Anderson Number One and the Pecos River, with the Anderson Number One being the shallow well, and the Pecos River, deep unit Number Four, being a deep plugged well, are located within that one circle; are they not?

A Approximately, yes.

Q They are about fifty feet apart --

A Yes, sir, on the surface.

Q Now in addition to the wells shown on this -- I guess, really you actually show the Number Three well; do you not?

A Yes -- I have added a Number Three well, which is being completed at the present time. It is not completed yet -- it is in the process of being completed. And it is located in the northeast of the southwest of the southeast of Section 11.

Q What formations are producing in this pool?

A Only the Queen -- the second Queen -- in this immediate area.

Over in Section 12, the Galvan lease was completed or was completed in the Seven Rivers, but it is temporarily abandoned.

Q Would you explain briefly the geology of this pool,

the producing intervals?

A. The Queen appears to be in the particular tracts -- it's awfully tight -- it's carried along on an anticline -- on the nose. It is on the eastward plunging Artesia vacuum trend, of the Guadalupian series.

The performance suggests permeability pinch-outs, between lenses.

The formation is generally tight and is sandstoned. It's so tight that it has given very little oil -- approximately, one percent of the oil in place.

Q. Does this Exhibit One also show the offset operators and the producing formations in the area?

A. That is correct.

Q. Please refer to what has been marked as Exhibit Two.

A. Exhibit Two is a well completion data, showing all pertinent information on these wells; the Anderson One, Two and Three; and the Pecos River Number Four; the Riggs Number Three, in Section 12; and the Pecos River Number Two, in Section 12, also.

The purpose of this to show that the -- to show the continuity of the lense into Section 12.

Q. When was the first well completed in this area?

A. In 1961 -- the Hondo Number One was completed and the second Queen, and it's produced -- oh, I don't know how long it produced, but it only gave up eight hundred and ninety-four barrels of oil before it had to be abandoned, because of economics -- potentially, forty-two barrels of oil per day.

Q. Please refer to what has been marked as Exhibit Three, being the electric log of the Anderson Number Two, and point out the pertinent information on this log?

A. Exhibit Three is a log of the Queen section of the Anderson Number Two.

It shows the original perforations at six hundred and sixty to six hundred and sixty-two feet, which was a poor Stomolite section.

It was acidized and tested salt water and a trace of oil.

It was plugged back to six twenty-eight and the second Queen was perforated at five fifty to five sixty and sand fracked, also acidized -- this well was swabbed backed with frack water and a trace of oil. And it was decided at that time to proceed with application to conduct a waterflooding in this area.

I should say a pressure maintenance project.

Q. Please refer to what has been marked as Exhibit Four, being the diagrammatic sketch of the injection well and point out the important information on this sketch?

A. Exhibit Four shows casings set to a total depth of seven oh two, cemented to the surface. And shows both sets of perforations, the Dolomite and the sand, with the bridge plugged, at six twenty-eight --

We propose to run cement -- two and three-eighths cement-lined tubing and the tension packer to about four hundred and eighty feet.

The top of the Queen is at four fifty-six --

Q. Will you do anything in the annulus?

A. We will load the annulus with inhibited fresh water and put the pressure gauge on the casing head.

Q. Now, the only producer in this field at this time is the Anderson Number One?

A. That is correct.

Q. What is its present rate of production?

A. In August, it produced up to five barrels a day -- the average is four barrels a day.

Q. Now, you referred to the M-1 as having completed initially at forty-two barrels and accumulative of how much?

A. Eight hundred and ninety-four barrels.



Q. Do you have the accumulative of the A-1?

A. On the Anderson One, it's -- no, it's pretty close to sixteen hundred right now, I believe -- I don't have the exact figure.

Q. Do you have an opinion as to how much oil could be recovered out of the Anderson One under the proposed pressure maintenance program?

A. Yes, sir. I would estimate some thirty-eight thousand barrels, by pressure maintenance.

Q. What is your proposed pressure at which you will inject this water?

A. Not more than four hundred pounds -- probably in the area of three hundred and fifty pounds.

Q. What volume of water?

A. About twenty barrels a day, after it's pressured out.

Q. Do you have an opinion as to whether the institution of this pressure maintenance program will recover oil that would otherwise not be recovered?

A. Yes, sir. I'm very confident that it will increase the production from maybe two thousand to thirty-eight thousand barrels -- per well.

Q. Do you anticipate putting any other wells on

production?

A. Yes, sir. This Number Three well doesn't look like it will make a very good producer, and it's ideally located for an input well, so we might want to make this an input well in the very future.

Q. And you would ask the Commission that you be given administrative authority in the future to convert the Number Three to an injector?

A. Yes, sir.

Q. Were Exhibits One through Four prepared by you?

A. Yes, sir.

MR. LOSEE: We move the introduction of Exhibits One through Four.

MR. UTZ: Without objection, Exhibits One through Four will be entered in the record in this case.

(WHEREUPON, Applicant's Exhibits One through Four, inclusive, were duly admitted into evidence.)

MR. LOSEE: That's all of the direct evidence.

CROSS EXAMINATION

BY MR. UTZ:

Q. Mr. Mahfood, does the southeast quarter of Section 11 all consist of one lease?

A. Yes, sir. That has been changed just recently.  
It's all the Anderson lease now.

Q. That is the Anderson lease, you say?

A. That is correct, sir.

The Hondo M-1 will be put in production shortly.

Q. I beg your pardon?

A. The Hondo M-1 -- that will be put in production  
shortly.

Q. So, you are going to set the packer about sixty-  
two feet above the injection zone?

A. Approximately, yes, sir.

MR. UTZ: Any questions of the witness?

CROSS EXAMINATION

BY MR. HATCH:

Q. Is there any need for a project allowable?

A. I don't believe so. This thing is so tight, we  
don't anticipate more than twelve barrels per day per well.

Q. You wouldn't need a complete pressure maintenance  
for transferring allowables?

MR. LOSEE: No -- we tried it as a waterflood,  
but in view of the production rates, I don't think they need  
any allowables.

Q (By Mr. Hatch) There is one other problem here -- you have asked for administrative procedure for the Number Three, and we did not advertise it and there has been a number of these that have been refused that were not advertised before --

THE WITNESS: Sir, we are not positive yet, but we will make this an input well -- perhaps we should write to you for administrative approval --

MR. LOSEE: I'm just trying to get them to set up the mechanism --

MR. HATCH: What I am saying here is that we have failed to put it in an order to allow for administrative approval -- before, we did not advertise it -- what we will do here, I don't know.

THE WITNESS: There will be additional drilling, too.

MR. UTZ: Any other questions? The witness may be excused.

Statements in this case? The case will be taken under advisement.

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dearnley-meier reporting service

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

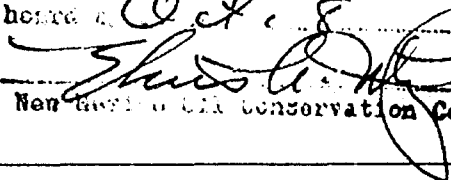
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STATE OF NEW MEXICO     )  
                                      ) ss  
COUNTY OF BERNALILLO    )

I, CA FENLEY, 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.

Witness my Hand this 20th day of November, 1969.

  
CA FENLEY - COURT REPORTER

I do hereby certify that the foregoing is  
a complete and correct transcript of the proceedings in  
the case of Oct. 8 No. 4225  
heard on 1969  
 Examiner  
New Mexico Oil Conservation Commission



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
P. O. Drawer 0  
Artesia, New Mexico 88210

October 16, 1969

Mr. S. P. Yates  
207 South Fourth Street  
Artesia, New Mexico 88210

Dear Sir:

Your letter of October 10, 1969 requests approval to operate a waterflood of the Queen formation on that portion of oil and gas lease New Mexico 04219 described as follows:

T. 20 S., R. 26 E., N.M.P.M., Eddy County, New Mexico  
sec. 11: SE $\frac{1}{4}$

You propose to utilize as an injection well the No. 2 Anderson located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 11 above.

The plan for operating the above described waterflood project as proposed in the application is satisfactory to this office, and hereby approved subject to approval by the New Mexico Oil Conservation Commission and the following:

1. This project will be operated in compliance with the New Mexico Oil Conservation Commission regulations governing waterflood operations.
2. Duplicate copies of a monthly progress report (N.M.O.C.C. form C-120 acceptable) are to be submitted to this office showing the volume of water injected and average pressure for the injection wells and production for the producing wells in the project area.
3. This approval does not preclude the necessity for further approval when the project is expanded to include other wells and leases or the necessity to submit the usual notices and reports on wells involved.

Sincerely yours,

(Orig. Signed)

James A. Knauf  
District Engineer

cc: N.M.O.C.C., Santa Fe ✓  
Roswell - File - Accounts

RLBeekman:ih 10/16/69



## OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87501

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER

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

October 15, 1969

Mr. A. J. Losee  
Attorney at Law  
Post Office Box 239  
Artesia, New Mexico 88210

Re: Case No. 4235  
Order No. R-3852  
Applicant:  
S. P. Yates

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X

Artesia OCC X

Aztec OCC           

Other                     State Engineer Office



BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE No. 4225  
Order No. R-3852

APPLICATION OF S. P. YATES FOR A  
PRESSURE MAINTENANCE PROJECT, EDDY  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 8, 1969, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 14th day of October, 1969, 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, S. P. Yates, seeks authority to institute a pressure maintenance project in the West McMillan Seven Rivers-Queen Pool, Eddy County, New Mexico, by the injection of water into the Queen formation through his Anderson Well No. 2, located 2310 feet from the South line and 990 feet from the East line of Section 11, Township 20 South, Range 26 East, NMPM, Eddy County, New Mexico.

(3) That the proposed pressure maintenance project is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(4) That the subject application should be approved and the pressure maintenance project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

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CASE No. 4225  
Order No. R-3852

IT IS THEREFORE ORDERED:

(1) That the applicant, S. P. Yates, is hereby authorized to institute a pressure maintenance project in the West McMillan Seven Rivers-Queen Pool, Eddy County, New Mexico, by the injection of water into the Queen formation through his Anderson Well No. 2, located 2310 feet from the South line and 990 feet from the East line of Section 11, Township 20 South, Range 26 East, NMPM, Eddy County, New Mexico.

(2) That said injection shall be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 480 feet, and into the perforated interval from approximately 550 feet to 560 feet;

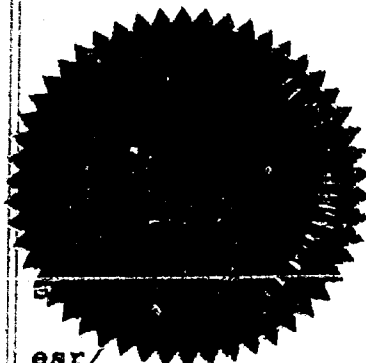
PROVIDED HOWEVER, that the tubing shall be cement-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus in order to determine leakage in the tubing, casing, or packer.

(3) That the subject pressure maintenance project is hereby designated the S. P. Yates West McMillan Anderson Pressure Maintenance Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(4) That monthly progress reports of the pressure maintenance project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. BRIDGES, Member

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

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 8, 1969

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 4220: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit E. P. Campbell, and all other interested parties to appear and show cause why the E. P. Campbell Christmas Well No. 1 located in Unit C of Section 6, Township 23 South, Range 36 East, Jalmat Pool, Lea County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 4221: Application of Tenneco Oil Company for a dual completion and water injection, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its South Hospah Unit Well No. 23 located in Unit K of Section 12, Township 17 North, Range 9 West, McKinley County, New Mexico, in such a manner as to permit the production of gas from the perforated interval 2590 feet to 2865 feet, undesignated Dakota gas pool, and the injection of water for secondary recovery purposes into the upper sand, South Hospah-Upper Sand Oil Pool, in the perforated interval from 1685 feet to 1714 feet.

CASE 4222: Application of Coastal States Gas Producing Company for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the West Sawyer-San Andres Pool, Lea County, New Mexico, including a provision for 80-acre spacing and proration units.

CASE 3881: (Reopened)

In the matter of Case No. 3881 being reopened pursuant to the provisions of Order No. R-3533, which order established 80-acre spacing units for the South Prairie-Devonian Pool, Roosevelt County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 4181: (Continued from the September 10, 1969 Examiner Hearing)

Application of J. M. Huber Corporation for a dual completion and salt water disposal, Lea County, New Mexico. Applicant,

(Case 4181 continued)

in the above-styled cause, seeks authority to dually complete its Stoltz Federal Well No. 1 located in Unit J 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 8 5/8 X 4 1/2-inch casing-casing annulus into the San Andres, Tubb, Abo, and possibly other formations in the open-hole interval from approximately 4330 feet to 9750 feet.

CASE 4223: Application of Resler and Sheldon for two waterflood projects, Lea County, New Mexico. Applicants, in the above-styled cause, seek authority to institute two waterflood projects by the injection of water into the Grayburg, and possibly other formations in the perforated interval from approximately 3555 feet to 3617 feet in their Kelly Well No. 3 and into the Queen, and possibly other formations in the perforated interval from approximately 3439 feet to 3689 feet in their Steeler Well No. 1, said wells being located, respectively, in Unit M of Section 16, and Unit I of Section 20, Township 23 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico. In the alternative, applicants seek authority to dispose of produced salt water in said wells in the intervals as described above.

CASE 4224: Application of Big "6" Drilling Company for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Ora Jackson "A" Well No. 1 located 660 feet from the South and West lines of Section 5, Township 19 South, Range 35 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Scharb-Bone Springs Pool and the disposal of produced salt water through the intermediate casing-production casing annulus into the Seven Rivers, Queen, San Andres, Upper Bone Springs, and possibly other formations in the interval from approximately 3989 feet to 9500 feet.

CASE 4225: Application of S. P. Yates for a pressure maintenance project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the Queen formation through his Anderson Well No. 2 located 2310 feet from the South line and 990 feet from the East line of Section 11, Township 20 South, Range 26 East, West McMillan Pool, Eddy County, New Mexico.

Examiner Hearing - October 8, 1969

-3-

Docket No. 27-69

CASE 4226: Application of John A. Yates 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 Grayburg formation through his John A. Yates-State A Wells Nos. 2 and 6 located in Units J and P, respectively, of Section 5, Township 19 South, Range 28 East, Artesia Pool, Eddy County, New Mexico.

CASE 4227: Application of Penrock Oil Corporation for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C 11 to permit the re-entry of a well at an unorthodox gas well location 660 feet from the South and East lines of Section 33, Township 12 South, Range 34 East, West Ranger Lake-Devonian Gas Pool, Lea County, New Mexico. The E/2 of said Section 33 to be dedicated to the well.

Case 4225  
Held 9-8-69  
Rec. 9-9-69.

Grant S. P. Yates permission  
to convert his Anderson #2 I-  
11-20-26 to a water injection  
well. Injection to be thru 2 3/4  
Cmt. lined tubing, under a packer  
set at approx 1480' & into the  
Queen Head of W. Millman-  
S.R. Queen Pool thru reefs from  
550'-560'.

The project area to be the  
SE 1/4 sec 11-20-26 is all  
one lease.

— Rust L. [Signature]

Give Admin approval for  
future injection wells.  
— [Signature]

Mr. S. P. Yates

October 6, 1969

Re: Pressure Maintenance, Queen S and, McMillan Pool, Eddy County

WELL COMPLETION DATA

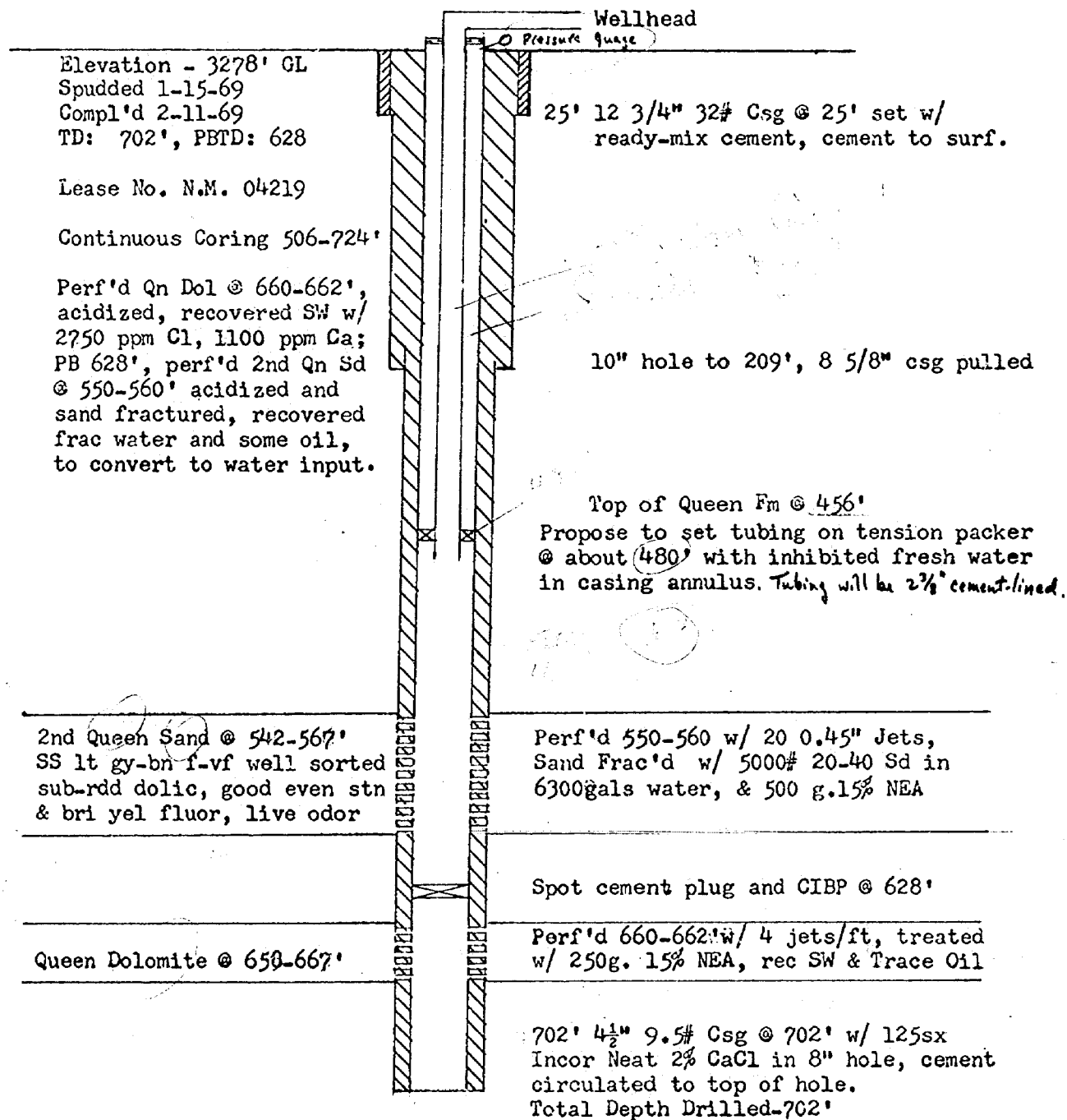
Hondo M-1	El. 3262	8 5/8" 396' 250sx	Pf 520-32, SOF 35600#/527b.
1650/S 1650/E	TD-1836	5 1/2" 855' 310sx	8/61: IPP- 42 B0,3 BW
J-11-20-26	PB-825	Qn-432, 2nd Qn-520	
PRDU #4	El. 3276	13 3/8" 230' 370sx	Pf
2130/S 1650/E	TD-11100	9 5/8" 1905' 675sx	
J-11-20-26	PB-	Qn-456, 2nd Qn-504	1/66: D & A
Anderson #1	El. 3276	8 5/8" 214' 50sx	Open hole-504-546, SWF 30000#/30000g
2080/S 1700/E	TD- 546	7" 20# 504' 70sx	10/68: IPP- 7 BOPD
J-11-20-26		Qn-456, 2nd Qn-504	
Anderson #2	El. 3278	12 3/4" 25' set	Pf 660-662, treat 250g. 15% NEA
2310/S 990/E	TD- 702'	8 5/8" 209' pulled	2/69: Swabbed SW & Trace Oil
I-11-20-26	PB-628'	4 1/2" 9.5# 702' 125sx	Pf 550-60, 500g. 15%, SWF 5000#
		Ready-mix to surf. 2/69: Swabbed frac wtr & some oil,	
		Cored 506-724'.	Shut in waiting for waterflood.
Anderson #3	El. 3281'		Open hole: Pay @530-540, testing 10/69
2310/E 990/S	TD- 560'	5 1/2" 15.5# 518'	
C-11-20-26		cemtd to surf.	
Riggs #3	El. 3294	7" 140' 50sx	Pf 536-41, 250g. RA, 11/65: Swb SW
2310/S 2300/W	TD-668	5 1/2" 270' 15sx	Sqd 536-41; Repl 524-29, 250g. RA
K-12-20-26		4" 668' 35sx	5/66: F & A (2nd Qn-597-614)
PRDU #2	El. 3333	13 3/8" 30' set	Bailed Oil & Water @ 558-571
1650/N 990/E	TD-1947	10 3/4" 271-130	Water @ 727, bailed 75 gph @ 1853-63
H-12-2 0-26	PB-571	8 5/8" 685' pulled	7/63: P&A

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 2  
CASE NO. 4225

Exhibit 2

# DIAGRAMMATIC SKETCH OF INJECTION WELL

I S, P. YATES - ANDERSON No. 2  
2310 FSL 990 FEL, Sec 11, T-20-S, R-26-E  
McMillan, West (Queen) Pool, Eddy County



BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 4  
CASE NO. 4225

EXHIBIT 4



S. P. YATES

OIL OPERATOR AND PRODUCER

YATES BUILDING - 207 SOUTH 4TH STREET

ARTESIA, NEW MEXICO - 88210

July 16, 1969

Mr. A. L. Porter, Secretary-Director  
New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico, 87501

*Case 4225*

Re: Application to Inject Water into Queen Formation,  
McMillan West Pool, Eddy County, New Mexico

Dear Mr. Porter:

Application is hereby submitted by S. P. Yates of Artesia for original authority for the injection of water into the Queen formation for a pressure maintenance program in the McMillan West Pool, Eddy County, New Mexico.

Permission is sought to convert the S. P. Yates-Anderson No. 2 well, located 2310' from the South line and 990' from the East line of Section 11, T-20-S, R-26-E, which is approximately 3/4 mile east of the Pecos River and south of Lake McMillan, having an elevation of 3278' ground level, drilled to a total depth of 702' in February 1969, plugged back to 628' with perforations in the Second Queen Oil horizon at 550-560'. The Anderson No. 1 well, located approximately 750 feet southwest of the No. 2 well, is the only remaining producer in this pool and is currently producing only 4 BOPD.

The Second Queen appears as a series of lenticular sand traps scattered along the anticlinal nose of the easterly plunging Artesia-Vacuum Trend of the Guadalupian Series. Production performance suggest permeability pinchouts between lenses and a generally tight to silty sandstone with primary recovery curtailed by economics at only 1 or 2 percent of original oil in place. Core analyses from the Anderson No. 2 and the Riggs No. 3 yield an average porosity of 14.6 percent, water saturation of 32.3 percent, and a permeability range of 6.1 to 0.5 md for an average of 1.75 md. Original oil in place is estimated at 738 STBO/ac-ft.

In the absence of a pressure maintenance program, production from the Anderson No. 1 would have to be curtailed at a projected cumulative of less than 2000 barrels of oil. The Yates-Bowers A-1, the Queen discovery well, potentialed at 36 BOPD in 1939 and was temporarily abandoned at only 922 BO cumulative. The Hondo-Federal M-1 potentialed at 42 BOPD in 1961, was temporarily abandoned at only 894 BO cumulative. Under a pressure maintenance program, the Anderson No. 1 may be anticipated to yield 38,000 BO before abandonment.

Water requirements for a pressure maintenance program is calculated at 135,000 barrels for the Anderson No. 2 over a period of 20 years, of which 54,000 barrels will be make-up water, the remainder being re-cycled produced water. The average rate of injection then is less than 20 BOPD. Under pilot conditions, the source

DOCKET MAILED

Date 9-26-69

Mr. A. L. Porter

July 16, 1969

Re: Application to Inject Water, McMillan West Pool

Page 2

of this make-up water will be by truckage from nearby oil-producing installations. Other sources of make-up water will be negotiated as feasibility of the project is proven.

A plat showing the location of the proposed injection well and the location of all other wells within a two-mile radius, and indicating the lessees and producing formations is appended and marked Exhibit 1. A diagrammatic sketch of the proposed injection well and all pertinent data is also appended and marked Exhibit 2. A copy of the Electric log of this well is attached hereto. By copy of this application, notice of this intent have been sent to the USGS (surface owners) in accordance with Oil Conservation Commission Rule 701-C.  
~~There are no Offset Operators.~~

Respectfully submitted,

*Eddie L. Yates, Jr.*  
S. P. YATES

cc:

A. L. Porter, 3 copies  
USGS, 4 copies  
File, 1 copy

Case 4225

DIAGRAMMATIC SKETCH OF INJECTION WELL

S. P. YATES - ANDERSON No. 2  
2310 FSL 990 FEL, Sec 11, T-20-S, R-26-E  
McMillan, West (Queen) Pool, Eddy County

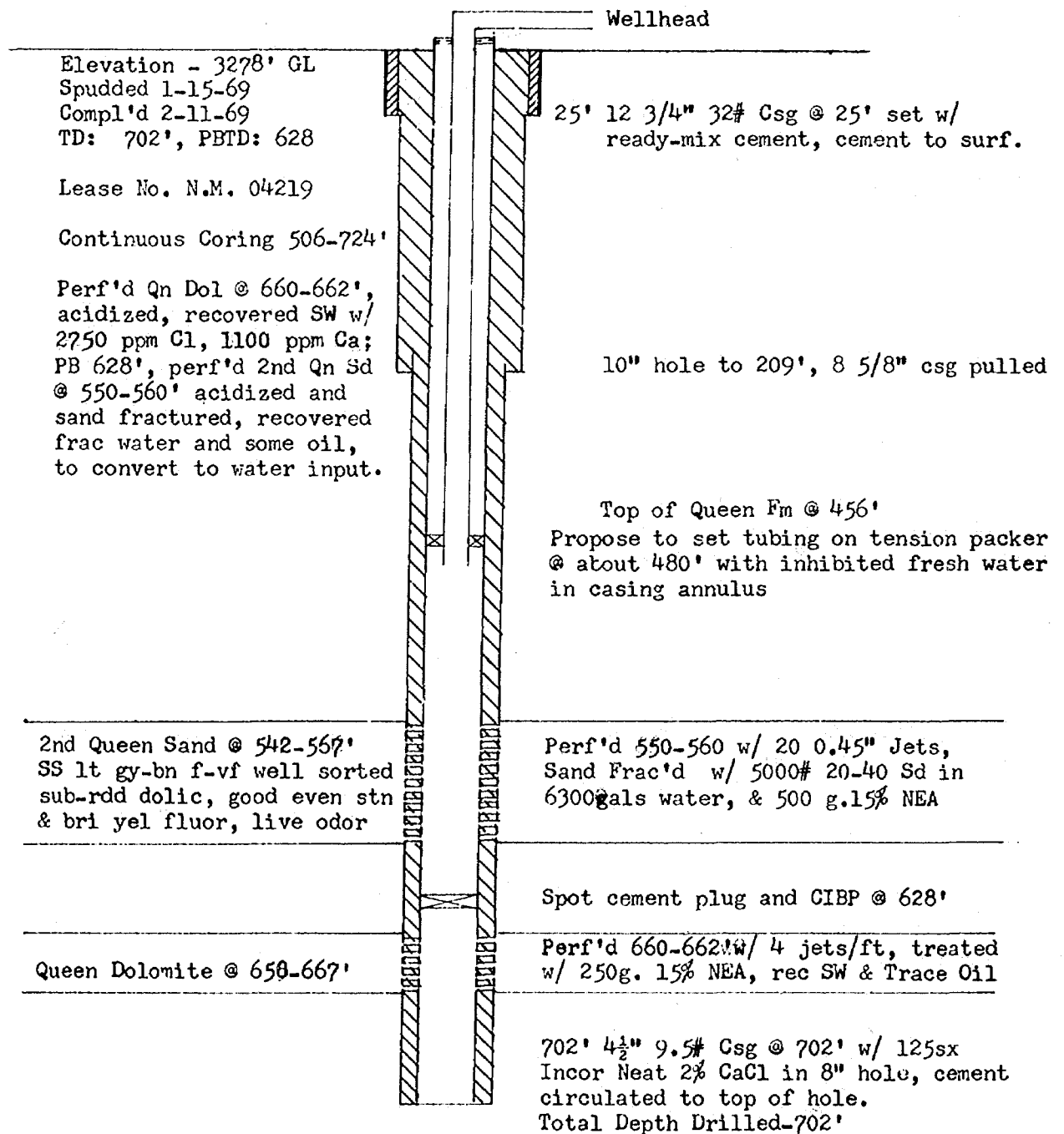


EXHIBIT 2

HALLIBURTON DIVISION LABORATORY  
HALLIBURTON COMPANY  
MIDLAND DIVISION

## LABORATORY WATER ANALYSIS

No. W1-097-69To S. P. YatesDate February 27, 1969207 So. 4th St.Artesia, New Mexico 88210

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 \_\_\_\_\_

Date Rec. 2-24-69Well No. Anderson #2

Depth \_\_\_\_\_

Formation QueenCounty Eddy

Field \_\_\_\_\_

Source \_\_\_\_\_

Resistivity

1.12 @ 72 F

Specific Gravity

1.002

pH

6.2

Calcium (Ca)

1,100

\*MPL

Magnesium (Mg)

155

Chlorides (Cl)

2,750Sulfates (SO<sub>4</sub>)140Bicarbonates (HCO<sub>3</sub>)230

Soluble Iron (Fe)

90

Remarks:

\*Milligrams per liter

Respectfully submitted,

Analyst: Frank Whitfield

cc:

HALLIBURTON COMPANY

By Frank Whitfield

DIVISION CHEMIST

## NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

Case 4225

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. 4225

Order No. R- 3852

APPLICATION OF S. P. YATES FOR A  
PRESSURE MAINTENANCE PROJECT, EDDY  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 8, 1969,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this \_\_\_\_\_ day of October, 1969, 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, S. P. Yates, seeks authority to  
institute a pressure maintenance project in the West McMillan Pool,  
Eddy County, New Mexico, by the injection of water into the Queen  
formation through his Anderson Well No. 2, located 2310 feet from  
the South line and 990 feet from the East line of Section 11,  
Township 20 South, Range 26 East, NMPM, Eddy County, New Mexico.

(3) That the proposed pressure maintenance project is in  
the interest of conservation and should result in greater ultimate  
recovery of oil, thereby preventing waste.

(4) That the subject application should be approved and  
the pressure maintenance project should be governed by the  
provisions of Rules 701, 702, and 703 of the Commission Rules  
and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, S. P. Yates, is hereby authorized <sup>to be a Queen</sup> to institute a pressure maintenance project in the West McMillan Pool, Eddy County, New Mexico, by the injection of water into the Queen formation through his Anderson Well No. 2, located 2310 feet from the South line and 990 feet from the East line of Section 11, Township 20 South, Range 26 East, NMPM, Eddy County, New Mexico.

(2) That said injection shall be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 480 feet, and into the perforated interval from approximately 550 feet to 560 feet;

PROVIDED HOWEVER, that the tubing shall be Cement-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus in order to determine leakage in the tubing, casing, or packer.

(3) That the subject pressure maintenance project is hereby designated the S.P. Yates West McMillan Anderson Pressure Maintenance Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(4) That monthly progress reports of the pressure maintenance project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(5) 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.