

CASE 4226: Application of JOHN A.  
YATES FOR A WATERFLOOD PROJECT,  
EDDY COUNTY, NEW MEXICO.

75

Case Number  
4226

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 John A. Yates for a  
waterflood project, Eddy County,  
New Mexico.

Case No.  
4226

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 4226.

MR. HATCH: Case 4226. Application of John A. Yates for a waterflood project, Eddy County, New Mexico.

MR. LOSEE: A. J. Losee, Mr. Examiner, I have one witness, who is Mr. Mahfood, and he was sworn previously in the last case.

MR. UTZ: Any other appearances?

Let the record show there were no other appearances. And Mr. Mahfood was sworn in a previous case, and you may proceed.

EDDIE MAHFOOD

the witness, called by Mr. Losee, having been previously duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. LOSEE:

Q You are the Eddie Mahfood from Artesia, New Mexico, in the consulting engineer business, who previously testified in this Case 4225?

A Yes, sir.

Q Would you explain the nature of this application

of John A. Yates for a waterflood project?

A. It's obligated to inject water into the Grayburg formation and the Artesia Pool, in Section 5, Township 19, Range 28. It's located approximately seventeen miles southeast of Artesia.

Q. Please refer to what has been marked as Exhibit One --

A. Exhibit One is a lease map showing the location of the proposed injection area.

Q. Notwithstanding the fact, Mr. Mahfood, that you have a portion of Section 5 and Section 8, in Township 19 south, Range 28 east, outlined in red, the proposed project area is only what portion of this map?

A. This southeast corner of Section 5 -- it's circled in green on this exhibit.

Q. And that's one lease?

A. That is one lease -- it's the State A lease.

Q. Now, your injection wells or the proposed wells are the two and six?

A. That is correct -- they have a triangle inscribed around them.

Q. What is the producing interval within this project area?

A. It's the upper portion of the Grayburg and it's located approximately fifty feet at the top of the Grayburg.

Q. And does it have a common name?

A. First Grayburg and the Loco Hills, I guess -- it's active in several horizons.

Q. Does this map also show the offset operators and the formations from which they are producing?

A. Yes, sir.

Q. Are any of these other formations or other wells producing in the immediate area?

A. This formation, this upper Grayburg section, is being waterflooded in the Artesia Flood Number Three area, in the Twin Lakes area, which is approximately a mile away.

Also, in Section 10 of the same township -- operated by Depco -- the State Six Four-A lease.

Q. Out of curiosity, are they getting any response in that Section 10 flood?

A. They haven't done very well there at all.

Q. Please refer to what has been marked as Exhibit Two, being your compilation of your well completion data, and explain what information you feel is pertinent on this sheet?

A. Exhibit Two is the well completion data for all the wells, operated by John Yates, in Sections 5 and 8 -- it shows that these wells are all completed in the Grayburg section.

Q. Now, actually the only three that are within the project area are the State Two, Five, and Six?

A. That is correct.

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

A. This discovery well in this area is known as State Number Four -- it was originally the State Number One and it was completed in 1955.

Q. It's an old well?

A. Yes, sir.

Q. Please refer to Exhibit Three-A, being a portion of the log on the proposed injection Well Two-A, and explain the importance of this exhibit?

A. I have shown the perforations in this well and the pay section, I have colored in red.

I have inscribed also the descriptions from the sample logs. And I have identified the zones by certain numbers here -- Zones One to A, Two-B, Three-A, Three-B and Four-A and Four-B. The Four-A and Four-B being the -- commonly known as Loco Hills sand -- the others are Dolomite

sections.

Q. Where is the top of this log?

A. This was a correlation log -- it was not logged to the surface. It was intended strictly as a correlation log.

Therefore, we had no print made of it.

Q. But that is the only log available of this well?

A. That is correct.

Q. Please refer to Exhibit Three, being the log of the State Number Six, and point out the important areas of this log?

A. This Exhibit Three-B is a radioactivity log of the State Number Six, and it shows the top of the Grayburg and the perforations in Zone B, Two-B, Four-A and Four-B.

Colored in red is the pay zones.

Q. Please refer to the diagrammatic sketch of the State A Number Two, being marked as Exhibit Four-A, and point out the important data on this sketch?

A. Exhibit Four-A shows surface casing set at four hundred thirty-six feet, which shuts off all known water zones.

It is cemented to the surface. It shows the oil string, set at twenty-one zero two. The top is cemented at approximately fifteen thirty.



We propose to run tubing, two and three-eighths inch tubing, on a tension packer, and set it at about eighteen hundred thirty feet and to load the annulus with inhibited fresh water.

Q Did you say whether your tubing was going to be lined?

A It will not be lined, that is, we don't plan on loading it -- because we will have to inhibit the water.

We will be using fresh water which has a high oxygen content and it will have to be inhibited.

Q Please refer to Exhibit Four-B, being the diagrammatic sketch of the State A Number Six and point out what is the important data on this sketch?

A Like the previous diagrammatic sketch, this Exhibit Four-B shows surface casing set at four seventy, cemented to the surface, and protecting known water sands.

It shows the oil strings cemented to a total depth of two zero five zero, and cemented at the top at a calculated top of four hundred thirty.

We propose to run two and three-eighths inch tubing on a tension packer and set it at about nineteen twenty. And to load the annulus with inhibited fresh water.

Q Now, you have noted on this sketch, as well as

the other one, the only water sands which will be encountered in drilling the well?

A. That is correct.

Q. Please refer to what has been marked as Exhibit Five, being the decline curve of this John A. Yates lease, and explain what this portrays?

A. This is the decline curve of all the Yates' leases, other than the Gulf lease -- all the State leases except the Gulf lease, I believe -- no, no, it does include the Gulf lease -- I'm sorry.

This does include the Gulf State lease. It shows the print completions and the normal decline curve. It also shows that these wells are in a depleted condition.

Q. Do you have the, referring only to the State A lease, which is the three wells in the project area; do you have a figure of the present production from these three wells?

A. Yes, sir -- in August, the three wells produced only sixty barrels of oil, which is approximately two barrels per day or less than a barrel per day per well.

Q. Are any of them making over two barrels per day?

A. No.

Q. Have they all reached a stripper state of

depletion?

A. Yes, sir.

Q. Do you know the accumulative production from the State A lease?

A. Through June of '69, the accumulative production was fifty-three thousand nine fifty-seven.

Q. Do you have an opinion as to the volume of oil that you expect to recover on secondary recovery?

A. Yes, sir -- based on core analysis, we have -- we should recover approximately one to one, on primary.

Q. So, there will be another fifty-three thousand barrels?

A. Approximately, yes.

Q. What is the source of water for this project?

A. This will be shallow water -- shallow ground water from this immediate area.

We advertised with the State Engineer recently for permission to drill a water well, and as far as I know, it has not been opposed.

Q. CID has not opposed it?

A. No, it's outside of their district.

Q. What volume of water do you anticipate will be necessary for the project?

A. We anticipate two hundred and forty barrels per day for both wells.

Q. At what pressure do you propose to inject the water?

A. The pressure is up to a thousand p.s.i.

Q. Were Exhibits One, Two, Three-A, Three-B and Four-A and Four-B and Five prepared by you?

A. Yes, sir.

MR. LOSEE: We move the introduction of the exhibits.

MR. UTZ: Without objection, the exhibits will be introduced in the record in this case.

(WHEREUPON, Applicant's Exhibits One, Two, Three-A, Three-B, Four-A, Four-B and Five were duly admitted into evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q. Mr. Mahfood, do I understand that all of the zones that you show; for example, on your Exhibit Three-B, will be injection zones?

A. Yes, sir.

Q. And they will of course all be below the packer and

in the interval shown on your diagrammatic sketches and the perforation of leases --

A. Yes, sir. Number Two, we are going to set the packer at eighteen thirty, which is above the top of the Grayburg.

Q. And was your tubing cement-lined; did you say?

A. No, sir. It will not be cement lined.

Q. Regular tubing?

A. Yes, sir -- that's four that will be inhibited.

Q. And your injection water will be inhibited fresh water?

A. Yes, sir.

Q. And you will put inhibited water in the annulus?

A. Yes, sir.

Q. And the tubing is two and three-eighths in both instances?

A. That is correct.

Q. Did you request administrative approval on your order for additional injection wells or do you anticipate any?

A. Yes, sir. I believe Mr. Yates is planning on doing some additional drilling if this pilot flood responds as we anticipate.

And in that case, we would be asking for

administrative approval for additional wells -- we will be asking for the unit, too.

MR. UTZ: Any further questions of the witness?

I believe you said the green area was one lease?

A. Yes, sir.

MR. UTZ: The witness may be excused.

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

I N D E XPage

The Witness - EDDIE MAHFOOD

Direct Examination by Mr. Losee

2

Cross Examination by Mr. Utz

10

E X H I B I T SAdmitted

Applicant's Exhibits One, Two, Three-A and

Three-B, Four-A and Four-B, and Five

10

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 87101  
1400 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO 87108

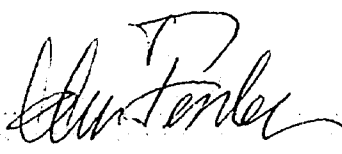
PAGE

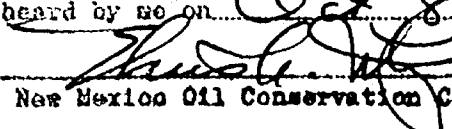
14

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 record of the proceedings in the Examiner hearing of Case No. 4226 heard by me on Oct 8, 1969  
  
Examiner  
New Mexico Oil Conservation Commission





OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

October 29, 1969

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

Dear Sir:

Reference is made to Commission Order No. R-3854, recently entered in Case No. 4226, approving the John A. Yates Artesia State A Water-flood Project.

Injection is to be into the two authorized water injection wells, the State "A" Wells Nos. 2 and 6, with injection being through 2 3/8-inch tubing set in packers. The packers in the two wells shall be set at 1830 feet and 1920 feet, respectively. The casing-tubing annulus in each of the wells shall be loaded with an inert fluid and equipped with a pressure gauge at the surface.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 126 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less. This allowable may, of course, be increased by the unitization or consolidation in a satisfactory manner of the SE/4 of Section 5 with the SW/4 NE/4, SE/4 NW/4, and E/2 SW/4 of Section 5 and the N/2 NE/4 of Section 8, and evidence thereof furnished the Commission.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

-2-

Mr. A. J. Losee  
Attorney at Law  
Artesia, New Mexico

October 29, 1969

the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/DSN/ir

cc: Oil Conservation Commission offices in Hobbs and Artesia

Mr. D. E. Gray, 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. 4226  
Order No. R-3854

APPLICATION OF JOHN A. YATES  
FOR A WATERFLOOD 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 22nd 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, John A. Yates, seeks permission to institute a waterflood project in the Artesia Pool 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, NMPM, Eddy County, New Mexico.

(3) That the applicant further seeks an administrative procedure whereby said project could be expanded to include additional injection wells in the area of the said project as may be necessary in order to complete an efficient injection pattern; that said administrative procedure should provide for administrative approval for conversion to water injection in exception to the well response requirements of Rule 701 E-5 of the Commission Rules and Regulations.

-2-

CASE No. 4226  
Order No. R-3854

(4) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided, however, that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

IT IS THEREFORE ORDERED:

(1) That the applicant, John A. Yates, is hereby authorized to institute a waterflood project in the Artesia Pool by the injection of water into the Grayburg formation through the following-described wells in Section 5, Township 19 South, Range 28 East, NMPM, Eddy County, New Mexico:

John A. Yates-State A Well No. 2, located in  
Unit J

John A. Yates-State A Well No. 6, located in  
Unit P

(2) That the subject waterflood project is hereby designated the John A. Yates Artesia State A Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commission may approve expansion of the John A. Yates Artesia State A Waterflood Project to include such additional injection wells in the area of said project as may be necessary to complete an efficient water injection pattern; that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

-3-

CASE No. 4226

Order No. R-3854

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

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

  
ALEX J. ARMIJO, Member

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



esr/

Case 4226  
Heard 10-8-69  
Rec. 10-10-69

Grant John A. Yates permission  
to convert 2 wells to water  
injection wells.

1. State A' #2 J-5-19-28, injection  
then 2 $\frac{3}{8}$ " ~~into~~ <sup>conlined</sup> tubing under packer  
set at approx 1830'. Then perforate  
into Grbg. from 1882' - 1967'.

2. State A' #6 P-5-19-28 then  
conlined 2 $\frac{3}{8}$ " tubing under  
packer set at approx 1820' +  
then perforate into the Grbg fm.  
from 1940' - 2016'.  
The project area is SW  
sec. 5.

Give Admin. Procedure for  
future injection wells.

*Thur. 10/10/69*  
This is a Pressure Maintenance  
project.

Docket No. 27-69

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.

Mr. John A. Yates  
September 1, 1969

Re: Appraisal of State Leases, Artesia (Grayburg), Eddy County Page 5

WELL COMPLETION DATA

Fletcher-State #1	9/25	El. 3530	10" 35# 424'	s/g 1850-55, s/o 1925-55, 2075-87
Yates-State #4		TD-2128		Shot @ 2067' w/60qts, @ 1955 w/160
2390/S 2390/W	4/54	PB-1960	8" 750' 50sx	SOF 1930-60 w/4000g. Petrofrac
K-5-19-28		TD-2560		IP- 15 BOPD
Yates-State #1	4/53	El. 3536	8 1/4" 423' 25sx	s/o 1840-54, 1912-27, 1990-2004
2180/S 2080/W		TD-2100		Hyfrac 1912-70, 2095-2100; IP-132
K-5-19-28				GOR 341/1, S.G. 1.23; 37° API
	5/59	Liner	4 1/2" 2080' 50sx	SOF 95,000#/550b.; IP-25 BOPD
Yates-State #2	10/53	El. 3528	8 5/8 436' 50s	s/o 1850-70, 1880-1910, 2650-2710
2310/S 2310/E		TD-2870		SOF 9000g; IP- 50 BOPD, 2 BWPD
J-5-19-28	12/57			<del>5 1/2" 1920' 50sx Pf 1867-72, 1892-96, 1905-09, 39-43, 1963-67; SOF 48500#/33000g, 1250g</del>
	9/58	Liner	4 1/2" 2100' 50sx	Pf 1867-72, 1892-96, 1905-09, 39-43, 1963-67; SOF 48500#/33000g, 1250g
Yates-State #3	7/54	El. 3530	7" 525' set	s/o 1867-73, 1920-38, s/g 1843-49
2310/N 2310/W		TD-1947	5 1/2" 1908' 25sx	Pf 1867-73, OH 1908-47; SOF 10000g.
F-5-19-28				IPF- 144 BOPD
	12/57			SOF 23000#/30000g.
Yates-State #5	3/59	El. 3540	7" 515' 50sx	Pf 1880-84, 1942-46, 1956-61
2310/E 990/S		TD-2860	4 1/2" 2065' 40sx	SOF 55000#/500b, 500g. A.; IPF-38 BOPD
O-5-19-28	4/61			Treat 20000g. 7 1/2" XM-38
Yates-State #6	5/59	El. 3545	8 1/4" 470' 50sx	Pf 1940-46, 58-64, 90-94, 2012-16
990/S 990/E		TD-2050	4 1/2" 2050' 90sx	SOF 100000#/870b, 750g. BDA; IP-36
P-5-19-28				
Yates-Gulf St#1	6/59	El. 3554	8 1/4" 465' 100sx	Pf 1894-97, 1942-47; SOF 80000#/
330/N 2310/E		TD-2103	4 1/2" 2051' 75sx	600b., 500g. 15%; IP 20 BOPD
B-8-19-28				

EXHIBIT 2

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 2  
CASE NO. 4226

John A. Yates- State "A" No. 2  
2310/S 2310/E J-5-19-28  
Artesia Pool, Eddy County, N.M.

Correlation - Collar-Neutron log  
1800

Top 96g  
1850

(1)



Pt 1867-73

Dol. buff. sh.

(2)



SSO

oil sh. prod.

Pt 1892-96

1950

Dol. buff. fx

(2-6)



slt. Sdy

Pt 1905-09

Dol. buff. sh.

(3)



oil stained, not prod

80% Dol

20% slt. dol. no. sh.

(4)



slt

Pt 1939-43

100% Sand

Some prod. and oil sh.

1950

50-100% Sand

Some oil sh.

(5)



slt. but prod. prod.

1950

Loco Hills Pt 1963-67

EXHIBIT 3a

95% Sand

2000

1950

BEFORE EXAMINER-UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 311  
CASE NO. 4226

LAME WELLS

# Radioactivity Log

Work Copy

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 3B  
CASE NO. 9226

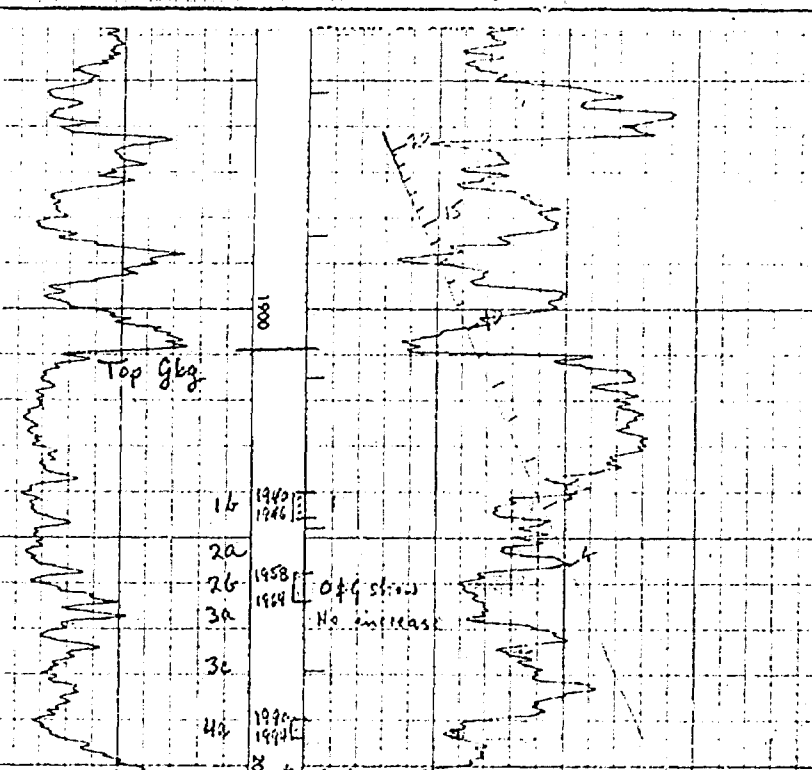
COMPANY: JOHN YATES  
WELL: STATE N. 6  
FIELD: ARTESIA  
LOCATION: 1/2 Sec. 4, T. 22N., R. 22E., S. 1  
COUNTY: MIAMI STATE: N. D.

LOG ZERO: CASE TOOL FLOOR  
DRLG. ZERO: CASE TOOL FLOOR  
PERM. DATUM: CASE TOOL FLOOR  
ELEV. 1:  
ELEV. 2:  
ELEV. 3:

TYPE OF LOG: 2000 5/8 3/8 3/8  
RUN NO.:  
DATE: 10-1-59  
TOTAL DEPTH (GRILLER) STEAR: 2000  
EFFECTIVE DEPTH (GRILLER): 2000  
TOP OF LOGGED INTERVAL: 2000  
BOTTOM OF LOGGED INTERVAL: 2000  
TYPE OF FLUID IN HOLE: FINE  
FLUID LEVEL: FINE  
MAXIMUM RECORDED TEMP.: 51.5  
SOURCE STRENGTH & TYPE: 11.2  
SOURCE SPACING - IN: 30 IN.  
DETECTOR CLASS: 12.2  
DETECTOR TYPE: 12.2  
LENGTH OF MEAS. DEVICE - IN: 3 5/8  
O.D. OF INSTRUMENT - IN: 1.5-2.0  
TIME CONSTANT - SECONDS: 10-50  
LOGGING SPEED FT./MIN.: 30-50  
STATISTICAL VARIATION - IN: 100-200  
SENSITIVITY REFERENCE: 271.410  
RECORDED BY: JAYES  
WITNESSED BY: JAYES

WELL RECORD

RUN	BIT SIZE	CASING WT.-LB.	FROM WELL RECORD	FROM LOG
ONE	12 1/4	5.5/8	SURFACE TO 528	SURFACE TO 528
TWO	12 1/4	5.5/8	SURFACE TO 1001	SURFACE TO 1001
			TO	TO
			TO	TO
			TO	TO



R. D. 2008  
T. D. 2021  
JOHN YATES  
STATE N. 6  
ARTESIA

LOGGING SENSITIVITY  
SENSITIVITY READING: 100  
MULTIPLIER: XI  
ZERO SUPPRESSION: 0

LOGGING SENSITIVITY  
SENSITIVITY READING: 130  
MULTIPLIER: XI  
ZERO SUPPRESSION: 4.00

EXHIBIT 3B

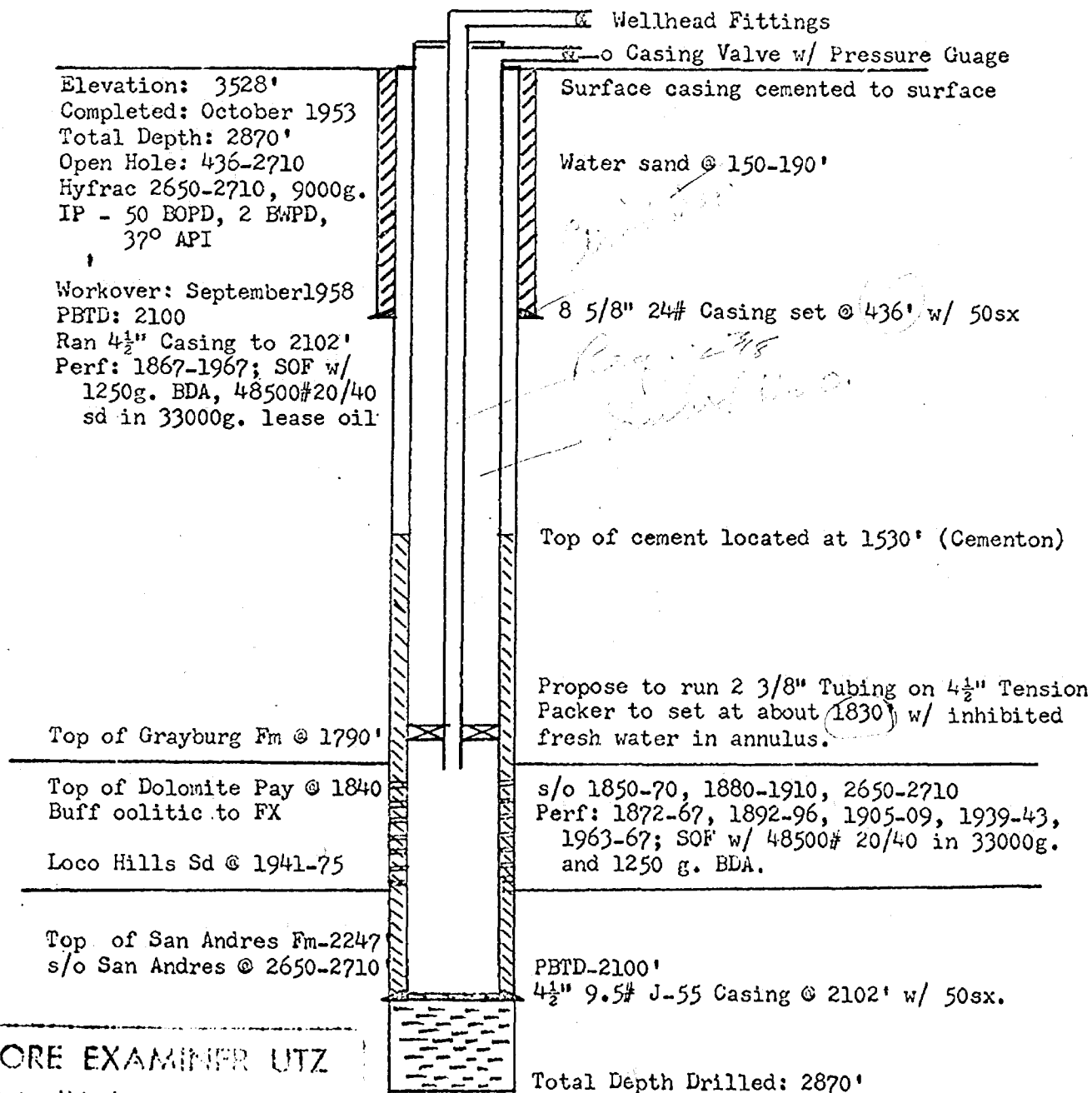
G/A LOG CALIBRATION  
BEFORE LOG

MEASUREMENTS OF CALIB. STD.  
SENSITIVITY READING: 100  
MULTIPLIER: XI  
ZERO SUPPRESSION: 0  
TIME CONSTANT: 10.1  
MEASURED COUNT RATIO: 10.1

YATES BROTHERS  
GEOLOGICAL FILE

DIAGRAMMATIC SKETCH OF INJECTION WELL

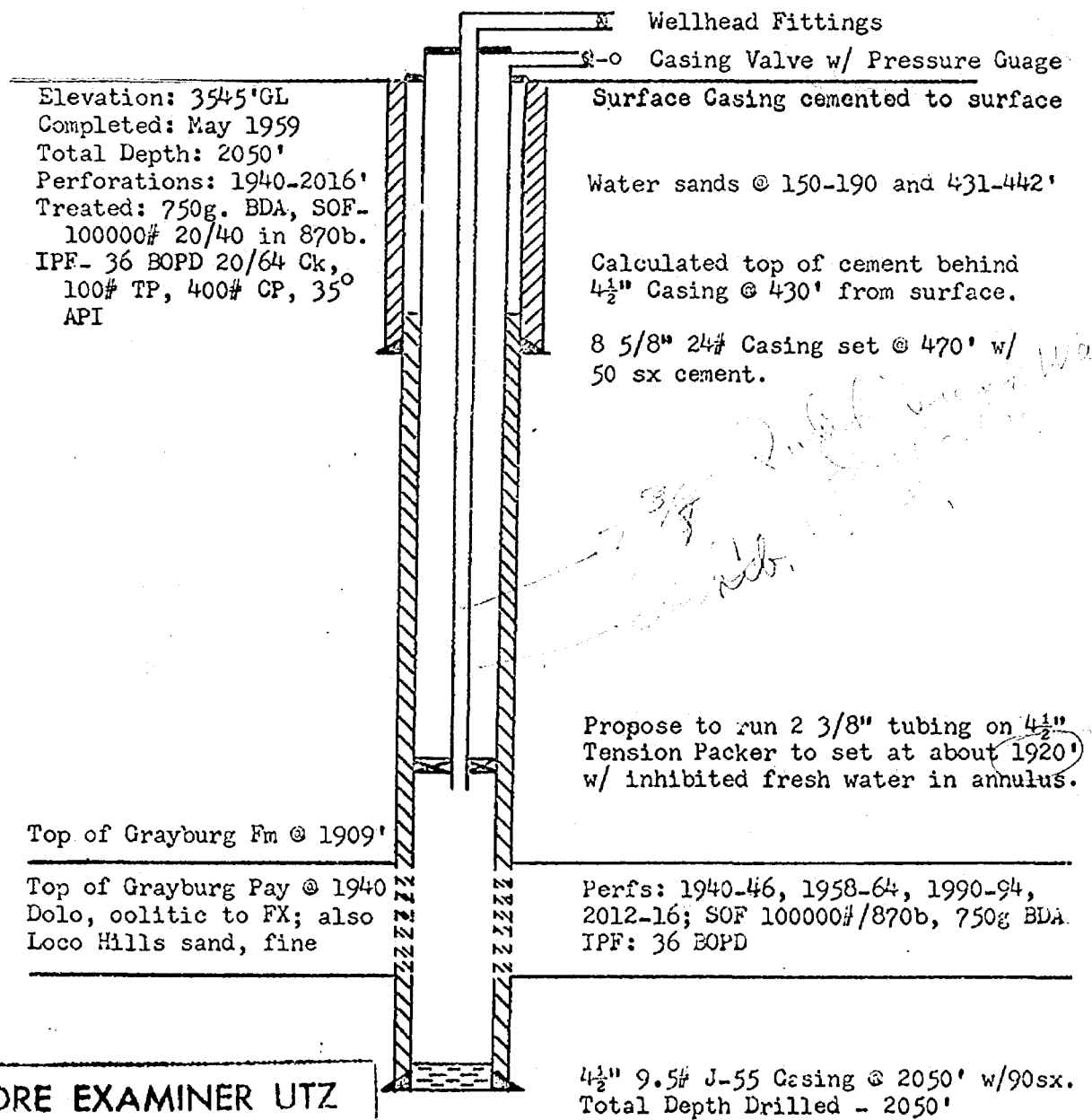
John A. Yates - State "A" No. 2  
2310/S 2310/E, Unit J 5-19-28  
Artesia (Grayburg) Pool  
Eddy County, New Mexico



BEFORE EXAMINER UTZ  
 I, \_\_\_\_\_, County Clerk of Eddy County, New Mexico, do hereby certify that the foregoing is a true and correct copy of the original as filed in my office.  
 \_\_\_\_\_  
 COUNTY CLERK  
 EXHIBIT 4a  
 4226

DIAGRAMMATIC SKETCH OF INJECTION WELL

John A. Yates - State "A" No. 6  
990/S 990/E, Unit P, 5-19-28  
Artesia (Grayburg) Pool  
Eddy County, New Mexico

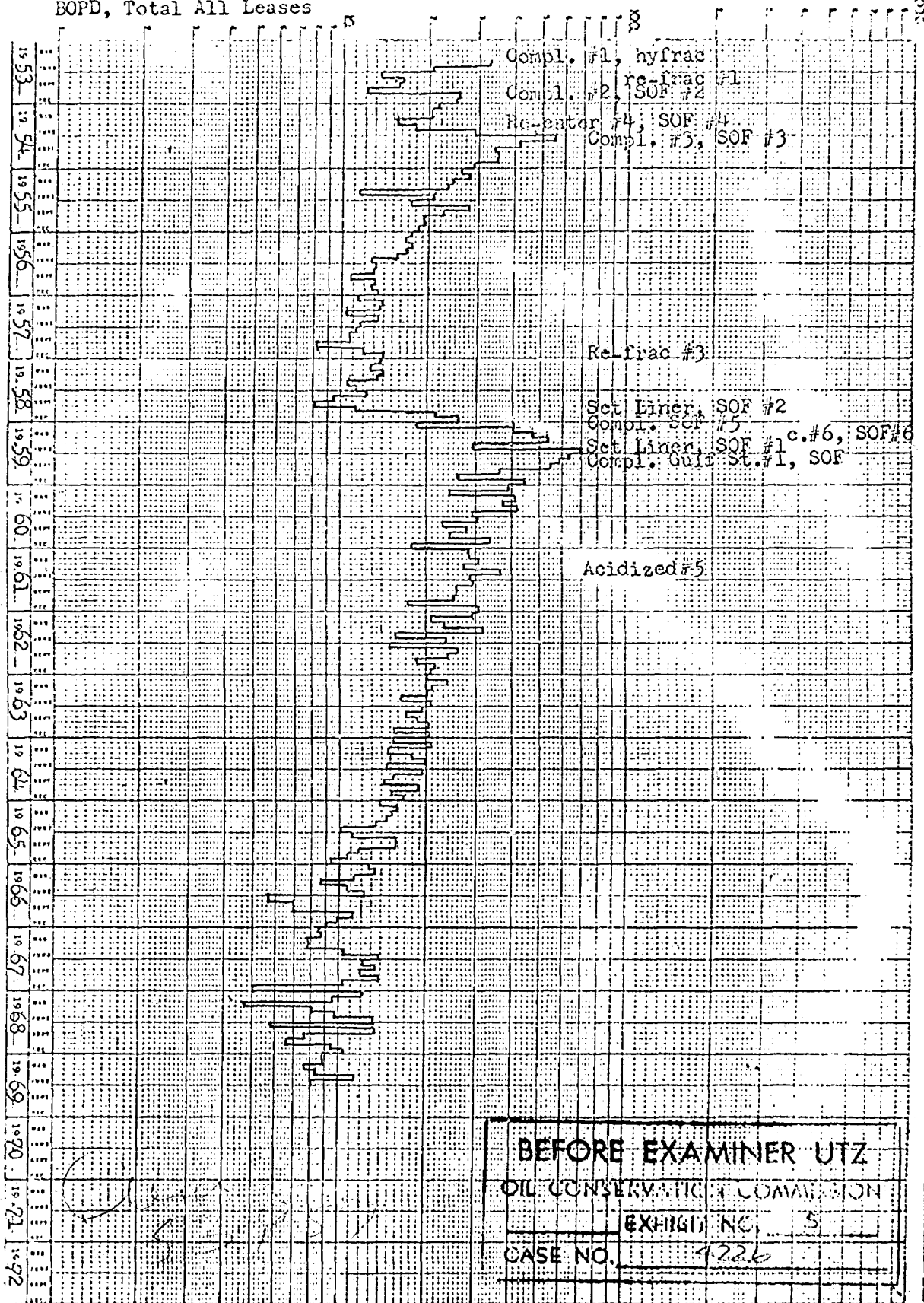


**BEFORE EXAMINER UTZ**  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 413  
CASE NO. 4226

EXHIBIT 4b

WATER & OIL PRODUCTION BBL/DAY  
WATER INJECTION BBL/DAY

BOPD, Total All Leases



TIME-YEARS

EXHIBIT 5

JOHN A. YATES  
ARTESIA (60g, S.A.) POOL  
EDDY COUNTY, NEW MEXICO  
PRODUCTION DECLINE CURVE

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 5  
CASE NO. 4226



JOHN A. YATES  
Oil Producer

ARTESIA, NEW MEXICO - 88210

323 CARPER BUILDING  
DIAL 746.3558

September 9, 1969

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

Re: Application to Inject Water into Grayburg  
Formation, Artesia Pool, Eddy County

Dear Mr. Porter:

Application is hereby submitted by John A. Yates for original authority to inject water into the Grayburg formation in a Pilot Waterflood Project in a portion of the Artesia Pool. The project area comprise the John A. Yates State leases in Sections 5 and 8, Township 19-South, Range 28-East, Eddy County, New Mexico, located approximately seventeen miles southeast of Artesia.

Permission is sought to convert to injection the following wells:

John A. Yates - State A No. 2    Unit J    Section 5-19-28  
John A. Yates - State A No. 6    Unit P    Section 5-19-28

The production history of the project area briefly is:

<u>Lease</u>	<u>No. Wells</u>	<u>Cumulative 6/69</u>	<u>Current Prod.</u>
State A	3	53,957 BO	90 BOPM
State B	2	38,407 BO	110 BOPM
State C	1	16,888 BO	44 BOPM
Gulf State	1	5,274 BO	16 BOPM

Water injectivity is estimated at about 240 BPD at pressures to 1000 psi for both wells, and the water source will be fresh water occurring locally at depths to 300 feet, or from the Caprock Water Basin. It is anticipated that the injection water will have to be inhibited. Ogallala water is also available from the Double Eagle Corporation trunk line located about two miles east of the study area.

A lease map is appended showing the location of the proposed injection wells and offset producers, and indicating the lessees and producing formations within the 2-mile radius of the project. Electric logs and diagrammatic sketches of the proposed injectors, completion data and a production decline curve for all wells in the project area are also attached.

Respectfully submitted,

*John A. Yates*  
John A. Yates

DOCKET MAILED

Date 9/26/69

*Cope 4226*

Mr. John A. Yates

September 1, 1969

Re: Appraisal of State Leases, Artesia (Grayburg), Eddy County

Page 5

WELL COMPLETION DATA

Fletcher-State #1	9/25	El. 3530	10" 35#	424'	s/g 1850-55, s/o 1925-55, 2075-87
Yates-State #4		TD-2128			Shot @ 2067' w/60qts, @ 1955 w/160
2390/S 2390/W	4/54	PB-1960	8"	750' 50sx	SOF 1930-60 w/4000g. Petrofrac
K-5-19-28		TD-2560			IP- 15 EOPD
Yates-State #1	4/53	El. 3536	8 1/4"	423' 25sx	s/o 1840-54, 1912-27, 1990-2004
2180/S 2080/W		TD-2100			Hyfrac 1912-70, 2095-2100; IP-132
K-5-19-28					GOR 341/1, S.G. 1.23; 37°API
	5/59	Liner	4 1/2"	2080' 50sx	SOF 95,000#/5500b.; IP-25 EOPD
Yates-State #2	10/53	El. 3528	8 5/8	436' 50s	s/o 1850-70, 1880-1910, 2650-2710
2310/S 2310/E		TD-2870			SOF 9000g; IP- 50 EOPD, 2 EOPD
J-5-19-28	12/58		5 1/2"	1920' 50sx	Pf 1867-72, 1892-96, 1905-09, 39-43,
	9/58	Liner	4 1/2"	2100' 50sx	Pf 1867-72, 1892-96, 1905-09, 39-43,
					Pf 1963-67; SOF 48500#/33000g, 1250g
Yates-State #3	7/54	El. 3530	7"	525' set	s/o 1867-73, 1920-38, s/g 1843-49
2310/N 2310/W		TD-1947	5 1/2"	1908' 25sx	Pf 1867-73, CH 1908-47; SOF 10000g.
F-5-19-28					IPF- 144 EOPD
	12/57				SOF 23000#/30000g.
Yates-State #5	3/59	El. 3540	7"	515' 50sx	Pf 1880-84, 1942-46, 1956-61
2310/E 990/S		TD-2860	4 1/2"	2065' 40sx	SOF 55000#/5000b, 5000g. A; IPF-38 EOPD
O-5-19-28	4/61				Treat 20000g. 7 1/2% KM-38
Yates-State #6	5/59	El. 3545	8 1/4"	470' 50sx	Pf 1940-46, 58-64, 90-94, 2012-16
990/S 990/E		TD-2050	4 1/2"	2050' 90sx	SOF 100000#/8700b, 750g. BDA; IP-36
P-5-19-28					
Yates-Gulf St#1	6/59	El. 3554	8 1/4"	465' 100sx	Pf 1894-97, 1942-47; SOF 80000#/
330/N 2310/E		TD-2103	4 1/2"	2051' 75sx	6000b., 500g. 15%; IP 20 EOPD
B-8-19-28					

EXHIBIT 2

John A. Yates- State "A" No. 2  
2310/S 2310/E J-5-19-28  
Artesia Pool, Eddy County, N.M.

Correlation - Collar-Newton log

1860

Top Gbg  
1850

(1)

Pt 1867-73

Dol, buff 21

SSO oil stn, not per.

Pt 1892-96

1900

Dol, buff fx (2-B

sh Sdy

Pt 1905-09

Dol, buff, oil stn  
oil stn, not per

(3)

30

80% Dol  
20% sh det no. 1

100% Sand  
Some fairly well at stn

(4)

1950

910

Pt 1937-41

90-100% Sand  
Some oil stn

110

sh but poor per.

1150

Loco Hills Pt 1763-67

EXHIBIT 3a

95% Sand  
5% sh

2070  
0 stn

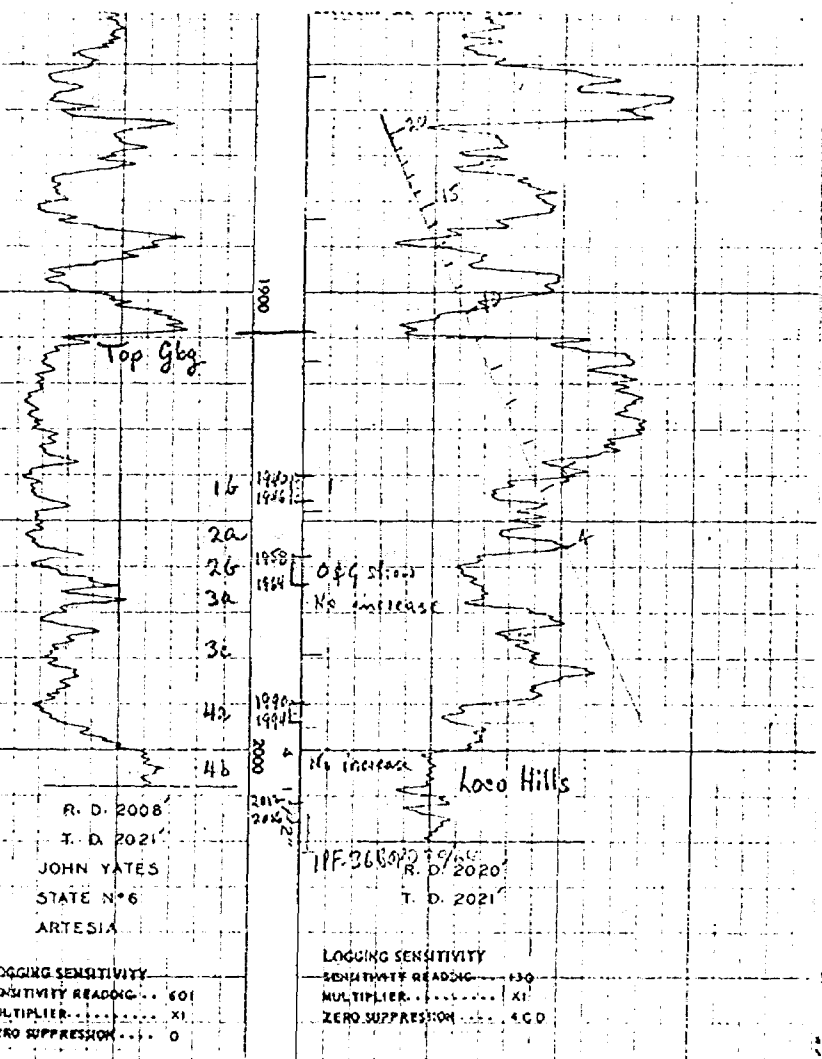
Woods County

# LANE WELLS Radioactivity Log

COMPANY: JUNE 1958 WELL: 1-17-S, E-11-S LOCATION: 1-17-S, E-11-S COUNTY: WOOD STATE: N.M.	COMPANY: JUNE 1958	Well Location
	WELL: STATE No. 6	
	FIELD: ARTESIA	
	LOCATION: 1-17-S, E-11-S, P.O. 12 2000 S.	
	COUNTY: WOOD STATE: N.M.	
LOG ZERO	CASE 1000	ELEV. 1
DALG. ZERO	CASE 1000	ELEV. 1
PERM. DATUM	CASE 1000	ELEV. 1

TYPE OF LOG	DATE	TIME	WELL	LOG
RUN NO.	1-17-S	1-17-S	1-17-S	1-17-S
DATE	1-17-S	1-17-S	1-17-S	1-17-S
TOTAL DEPTH (DRILLER)	1-17-S	1-17-S	1-17-S	1-17-S
EFFECTIVE DEPTH (DRILLER)	1-17-S	1-17-S	1-17-S	1-17-S
TOP OF LOGGED INTERVAL	1-17-S	1-17-S	1-17-S	1-17-S
BOTTOM OF LOGGED INTERVAL	1-17-S	1-17-S	1-17-S	1-17-S
TYPE OF FLUID IN HOLE	1-17-S	1-17-S	1-17-S	1-17-S
FLUID LEVEL	1-17-S	1-17-S	1-17-S	1-17-S
MAXIMUM RECORDED TEMP.	1-17-S	1-17-S	1-17-S	1-17-S
SOURCE STRENGTH & TYPE	1-17-S	1-17-S	1-17-S	1-17-S
SOURCE SPACING - IN	1-17-S	1-17-S	1-17-S	1-17-S
DETECTOR CLASS	1-17-S	1-17-S	1-17-S	1-17-S
DETECTOR TYPE	1-17-S	1-17-S	1-17-S	1-17-S
LENGTH OF MEAS. DEVICE - IN	1-17-S	1-17-S	1-17-S	1-17-S
O.D. OF INSTRUMENT - IN	1-17-S	1-17-S	1-17-S	1-17-S
TIME CONSTANT - SECONDS	1-17-S	1-17-S	1-17-S	1-17-S
LOGGING SPEED FT./MIN.	1-17-S	1-17-S	1-17-S	1-17-S
STATISTICAL VARIATION - IN	1-17-S	1-17-S	1-17-S	1-17-S
SENSITIVITY REFERENCE	1-17-S	1-17-S	1-17-S	1-17-S
RECORDED BY	1-17-S	1-17-S	1-17-S	1-17-S
WITNESSED BY	1-17-S	1-17-S	1-17-S	1-17-S

WELL RECORD			
RUN	BIT SIZE	CASING WT.-LB.	FROM WELL RECORD
ONE	10 1/2	8 5/8	SURFACE TO 525
TWO	6 1/2	4 1/2	SURFACE TO 525
			TO 525
			TO 525
			TO 525

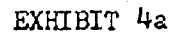


LOGGING SENSITIVITY	
SENSITIVITY READING	501
MULTIPLIER	X1
ZERO SUPPRESSION	0
LOGGING SENSITIVITY	
SENSITIVITY READING	130
MULTIPLIER	X1
ZERO SUPPRESSION	4.00
G/R LOG CALIBRATION	
BEFORE LOG	
RADIATION UNITS OF CALIB STD	6.2
SENSITIVITY READING	400
MULTIPLIER	X1
ZERO SUPPRESSION	0
TIME CONSTANT	4
MEASURED CHART DIVISIONS	10.3

YATES BROTHERS  
GEOLOGICAL FILE

EXHIBIT 36

John A. Yates - State "A" No. 2  
2310/S 2310/E, Unit J 5-19-28  
Artesia (Grayburg) Pool  
Eddy County, New Mexico



Case 4226

DIAGRAMMATIC SKETCH OF INJECTION WELL

John A. Yates - State "A" No. 6  
990/S 990/E, Unit P, 5-19-28  
Artesia (Grayburg) Pool  
Eddy County, New Mexico

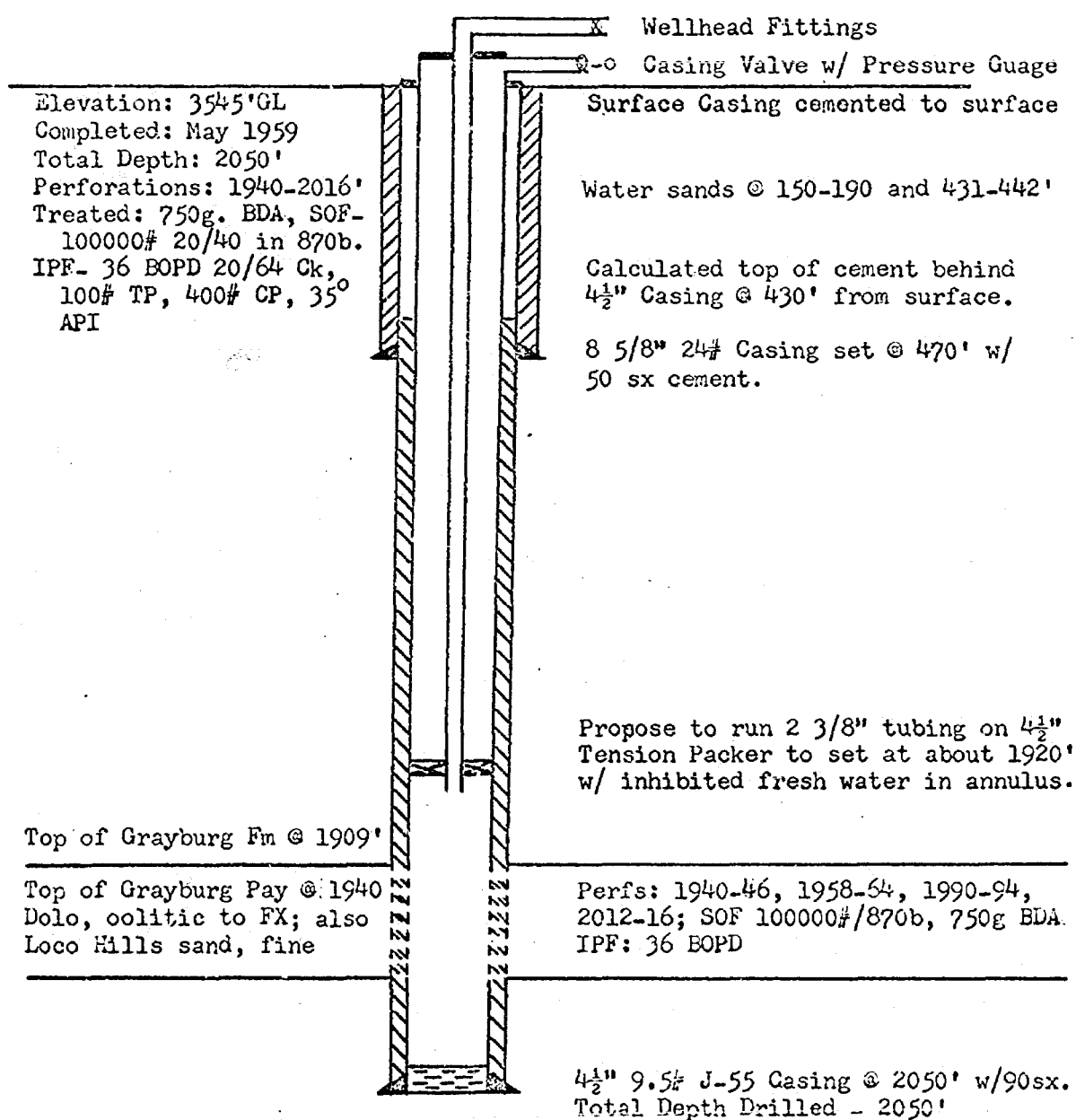


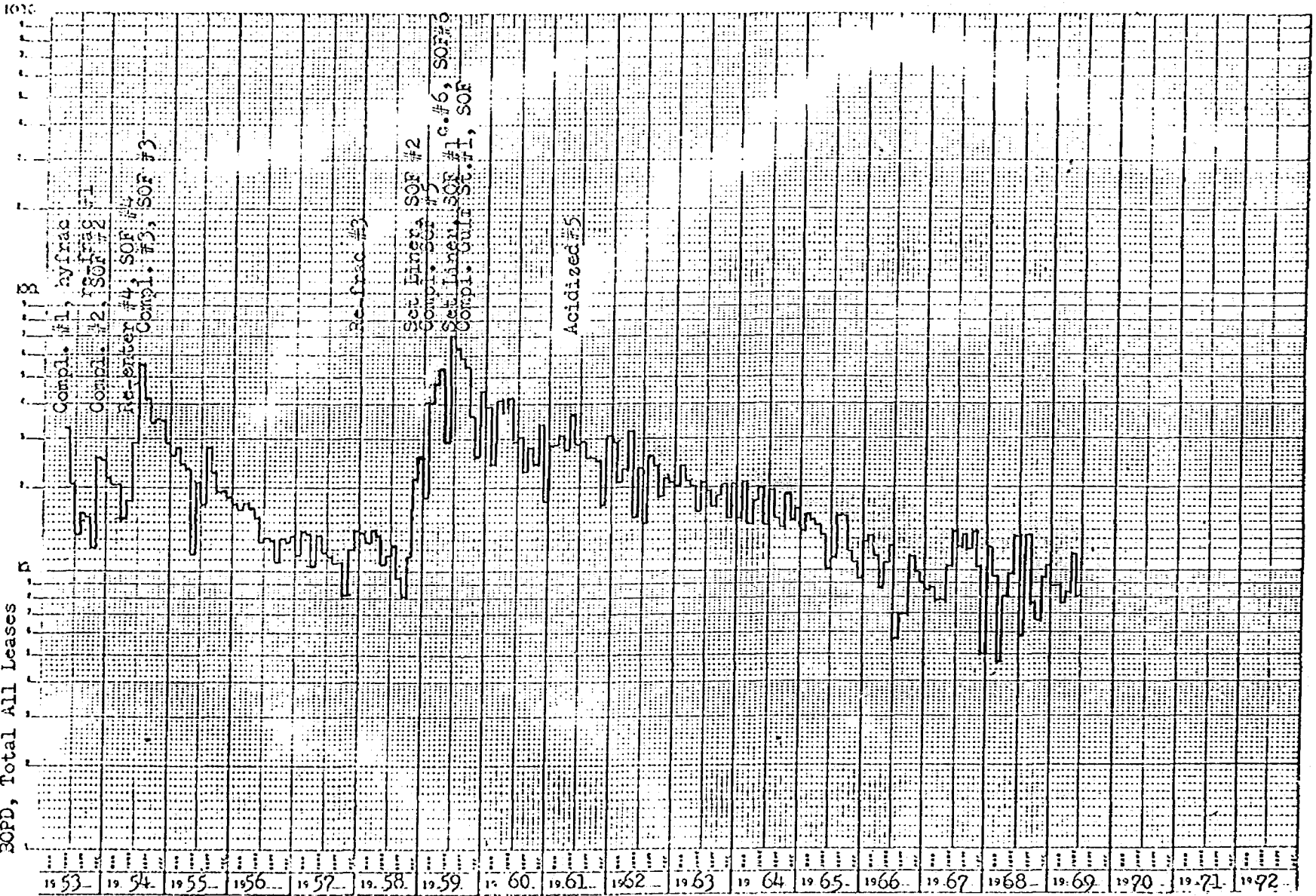
EXHIBIT 4b

*Case 4226*

Page 4 of 236

WATER & OIL PRODUCTION BBL/DAY  
WATER INJECTION MMS/DAY

BOPD, Total All Leases



TIME-YEARS

EXHIBIT 5

JOHN A. YATES

ARTESIA (Gbg, S.A.) POOL

EDDY COUNTY, NEW MEXICO

PRODUCTION DECLINE CURVE

ROUGH DRAFT FOR WATERFLOOD LETTERS

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

Dear Sir:

*Approval is made to* Commission Order No. *recently* R-3854, entered in Case No. 4226, approving the *John A. Gates Artesia State A* Waterflood Project.

*Injection is to be into the two authorized water injection wells, the State "A" Wells Nos. 2 and 6, with injection being through 2 7/8-inch tubing set in packers. The packers in the two wells shall be set at 1830 feet and 1920 feet, respectively. The casing-tubing annulus in each of the wells shall be loaded with an inert fluid and equipped with a pressure gauge at the surface.*

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 126 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less. *This allowable*

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

cc: OCC: Hobbs X  
Artesia X  
Aztec         
USGS       

~~Mr. Frank Erby~~, State Engineer Office, Santa Fe, New Mexico  
Mr. D. E. Gray

*may, of course, be increased by the unitization or consolidation in a satisfactory manner of the SE 1/4 of Section 5 with the SW 1/4 NE 1/4, SE 1/4 NW 1/4, and E 1/2 SW 1/4 of Section 5 and the N 1/2 NE 1/4 of Section 8, and evidence thereof furnished the Commission.*



GMH/esr

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

CASE No. 4226

Order No. R-

APPLICATION OF JOHN A. YATES  
FOR A WATERFLOOD 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, John A. Yates,  
seeks permission to institute a waterflood project in the \_\_\_\_\_  
~~===== Unit Area~~ Artesia Pool 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, NMPM, Eddy County, New Mexico.

(3) That the applicant further seeks an administrative procedure whereby said project could be expanded to include additional injection wells in the area of the said project as may be necessary in order to complete an efficient injection pattern; that said administrative procedure should provide for administrative approval for conversion to water injection in exception to the well response requirements of Rule 701 E-5 of the Commission Rules and Regulations.

(SEE UNDER)

waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided, however, that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection. (SEE UNDER)

(1) That the applicant, John A. Yates,  
is hereby authorized to institute a waterflood project in the  
~~Unit Area~~ Artesia Pool  
by the injection of water into the Grayburg formation  
Section 5,  
through the following-described wells in/Township 19  
~~North~~, South, Range 28 ~~West~~ East, NMPM, Eddy  
County, New Mexico:

John A. Yates-State A Well No. 2, located in  
Unit J  
John A. Yates-State A Well No. 6, located in  
Unit P

(2) That the subject waterflood project is hereby designated  
the John A. Yates Artesia State A Waterflood Project and shall  
be governed by the provisions of Rules 701, 702, and 703 of the  
Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commis-  
mission may approve expansion of the John A. Yates Artesia State A  
Waterflood Project to include such additional injection wells in  
the area of said project as may be necessary to complete an  
efficient water injection pattern; that the showing of well  
response as required by Rule 701 E-5 shall not be necessary  
before obtaining administrative approval for the conversion of  
additional wells to water injection.

(SEE UNDER)

entry of such further orders as the Commission may deem necessary.

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