

CASE 3287; Application of **TEXACO**  
INC. for a waterflood project,  
Lea County, New Mexico.

CASE NO.  
3282

Application,  
TRANSCRIPTS,  
SMALL Exhibits  
ETC.

State of New Mexico  
Oil Conservation Commission

LAND COMMISSIONER  
E. S. JOHNNY WALKER  
MEMBER



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

P. O. BOX 2088  
SANTA FE  
87501

*Injection is to be through the two authorized  
water injection wells, which are to be equipped  
with plastic coated tubing and packers set at  
approximately 3320 feet.*

Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

, 19

Dear Sir:

Gentlemen:

*Reference is made to*  
~~Enclosed herewith is~~ Commission Order No. R- 2957, *recently* entered in Case  
No. 3287, approving the *TEXACO Langite-Matrix Black*  
Water Flood Project.

*as to allowable*  
~~According to~~ our calculations, *indicate that when both 8* 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 224 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: Mr. Frank Irby  
OCC - Hobbs

A. L. PORTER, Jr.  
Secretary-Director

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. 3287

Order No. R-2957

APPLICATION OF TEXACO INC.  
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  
August 11, 1965, at Santa Fe, New Mexico, before Examiner  
Elvis A. Utz.

NOW, on this        day of August, 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, Texaco Inc.,  
seeks permission to institute a waterflood project in the         
Langlie-Mattix Pool by the injection of water into the  
Queen formation through two injection wells in  
Section 21, Township 24, North 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.

(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, Texaco Inc.,  
is hereby authorized to institute a waterflood project in the  
Langlie-Mattix ~~in the xxxxxxxxxxxxxxxxxxxxxxxxxx block xxx~~  
Pool by the injection of water into the  
Queen formation through the following-described wells  
in Section 21,  
~~in~~ Township 24 ~~North~~, Range 37 ~~West~~,  
South East  
NMPM, Lea County, New Mexico:

*G. J. Black well No 6 to be located 1330 feet from the north  
line and 2625 feet from the West line.  
G. J. Black well No 6 to be located 2630 feet from  
the North line and 1340 feet from the West line.*

(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.

(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.

TEXACO  
INC.

PETROLEUM PRODUCTS



MAIN OFFICE 0300

'65 JUL 21 AM 7 25

DRAWER 728  
HOBBS, NEW MEXICO 88240

July 20, 1965

*Case 3287*

New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico

Re: Application for Examiner Hearing,  
Statewide Rule 701-B, TEXACO Inc.  
J. F. Black Lease, Langlie Mattix  
Field, Lea County, New Mexico

ATTENTION: Mr. A. L. Porter, Jr.

Gentlemen:

TEXACO Inc. respectfully requests that an examiner hearing be scheduled on the first available hearing docket to consider its application for permit to inject water into the Langlie Mattix Pool on the TEXACO Inc. J. F. Black Lease for the purposes of secondary recovery operations. In support of this request, the following is stated:

1. TEXACO Inc. is owner and operator of the J. F. Black Lease that is comprised of the W/2 NE/4, E/2 NW/4 and NW/4 SE/4 of Section 21, Township 24 South, Range 37 East, Lea County, New Mexico. A plat showing the injection wells on this lease and the location of other wells within a two mile radius from these wells is attached.
2. There are to be a total of two injection wells and four producing wells on the J. F. Black Lease. The location of these wells will be commensurate with the pattern of injection and producing wells in the George L. Buckles Langlie-Mattix Water Flood Project, which project is east adjacent to the TEXACO Inc. J. F. Black Lease.
3. TEXACO Inc.'s J. F. Black Lease shall not be unitized with the George L. Buckles Project, but waterflood operations shall be performed on the J. F. Black Lease on a cooperative basis with the George L. Buckles Project and projects of other adjacent operators as indicated on the attached plat.
4. Logs of the injection wells on the J. F. Black Lease are not being submitted at this time since these wells are to be drilled. One of the proposed producing wells also is to be drilled. Attached is a diagrammatic sketch of each of the proposed injection wells indicating the proposed casing, cementing and tubing programs and the anticipated injection interval.

DOCKET MAILED

*7-30-65*  
*[Signature]*

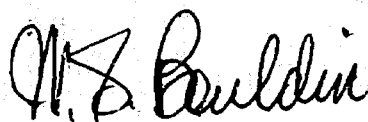
5. It is proposed to inject approximately 400 barrels of water per day into the Queen formation in the interval from approximately 3350 feet to 3550 feet. The exact interval will be determined after drilling and logging the wells. Approximately 200 barrels of water per day is to be injected into each well. The water is anticipated to be obtained from a water supply well completed in the Santa Rosa and Rustler formations.

6. A copy of this application is being sent this date by registered mail to the State Engineer Office, Capitol Building, Santa Fe, New Mexico and to the below listed offset operators:

George L. Buckles Company, Box 56, Monahans, Texas  
Skelly Oil Company, Box 38, Hobbs, New Mexico  
Continental Oil Company, Box 460, Hobbs, New Mexico  
Shell Oil Company, Box 1858, Roswell, New Mexico  
Pan American Petroleum Corporation, Box 1410, Ft. Worth, Texas  
Gulf Oil Corporation, Box 1938, Roswell, New Mexico

In view of the aforementioned proposal that will prevent waste and protect correlative rights, TEXACO Inc. would appreciate receiving the requested examiner hearing and if possible, having the hearing scheduled on the monthly docket for August 11, 1965.

Yours very truly,

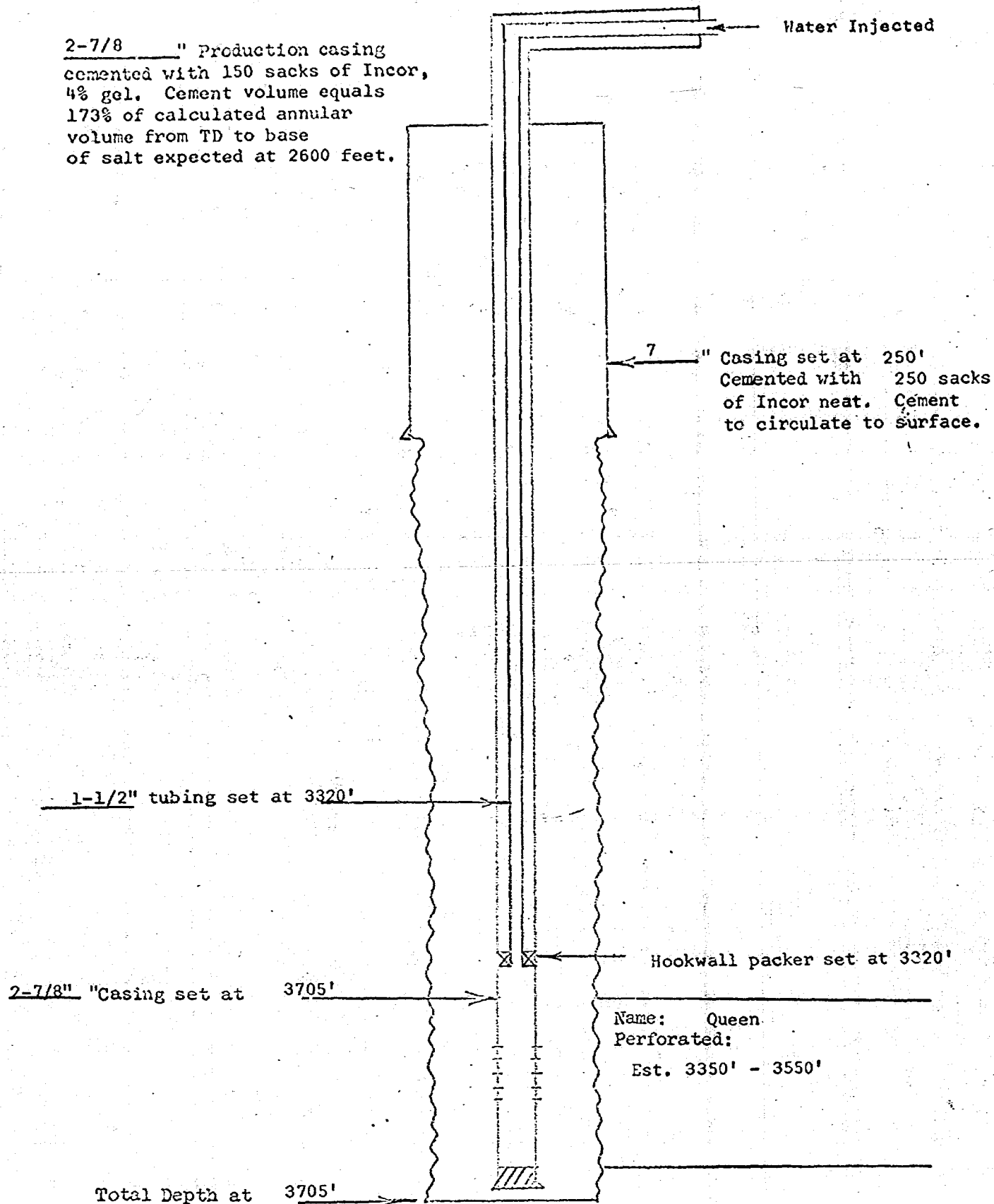


W. S. Bouldin  
District Petroleum Engineer

WPY/om

Attachments

2-7/8" Production casing  
cemented with 150 sacks of Incor,  
4% gel. Cement volume equals  
173% of calculated annular  
volume from TD to base  
of salt expected at 2600 feet.



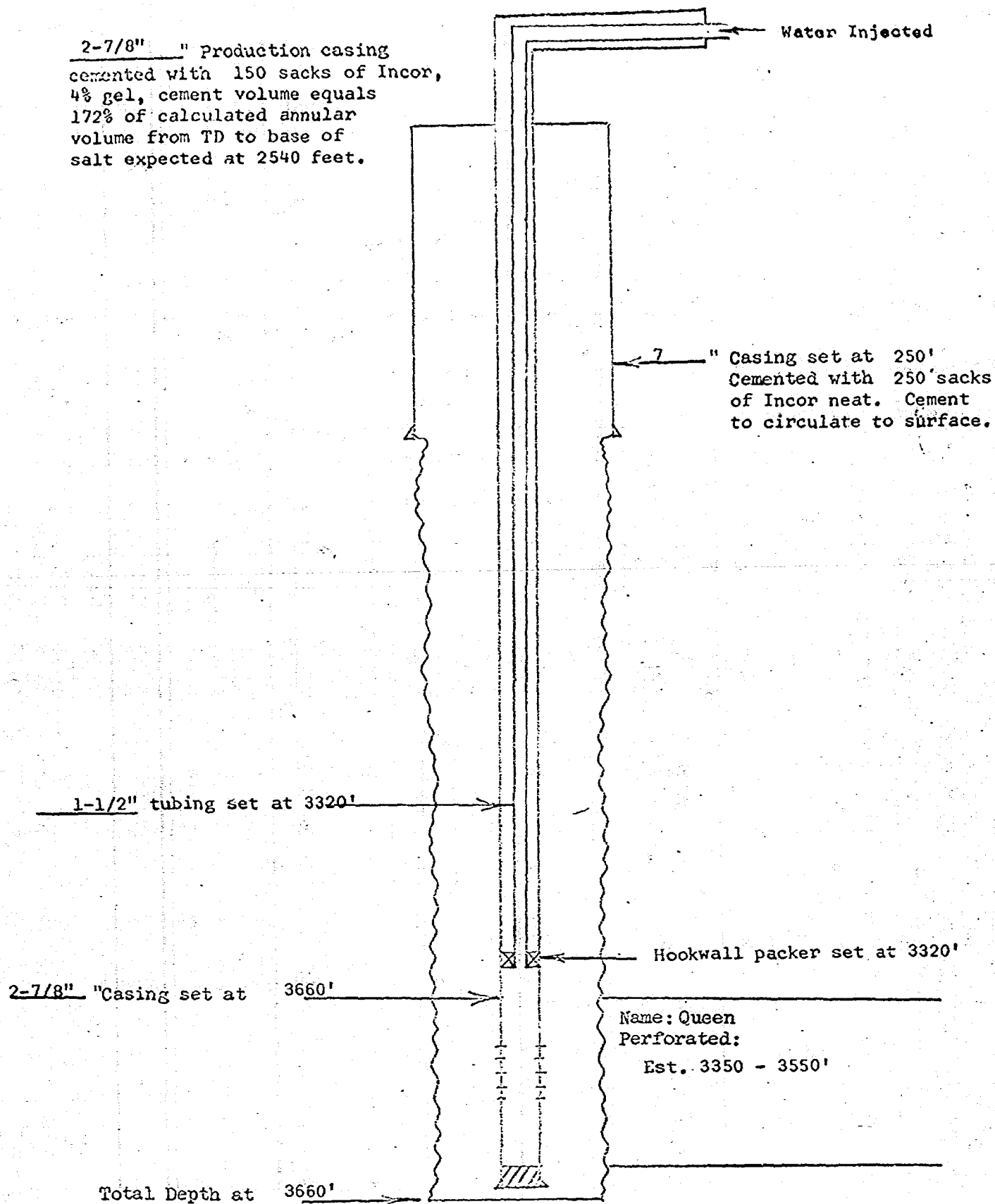
TEXACO Inc.  
PROPOSED INJECTION WELL  
LANGLIE-MATTIX WATERFLOOD PROJECT

Name: J. F. Black Well No. 6 WIW  
Field: Langlie-Mattix  
Date: July 19, 1965

Case 3287



2-7/8" " Production casing  
cemented with 150 sacks of Incor,  
4% gel, cement volume equals  
172% of calculated annular  
volume from TD to base of  
salt expected at 2540 feet.



TEXACO Inc.

PROPOSED INJECTION WELL  
LANGLIE-MATTIX WATERFLOOD PROJECT

Name: J. F. Black Well No. 7 WIW  
Field: Langlie-Mattix  
Date: July 19, 1965

*Case 3287*

July 28, 1965

MAIN  
265 JUL 29 PM

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

Dear Mr. Irby:

The below listed information is that requested by your letter dated July 23, 1965, concerning source water for secondary recovery purposes on TEXACO's J. F. Black Lease, Langlie-Mattix Field, Lea County, New Mexico.

1. The proposed water well location is 2340 feet from the west line and 1430 feet from the north line of Section 21, Township 24 South, Range 37 East, Lea County, New Mexico.
2. The well is to be drilled to a total depth of approximately 780 feet to the base of the Santa Rosa formation with 5-1/2 inch casing being set at total depth and cemented to surface with 300 sacks of Incor neat cement. Logs are to be run on the well and the casing is to be perforated throughout the Santa Rosa formation from approximately 550 feet to 770 feet. The exact interval will be selected after logging. Water probably will be lifted to the surface with a beam type pumping unit and sucker rod type pump, the water being lifted through 2-3/8 inch OD tubing, plastic coated for corrosion resistance.
3. If the water supply is adequate in this well as anticipated, only the Santa Rosa will be produced. Shell Oil Company's water supply well, located 1200 feet from the south line and 2320 feet from the east line of said Section 21, produces an adequate supply from the Santa Rosa formation. Therefore, it may reasonably be assumed that only the Santa Rosa will be tested in TEXACO Inc.'s proposed well. If it becomes necessary to test the Rustler, proper authorization will be obtained.

Mr. Irby

- 2 -

July 28, 1965

from your office for such testing as well as obtaining proper authorization prior to testing the Santa Rosa.

4. Analysis of the Santa Rosa water from Shell's aforementioned water well is as follows:

ph	7.6	Sp. Gr.	1.0008 @ 60° F
Calcium	56 PPM	Magnesium	48 PPM
Sodium	570 PPM	Bicarb.	342 PPM
Sulfate	1070 PPM	Chloride	130 PPM
Total Dissolved Solids - 2216 PPM			

5. Each injection well will be equipped with 1-1/2 inch nominal diameter, 2.75 pound per foot, non-upset, API J-55 grade tubing, plastic coated internally for corrosion resistance.

If additional information is desired, TEXACO Inc. would be happy to furnish it.

Yours very truly,

*W. S. Bouldin*  
W. S. Bouldin  
District Engineer

WPI-bh

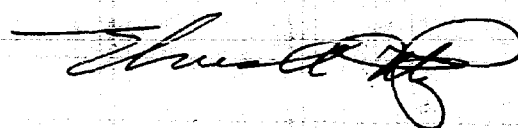
CC: HMOCC - Hobbs  
HMOCC - Santa Fe

Case 3287  
Heard 8-11-65  
Rec. 8-12-65.

approve DeSoto's request for  
a 2 well waterflood.  
The injection wells are as follows:

1. J. F. Black # 8 W2W 1340/N, 2626/W  
21-245-37E.

2. J. F. Black # 6 W2W 2630/N, 1340/W  
21-245-37E.



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

August 16, 1965

Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

Re: Case No. 3287  
Order No. R-2957  
Applicant:

TEXACO INC.

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 Frank Dehy

MAIN OFFICE 000

'65 JUL 26 AM 11:02

'65 JUL 2

July 23, 1965

Case 3287

Mr. W. S. Bouldin  
District Petroleum Engineer  
Texaco, Inc.  
P. O. Box 728  
Hobbs, N. M. 88240

Dear Mr. Bouldin:

Texaco's application dated July 20, 1965 which seeks authority from the Oil Conservation Commission to inject water into the following two wells for secondary recovery purposes is hereby acknowledged:

J. F. Black well No. 6 WIW  
J. F. Black well No. 7 WIW

I would appreciate receiving the answers to the following questions prior to hearing on this application:

1. What is the location of the source water well?
2. What is the manner of construction of the source water well and what kind of equipment is, or will be, installed?
3. Are the waters in the Santa Rosa and Rustler in communication with each other?
4. What is the analysis of the source water (each water if they are not in communication)?
5. What kind of tubing is to be used in the injection wells?

Thank you in advance for this information.

FEI/ma  
cc-Mr. A. L. Porter, Jr.  
Mr. Joe Ramey  
Mr. F. H. Hennighausen

Very truly yours,

Frank E. Irby, Chief,  
Water Rights Division.

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. 3287  
Order No. R-2957

APPLICATION OF TEXACO INC.  
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 August 11, 1965, at Santa Fe, New Mexico, before Examiner Elvis A. Uts.

NOW, on this 16th day of August, 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, Texaco Inc., seeks permission to institute a waterflood project in the Langlie-Mattix Pool by the injection of water into the Queen formation through two injection wells in Section 21, Township 24 South, Range 37 East, NMPN, 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.

-2-

CASE No. 3287

Order No. R-2957

(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, Texaco Inc., is hereby authorized to institute a waterflood project in the Langlie-Mattix Pool by the injection of water into the Queen formation through the following-described wells in Section 21, Township 24 South, Range 37 East, NMPM, Lea County, New Mexico:

J. F. Black Well No. 7 to be located 1310 feet from the North line and 2626 feet from the West line.

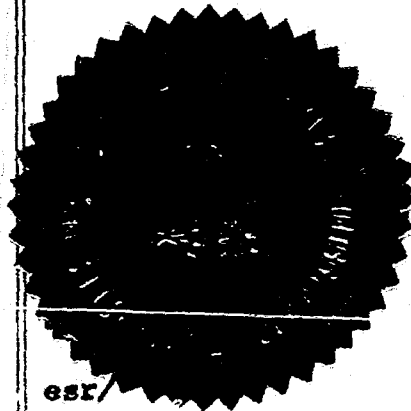
J. F. Black Well No. 6 to be located 2630 feet from the North line and 1340 feet from the West line.

(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.

(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

*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/



OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

- 2 -

Mr. Booker Kelly  
September 8, 1965

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:ag

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

Oil Conservation Commission  
P. O. Box 1980  
Hobbs, New Mexico

C  
O  
P  
Y

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

September 8, 1965

C  
O  
P  
Y  
  
Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

Dear Mr. Kelly:

Reference is made to Commission Order No. R-2957, recently entered in Case No. 3287, approving the Texaco Langlie-Mattix Black Water Flood Project.

Injection is to be through the two authorized water injection wells, which are to be equipped with plastic coated tubing and packers set at approximately 3320 feet.

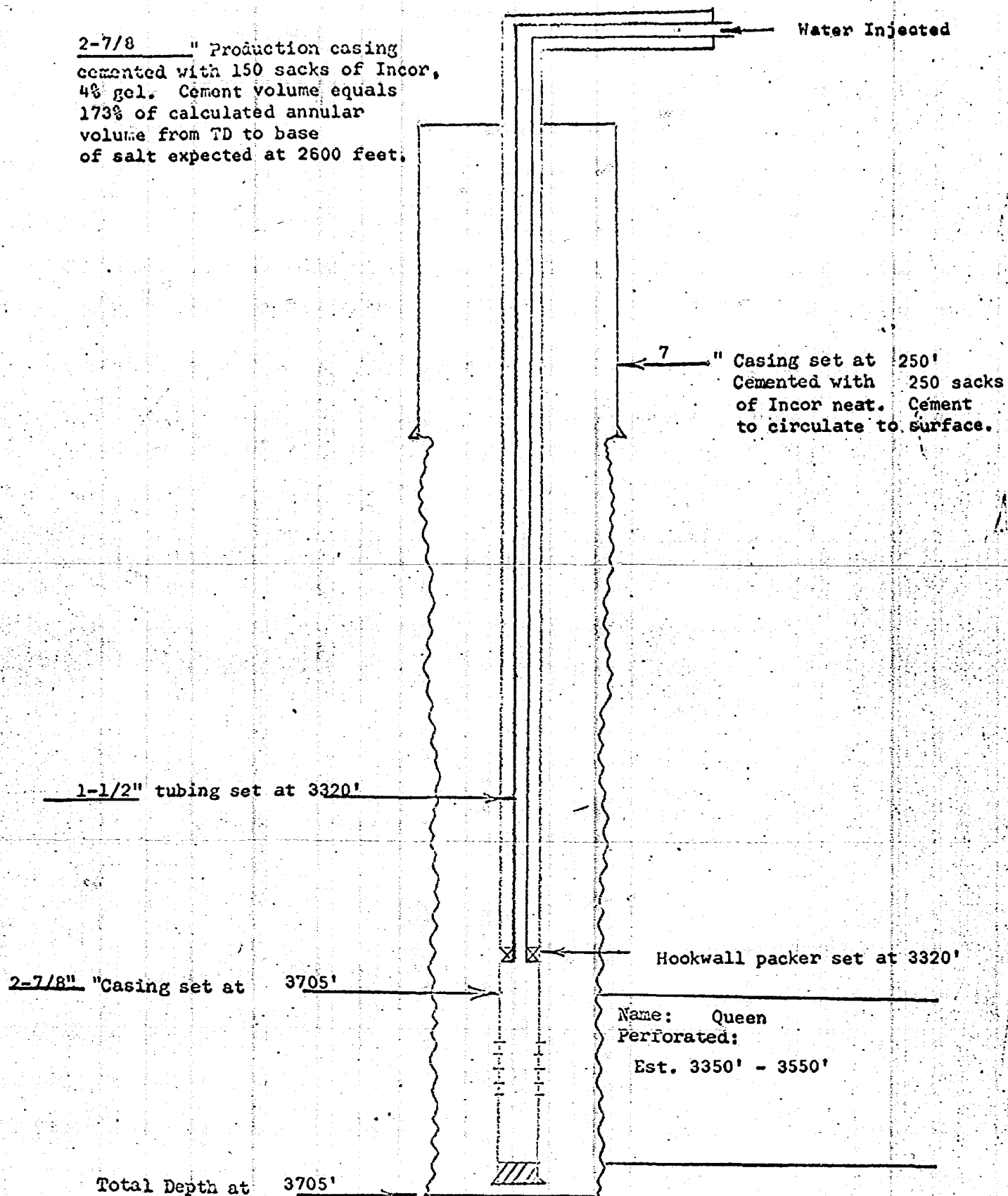
As to allowable, our calculations indicate that when both of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 224 barrels per day.

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.



2-7/8" Production casing  
cemented with 150 sacks of Incor,  
4% gel. Cement volume equals  
173% of calculated annular  
volume from TD to base  
of salt expected at 2600 feet.



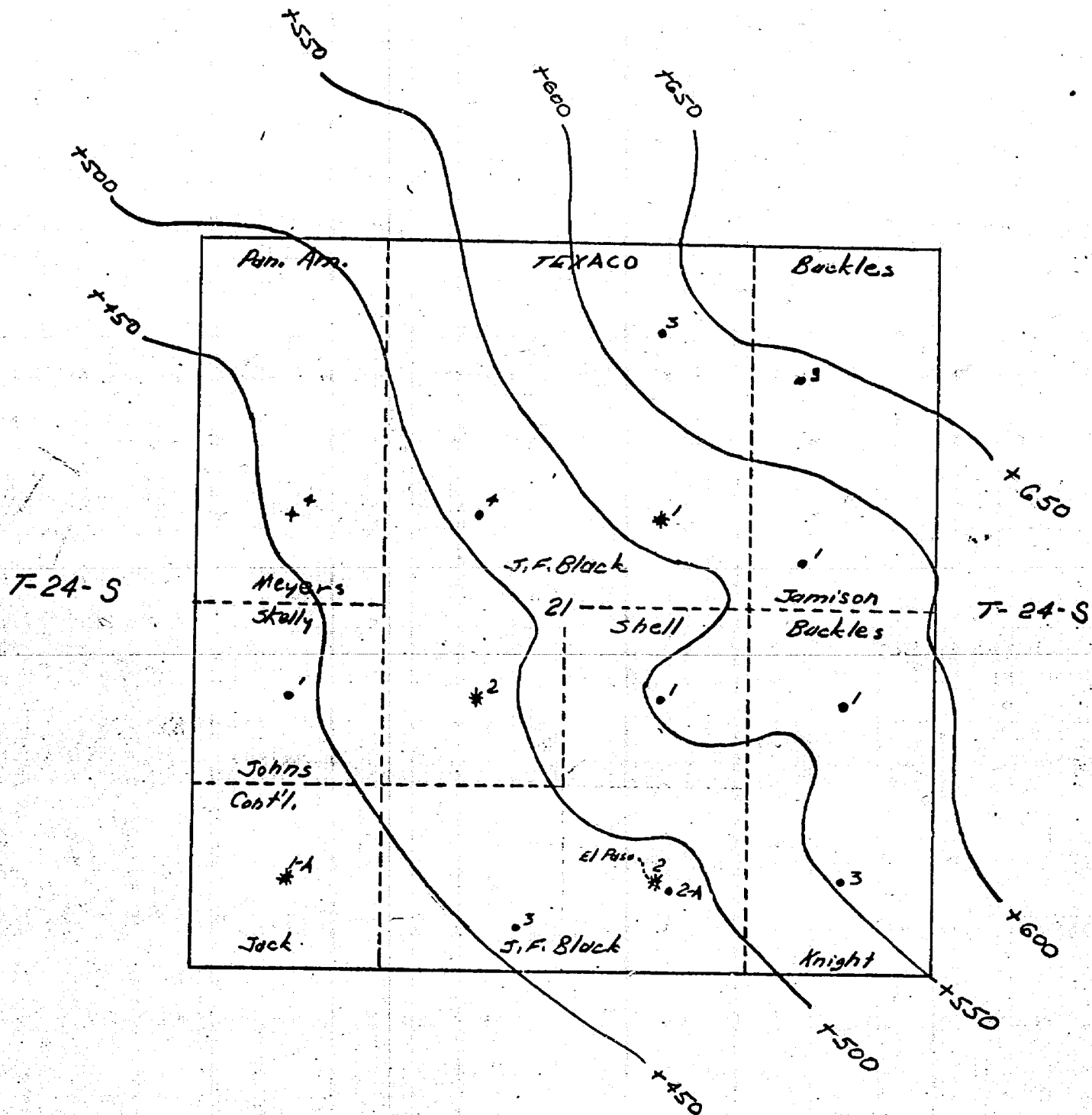
Name: Queen  
Perforated:  
Est. 3350' - 3550'

TEXACO Inc.  
PROPOSED INJECTION WELL  
LANGLIE-MATTIX WATERFLOOD PROJECT

Name: J. F. Black Well No. 6 WIW  
Field: Langlie-Mattix  
Date: July 19, 1965

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 5  
CASE NO. 3287

R-37-E



TEXACO Inc.  
STRUCTURE MAP

J. F. BLACK LEASE  
COOP WATERFLOOD PROJECT

Sec. 21, T-24-S, R-37-E  
Lea County, New Mexico

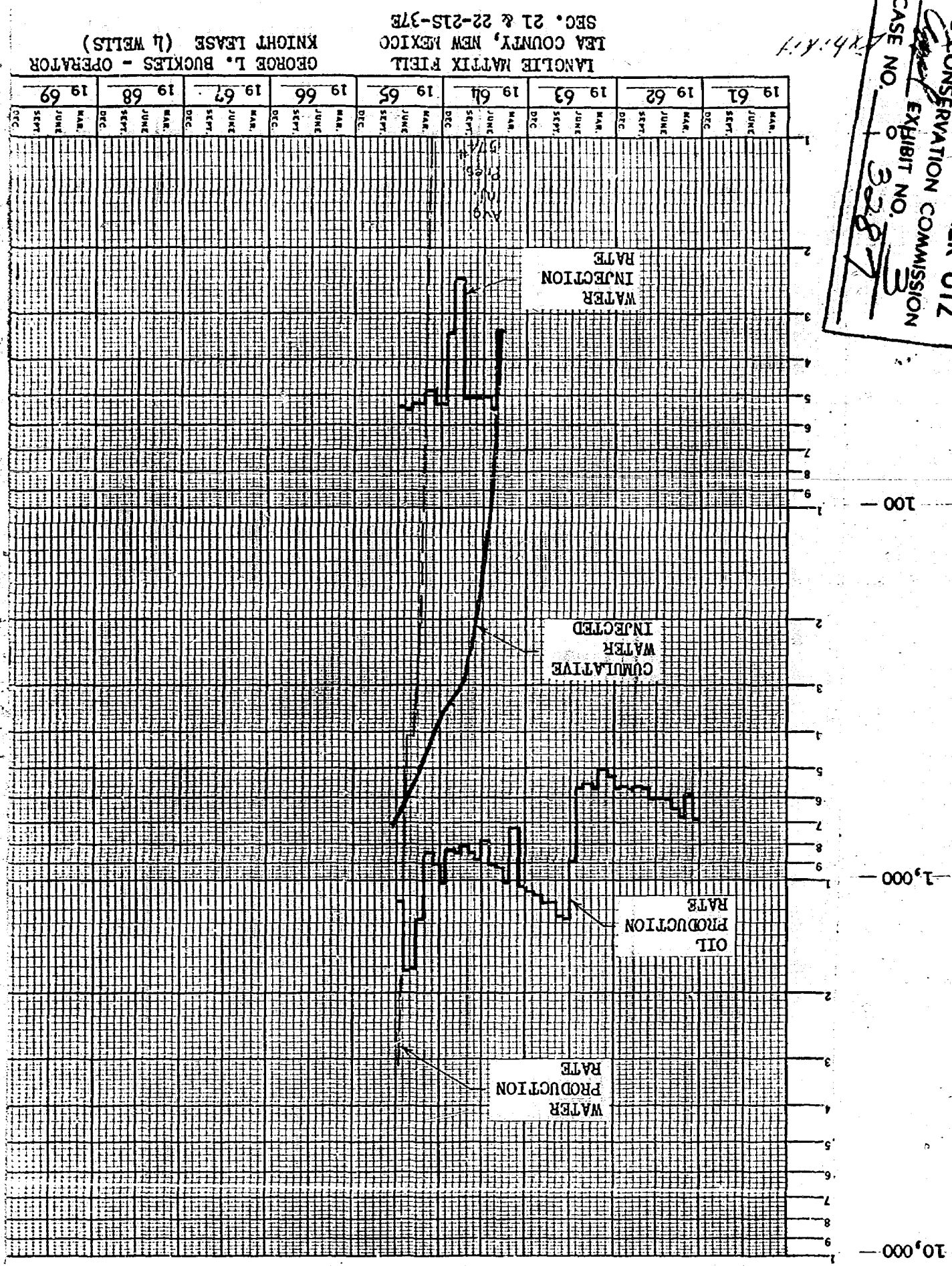
Scale 1" = 1000'

NOTE: Contoured on top of Yates formation from drilling formation samples. Anticipated that contours on top of Queen will closely follow Yates contours. Queen top at a depth approximately 700 feet below Yates top.

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
EXHIBIT NO. <u>4</u>	
CASE NO. <u>3287</u>	

BEFORE EXAMINER UTZ  
 OIL CONSERVATION COMMISSION  
 CASE NO. 3287  
 EXHIBIT NO. 3

MONTHLY OIL PRODUCED AND MONTHLY WATER PRODUCED, BBLS.  
 MONTHLY WATER INJECTED AND MONTHLY CUMULATIVE WATER INJECTED, M BBLS.



LANGLIE MATIX FIELD  
 LEA COUNTY, NEW MEXICO  
 SEC. 21 & 22-21S-37E  
 GEORGE L. BUCKLES - OPERATOR  
 KNIGHT LEASE (4 WELLS)  
 19 61 19 62 19 63 19 64 19 65 19 66 19 67 19 68 19 69



dearley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS  
1120 SIAMS BLDG. • P. O. BOX 1092 • PHONE 243-4691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 11, 1965

EXAMINER      HEARING

IN THE MATTER OF:

Application of Texaco Inc. for a  
waterflood project, Lea County,  
New Mexico.

Case No. 3287

BEFORE:      Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 3287.

MR. DURRETT: Application of Texaco Inc. for a waterflood project, Lea County, New Mexico.

MR. KELLY: Booker Kelly of White, Gilbert, Koch and Kelly on behalf of Texaco. I have one witness and ask that he be sworn.

(Witness sworn.)

WILLIAM P. YOAST

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

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, employer and position, please?

A William P. Yoast, employed by Texaco Inc. as a petroleum engineer.

Q And what is your place of occupation?

A In Hobbs, New Mexico.

Q Have you previously testified before this Commission?

A No.

Q Would you give the Examiner a brief resume of your professional and educational background?

A I graduated from Texas Technological College with a



dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO  
1213 FIRST NATIONAL BANK EAST • PHONE 236-1294 • ALBUQUERQUE, NEW MEXICO

PAGE 3

Bachelor of Science degree in chemical engineering. I commenced petroleum engineering duties in November of 1954. In February of 1956 I commenced petroleum engineering duties in all of Texaco's drilling and production operations in the area, including Lea County, Eddy County, Chaves and Roosevelt Counties. Currently employed as supervisor of engineering capacity in these same counties.

Q As part of your professional experience you have had actual working knowledge of the area in which the subject wells are contained?

A Yes.

MR. KELLY: Are the witness's qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q Would you briefly state to the Examiner what Texaco seeks by this application, referring to what has been marked as Exhibit 1?

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

A Yes. Texaco seeks authorization to perform secondary recovery operations by injecting water into the Queen formation in Texaco's J. F. Black lease, this lease being located in Section 21, Township 24 South, Range 37 East, Lea County, New Mexico. Texaco currently has three producing

wells in the Langlie-Mattix Pool on this lease and one well which is in the Jalmat Pool. Texaco proposes to drill two injection wells and one injection well in order to accomplish this secondary recovery operation.

Q You said two injections wells and one injection well. You mean one producing well?

A Propose to drill one production well and two injection wells.

Q Could you locate on Exhibit 1 the injections wells and the producing well?

A Yes. The proposed injection wells will be the Well No. 6 and Well No. 7; No. 6 being in Unit F and Well No. 7 being in Unit B of Section 21. The proposed producing well to be drilled is in the Northeast Quarter of the Southwest Quarter of Section 21.

MR. UTZ: No. 7 is actually in Unit B? This shows it a little over in -- well, some question.

A Well, it's really, I think will be on the borderline of those units in there. Well No. 7 is to be located 2640 feet from the West Line of Section 21 and 1320 feet from the North Line of Section 21, with Well No. 6 being located 1340 feet from the West Line and 2,030 feet from the South Line of Section 21.

MR. UTZ: Give me those again.

A No. 6?

MR. UTZ: Yes.

A 1340 feet from the West Line and 2640 feet from the South Line.

MR. UTZ: Is that a standard section?

A Yes, sir, I believe it is. I did not check the survey on it to be definite.

MR. UTZ: And the casing in the No. 7 well will be right on the quarter-quarter section?

A Yes, it would.

MR. UTZ: On the other one it would be on the half section line, 20 feet off center?

A Yes.

Q (By Mr. Kelly) Are there other existing waterflood projects that adjoin the proposed project?

A Yes, as indicated on Exhibit 2, the currently active Woolworth Unit operated by Amerada is in a pilot flood stage. It is south, adjacent to the proposed area project bordering the south end of Section 21. As indicated by their outlines surrounding the entire area of the proposed project, other proposals are being studied for secondary recovery in the Langlie-Mattix Pool. These have not been consummated as yet, but this will indicate that this area of the Langlie-Mattix Pool is at a stage of primary depletion and secondary recovery



operations should be commenced in the near future.

(Whereupon, Applicant's Exhibit No. 2 was marked for identification.)

Q What agreements, if any, have you reached with the adjoining projects?

A Texaco has executed an agreement with George Buckles, who operates a pilot flood east adjacent to Texaco's Black lease. Texaco is currently negotiating a similar agreement with Shell Oil Company, who is operating a similar waterflood operation south adjacent to Texaco's Black lease.

Q Could you give the Examiner a brief history of this field as it pertains to the Texaco acreage and the position of the completion that you are in now?

A Yes. Approximately ten years ago the Texaco J. F. Black lease was producing approximately 1834 barrels of oil per month. It is currently producing only 22 barrels of oil per month, which indicates it is near the economic stage of depletion which we have estimated at 99%.

Q What would your expectation be of production if this waterflood application is approved? Would you have a successful project?

A As indicated on Exhibit 3, this is a performance curve plotted on the George L. Buckles Knight lease. It indicates production prior to the commencement of injection of

water and also indicates the performance after injection of water commenced. As seen on the curve, an injection of water commenced on this Buckles lease early in 1964. Indicated also, early in 1965, a response was received from this injection with water which increased oil from approximately 844 barrels of oil per month to approximately 1270 barrels per month during the first month of response. Texaco anticipates similar results on our project.

(Whereupon, Applicant's Exhibits 3 and 4 were marked for identification.)

Q Have you prepared a structure map for the top of the Queens?

A Exhibit 4 indicates a structure map, it is not contoured on top of the Queens. This structure map is contoured on top of the Yates formation from drilling samples, and the contours made by Texaco's Geological Department. This Department anticipates the Queen top at approximately 700 feet below the top of the Yates formation, and the contours should be similar for the Queen formation, which indicates that the structure on Texaco's Black lease should be similar to that on the Buckles and the Shell project.

Q Now you have three producers currently in the Queens. There were no logs on those wells, is that it?

A Those wells were drilled many years ago. They have

never been logged. However, the two injection wells and the one producing well to be drilled will be logged, with the two injection wells being cored for additional information.

Q Well, based on the production data of the Buckles lease, which is shown in Exhibit 3 and the structure information that you have, would you expect to have a successful waterflood project?

A Yes. I definitely would. I can expect very similar results.

Q What would you expect the life of the secondary recovery would be?

A We have estimated a nine-year life from day of commencement of injection of water on the J. F. Black lease.

Q And you say you consider it about 99% depleted now as far as primary production?

A Yes, that is true.

(Whereupon, Applicant's Exhibit No. 5 was marked for identification.)

Q Now, referring to what has been marked Exhibit No. 5, the diagrammatic sketch of your proposed injection well, would you go through that for the Examiner?

A Yes. Exhibit 5 illustrates the proposed drilling, casing and cementing program of the Black Well No. 6 water injection well. Well No. 7 will be identical to this with the

exception of its total depth, will be approximately 3606 feet rather than the total depth of the well No. 6 being at 3705 feet.

Surface casing is to be set at approximately 250 feet and top of the Red Beds and cemented to surface by 250 sacks of Incor neat cement. After drilling to total depth, 2-7/8ths inch production casing will be run and set at that depth and it will be cemented with approximately 150 sacks of Incor, 4% gel, and the cement is to reach the base of the salt expected at approximately 2600 feet. The base of the salt in Well No. 7 is expected to be approximately 2540 feet.

The production casing will be selectively perforated, the perforation will be selected after logging and after receiving core analysis data. This will insure that water will go into the exact selected intervals in the Queen formation. After perforating the well will be acidized for cleanup and tubing will be run which will be internally plastic coated for corrosion.

A packer will be set at 3320 feet, it will also be plastic coated for corrosion. Texaco will also spot corrosion-inhibited water in the tubing casing annulus for the additional protection.

Q What is the source of your water?

A Texaco proposes to drill a water supply well to



the Santa Rosa formation. It will be cased all the way through the water supply zone, selectively perforated after being logged, and we anticipate withdrawing approximately 400 barrels a day from this supply well, 200 barrels a day being injected into each of the injection wells. We anticipate that possibly it will be necessary to inject approximately 300 barrels per day into each of the injection wells.

Q Could you show, referring back to Exhibit 1, the proposed location of the water well?

A Yes. This water well is to be located 2340 feet from the West Line and 1430 feet from the North Line of Section 21.

Q Is there presently a well to the Santa Rosa water in any of the adjoining project areas?

A Yes. Shell Oil Company is using a water supply well completed in the Santa Rosa formation. This well is located in the Southwest Quarter of the Southeast Quarter of Section 21. It is near their injection well No. 6.

Q Have they been able to get adequate water out of that well for their injection project?

A Yes. I do not have the exact producing capacity of the well current, but Shell has been obtaining an adequate water supply from this source.

Q Do you have information as to the characteristics



dearnley-meier reporting service, inc.

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

1120 SIMAS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO  
1213 FIRST NATIONAL BANK EAST • PHONE 236-1294 • ALBUQUERQUE, NEW MEXICO



of the water?

A Yes, I do.

Q Could you briefly give those to the Examiner?

A This information was obtained from water analysis of Shell's water supply well and it indicates that it is a brackish non-potable water.

Q Have you furnished the salt water characteristics and other pertinent data to the State Engineer's office?

A Yes, I have.

Q Do you expect to encounter the same characteristics in your water well?

A We expect to be on strike with Shell's well and obtain similar results.

Q Has Texaco made any plans of what alternates it would use if its first well was not successful?

A Yes, we have. One alternative would be to drill a second well near the Shell well and another alternative would be to negotiate the purchase of water from Shell.

Q In your expert opinion do you feel that the granting of this application and the institution of this waterflood project would result in efficient and economic production of the oil and protect correlative rights of all operators in the area?

A Yes, I do. We have estimated there are approximately

250,000 barrels of secondary oil to be recovered on the Texaco J. F. Black lease through the nine-year remaining period once the injection commences.

Q Were Exhibits 1 through 5 prepared by you or under your supervision?

A Yes, they were.

MR. KELLY: I move the introduction of the exhibits.

MR. UTZ: Exhibits 1 through 5 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 5 were offered and admitted in evidence.)

MR. KELLY: We have no further questions at this time.

CROSS EXAMINATION

BY MR. UTZ:

Q With regard to the location of your two injection wells is the location critical to the extent that you could not move them off, say ten, fifteen, twenty-five feet off the quarter-quarter section line?

A No. It is flexible enough that they could be moved.

Q Would you be in a position to state which way you would move them?

A No, sir, not to state definitely, but probably in a southeast to southwest location for Well No. 7 and

dearnley-meier reporting service, inc.

SPECIALIZING IN DEPOSITIONS - HEARINGS, STATEMENTS, EXHIBIT TESTIMONY, BAILY COPY, CONVERSIONS

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-4491 • ALBUQUERQUE, NEW MEXICO  
1213 FIRST NATIONAL BANK EAST • PHONE 264-1294 • ALBUQUERQUE, NEW MEXICO

possibly an east movement of Well No. 6. This is only a prospective movement. It would have to be studied to be definite on the footage each direction.

Q Ordinarily, so that you will understand, ordinarily the Commission does not approve any well locations right on a quarter-quarter section line.

A Yes.

Q We like to have them off ten feet or more.

A Yes. We can move those wells any satisfactory direction.

Q Will you let me know soon?

A Yes, I can call you back probably tomorrow.

Q I believe you stated your tubing would be internally plastic coated?

A Yes.

Q With inert water in the annulus on both wells?

A Yes, sir.

Q What is the range of production, do you have that available, within the unit area or within the project area?

A On Exhibit 3 that is the most responsive production currently producing, in July, 1965, currently produced approximately 1150 barrels of oil per month. I do not have the exact data on the Buckles Jamison lease, which is north adjacent to their Knight lease and east adjacent to

Texaco's Black lease, but it is down to a similar position range of Texaco's Black lease. The exact numbers I do not have with me. I can obtain them, if you desire.

Q I believe you stated that the, was it the lease produced 22 barrels per month?

A Per month, yes, sir.

Q And obviously no well will produce more than 22 barrels per month?

A That's right.

Q I think that will suffice.

MR. UTZ: Any other questions of the witness?

MR. IRBY: Yes, sir. Frank Irby, State Engineer's office.

BY MR. IRBY:

Q Mr. Yoast, I didn't get that, I'm not sure that I got that description of Shell's water supply well correctly. Would you restate that for me?

A Yes, sir. It is located in the Southwest Quarter of the Southeast Quarter of Section 21. It is very near their injection Well No. 6, the water supply well being in a southeast direction from Well No. 6. The exact footage I do not have.

Q Is this the same description that was in your letter to me dated July 28? I have been trying to find it

and I can't.

A Let's see, yes, sir, that is the description in this letter dated July 28. That is the correct location as furnished by Shell Oil Company.

Q Do you anticipate that the Santa Rosa is going to supply sufficient water to carry out this flood?

A Yes, sir. We do anticipate the Santa Rosa will last the nine-year life as we have expected.

Q If it is necessary to acquire water from other sources, you would immediately notify the State Engineer and the Oil Conservation Commission?

A Yes, sir. Every change of water supply source that we anticipate we will, of course, notify both offices.

MR. IRBY: Thank you. That's all the questions I have.

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

(Witness excused.)

MR. UTZ: That completes your case?

MR. KELLY: Yes, sir.

MR. UTZ: Any statements in this case? The case will be taken under advisement.

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO  
1213 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
WILLIAM P. YOAST	
Direct Examination by Mr. Kelly	2
Cross Examination by Mr. Utz	12
Cross Examination by Mr. Irby	14

<u>EXHIBIT</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
Exhibit 1	3	12
Exhibit 2	6	12
Exhibits 3 & 4	7	12
Exhibit 5	8	12

111120 SIMMS,BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO  
1213 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

*Elmer A. [Signature]* Examiner  
New Mexico Oil Conservation Commission