

CASE 3301: Appli. of TIDEWATER
OIL CO. for a waterflood project,
Lea County, New Mexico.

CASE NO.
3301

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

*issue
name protection*

Tidewater Oil Company



Box 34
Midland, Texas 79701

R. H. COE
West Texas District
Production Manager

H. C. WESBERRY
Assistant Manager

MAIN OFFICE

September 27, 1965

Mr. James Durett
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Re: Tidewater Oil Company
Case No. 3301
Application for Waterflood
Justis McKee Unit, Justis
McKee Field, Lea County, N.M.

Dear Mr. Durett:

The subject case was held before the New Mexico Conservation Commission on September 8, 1965. Exhibit No. 7 presented at that time had a typographical error on the location of a proposed injection well, Tidewater Coates "C" No. 28. This location was shown on Exhibit No. 7 as 1820 feet from the North line and 1820 feet from the South line of Section 24. This location should properly have been 1820 feet from the North line and 1820 feet from the West line of Section 24. This error was further reflected in Order R-2966 concerning this case.

It would be appreciated if you would correct this location and we hope this error has caused you no inconvenience. If you desire additional information in this regard, please advise.

Very truly yours,

Robert N. Miller
District Engineer

cc: Mr. Frank Irby
State Water Engineer
Santa Fe, New Mexico

Mr. Sumner Buell
Seth, Montgomery, Federici & Andrews
Santa Fe, New Mexico

RNM: rlc

GOVERNOR
JACK M. CAMPBELL
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 2088
SANTA FE

October 4, 1965

Mr. Sumner Buell
Seth, Montgomery, Federici & Andrews
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

Re: Case No. 3301
Order No. R-2966-A
Applicant:
TIDEWATER OIL COMPANY

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

OTHER Mr. Frank Irby

August 27, 1965

Mr. Richard S. Morris
Attorney at Law
P. O. Box 2307
Santa Fe, New Mexico

Dear Mr. Morris:

Reference is made to the application which you submitted on behalf of Tidewater Oil Company to the Oil Conservation Commission for approval of a water flood project in Lea County, New Mexico on August 24, 1965.

The description of the source water well in your paragraph 7 is not in sufficient detail for me to determine exactly which well it is. The water analysis by Martin Water Laboratories of Monchans indicates that it is from the A. B. Coates "C" water well and it appears that this may be the source well. I would appreciate knowing definitely whether the A. B. Coates "C" water well is the one to be used as a supply well. The application states that the water is to come from the Rustler formation, but the chloride concentration in the Rustler water is usually much higher than shown in the analysis submitted with the application. It is requested that Tidewater check the application, the analysis and any records they may have in the office and advise as to whether there has been an error in stating the formation, or an error in the analysis.

Please advise as to whether the system will be a closed system.

1. What casing tests will be made prior to injection?
2. What are the completion dates on the 4 injection wells which have been completed?
3. Please give specific information on the 5½ inch liner and the cement program used in the installation of the liner on the Gulf-McBuffington No. 12.
4. Please give the top of the cement surrounding the 7 inch casing on the Gulf-McBuffington No. 4 and state how the top of the cement was determined.

Mr. Richard S. Morris

-2-

August 27, 1965

5. Please state how the top of the cement on the Tidewater Coates "D" No. 3 surrounding the 7 inch casing was determined.
6. Please state how the top of the cement surrounding the 7 inch casing in the Atlantic State "Y" No. 4 was determined.
7. On the Tidewater Coates "C" No. 28, please state whether the exact top of the cement surrounding the 5 inch casing will be determined when the well is completed, in order that we may be assured that the tubing and packer will be set below that depth.

I will appreciate receiving the answers to these questions prior to the hearing.

FEI/ma

cc-A. L. Porter, Jr.
F. H. Hennighausen

Yours truly,

S. E. Reynolds
State Engineer

By:

Frank E. Irby
Chief
Water Rights Division



TIDEWATER OIL COMPANY

B O X 1 2 3 1 M I D L A N D E A S

September 1, 1963

Mr. Frank E. Irby
Chief, Water Rights Division
State of New Mexico
State Capitol
Santa Fe, New Mexico 87501

Re: Justis McKee Waterflood Project
Lea County, New Mexico

Dear Mr. Irby:

Mr. Richard S. Morris, our Attorney in Santa Fe, forwarded us a copy of your letter requesting additional information concerning our application submitted to the Oil Conservation Commission on August 24, 1965. In the interest of time, we are furnishing the answers to your questions directly to you with a copy to Mr. Morris.

The source water well, referred to as A. B. Coates "C" Water Well No. 1, is located 2700' FSL and 1370' FWL of Sec. 24, T25S-R37E and is to be used as the supply well for the proposed Justis McKee flood. This well was drilled with cable tools to a depth of 901' and 9-5/8" casing was set at 806' with 425 sacks of cement on 2-18-65. A water sample was swabbed from the well and the Martin Laboratory analysis indicated relatively high concentration of sulphate, calcium and magnesium with low amounts of chloride and sodium. Martin states that this water is similar to that being referred to as Santa Rosa in the Dollarhide area with essentially the only difference being the significantly higher calcium and magnesium content. Otherwise the waters show to have essentially the same characteristics.

Please find attached a sheet on which a copy of the sample log of the Coates "C" Water Well and a Gamma Ray-Neutron Log of the Tidewater-Coates "C" No. 12 well have been placed in relative structural position to show the top of the Rustler Formation. These wells are approximately 600' apart. A Kodachrome copy of the sample log was submitted to Mr. Hennighausen at your Roswell Office in April 1965.

Following are answers to questions posed in your letter:

1. The entire water system will be a closed system with a gas blanket on the tanks to prevent oxygen contamination.
2. No casing tests are planned to be run prior to injection since all wells will have packers set below the top of the cement.
3. The completion dates of the four injection wells are as follows:

Mr. Frank E. Irby
Santa Fe, New Mexico

Page - 2 -

September 1, 1965

Gulf-McBuffington No. 4 - 11-4-57
Gulf-McBuffington No. 12 - 7-27-59
Tidewater-Coates "D" No. 3 - 5-29-59
Atlantic-State "Y" No. 4 - 3-1-59

4. A 5-1/2" flush joint liner, 850', is planned to be set in the Gulf-McBuffington No. 12 well from 7050' to 7900' and squeezed to 1250 psi with 250 sacks of 50-50 Litepoze-1 cement with 3% salt. This will allow 180' of liner inside the 7" casing and complete isolation of the entire McKee interval for water injection.

5. The top of the cement surrounding the 7" casing on the Gulf-McBuffington No. 4 is indicated to be at 3610'. This was determined by a Temperature Survey which was run on 11-2-57.

6. The top of the cement on the Tidewater-Coates "D" No. 3 surrounding the 7" casing was calculated.

7. The top of the cement surrounding the 7" casing in the Atlantic State "Y" No. 4 was determined to be at 2115' by a Temperature survey run on 2-14-59.

8. The exact top of the cement surrounding the 5" casing in the Tidewater-Coates "C" No. 28 will be determined by a Temperature survey run when the well is completed.

We sincerely hope that we have adequately answered your questions concerning this project. Please advise if additional information is needed.

Yours truly,

Original signed by
Robert N. Miller

Robert N. Miller
District Engineer

HGV:RNM:rlt

Attach.

cc: Mr. Richard S. Morris, Attorney at Law
P. O. Box 2307
Santa Fe, New Mexico 87501

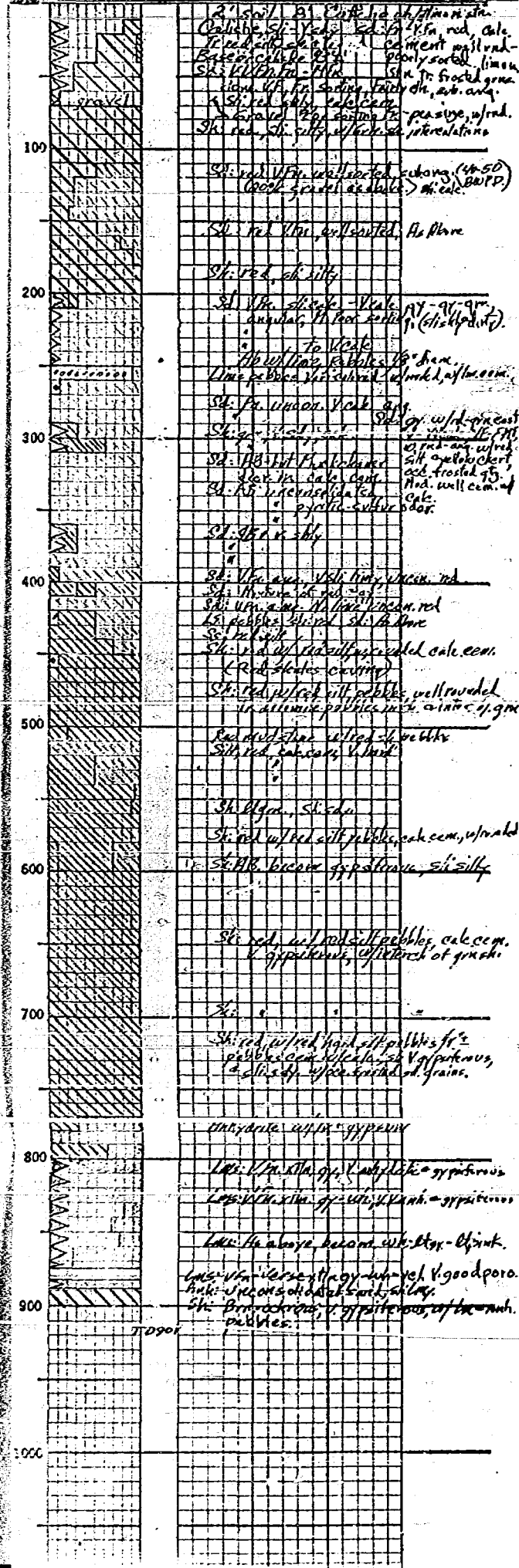
Mr. A. L. Porter, Jr., Secretary-Director,
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Mr. F. H. Hennighausen
State Engineer Office
909 E. 2nd St.,
Roswell, New Mexico

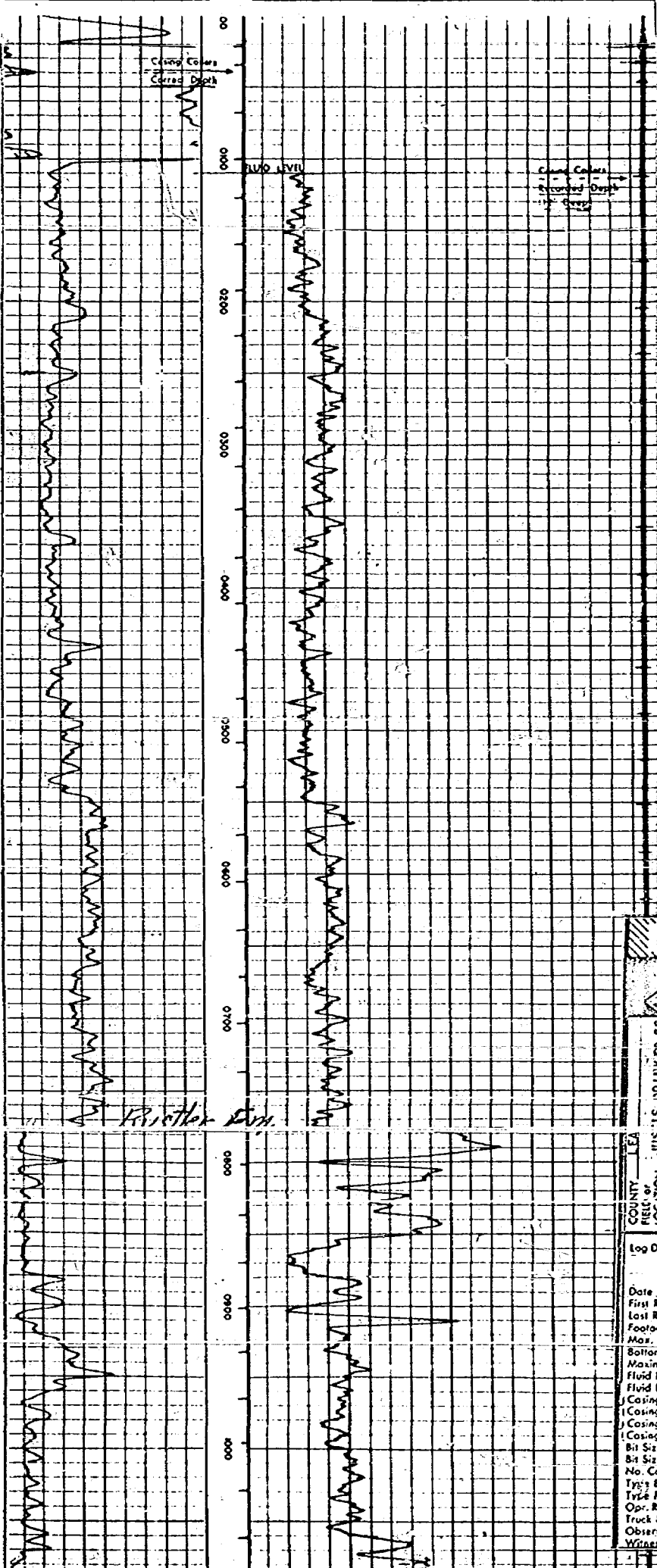
UNIT WATER WELL

STATE NEW MEXICO ELEV. 3075 GL
 COUNTY LEA
 COMPANY TIDEWATER OIL COMPANY
 FARM COATES "C" WATER WELL NO. 1
 LOCATION 2700' FSL & 50' FW LEASE
 LINE SEC. 24, T-25-S, R-37-E
 ID. 901' TOOLS CABLE TOOLS
 Drilling Measured from 2'
 Above Ground Level

Form 795 - In stock and for sale by ROSS MARTIN CO., - Tulsa, MFS



GAMMA RAY MICROGRAMS RA EQ TON		NEUTRON STANDARD COUNTS SECOND	
INTERVAL: 0 to 4550	Sens. 300 T.C. 2	INTERVAL: 0 to 3345	Sensitivity 300 Time Constant 2
Logging Speed 60 ft. min.		Logging Speed 60 ft. min.	
ZERO 0 div. to left		ZERO 0 divisions to left of this line	
7.5		120	
INTERVAL: 4550 to 7130	Sens. 300 T.C. 2	INTERVAL: 3345 to 4550	Sensitivity 400 Time Constant 2
Logging Speed 30 ft. min.		Logging Speed 60 ft. min.	
ZERO 0 div. to left		ZERO 0 divisions to left of this line	
7.5		160	
INTERVAL: to	Sens. T.C.	INTERVAL: 4550 to 7137	Sensitivity 400 Time Constant 2
Logging Speed ft. min.		Logging Speed 60 ft. min.	
ZERO div. to left		ZERO 0 divisions to left of this line	
		160	
		560	



SCHLUMBERGER WELL SURVEYING CORPORATION			
COMPANY <u>TIDEWATER OIL</u>		Other Surveys <u>YES</u> <u>NO</u>	
WELL <u>A. B. COATES C</u>		Location of Well <u>1200' From S/L</u> <u>1650' From W/L</u>	
FIELD <u>JUSTICE, PRIMMAN, FLESS</u>		Elevation: D.F. <u>3086</u> K.B. <u></u> or G.L. <u></u>	
LOCATION <u>SEC. 24-25S-37E</u>		FRING No. <u></u>	
COUNTY <u>LEA</u>		STATE <u>NEW MEXICO</u>	
Log Depths Measured From <u>KB</u> <u>15.5 Ft. above GL</u>			
RUN NO. <u>7-10-58</u>			
Date <u>7-10-58</u>			
First Reading <u>7137</u>			
Last Reading <u>7138</u>			
Footage Measured <u>7137</u>			
Max. Depth Reached <u>7138</u>			
Bottom Griller <u>7138</u>			
Maximum Temp. °F. <u>7138</u>			
Fluid Nature <u>CHEM - MUD</u>			
Fluid Level			
Casing Size <u>8 5/8 in.</u>			
Casing Weight <u>to 3345</u>			
Casing Size <u>in.</u>			
Casing Weight <u>to</u>			
Bit Size <u>8 3/4 in.</u>			
No. Counters Used <u>TO</u>			
Type Equipment <u>GNAM-4</u>			
Type Panel <u>GNP-C</u>			
Opr. Rig Time <u>3 HOURS</u>			
Truck No. <u>2526</u>			
Observer <u>HOBBBS</u>			
Witness <u>GETSEL</u> <u>WISNER</u>			

GOVERNOR
EDWIN L. MECHAM
CHAIRMAN

State of New Mexico
Oil Conservation Commission



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

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

P. O. BOX 2088
SANTA FE
87501

*Injection is to be through the five author-
ized water injection wells, which shall be equipped
with plastic-coated tubing and packers, sand
packers being set not more than 100 feet
above the uppermost perforation.*

Mr. Sumner G. Buell
Seth, Montgomery, Federici & Andrews
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

_____, 19____

Gentlemen:

Reference is made to
Enclosed herewith is Commission Order No. R-2966, recently
No. 3301, approving the *Tilwater Justice McKee Unit*
Water Flood Project.
As to allowable, our calculation indicates that
According to ~~our~~ calculations, 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 1372 barrels per day.

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,

cc: OCC - Hobbs
Mr. Frank Irby

A. L. PORTER, Jr.
Secretary-Director



STATE OF NEW MEXICO

STATE ENGINEER OFFICE
SANTA FE

S. E. REYNOLDS
STATE ENGINEER

September 8, 1965

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, NEW MEXICO 87501

Re: Case 3301

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

Dear Mr. Porter:

Reference is made to the application of Tidewater Oil Company water flood project which seeks to convert four wells and drill one new injection well.

This office offers no objection to the granting of this application provided the construction and equipping of wells are in compliance with the plan set forth on the diagrammatic sketches submitted with the application and noted at the hearing as Exhibits 8 thru 12.

DEG:ma
cc-Tidewater Oil Co.
Richard S. Morris
F. H. Hennighausen

Yours truly,

S. E. Reynolds
State Engineer

By: *D. E. Gray*
D. E. Gray
Engineer
Water Rights Div.

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

September 14, 1965

Mr. Sumner G. Buell
Seth, Montgomery, Federici & Andrews
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

Dear Mr. Buell:

Reference is made to Commission Order No. R-2966, recently entered in Case No. 3301, approving the Tidewater Justis-McKee Unit Water-flood Project.

Injection is to be through the five authorized water injection wells, which shall be equipped with plastic-coated tubing and packers, said packers being set not more than 100 feet above the uppermost perforation.

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 1372 barrels per day.

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

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

-2-

**Mr. Sumner G. Buell
Attorney at Law
Post Office Box 2307
Santa Fe, New Mexico**

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: **Mr. Frank Iroy
State Engineer Office
Santa Fe, New Mexico**

**Oil Conservation Commission
Hobbs, New Mexico**

C
O
P
Y

Application of Tidewater Oil
Company for approval of a
waterflood project, Lea County,
New Mexico.

Applicant in the above-styled
cause seeks permission to
institute a waterflood project
in the Justin McKee Unit area
by the injection of water
into the McKee formation
through five injection wells
located in Section 13, 24 and 25,
Township 25 South, Range 37 East,
Lea County, New Mexico.

3301

Heard 9-8-65

Rec. 9-8-65

Approve Tidewater's request for a waterflood for their Justus-McKee unit.

Approve 5 injection wells as shown on Et. # 7. attached. 4 conventional & 1 New wells.

Plastics coated tubing (internally) and packers to be used in all wells. The St. 4th and Coates 'C' #28 shall have annulus filled with inert fluid with gauge at surface. Other 3 wells are combination thereby producer - McKee injection wells.

Shut G. W.

DRAFT

JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CASE No. 3301
Order No. R-2966-A

IN THE MATTER OF THE APPLICATION OF
TIDEWATER OIL COMPANY FOR A WATER-
FLOOD PROJECT, LEA COUNTY, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE COMMISSION:

It appearing to the Commission that due to clerical error,
Order No. R-2966, dated September 13, 1965, does not correctly
state the intended order of the Commission,

IT IS THEREFORE ORDERED:

(1) That the portion of Paragraph (1) ~~on Page 2~~ of Order
No. R-2966 reading:

"Tidewater-Coates "C" Well No. 28, to be located 1820 feet
from the North line and 1820 feet from the South line
of Section 24."

is hereby stricken, and

"Tidewater-Coates "C" Well No. 28, to be located 1820 feet
from the North line and 1820 feet from the West line
of Section 24."

is hereby interlineated in lieu thereof.

(2) That the correction set forth above shall be effective
nunc pro tunc as of September 13, 1965.

DONE at Santa Fe, New Mexico, on this _____ day of October,
1965.

DRAFT

JMD/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. 3301

Order No. R-2966

APPLICATION OF TIDEWATER OIL COMPANY
FOR A WATERFLOOD PROJECT, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
September 8, 1965, at Santa Fe, New Mexico, before Examiner
Elvis A. Utz.

NOW, on this day of September, 1965, 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, Tidewater Oil Company,
seeks permission to institute a waterflood project ~~in the~~

Justis-McKee Pool, by the injection of water into the
Justis-McKee in the Justis-McKee Unit Area,

McKee formation through five injection wells in

Sections 13, 24, and 25, Township 25 ~~North~~ Range South

37 ~~North~~, NMPM, Lea County, New Mexico.
East

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

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

(5) 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.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tidewater Oil Company,
is hereby authorized to institute a waterflood project ~~on the~~
Justis-McKee in the Justis-McKee Unit Area,
McKee Pool, by the injection of water into the
McKee formation through the following-described ^{five} wells
in Township 25 ~~North~~ Range 37 ~~West~~
South East
NMPM, Lea County, New Mexico:

Gulf-McBuffington Well No. 12, located 1650 feet from the
South line and 990 feet from the East line of Section 13;

Gulf-McBuffington Well No. 4, located 660 feet from the
South line and 1980 feet from the West line of Section 13;

Tidewater-Coates "D" Well No. 3, located 990 feet from the
South line and 2310 feet from the West line of Section 24;

Atlantic-State "Y" Well No. 4, located 430 feet from the
North line and 660 feet from the East line of Section 25;
and

Tidewater-Coates "C" Well No. 28, to be located 1820 feet from
the North line and 1820 feet from the South line of Section 24.

(2) That the subject waterflood project shall be governed
by the provisions of Rules 701, 702, and 703 of the Commission
Rules and Regulations.

(3) That monthly progress reports of the waterflood project
herein authorized shall be submitted to the Commission in accord-
ance with Rules 704 and 1120 of the Commission Rules and Regula-
tions.

Continued,
(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 herein-
above designated.

IT IS FURTHER ORDERED:

(1) That of the above-described authorized water injection wells, the following-described wells are ^{hereby} authorized for dual completion, to produce oil from the Blinney formation and to inject water into the McKee formation, utilizing parallel strings of $2\frac{3}{8}$ inch tubing with separation of the zones accomplished by means of permanent type plastic-coated packers:

Gulf-McBuffington Well No. 12

Gulf-McBuffington Well No. 4

Tidewater-Coates "D" Well No 3

(2) That the injection string of tubing in the aforesaid wells shall be ^{internally} plastic-coated.

(3) That jurisdiction etc

DONE at

8-23-65
Rec.

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION OF TIDEWATER OIL
COMPANY FOR APPROVAL OF A
WATERFLOOD PROJECT, LEA
COUNTY, NEW MEXICO.

Case No. 330

A P P L I C A T I O N

Comes now Tidewater Oil Company by its attorneys and seeks permission to institute a waterflood project in the Justis McKee Unit Area, Justis McKee Pool, Lea County, New Mexico, and in support of its application states:

1. By an application filed coincident herewith Tidewater Oil Company is seeking approval of the Justis McKee Unit comprising 880 acres of federal, state and fee lands in Lea County, New Mexico, as follows:

Township 25 South, Range 37 East.

Sec. 13: $SE\frac{1}{4}$ and $SE\frac{1}{4}SW\frac{1}{4}$
Sec. 24: $E\frac{1}{2}$, $E\frac{1}{2}SW\frac{1}{4}$, and $SE\frac{1}{4}NW\frac{1}{4}$
Sec. 25: $NE\frac{1}{4}NE\frac{1}{4}$

Township 25 South, Range 38 East

Sec. 19: $W\frac{1}{2}W\frac{1}{2}$
Sec. 30: $NW\frac{1}{4}NW\frac{1}{4}$

2. Applicant seeks permission to institute a waterflood project in the Justis McKee Unit Area by injecting water into the McKee formation through five injection wells at the following locations:

Gulf-McBuffington Well No. 12,
 $NE\frac{1}{4}SE\frac{1}{4}$, Section 13

Gulf-McBuffington Well No. 4,
 $SE\frac{1}{4}SW\frac{1}{4}$, Section 13

Well to be drilled,
 $SE\frac{1}{4}NW\frac{1}{4}$, Section 24

Tidewater-Coates-Federal Well No. 3
 $SE\frac{1}{4}SW\frac{1}{4}$, Section 24

Atlantic State "Y" Well No. 4
 $NE\frac{1}{4}NE\frac{1}{4}$, Section 25

All in Township 25 South, Range 37 East, Lea County, New Mexico.

3. The wells in the Justis McKee Unit Area have reached an advanced state of depletion and are regarded as what is commonly referred to as "stripper" wells.

4. Attached to this application is a plat showing the location of the proposed injection wells, the location of all other wells within a radius of two miles from the proposed injection wells, the formations from which all wells are producing or have produced and the lessees within said area.

5. Logs of the four injection wells that have been drilled are submitted with this application.

6. Attached to this application are diagrammatic sketches of the proposed injection wells showing the present status of the wells that have been drilled and how they will be converted to water injection purposes. The sketch of the well to be drilled and how it will be completed is included.

7. Applicant proposes to inject approximately 5,160 barrels of water per day into the five proposed injection wells at an average injection pressure of 825 lbs. per square inch. The source of injection water will be the Rustler Formation on the Tidewater-Coates "C" lease. Approximately 3,800,000 barrels of water will be needed to attain fill-up and approximately 7,000,000 barrels of water will be injected throughout the life of the proposed waterflood project.

8. The proposed waterflood project will prevent waste and protect correlative rights.

WHEREFORE, Tidewater Oil Company requests that this application be set for hearing before the Commission or one of its

examiners and that the Commission enter its order approving the waterflood project proposed by this application.

SETH, MONTGOMERY, FEDERIGI & ANDREWS

By Richard S. Morris
P. O. Box 2307
Santa Fe, New Mexico

Attorneys for Tidewater Oil
Company.

CERTIFICATE OF MAILING

I hereby certify that a copy of this application, complete with attachments, has been sent to Mr. Frank Irby, Chief, Water Rights Division, Office of the State Engineer, State Capitol Building, Santa Fe, New Mexico, on this 23rd day of August, 1965.

Richard S. Morris

JUSTIS McKEE UNIT
TABLE OF PROPOSED INJECTION WELLS
IN T25S-R37E

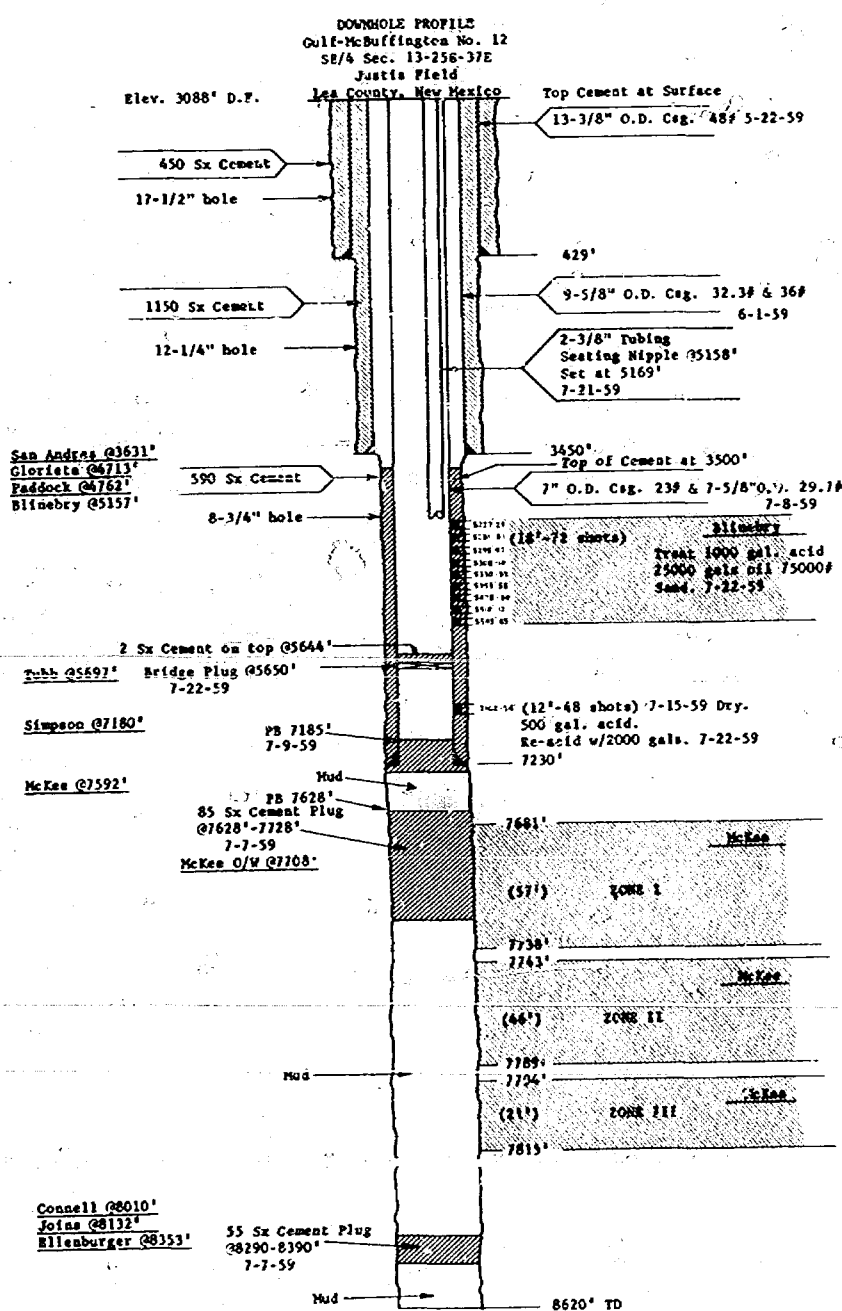
IN T25S-R37E

Operator-Lease-Well (Location)	Casing		Depth	Cement		T.D. (PBTD)	Present zone (Perf. Interval)	Proposed McKee Inj. Interval
	Type	Size		Amount	Top			
PROPOSED CONVERSIONS:								
Gulf-McBuffington No. 12 (1650 FSL, 990 FEL Sec. 13) Elev. 3088'	Surf.	13-3/8"	429'	450 Sx	Surf.	8620'	Blinebry-Prod. (5227-5545')	7681-7815' (Liner)
	Inter.	9-5/8"	3450'	1150 Sx	Surf.	(5644')		
	Prod'n	7"	7230'	590 Sx	3500'			
Gulf-McBuffington No. 4 (1980 FWL, 660 FSL Sec. 13) Elev. 3091'	Surf.	13-3/8"	410'	500 Sx	Surf.	8264'	Blinebry-Prod. (5458-5549')	7768-7871'
	Inter.	9-5/8"	3449'	2200 Sx	Surf.	(5841')		
	Prod'n	7"	8230'	1250 Sx	3610'			
Tidewater-Coates "D" No. 3 (990 FSL, 2310 FWL Sec. 24) Elev. 3085	Surf.	13-3/8"	539'	550 Sx	Surf.	8260'	Blinebry-Prod. (5300-5430')	7712-7847'
	Inter.	9-5/8"	3309'	650 Sx	Surf.	(7880')		
	Prod'n	7"	8243'	950 Sx	5100'			
Atlantic-State "Y" No. 4 (430 FNL, 660 FEL Sec. 25) Elev. 3073'	Surf.	13-3/8"	605'	500 Sx	Surf.	8165'	McKee-S.I. (7576-7668')	7567-7700'
	Inter.	9-5/8"	3350'	1400 Sx	Surf.	(8054')		
	Prod'n	7"	8164'	976 Sx	2115'			
PROPOSED NEW WELL:								
Tidewater-Coates "C" No. 28 1820 FNL, 1820 FSL Sec. 24) Elev. 3090'	Surf.	10-3/4"	550'	450 Sx	Surf.	7900'	-	7710-7837'
	Inter.	8-5/8"	3450'	1200 Sx	Surf.	(-)		
	Prod'n	5"	7900'	1000 Sx	5000'			

Page 330

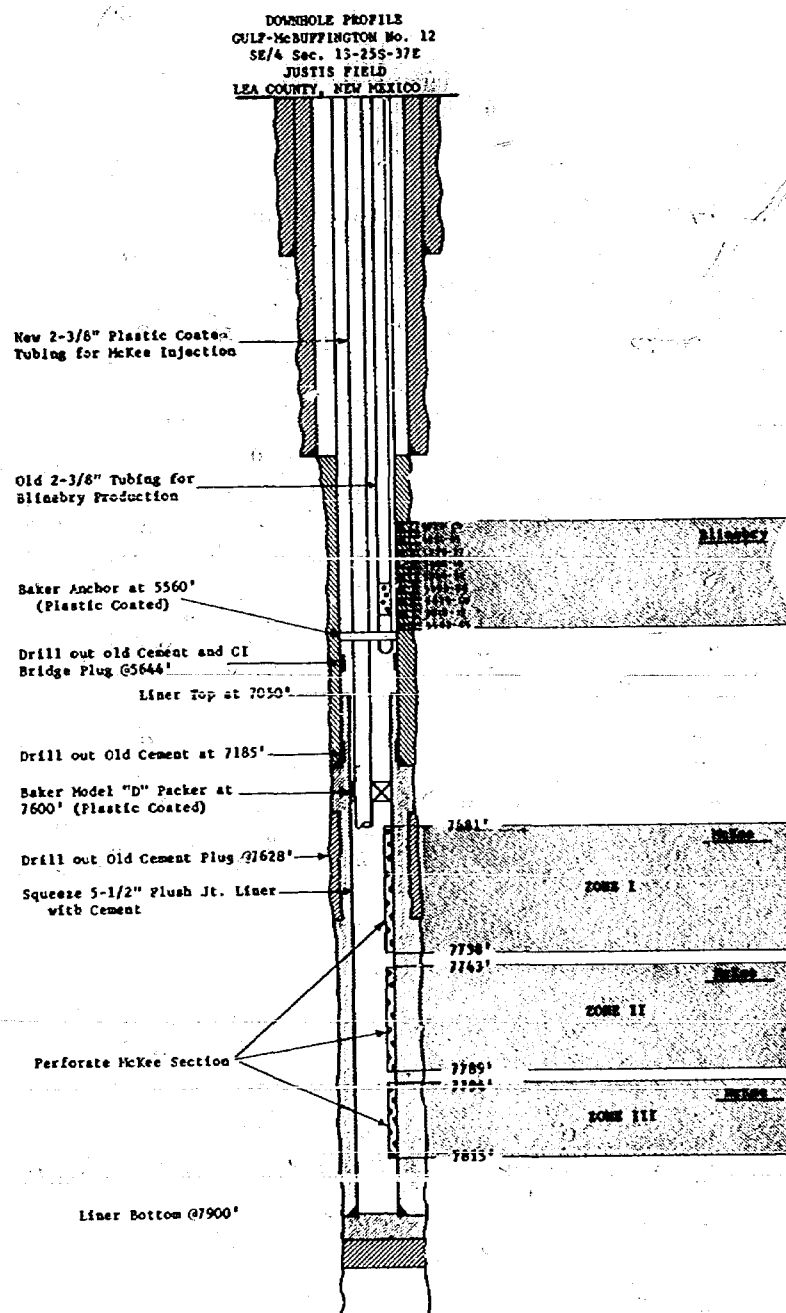
PRESENT STATUS

BLINEBRY-PRODUCER



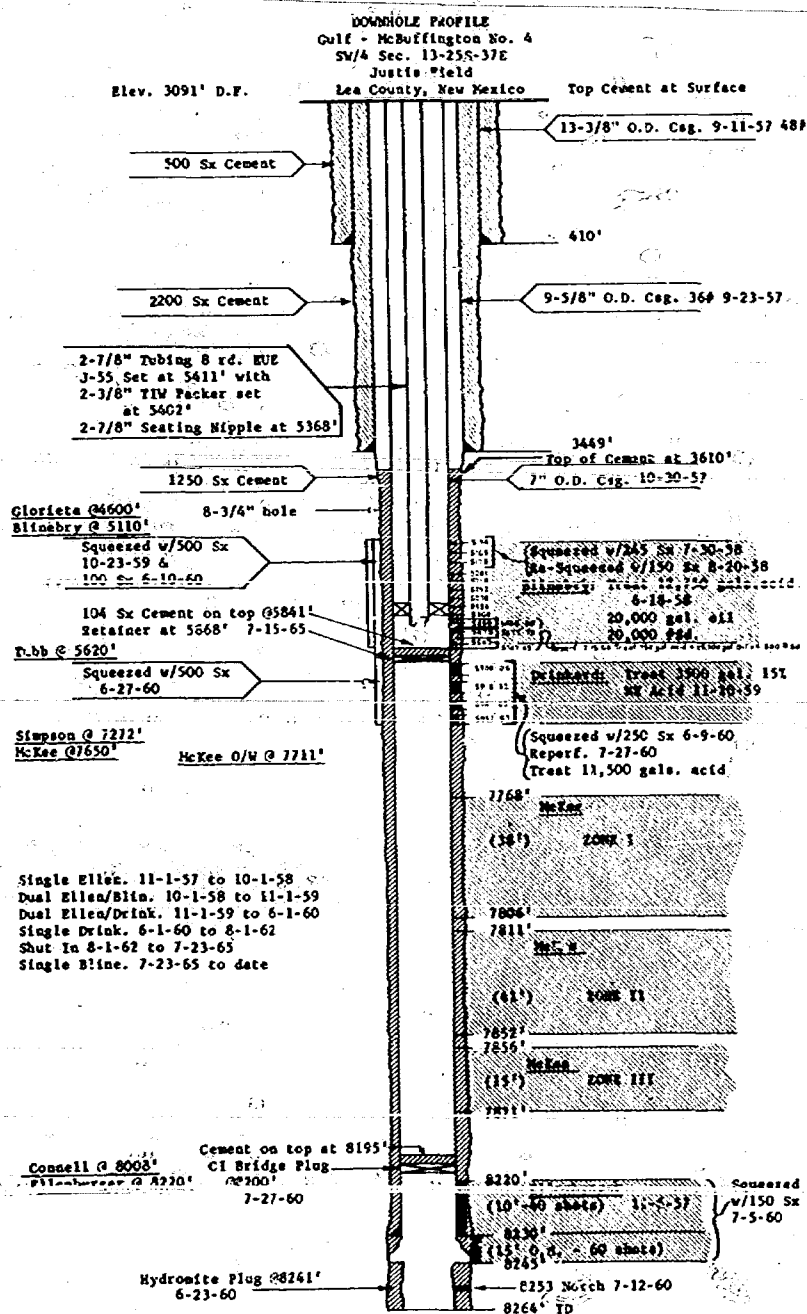
WATERFLOOD STATUS

McKEE - INJECTOR
BLINEBRY-PRODUCER



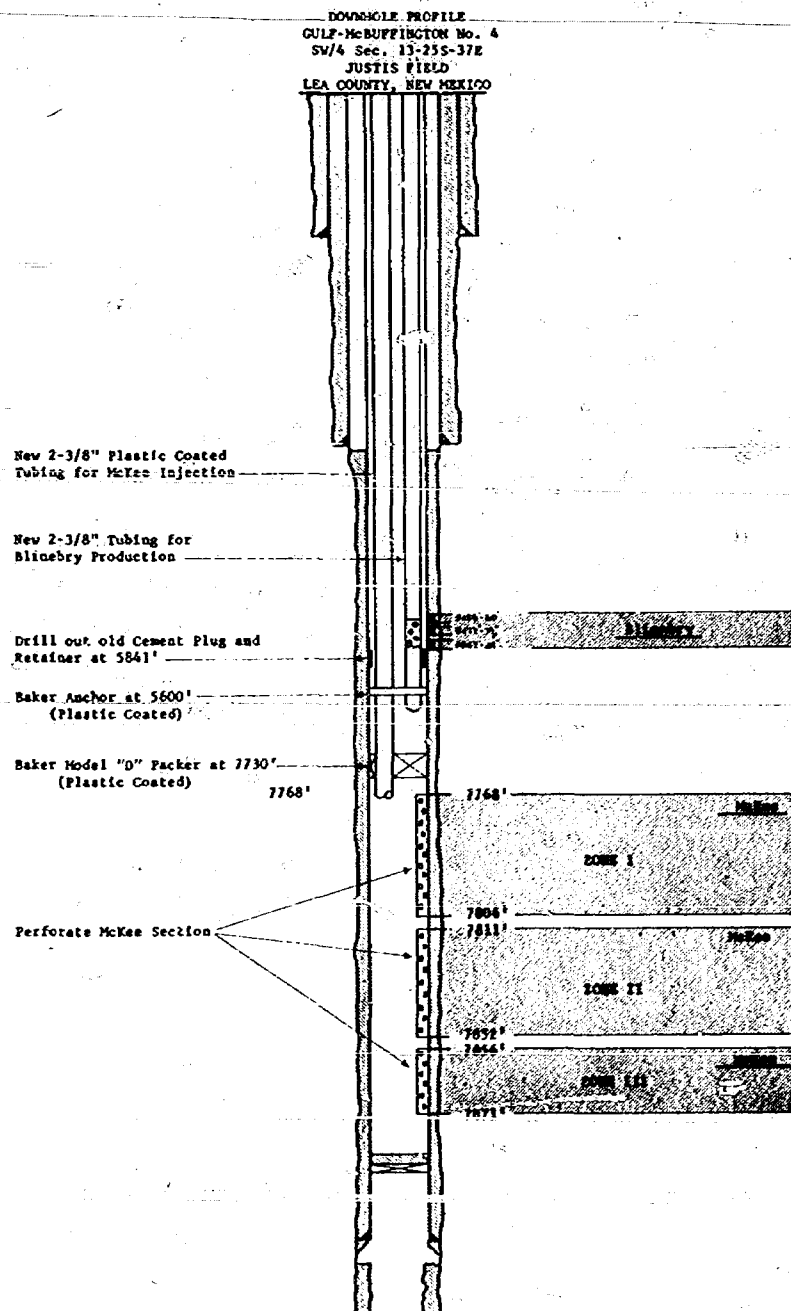
PRESENT STATUS

BLINEBRY - PRODUCER



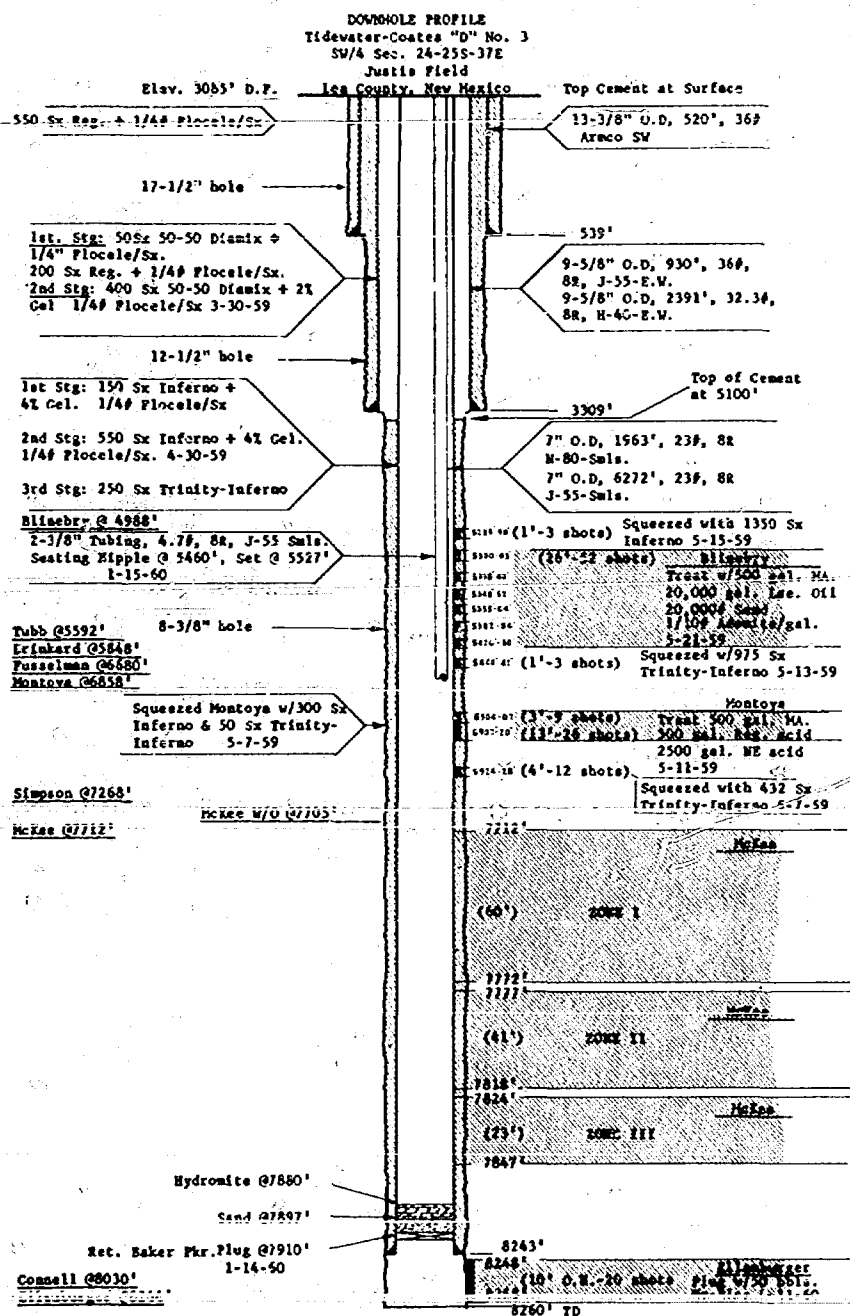
WATERFLOOD STATUS

McKEE - INJECTOR BLINEBRY - PRODUCER



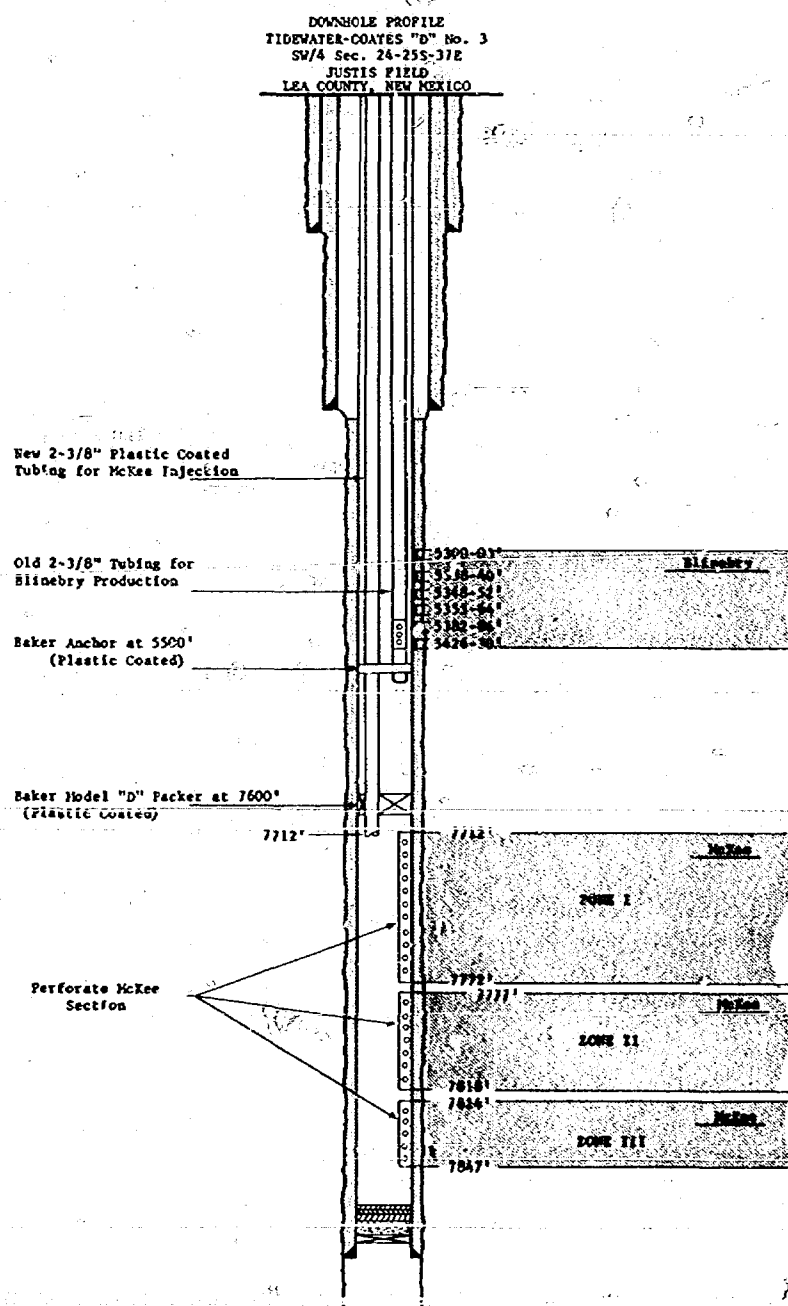
PRESENT STATUS

BLINEBRY - PRODUCER

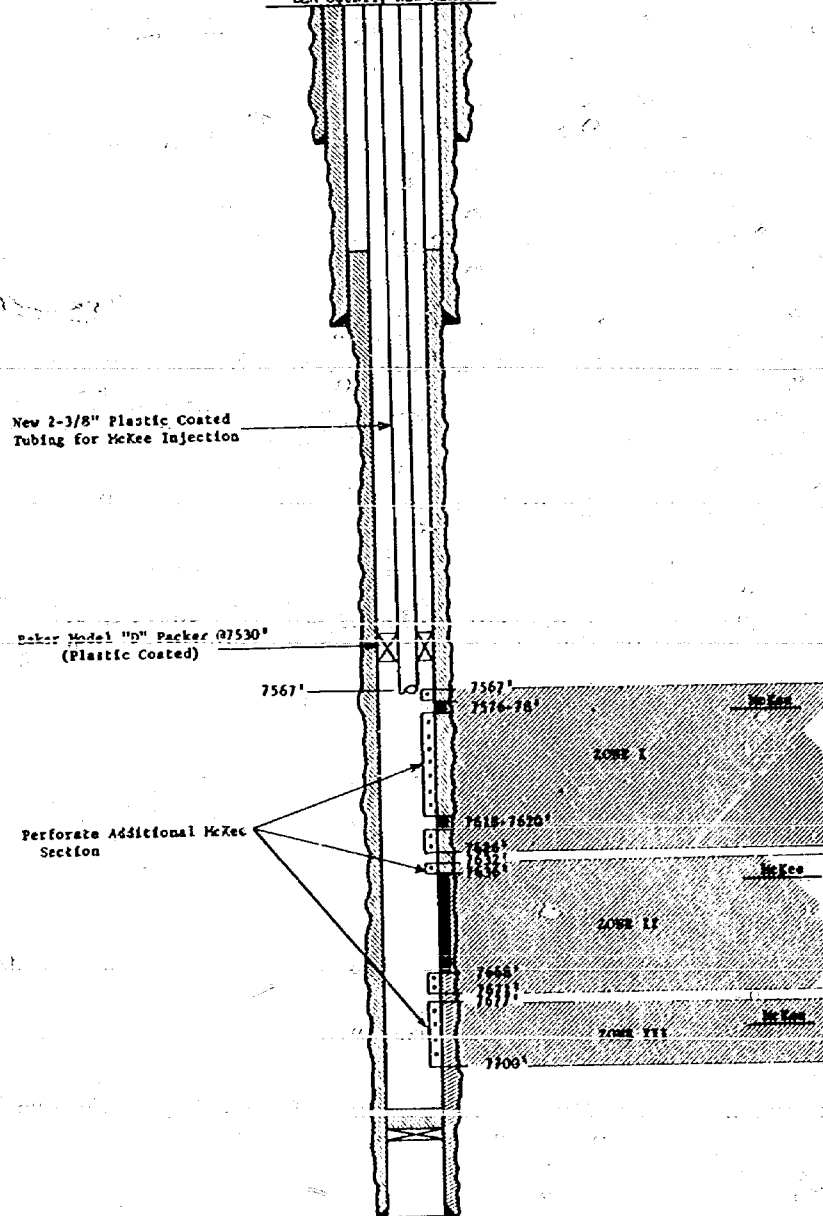
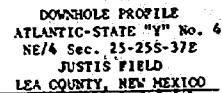


WATERFLOOD STATUS

McKEE-INJECTOR BLINEBRY - PRODUCER

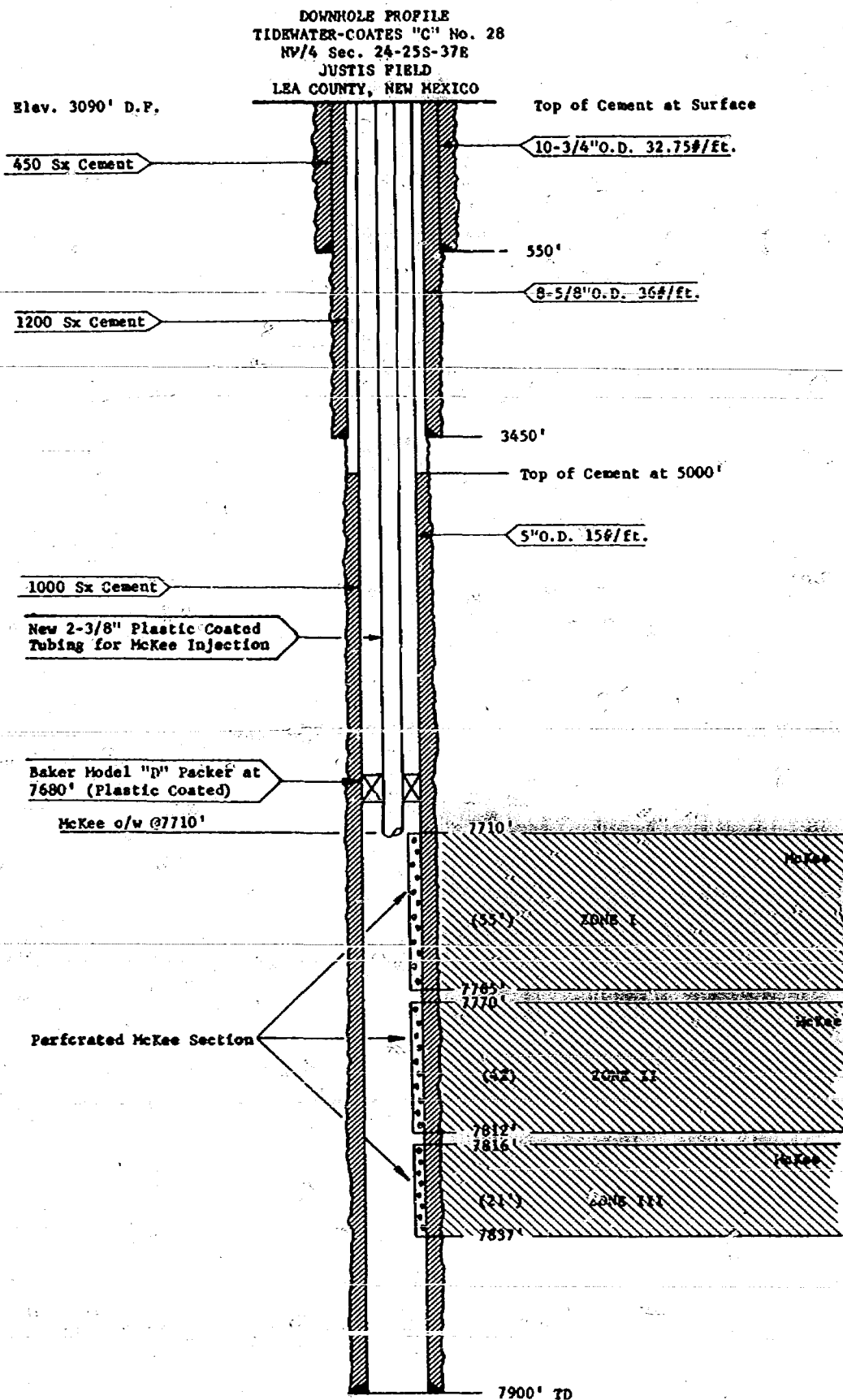


DOWNHOLE PROFILE
ATLANTIC STATE "Y" No. 4
NE/4 Sec. 25-25S-37E
JUSTIS FIELD
LEA COUNTY, NEW MEXICO



WATERFLOOD STATUS

McKEE - INJECTOR
(NEW WELL)



Case 3301

JUSTIS McKEE UNIT
SOURCE WATER DATA

Martin Water Laboratories

BOX 1468 MONAHANS, TEXAS W13-3234

COMPANY Tidewater Oil Company LEASE A. B. Coates "C"

FIELD OR POOL Justis

SECTION 24 BLOCK T25S SURVEY R37E COUNTY Lea STATE N. M.

SOURCE OF SAMPLE AND DATE TAKEN: Loc: 2700' FSL, 1370' FWL

NO. 1 Raw water - taken from A. B. Coates "C" water well.

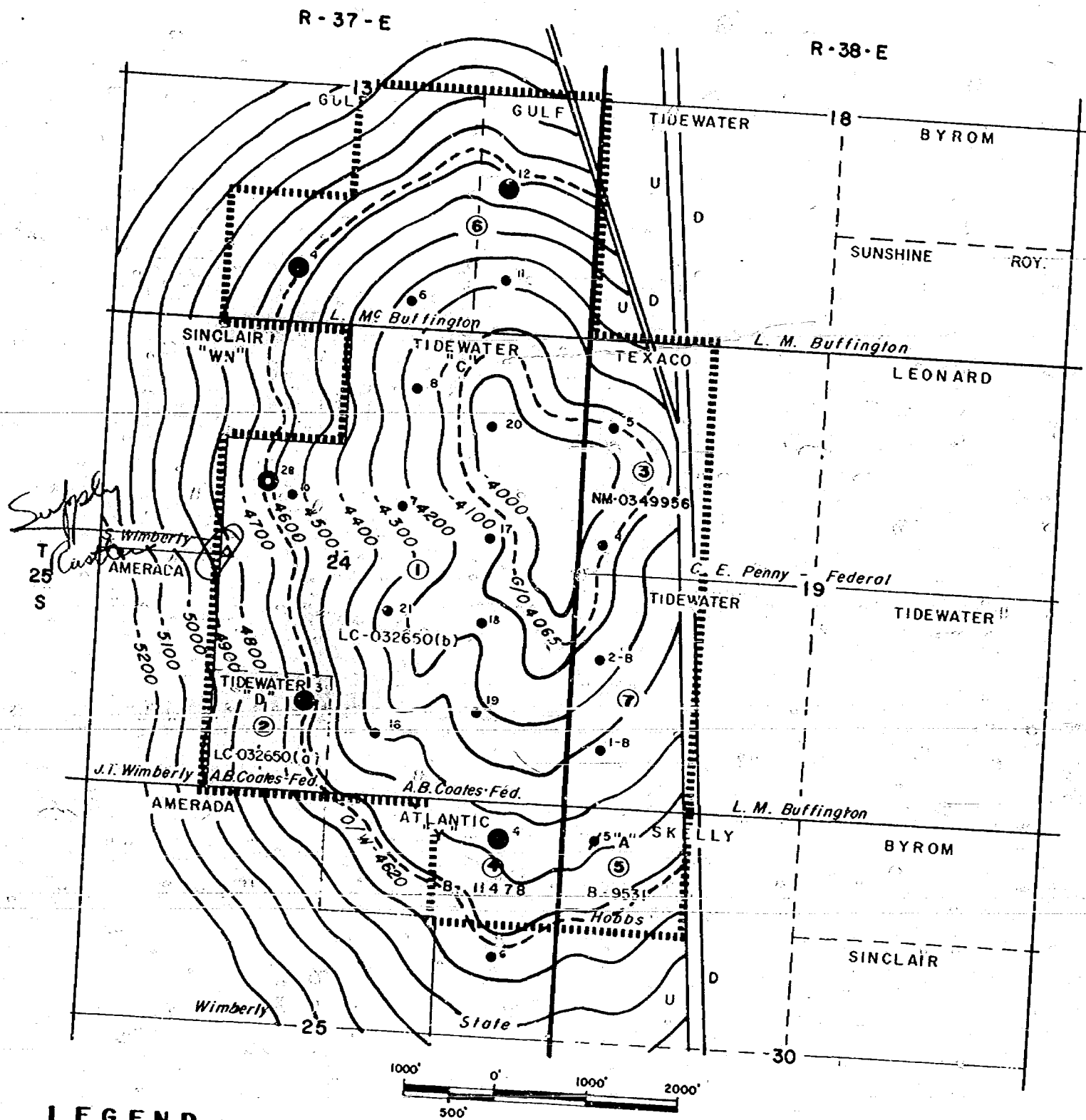
9-5/8" Casing set at 806' with 425 sx. 2-18-65

5-Hr. Test with shaft driven pump: 3430 BWPD, Static FL 213'

REMARKS: Rustler zone 888'-901'

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60 degs. F.	1.0053			
pH When Sampled				
pH When Received	7.5			
Total Alkalinity as CaCO ₃	204			
Supersaturation as CaCO ₃	4			
Undersaturation as CaCO ₃	-			
Total Hardness as CaCO ₃	1,890			
Calcium as CaCO ₃	1,236			
Magnesium as CaCO ₃	654			
Sodium and/or potassium				
Sulfate as SO ₄	1.927			
Chloride as NaCl	466			
Iron as Fe	3.4			
Manganese as Mn				
Barium as Ba	0.0			
Turbidity Electric	15.9			
Color as Pt.	4.5			
Dissolved Solids at 103 deg. C				
Total Solids at 103 deg. C				
Total Solids, Calculated				
Temperature Degs. F.				
Carbon Dioxide, Calculated	13			
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity OHM/CC at 60 Degs. F.	270			
Total Suspended Oil				
All Results Reported As Parts Per Million				
Additional Determinations And Remarks				
Water Source Requirements: 2 Yrs. @5160 BWPD for 3,800,000 BW				
5 Yrs. @1650 BWPD for 3,000,000 BW				
1 Yr. @ 550 BWPD for 200,000 BW				
Total 7,000,000 BW				
Injection Well Pressures: Range 350-1300 psi				
Average 825 psi				

Ex #6



LEGEND

- ② TRACT NUMBER
- UNIT WELL
- PROPOSED INJECTION WELL
- PROPOSED CONVERSION TO INJECTION WELL
- △ WATER SOURCE WELL
- ||||| UNIT AREA

BEFORE EXAMINER UT JUSTIS Mc KEE POOL

OIL CONSERVATION COMMISSION

EXHIBIT NO. 2

CASE NO. 330

LEA COUNTY, NEW MEXICO

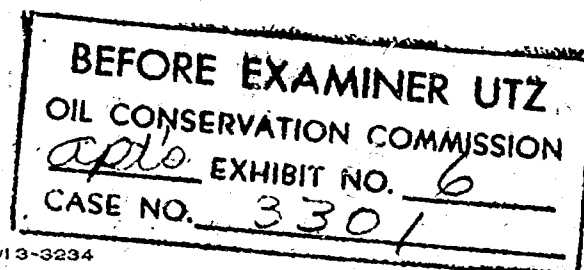
JUSTIS McKEE UNIT
SOURCE WATER DATA

Martin Water Laboratories

BOX 1468

MONAHANS, TEXAS

WI 3-3234



COMPANY Tidewater Oil Company LEASE A. B. Coates "C"
FIELD OR POOL Justis
SECTION 24 BLOCK T25S SURVEY R37E COUNTY Lea STATE N. M.
SOURCE OF SAMPLE AND DATE TAKEN: Loc: 2700' FSL, 1370' FWL
NO. 1 Raw water - taken from A. B. Coates "C" water well.
9-5/8" Casing set at 806' with 425 sx. 2-18-65
5-Hr. Test with shaft driven pump: 3430 BWP, Static FL 213'

REMARKS: Rustler zone 888'-901'

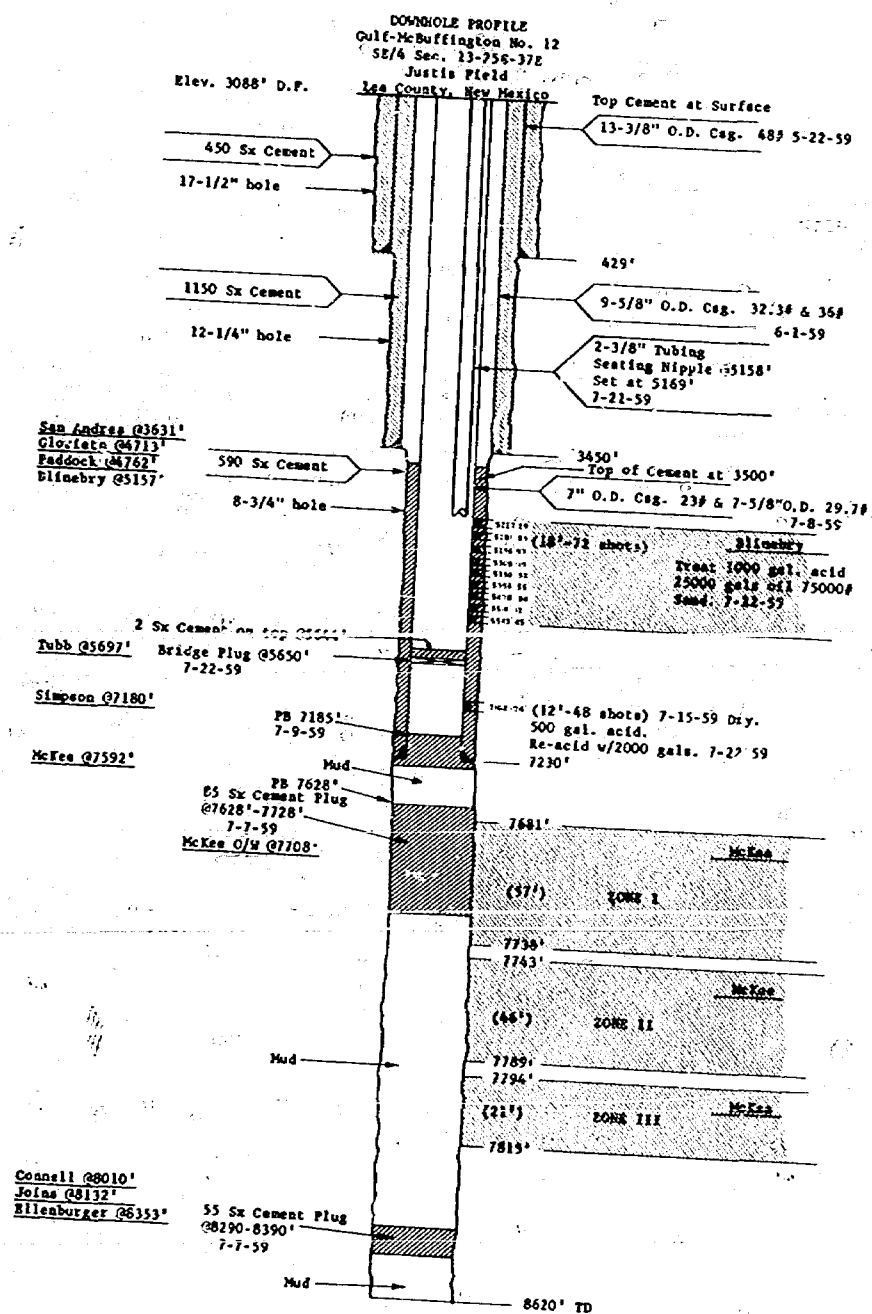
CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60 degs. F	1.0053			
pH When Sampled				
pH When Received	7.5			
Total Alkalinity as CaCO ₃	204			
Supersaturation as CaCO ₃	4			
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	1,800			
Calcium as CaCO ₃	1,236			
Magnesium as CaCO ₃	654			
Sodium and/or Potassium				
Sulfate as SO ₄	1,927			
Chloride as NaCl	466 - <i>Hand</i>			
Iron as Fe	3.4			
Manganese as Mn				
Barium as Ba	0.0			
Turbidity Nephelometric	15.9			
Color as Pt	4.5			
Dissolved Solids at 105 deg. C				
Total Solids at 105 deg. C				
Total Solids, Calculated				
Temperature Degs. F.				
Carbon Dioxide, Calculated	13			
Unsoluble Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity OHM-CM at 60 Degs. F.	270			
Total Suspended Solids				
All Results Reported As Parts Per Million				
Additional Determinations And Remarks				
Water Source Requirements: 2 yrs. @ 160 BWP for 3,800,000 BW				
5 Yrs. @ 1650 BWP for 3,000,000 BW				
1 Yr. @ 550 BWP for 200,000 BW				
Total 7,000,000 BW				
Injection Well Pressures: Range 350-1300 psi				
Average 825 psi				

JUST'S MCKEE UNIT
TABLE OF PROPOSED INJECTION WELLS
IN T25S-R37E

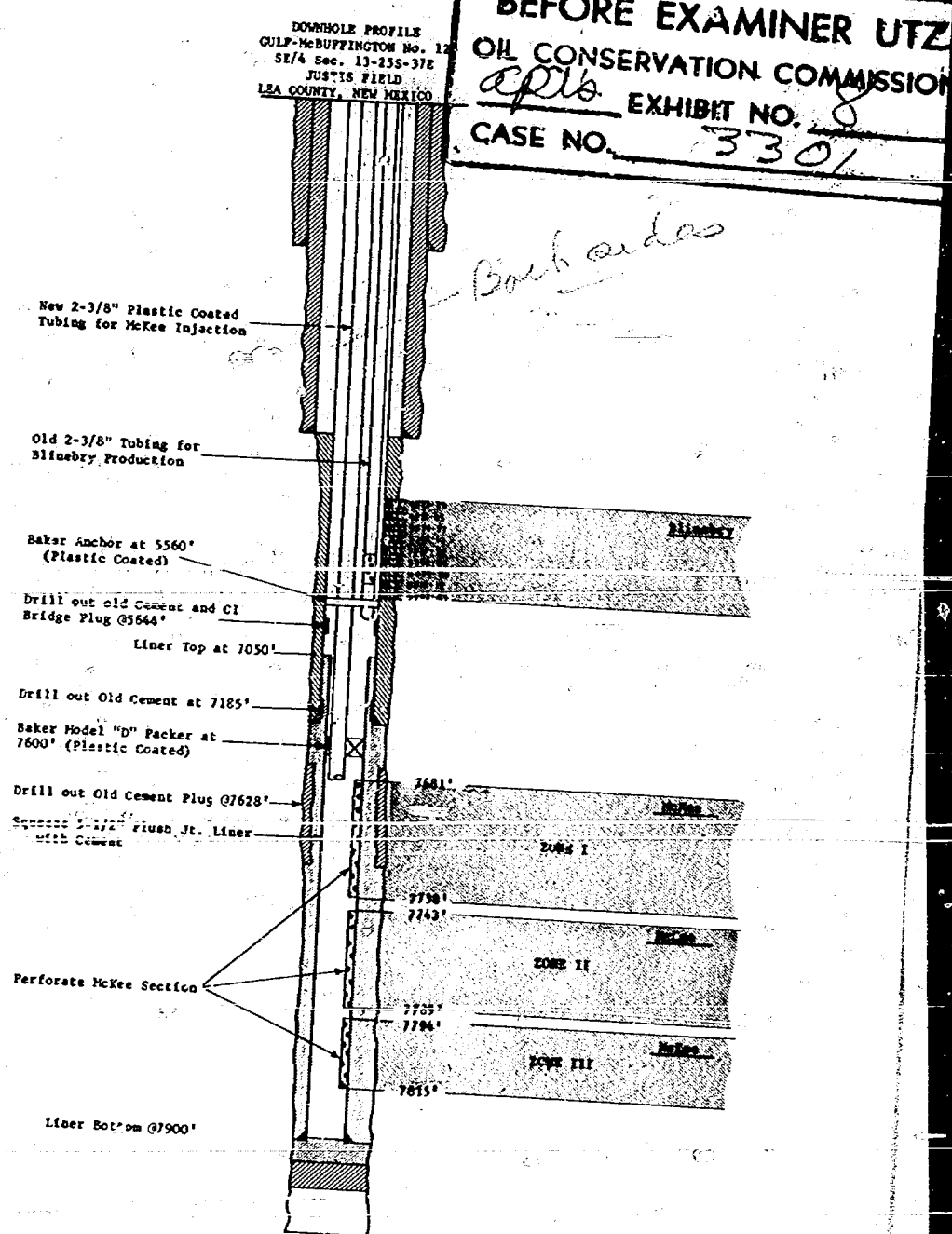
Operator-Lease-Well (Location)	Type	Casing Size	Depth	Cement Amount	Top	T.D. (P.B.T.D.)	Present Zone (Perf. Interval)	Proposed McKee Inj. Interval
PROPOSED CONVERSIONS:								
Gulf-McBuffington No. 12 (1650 FSL, 990 FEL Sec. 13) Elev. 3088'	Surf.	13-3/8"	429'	450 Sx	Surf.	8620'	Blinebry-Prod. (5227-5545')	7681-7815' (Liner)
	Inter.	9-5/8"	3450'	1150 Sx	Surf.	(5644')		
	Prod'n	7"	7230'	590 Sx	3500'			
Gulf-McBuffington No. 4 (1980 FWL, 660 FSL Sec. 13) Elev. 3091'	Surf.	13-3/8"	410'	500 Sx	Surf.	8264'	Blinebry-Prod. (5458-5549')	7768-7871'
	Inter.	9-5/8"	3449'	2200 Sx	Surf.	(5841')		
	Prod'n	7"	8230'	1250 Sx	3610'			
Tidewater-Coates "D" No. 3 (990 FSL, 2310 FWL Sec. 24) Elev. 3085	Surf.	13-3/8"	539'	550 Sx	Surf.	8260'	Blinebry-Prod. (5300-5430')	7712-7847'
	Inter.	9-5/8"	3309'	650 Sx	Surf.	(7880')		
	Prod'n	7"	6243'	950 Sx	5100'			
Atlantic-Steate "Y" No. 4 (430 FNL, 660 FEL Sec. 25) Elev. 3073'	Surf.	13-3/8"	605'	500 Sx	Surf.	8165'	McKee-S.I. (7576-7668')	7567-7700'
	Inter.	9-5/8"	3350'	1400 Sx	Surf.	(8054')		
	Prod'n	7"	8164'	976 Sx	2115'			
PROPOSED NEW WELL:								
Tidewater-Coates "C" No. 28 (1820 FNL, 1820 FSL Sec. 24) Elev. 3090'	Surf.	10-3/4"	550'	450 Sx	Surf.	7900'	-	7710-7837'
	Inter.	6-5/8"	3450'	1200 Sx	Surf.	(-)		
	Prod'n	5"	7900'	1000 Sx	5000'			

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
apls EXHIBIT NO. 7
CASE NO. 3301

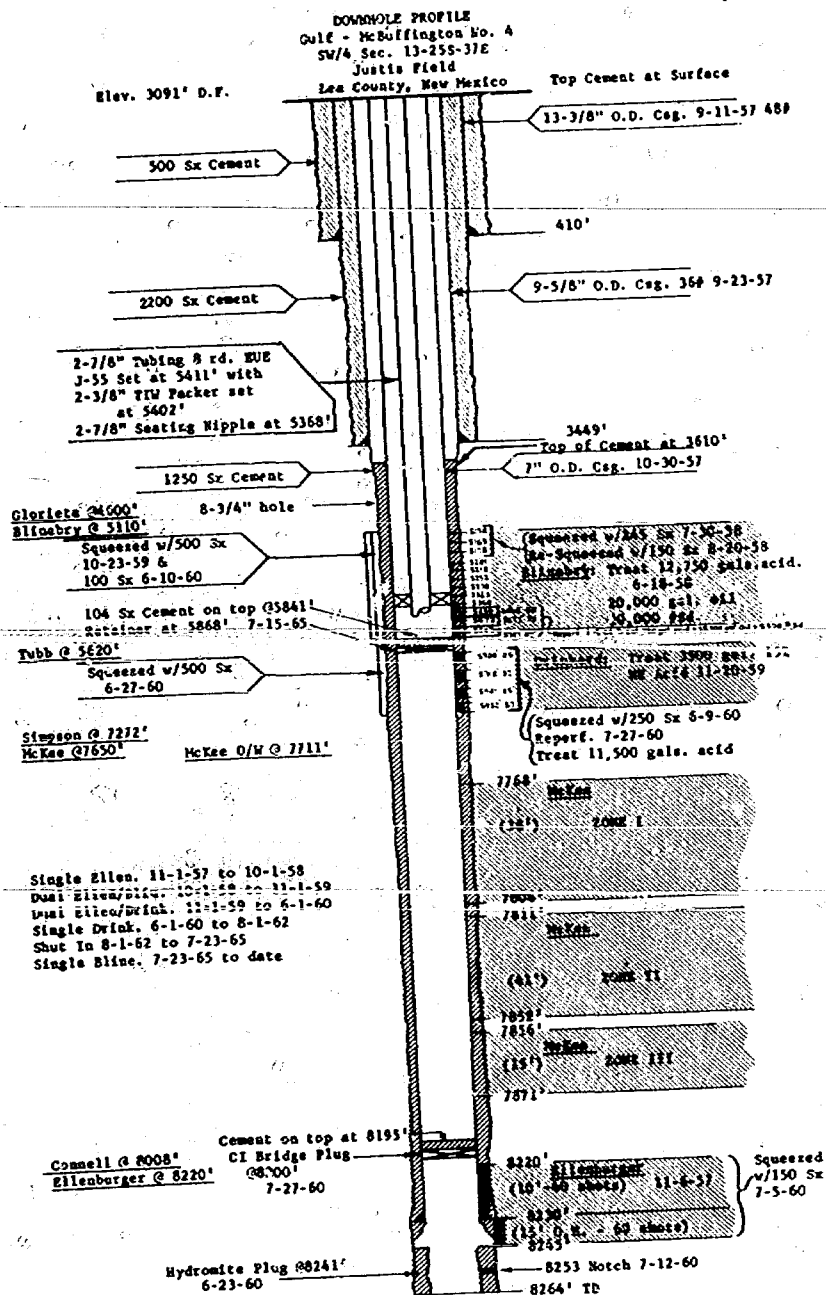
PRESENT STATUS
BLINEBRY-PRODUCER



WATERFLOOD STATUS
McKEE - INJECTOR
BLINEBRY-PRODUCER



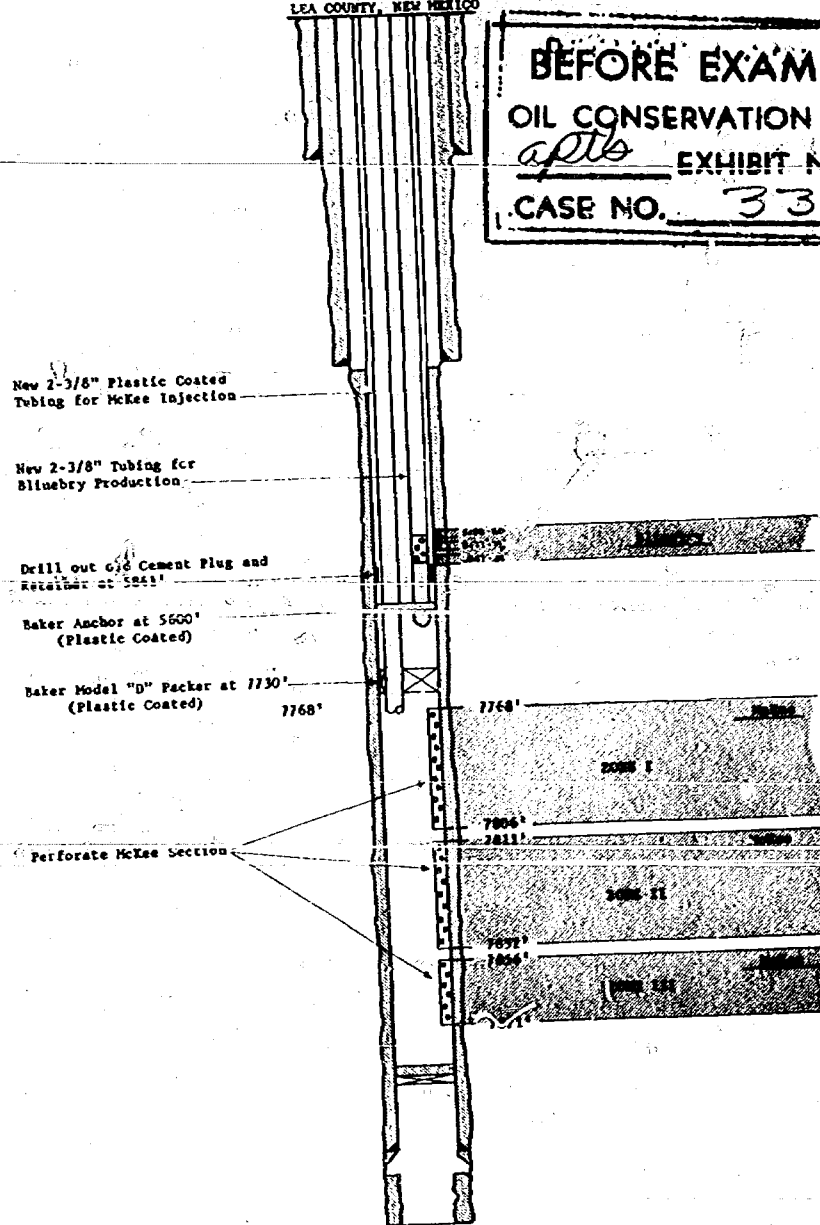
PRESENT STATUS
BLINEBRY - PRODUCER



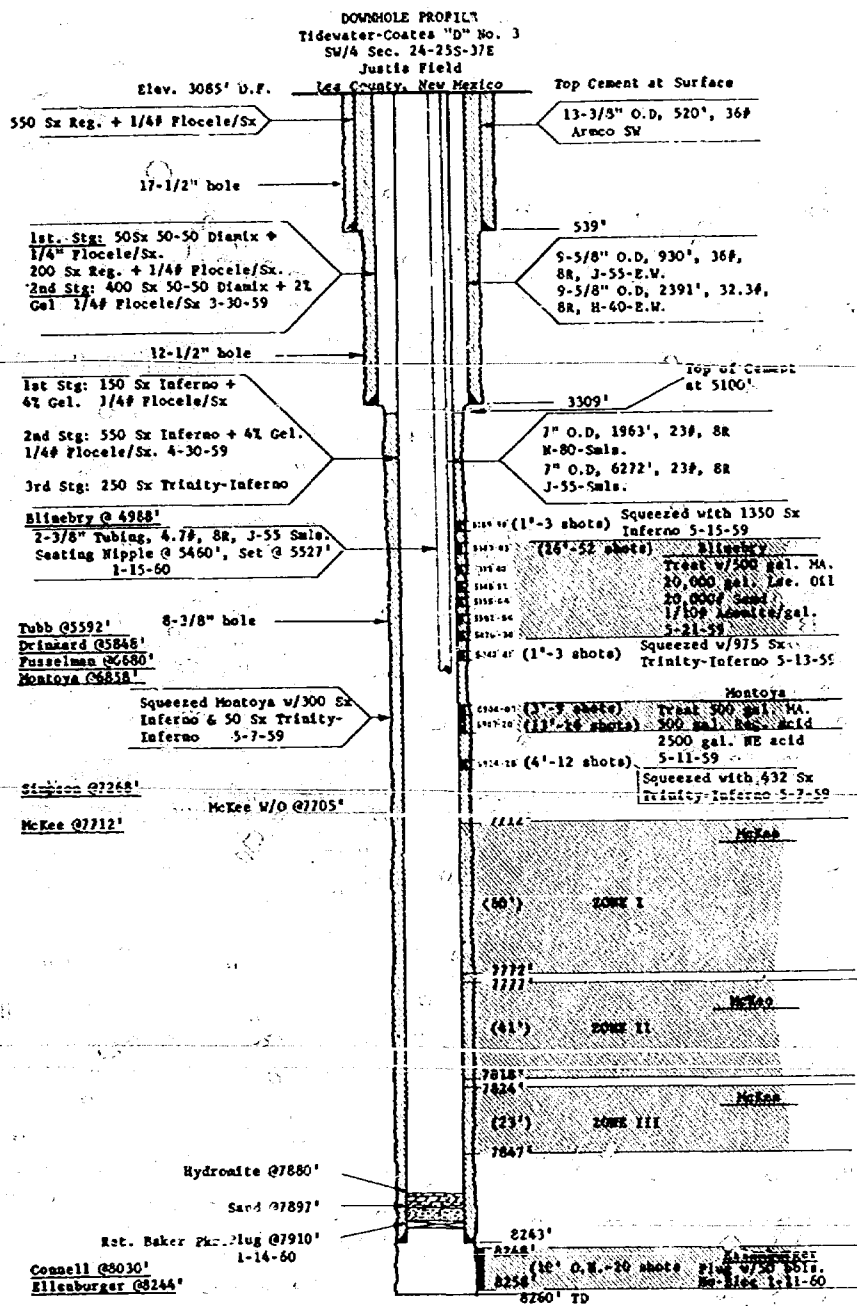
WATERFLOOD STATUS
McKee - INJECTOR
BLINEBRY - PRODUCER

DOWNHOLE PROFILE
GULF - McBuffington No. 4
SW/4 Sec. 13-25S-37E
Justis Field
Lea County, New Mexico

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
apls EXHIBIT NO. 9
CASE NO. 3301

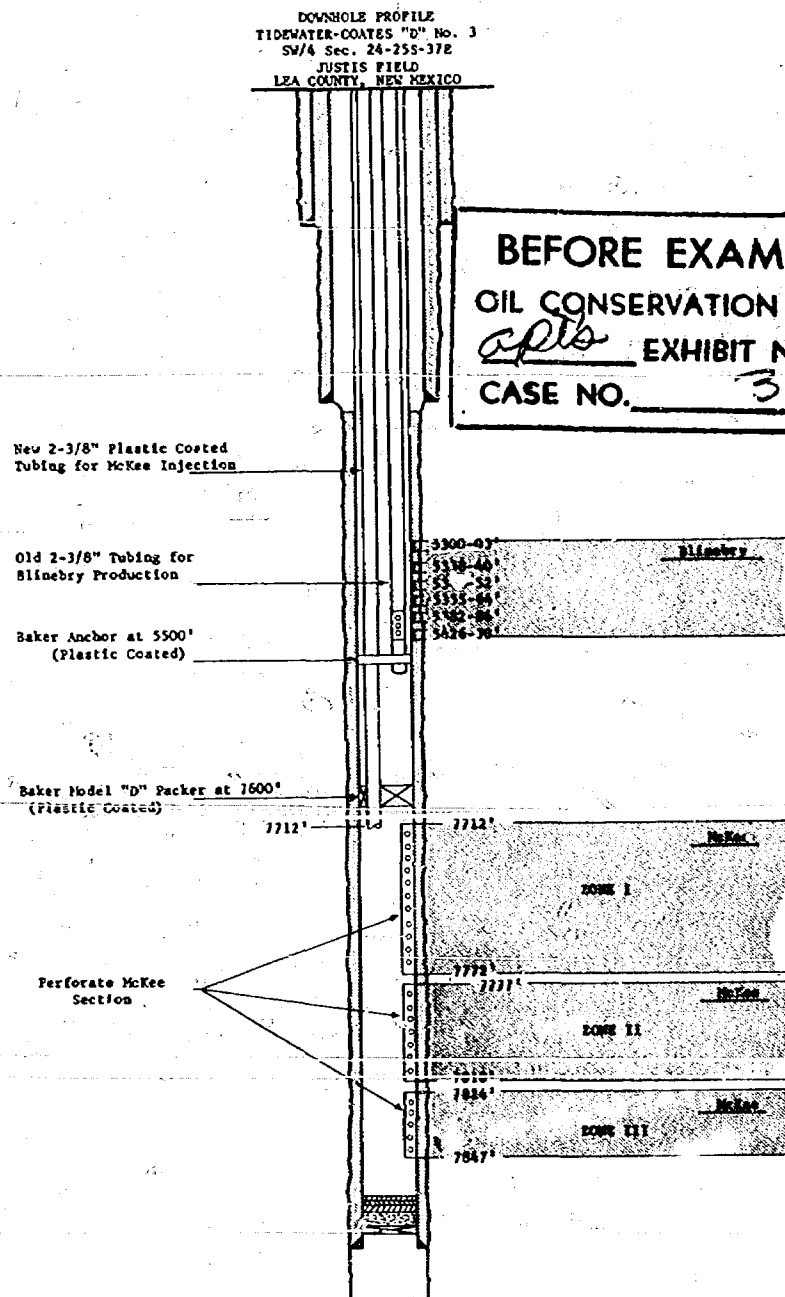


PRESENT STATUS
BLINEBRY-PRODUCER



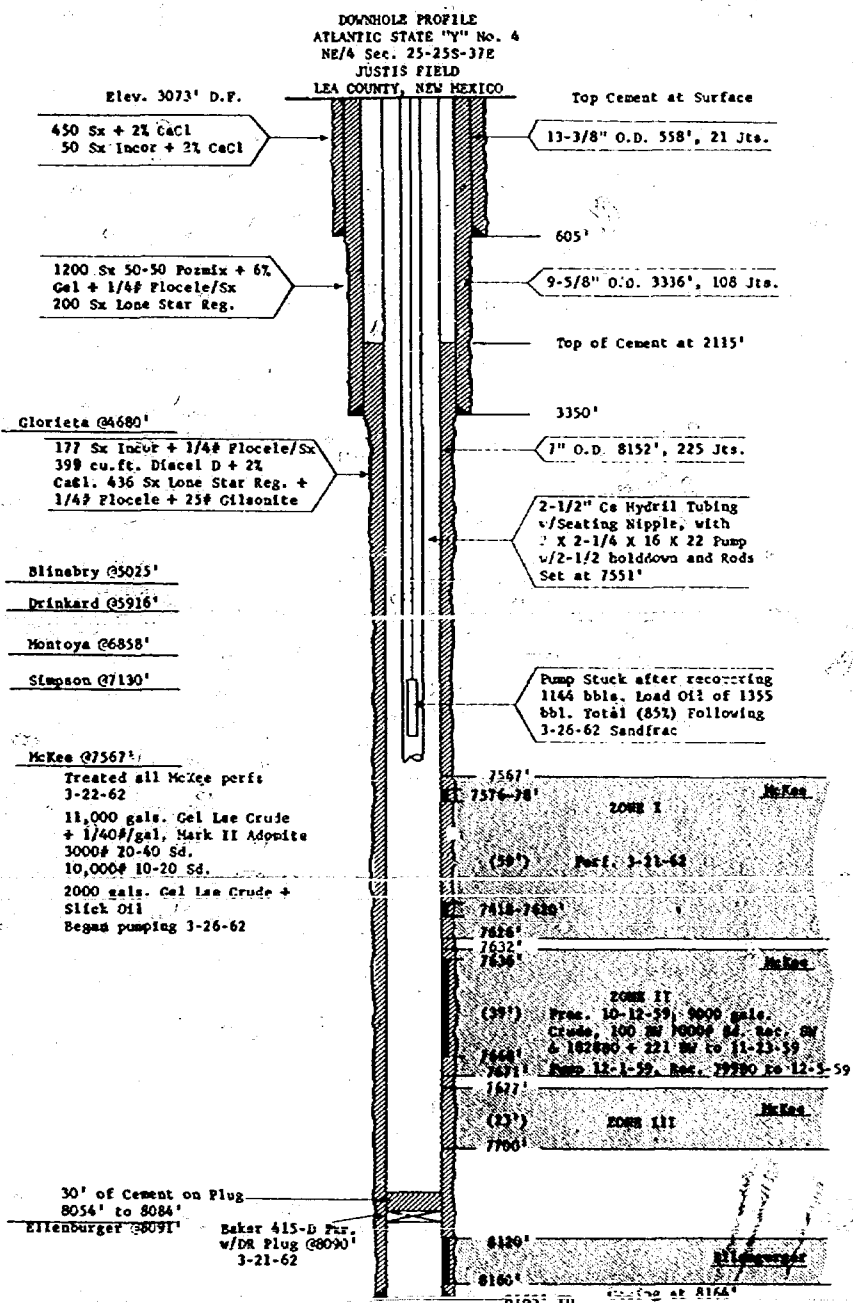
WATERFLOOD STATUS

McKEE-INJECTOR
BLINEBRY - PRODUCER



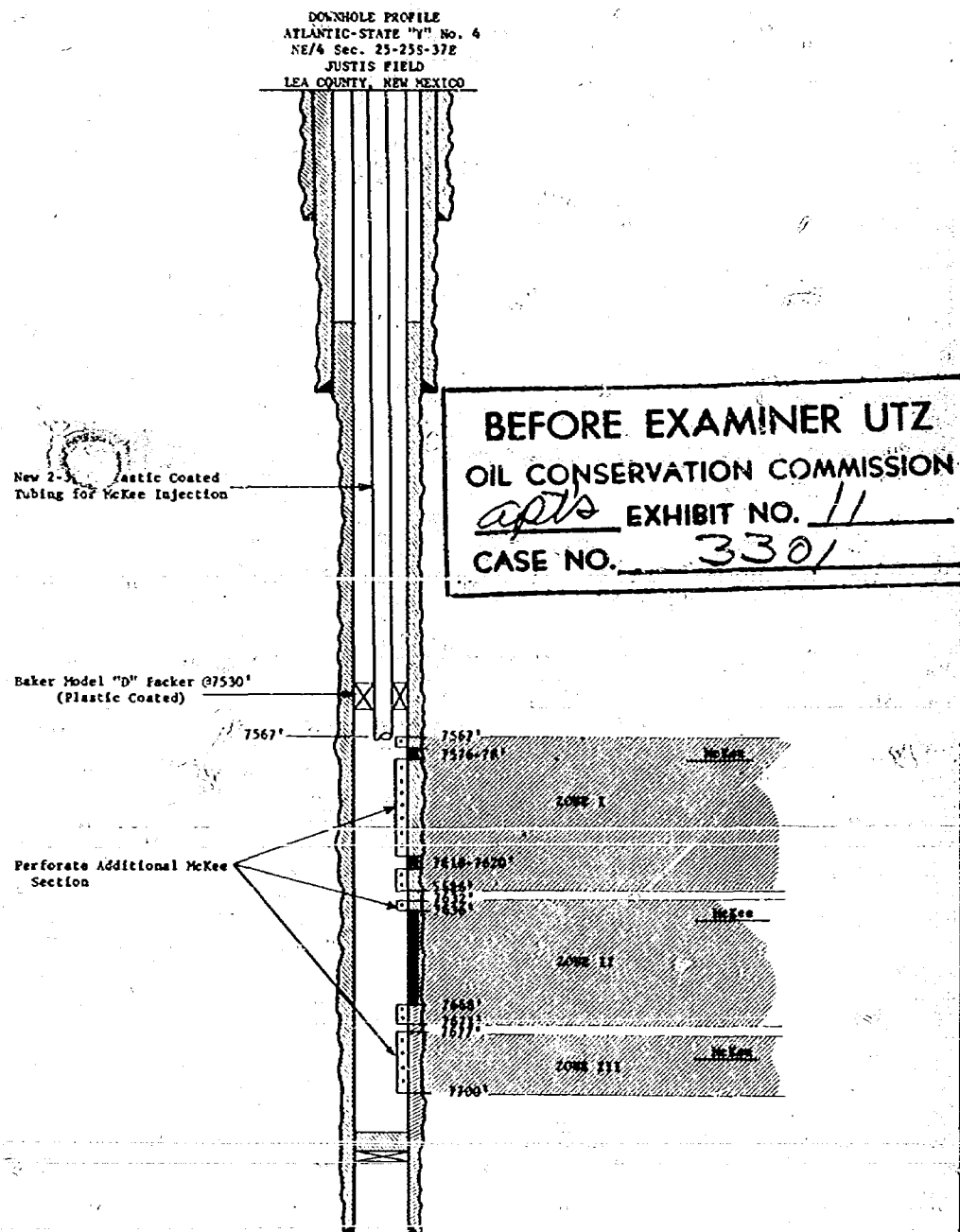
PRESENT STATUS

McKEE - SHUT IN



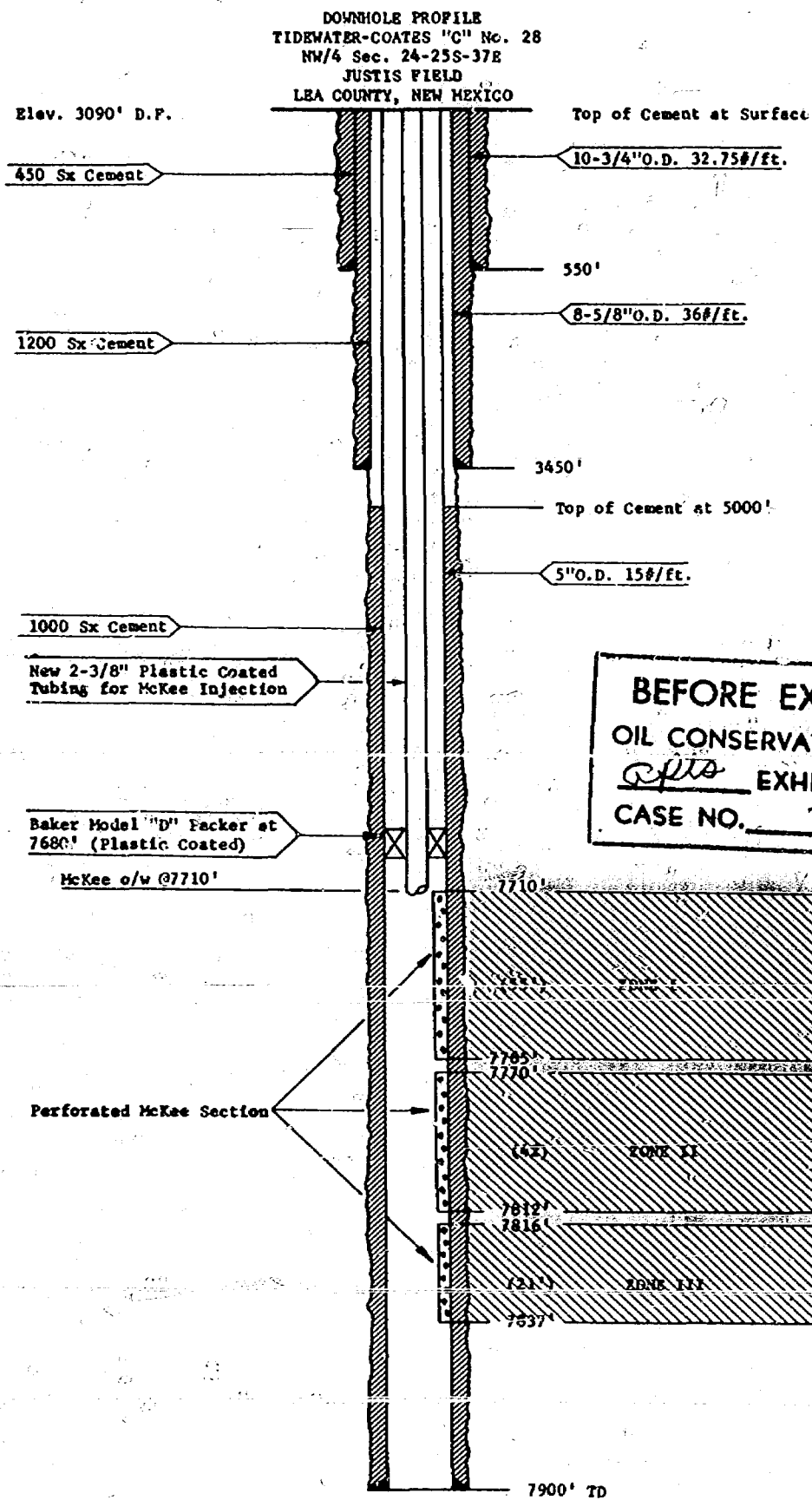
WATERFLOOD STATUS

McKEE - INJECTOR



WATERFLOOD STATUS

McKEE - INJECTOR
(NEW WELL)



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 12
CASE NO. 330

dearnley-meier reporting service, inc.

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PAGE 1

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

September 3, 1965

EXAMINER HEARING

IN THE MATTER OF: Tidewater Oil Company for
approval of a unit agreement, Lea County, New
Mexico. Applicant in the above-styled cause,
seeks approval of the Justis-McKee Unit Area
comprising 880 acres of Federal, State and
fee lands in Township 25 South, Ranges 37 and
38 East, Lea County, New Mexico.

IN THE MATTER OF: Application of Tidewater
Oil Company, for approval of a waterflood
project, Lea County, New Mexico. Applicant,
in the above-styled cause, seeks permission
to institute a waterflood project in the
Justis-McKee Unit Area by the injection of
water into the Justis-McKee formation through
five injection wells located in Sections 13,
24 and 25, Township 25 South, Range 37 East.
BEFORE:

Elvis A. Utz, Examiner

Case No. 3300 & 3301
(Consolidated.)

TRANSCRIPT OF HEARING

MR. UTZ: The next case will be Case 3300. The application of Tidewater Oil Company for approval of a unit agreement, Lea County, New Mexico.

MR. BUELL: Mr. Sumner G. Buell, Seth, Montgomery, Federici and Andrews, appearing on behalf of the applicant. At this time I would like to move to consolidate Cases 3300 and 3301.

MR. UTZ: Cases 3300 and 3301 will be consolidated for the purpose of testimony, but separate orders will be written on each case.

MR. BUELL: I have two witnesses, Mr. Lindahl and Mr. Miller, and we ask that they be sworn.

(Witnesses sworn.)

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

DIRECT EXAMINATION

BY MR. BUELL:

Q Would you state your name, by whom you are employed, and in what capacity?

A My name is Larry Lindahl, with Tidewater Oil Company. I am employed as a land man.

Q Are you familiar with the application filed in this Case Number 3300?

A Yes, I am.

Q Will you explain what is sought by this application?

A Tidewater seeks approval of a unit agreement of the Justice-McKee Unit Area comprising 880 acres of Federal, State and fee lands which is centered around Section 24, Township 25 South, Range 37 East.

Q What is the purpose of this proposed unit?

A The purpose of this unit is to unitize these lands for secondary recovery operation.

(Whereupon, Applicant's Exhibit No. 1 marked for identification.)

Q Referring you now to what has been marked as Exhibit 1, would you explain what it is?

A This is a bound copy of the combination unit and unit operating agreement which will be used in this unitization.

Q Referring you to Exhibit A of Exhibit 1, what does that show?

A Exhibit A of the Unit Agreement is a plat showing the acreage involved in this unitization, and it is distinguished by the cross-hatched outline around it. It shows the fee tracts, State tracts and Federal tracts and also the tract numbers which are indicated by a number with a circle around it.

Q Are those tract numbers carried over from Exhibit A to Exhibit B?

A Yes, they are.

Q Referring you now to Exhibit B of Exhibit 1, what does

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PAGE 4

that show?

A Exhibit B, Part 1, is the schedule of ownership. It indicates the tract number which is carried from the preceding plat. It shows the number of acres, the basic royalty owners, the lessees of record, the overriding royalty owners and percentages, and the working interest owners and percentages, and the phase 1 and phase 2 participation.

Q Is Part 2 of Exhibit B, Exhibit 1 a recapitulation.

A Yes, it is. Exhibit B, Part 2, is a recapitulation of the working interest ownership.

Q What percentage of your working interest to this proposed unit has ratified the unit agreement?

A One hundred percent of the working interest has ratified the agreement.

Q And as to the royalty interest and overriding royalty interests, where do you stand on securing approval of those persons?

A Throughout the entire unit area, we have an average commitment of 98.34 percent. This is taking into consideration the preliminary approval that was granted by the State and U. S. G. S.

Q Who will operate this unit?

A Tidewater will be the unit operator.

Q And who are the larger percentage holders of the

working interest?

A Tidewater will have approximately 53 percent while Gulf and Texaco are the largest working interest owners.

Q What is the general form of this unit agreement?

A The form of this unit agreement is one that is generally used in the industry and it's patterned after other agreements that have been approved, that Tidewater operates.

Q What formation do you seek to unitize?

A We are seeking to unitize the McKee formation which is found between the depths of 7,311 feet and 7,446 feet.

Q And on what basis will the various interest owners participate, what formula is to be used?

A The participation under the unit agreement is a split type formula. Phase 1, or the primary interest will be based on 100 percent of the total income from oil and gas produced from the period of January 1, 1964 to March 1, 1964.

Phase 2, or the secondary phase will be based on 50 percent of the accumulative oil produced to November 1, 1962, plus 50 percent of the accumulative oil produced to March 1, 1964.

Phase 1 is to remain in effect until an accumulative total of 319,000 barrels are produced after November 1, 1962.

Q Do you anticipate any problems in the various tracts qualified for this unit?

A We do not. Each tract is now qualified under the

terms of the unit agreement.

MR. BUELL: At this time, Mr. Examiner, I would like to offer into evidence, Exhibit Number 1 in Case 3300.

MR. UTZ: Without objection Exhibit Number 1 will be entered into the record of this case.

(Whereupon, Applicant's Exhibit 1 was entered in evidence.)

MR. BUELL: I have no further questions.

MR. UTZ: Are there any questions of this witness?

MR. BUELL: May the witness be excused?

MR. UTZ: Yes, if you are through with this case, the witness may be excused.

(Witness excused.)

* * * * *

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

DIRECT EXAMINATION

BY MR. BUELL:

Q Would you state your name, please?

A Robert N. Miller.

Q By whom are you employed and in what capacity?

A Tidewater Oil Company, as district engineer in Midland, Texas.

Q Have you previously testified before this Commission?

A Yes, I have.

Q And have your qualifications been accepted by this Commission?

A Yes, they have.

Q Are you familiar with Tidewater's application in Case 3301?

A Yes, sir, I am.

Q Would you briefly state what is sought in this application?

A Yes, sir. Tidewater Oil Company seeks permission to institute a waterflood project in the Justis-McKee Unit Area by injection of water into the McKee formation through five injection wells located in Sections 13, 24 and 25, Township 25 South, Range 37 East, Lea County, New Mexico.

(Whereupon, Applicant's Exhibit 1,
Case 3301, marked for identification.)

Q Mr. Miller, referring you now to what has been marked as Exhibit 1, would you briefly state and identify what it shows?

A Yes, sir. This is an exhibit in the general area of the Justis-McKee Unit. It shows the wells and completion intervals with a legend by letter within a two-mile radius of each proposed injection well. The unit area is shown by a dotted line centered around Section 24, 25 South and 37 East. Four existing wells that will be converted to injection

service are shown by red circles with a blue center. A proposed well for injection, located in the southeast quarter of the northwest of Section 24, is shown by a red circle with a white center. This is in the unit area, the Justis-McKee Unit area.

(Whereupon, Applicant's Exhibit 2 marked for identification.)

Q Referring you now to what has been marked as Exhibit 2, would you explain what this exhibit shows?

A Yes, sir. This is an enlarged portion of the unit area, it's a structure map of the Justis-McKee Field, and shows the structure to be an anticline flanked on the east by a fault. The tract number shown corresponds with that in the unit agreement previously presented. The proposed injection wells being requested are shown in red circles with blue centers. The proposed well for drilling is shown as a red circle with a white center. The gas-oil contact is shown to be about 4,065 feet subsea, and the oil-water contact at 4,620 feet subsea.

(Whereupon, Applicant's Exhibit 3 marked for identification.)

Q Referring you now to what has been marked as Exhibit 3, what does that show?

A This is the production history of the Justis-McKee Unit Area showing the monthly production, the number of

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producing wells and accumulative production. At the present time there are twelve producing wells in the Justis-McKee Field with an average per well production of ten barrels per day per well, with a monthly rate for the field of approximately 3,600 barrels. Accumulative production for the unit area has been 1,200,000 barrels, and the field is approximately 90 percent depleted.

(Whereupon, Applicant's Exhibit 4 marked for identification.)

Q Mr. Miller, referring you now to what has been marked as Exhibit Number 4, what does that show?

A That is a west to east cross section across the unit area, showing the continuity of the pay. It shows the top of the McKee and the three zones into which we divide the McKee formation. Exhibit 4 also shows the gas-oil contact at a subsea depth of 4,065 feet and the oil-water contact at a subsea depth of 4,620 feet.

(Whereupon, Applicant's Exhibit 5 marked for identification.)

Q Referring to Exhibit 5, is that also a cross section? Would you explain what that shows?

A Yes, sir, a north to south cross section across the unit area again showing the continuity of pay in the unit area; it shows the gas-oil contact at 4,065 subsea and the oil-water contact, and the division into three producing sections of



McKee formation.

Q Briefly, Mr. Miller, could you explain and outline the reservoir characteristics that are involved in McKee formation?

A Yes, sir. The McKee formation is a silty sand. It has an average porosity of 16.2 percent and an average permeability of 50.7 millidarcies, and 55 percent connate water saturation.

Q What is the present reserve in percentage of the McKee zone, at this time?

A Based upon primary depletion methods this reservoir will produce 15.4 percent of the oil in place; by secondary it will be increased to 44.3 percent total, or 28.9 percent would be produced under water injection.

Q How many barrels is that, approximately?

A 2.6 million barrels.

Q And how long do you expect it to take to start production under secondary recovery methods?

A We will start our injection as soon as the approval of the Commission and the Federal Government is received, around December or January the 1st, and it would require about 18 months to receive the first response. The overall life of the project is anticipated at nine years.

Q And what will you inject into this, into the McKee

formation?

A Water.

Q And where are you going to get the water required?

A It will be from the Rustler formation.

Q And how much water will you require?

A Extraneous water requirements about, approximately 7,000,000 barrels, and total injection including the recycling of produced water will make about 9,000,000 barrels.

Q And how much water will you inject per day into the formation?

A Initially we will inject about 5,160 barrels through five injection wells, until we have injected for approximately two years; then the rates will be reduced to 1,650 barrels a day to match withdrawals and withdrawals will be matched during the entire life of the project.

Q What pressure will this water be injected at?

A At approximately 1,300 pounds maximum, sir.

Q Where is the well located that will supply the water for the formation?

A The well is located approximately 2,700 feet from the south line and 1,370 feet from the west line of Section 24, Township 25 South, Range 37 East.

MR. UTZ: Is that marked on your Exhibit 1?

A It's marked on Exhibit Number 2 by a small triangle,

almost in the center of the west half of Section 24.

Q At what depth will you be producing this water in your water well?

A From approximately 800 feet.

Q As you stated earlier, that is the Rustler, that is the Rustler formation?

A Yes, sir.

(Whereupon, Applicant's Exhibit No. 6 marked for identification.)

Q Mr. Miller, referring to what has been marked as Exhibit 6, would you explain what that shows?

A Yes, sir. It's a water analysis by Martin Water Laboratory, of the Coates "C" water well. It shows at the bottom the estimated yearly water requirements, the total water requirements, and the range of injection pressure anticipated over the life of the project.

Q Looking at this water analysis, is there anything that you can tell as to quality of the water?

A It appears to be a hard water and has 466 parts per million of sodium chloride.

Q Do you anticipate any problems of compatibility with the McKee water?

A No, sir, we have conducted compatibility tests with the McKee water and the water shown on the analysis, and it's

compatible in all respects.

Q Have you run any logs on this well?

A No, sir. We have a sample log for this well that was drilled with cable tools, and that has been furnished for the State Water Engineer in Roswell and Santa Fe.

(Whereupon, Applicant's Exhibit No. 7 marked for identification.)

Q Referring to what has been marked as Exhibit Number 7, would you tell the Examiner what is on the tabulation?

A Yes, sir. This is a tabulation of the four existing wells which will be used for water injection service and the proposed new wells. The completion dates of the initial four wells now existing is from late '57 to the middle of '59. It shows the amount of pipe set and the size of the surface, intermediate and production casing, the amount of cement used, and the top of the cement, the current producing interval and its perforations, and the proposed McKee injection interval. This well log has been previously furnished the Commission and the State Engineer on these four existing wells.

(Whereupon, Applicant's Exhibit No. 8 through 12 marked for identification.)

Q Mr. Miller, Exhibits 8, 9, 10, 11 and 12 have been marked, referring now to those, would you explain what Exhibit Number 8 shows?

A Exhibit Number 8 is a diagrammatic sketch of Gulf

McBuffington Well Number 12. It shows the present condition of the well and the way the well will be recompleted as a Blinebry producer and McKee water injector. You will notice that injection will be beneath the packer and the equipment will be corrosion resistant equipment, plus plastic coated for protection.

Q What is the character of the present production in the Blinebry?

A It's a sweet oil.

Q This sketch is of one of the wells you propose to inject water into the McKee formation?

A Yes, sir.

Q Would you explain Exhibit 9 also, please?

A Exhibit Number 9 is a diagrammatic sketch of the dual Gulf McBuffington Number 4, also a proposed injection well. The diagram on the left shows the existing status of the well and the diagram on the right shows the way that it will be recompleted as a dual Blinebry-McKee injector. Here again injection will be beneath the packer through plastic coated tubing.

Q Referring you to Exhibit 10, would you explain that, please?

A Exhibit 10 is a downhole profile of the Coates "D" Number 3, also proposed for injection. The sketch on the right shows how it will be recompleted as a Blinebry producer-McKee

injector. Here again, beneath the packer through the tubing.

Q And Exhibit 11?

A Exhibit 11 is Atlantic State "Y" Number 4. On the left it shows it to be a McKee completion not in operation. On the right it shows how it will be recompleted as a McKee injection well, showing the additional perforations required, and here again injection will be beneath the packer through plastic coated tubing.

Q And Exhibit 12?

A Exhibit 12 is the proposed injection well that will be drilled in the southeast quarter of the northwest quarter of Section 24. This shows the proposed program and how this well will be completed for injection service. Here again, being beneath the packer through plastic coated tubing.

Q On all the proposed injection wells, will the injection of water be below a packer?

A Yes.

Q And the packer is set below the top of the cement?

A Yes, sir, in all cases.

Q Were Exhibits 1 through 12 prepared by you or under your supervision?

A Yes, sir, they were.

Q Mr. Miller, in your opinion, will the proposed water flood project prevent waste and protect correlative rights?

A Yes, sir, it will.

MR. BUELL: At this time I would like to offer in evidence Exhibits 1 through 12.

MR. UTZ: Without objection Exhibits 1 through 12 will be entered into the record of this case.

(Whereupon, Exhibits 1 through 12 were entered in evidence.)

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

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Miller, this would be considered a peripheral type flood, is that correct?

A Yes, that is correct.

Q On your completion methods you state here on your downhole profiles that the two and three-eighths-inch tubing is plastic coated?

A Yes, sir.

Q Is that plastic coated on both sides, or just internally?

A Just internally.

Q How about the possibility of corrosion below the packer from the outside of the tubing?

A On the outside of the tubing, below the packer?

Q Yes.

A We do not actually anticipate it in the area of the packer itself. That will be plastic coated and there will be very little tailpipe that will be set through the packer.

Q Well, nevertheless, you will have bare steel going up through the inside of the plastic coated packer, won't you?

A Well, your seal ring is going through your packer, this is a Model "D" packer, and it has your seal ring that will go thorough and seal in the packer and the amount of tubing that will be below the packer will not exceed over 24 feet; and your injection will be down at that point. Now, you would have a dead stage in there that will be filled with fluid up to the bottom of your packer. Since that would not be active flood, we would not anticipate an appreciable amount could be run through the packer. Whether or not you had a good job on the outside would be subject to question.

Q And your injection producer wells, how about the Blinebry oil, what affect will it have on the exterior of your injection tubing?

A The Blinebry oil, to my knowledge, has shown no corrosion problems through its fill out there. Now, there are numerous Blinebry wells out there, but we would anticipate no particular corrosion problem from the outside in from the Blinebry production. I believe rather than saying it was a sweet oil, it will be classified as intermediate by the Texas-New Mexico

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Pipeline Company, and is commingled with the McKee and Ellenburger and Montoya in the commercial batteries in that general area.

Q On the wells that you don't intend to produce from the Blinbry do you have intentions of flooding it beneath with an inner-flood around the field?

A Well, probably, if you have a packer in there, that would be inhibited brine or inhibited fresh water, as a packer flood, yes, sir.

Q Now, referring to your Exhibit 3, do I interpret this as now having twelve producing wells?

A Yes, sir, it now has 15 wells in the McKee, 12 of which are currently producing.

Q And what is the rate of production of all 12 of those wells?

A Roughly, 3,600 barrels per month.

Q So that would be an average of 300 barrels per month apiece, right?

A Yes, sir, ten barrels per day per well.

Q Would you give me the formation characteristics again, your porosity, permeability and water?

A Yes, sir. The porosity of the McKee averages 16.2 percent; permeability, 50.7 millidarcies; and the water saturation, 55 percent.

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MR. UTZ: Are there other questions of the witness?
Is the State Engineer completely satisfied with it?

MR. GRAY: I believe so, Mr. Examiner. I don't believe
the State Engineers would offer any objection to this waterflood.

MR. UTZ: If there are no further questions the witness
may be excused.

MR. BUELL: We have nothing further in either case.

(Witness excused.)

MR. UTZ: Are there any other statements to be made
in this case, these cases? The case will be taken under
advisement.

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STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss.

I, Denny Watts, Court Reporter, do hereby
certify that the foregoing and attached transcript of
proceedings before the New Mexico Oil Conservation Commission
Examiner at Santa Fe, New Mexico, is a true and correct record
to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial
seal this _____ day of _____, 1965.

Denny Watts
Notary Public, Court Reporter

My Commission Expires:

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No 33,000-33,01
heard by me on 9-6, 1965.

Thurs. Q. R., Examiner
New Mexico Oil Conservation Commission

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTERHEARING DATE SEPTEMBER 8, 1965 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Sumner G. Bull	Acting Managing, 7 + A	Santa Fe
R N Miner	Tidewater Oil	Midland, Texas
L B LINDAHL	"	"
Richard L. Turnble	Atlantic Refining Co	Roswell
Nma Duthamie	R W Byrum	Santa Fe
James E. Hinkle	Atlantic	Roswell
H. E. Gray	State Engr. 77	Santa Fe

**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. 3301
Order No. R-2966**

**APPLICATION OF TIDEWATER OIL COMPANY
FOR A WATERFLOOD PROJECT, LEA COUNTY,
NEW MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 8, 1965, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 13th day of September, 1965, 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, Tidewater Oil Company, seeks permission to institute a waterflood project in the Justis-McKee Unit Area, Justis-McKee Pool, by the injection of water into the McKee formation through five injection wells in Sections 13, 24, and 25, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico.

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

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

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CASE No. 3301

Order No. R-2966

(5) 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.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tidewater Oil Company, is hereby authorized to institute a waterflood project in the Justis-McKee Unit Area, Justis-McKee Pool, by the injection of water into the McKee formation through the following-described five wells in Township 25 South, Range 37 East, NMPM, Lea County, New Mexico:

Gulf-McBuffington Well No. 12, located 1650 feet from the South line and 990 feet from the East line of Section 13;

Gulf-McBuffington Well No. 4, located 660 feet from the South line and 1980 feet from the West line of Section 13;

Tidewater-Coates "D" Well No. 3, located 990 feet from the South line and 2310 feet from the West line of Section 24;

Atlantic-State "Y" Well No. 4, located 430 feet from the North line and 660 feet from the East line of Section 25;
and

Tidewater-Coates "C" Well No. 28, to be located 1820 feet from the North line and 1820 feet from the South line of Section 24. *West*

(2) That the subject waterflood project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(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.

IT IS FURTHER ORDERED:

(1) That of the above-described authorized water injection wells, the following-described wells are hereby authorized for dual completion, to produce oil from the Blinbry formation and

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CASE No. 3301

Order No. R-2966

to inject water into the McKee formation, utilizing parallel strings of 2 3/8-inch tubing with separation of the zones accomplished by means of permanent type plastic-coated packers:

Gulf-McBuffington Well No. 12
Gulf-McBuffington Well No. 4
Tidewater-Coates "D" Well No. 3

(2) That the injection string of tubing in the aforesaid wells shall be internally plastic-coated.

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

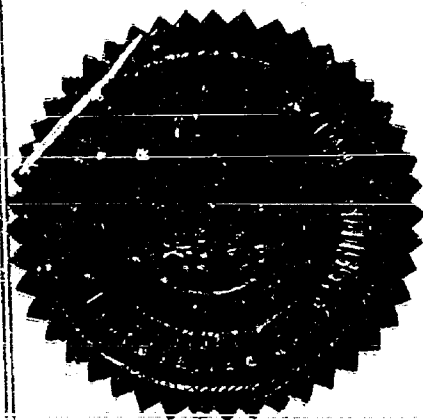
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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



esr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CASE No. 3301
Order No. R-2966-A

IN THE MATTER OF THE APPLICATION OF
TIDEWATER OIL COMPANY FOR A WATER-
FLOOD PROJECT, LEA COUNTY, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE COMMISSION:

It appearing to the Commission that due to clerical error,
Order No. R-2966, dated September 13, 1965, does not correctly
state the intended order of the Commission,

IT IS THEREFORE ORDERED:

(1) That the portion of Paragraph (1) of Order No. R-2966
reading:

"Tidewater-Coates "C" Well No. 28, to be located 1820 feet
from the North line and 1820 feet from the South line
of Section 24."

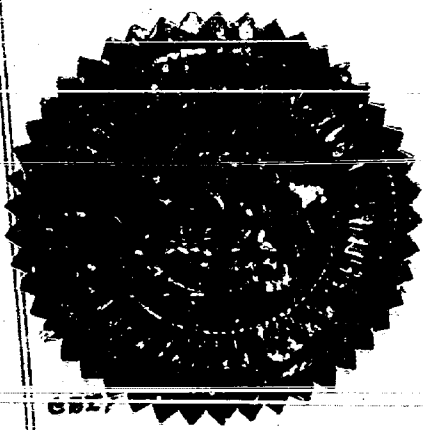
is hereby stricken, and

"Tidewater-Coates "C" Well No. 28, to be located 1820 feet
from the North line and 1820 feet from the West line
of Section 24."

is hereby interlineated in lieu thereof.

(2) That the correction set forth above shall be effective
nunc pro tunc as of September 13, 1965.

DONE at Santa Fe, New Mexico, on this 4th day of October,
1965.



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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