

CASE 3369: Application of TEXACO
for salt water disposal, Lea
County, New Mexico.

Alvin
Jones

P.O. Box
776

Rosewell

88201

Carroll
County
Ga.
12/19/78

ASE NO.

3369

Application,

Transcripts,

Small Exhibits

ETC.

TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



P. O. BOX 3102
MIDLAND, TEXAS 79704

December 30, 1965

Case 3369

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

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

Gentlemen:

Texaco Inc. respectfully requests a hearing to be scheduled to consider their application for salt water disposal into the Devonian formation through its State of New Mexico "BO" Well No. 4, Moore (Devonian) Field, Lea County, New Mexico.

Attached are the Form C-108, a plat of the area, a schematic diagram of the down-hole equipment, an analysis of the water sample and a radioactive log of the proposed disposal well. The well is located 660' FSL and 660' FWL of Section 13, T-11-S, R-32-E.

Texaco Inc. would appreciate as early a hearing date as possible.

Yours very truly,

C. L. Whigham

C. L. Whigham
Division Proration Engineer

JTJ:jl
Attach.

cc: State Engineer
Box 1079
Santa Fe, New Mexico

DOCKET MAILED

Date 1-13-66

[Signature]

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

Case 3369

OPERATOR TEXACO Inc.		ADDRESS P.O. Box 728, Hobbs, New Mexico	
LEASE NAME State of New Mexico 'BO' ✓	WELL NO. 4 ✓	FIELD Moore (Devonian) ✓	COUNTY Lea
LOCATION UNIT LETTER M ✓; WELL IS LOCATED 660' FEET FROM THE South LINE AND 660' FEET FROM THE West LINE, SECTION 13 ✓ TOWNSHIP 11-South ✓ RANGE 32-East ✓ NMPM.			

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13-3/8"	316'	350	Surface	Circulation
INTERMEDIATE	8-5/8"	3515'	2300	Surface	Circulation
LONG STRING	5-1/2"	10,630'	450	8535'	Temp. Survey
TUBING	3-1/2"	10,550'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Model 'A' Tension Packer set @ 10,550'		
NAME OF PROPOSED INJECTION FORMATION Devonian ✓		TOP OF FORMATION 10,604'		BOTTOM OF FORMATION Unknown	
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLES Both		PROPOSED INTERVAL(S) OF INJECTION 10,604' to 10,780' ✓	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil Production		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? Yes	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH 8400-8401' w/50 sx; 8240-8241' w/50 sx; 8110-8111' w/100 sx; 8165-8270' dry & not squeezed.					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 300'		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA 8270'		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA No lower zones producing in area.	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.)	MINIMUM 3300	MAXIMUM 5000	OPEN OR CLOSED TYPE SYSTEM Closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Gravity	APPROX. PRESSURE (PSI) -
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -		WATER TO BE DISPOSED OF Yes		NATURAL WATER IN DISPOSAL ZONE Yes	ARE WATER ANALYSES ATTACHED? Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) State of New Mexico (not leased)					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL					
Amerada Petroleum Corp., P. O. Box 312, Midland, Texas					
TEXACO Inc., P. O. Box 728, Hobbs, New Mexico					
Great Western Drilling Co., Box 1659, Midland, Texas					
Gulf Oil Corp., Box 1938, Roswell, New Mexico					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER Yes		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)?		PLAT OF AREA Yes		ELECTRICAL LOG Yes	
				THE NEW MEXICO STATE ENGINEER Yes	
				DIAGRAMMATIC SKETCH OF WELL Yes	

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

J.G. Blevins, Jr. Assistant District Supt. December 23, 1965
(Signature) (Title) (Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY
LOVINGTON, NEW MEXICO

LABORATORY REPORT

No. W1-713-61

Date November 10, 1961

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

To Texaco, Inc.

Box 727

Lovington, New Mexico

Date Received

Well & Lease J.H. Moore # 2

Depth

Formation Dev.

Location 660' FS & WL, Sec. 13, T-11-S, 32-E Field Moore Source Well head

Specific gravity	60/60 °F	1.029
Color, filtrate		Colorless
pH		6.9
Resistivity	° 65 °F	138
		ppm (mp)
Chlorides, Cl		24,600
Sulfates, SO ₄		1,600
Alkalinity, HCO ₃		457
Calcium, Ca		1,569
Magnesium, Mg		316
Iron, Fe		Neg1.
Sodium, Na*		14,500
Sulfides, H ₂ S		Neg1.

Remarks:

ppm equals Parts per million uncorrected or milligrams per liter
* includes Potassium as Na.

Laboratory Analyst

Brewer

Respectfully submitted

HALLIBURTON COMPANY

By Dave Sutton
Dave Sutton, Division Chemist

CRN 3309



STATE OF NEW MEXICO
STATE ENGINEER OFFICE
SANTA FE

S. E. REYNOLDS
STATE ENGINEER

January 7, 1966

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

Case 3360

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

Dear Mr. Porter:

Reference is made to the application of Texaco Inc. which requests authority for a salt water disposal well identified as its State of New Mexico "BO" Well No. 4, Moore (Devonian) Field, Lea County, New Mexico.

This office offers no objection to the granting of the application, provided the tubing is internally plastic coated and the packer on the end of the tubing is set below the top of the cement surrounding the 5½" casing as indicated on the diagrammatic sketch.

Yours truly,

S. E. Reynolds
State Engineer

By: *Frank E. Irby*
Frank E. Irby
Chief
Water Rights Division

tmr

cc: Texaco Inc.

F. H. Hennighausen
District II Supervisor

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1120 SIMAS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 26, 1966

EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco Inc. for salt water
disposal, Lea County, New Mexico.

Case No. 3369

BEFORE:

Elvis A. Utz, Gas Engineer

TRANSCRIPT OF HEARING

MR. UTZ: Call Case 3369. Application of Texaco Incorporated for salt water disposal, Lea County, New Mexico.

MR. KELLY: Booker Kelly of White, Gilbert, Cook and Kelly appearing on behalf of the Applicant. I have one witness that has to be sworn.

(Witness sworn)

(Whereupon, Applicant's Exhibits 1-6 marked for identification.)

W I L L I A M P. Y O S T, a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position, and by whom you are employed?

A My name is William P. Yost, I am employed as a Petroleum Engineer by Texaco Incorporated in Hobbs, New Mexico.

Q Have you previously testified before this Commission?

A Yes, sir, I have.

Q Would you state briefly what Texaco seeks by the application?

A Texaco seeks permission to dispose salt water in the Devonian Formation through perforations from 10,604 to 10,780 feet in its State "BO" Well Number 4 located in Unit "M",

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Section 13, Township 11 South, Range 32 East in the Moore-Devonian Pool, Lea County, New Mexico.

Q I believe there's a slight error in the notice as far as where you're going to be injecting this water. Could you explain that to the Examiner?

A Yes, the minor error is the fact that the notice is published as perforations from this formation interval but it is a combination of perforations, an open hole section, I will give those later.

Q Now, referring to what has been marked Exhibit 1, which is the plat of the area, would you briefly go through the history of this pool and especially in relation to its injection?

A Yes. As indicated on this plat all ownerships and all wells and zones of completion within two miles of the proposed disposal as indicated in the Morrow-Devonian Pool is quite small, possibly 3 wells wide, and lock in a North and South running strip. Salt water disposal commenced in the Moore-Devonian Field on May 21, 1958 and the disposal well is the one on the plat as being in purple color on the far south end of the pool. This was completed in the Dewey Lake Formation and water was disposed through perforations 1260 feet and 1440 feet on February 8, 1964. Disposal was commenced in the alternate well just North of the initial well because of the

initial Dewey Lake Well which had failed, and we are currently disposing of water into this alternate well. All the water disposed into each of these wells was from the Moore-Devonian Pool and nearly 9.7 million barrels of water was disposed for the original well and a little over 1.8 million barrels have been disposed into that from a depth of 9,640 feet. This currently being used well is not readily receptive to salt water disposal. We are currently disposing of 3100 barrels per day at surface pressure of 2400 PSI. Our currently used disposal pumps are being used for in excess of a maximum safe rate of pressure by the manufacturer, and water is continuously increasing so we need to either install high volume, extremely high pressure equipment at a very huge cost, or select an alternate well, and the economics indicate that using the subject well, State Well Number 4, is the best thing to do. So disposal water back to the Devonian which we think will go in by hydrostatic pressure and not require pumping. If we get a permit for this well and convert it to a salt water disposal, we intend to hold the current well in reserve until the field is abandoned.

Q Now, referring to what has been marked Exhibit 2, which is a cross-section of the logs in the pool, will you explain the significance of that to the Examiner?

A Yes, the cross-section is made through the North and

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South cut as can be seen down through the middle row of wells in the pool and it represents the entire structure. It may be seen by the dotted line, the lower one. The original oil-water contact in the pool as determined by drill tests on a well after the discovery well was drilled indicates that it was at a subsea depth of approximately 6350 feet. The current oil-water contact based on production data of all the wells in the pool, subsea depth of approximately -6220 feet throughout the entire pool, and this cross-section does indicate that the water table is uniform and rising up structure throughout the entire pool and almost any place we would dispose of water at or below the water contact would be satisfactory and shouldn't endanger any wells producing oil from the Devonian Reservoir.

Q Now, which well do you propose injection?

A On this cross-section it's the one indicated by the log second from the left-hand side of the cross-section, and in that interval proposed for injection can be seen that the top of the Devonian is well below the current oil-water contact and also is indicated that we will drill deeper to the Devonian Reservoir to maintain a better zone and reduce operating costs, and we will use that section indicated on this log.

Q Is there a pool in the immediate area, Devonian Pool,

in which there is an injection procedure similar to this where you're producing out of the Devonian and injecting salt water back into it?

A Referring to Exhibit 3 and 3A--

MR. KELLY: Exhibit 3 is right under the cross-section and 3A is on the other side of the little booklet there.

A --in the East Caprock Devonian Pool approximately a mile and a half South of the subject Moore-Devonian Pool, water is being disposed into the Devonian Reservoir. Both of these maps show the Devonian contour or structure for each pool and also the faults in both pools.

Q (By Mr. Kelly) Do you have figures to show whether these two pools have common reservoir characteristics?

A Yes, sir, the Moore-Devonian Pool discovered a well in April of '52 and the Caprock-Devonian Field had its discovery in August of 1951. Development of each pool was rather rapid with 19 wells in the Moore Pool being drilled from 1952 to 1955, approximately three years, and the same for the East Caprock Pool with a total of 23 wells in a period of three years and 1 well in 1954. The initial reservoir pressure for the Moore Pool was 4099 PSI at a subsea datum of -6,050 feet as compared to an initial reservoir pressure of the East Caprock of 4454 PSI and a datum of -6900 feet PSI. The most recent bottom hole pressure data we have for the Moore-Devonian

Pool was a survey conducted in 1962 indicating a bottom hole pressure of 3868 PSI as compared to a pressure in 1965 of 4231 PSI. The bottom hole pressure designed for each of these pools over a pertinent period of time, 235 for the Moore-Devonian and 221 for the East Caprock. So essentially, the Moore Pool and the East Caprock as indicated by these very slight declining bottom hole pressures indicates a water-drive reservoir and also the fact that as of November 1, 1965 the Moore-Devonian Pool has a cumulative oil production of 12,869,985 barrels of oil and 13,908,483 barrels of water, as compared to the East Caprock of 18,049,399 barrels of oil and 42,008,149 barrels of water, and both pools have had very high volumes of BW withdrawal for very small bottom hole pressure decline which further substantiates the water volume. These are not giving credit to the formations' volume factor since the gas-oil ratio is very low; this is not taken by the barrel of oil here.

Q Have you prepared performance curves to show the lack of effect of injection in the Devonian?

A Let me explain here, a comparison of what is taking place; on Exhibit 3A which is the structure for the East Caprock Devonian you may see outlined there in yellow all wells adjacent to the disposal wells used at one time or another in the East Caprock Pool, Amerada's Posey "A". Number 4 in Unit B of Section 14

was an initial disposal well and later on it was recompleted in the Pennsylvanian for a producer, and there West adjacent, ECA Number 1 is a principal well. Just a comparison in this area outlined in yellow prior to the time when the disposal commenced in the Devonian Reservoir, nearly 7.3 million barrels of fluid had been withdrawn from the reservoir in that area as compared to a comparable area also outlined in yellow on Exhibit 3, all these surround the subject disposal well in this area. Nearly 12.2 million barrels a foot have been withdrawn. Now, currently as I mentioned Amerada State ECA is the current disposal well and in the area outlined on Exhibit 3A by the broken red lines the withdrawal--pardon, the injection to withdrawal ratio as of November 1965 is 2.92 compared to the Moore Pool outlined in a solid red line had we been disposing of water the injection ratio would have been 1.13 which is considerable less in the East Caprock Devonian. And as outlined on Exhibit 3 by a broken red line you see we have dropped Amerada which is anticipated to be watered out and shut in or abandoned in the near future. At that time when that happens the injection to withdrawal ratio will be 1.22 and we expect this low withdrawal ratio to exist throughout the life of the field. Of course, production techniques and improved equipment will help, but we don't expect it to get any higher, never as high as the withdrawal area in the East Caprock.

In the East Caprock the total cumulative water injected as of December 1, '65, is nearly 6.5 million barrels of water and further exhibits will indicate that we can detect no detrimental or any kind of effects on nearby producing wells.

Q Going on to the performance curves, would you locate them on the plats and explain the significance?

A Yes. Exhibit 4 is a performance curve of Amerada State ECA Well Number 1. At the time it was a producing well prior to being converted to salt water disposal. This curve is typical of all the wells in the East Caprock Devonian Pool and as can be seen here in the latter part of 1/'58, that's the time when water was commenced to be disposed of in the Posey "A" Number 4 just East of this State ECA Number 1, and you can see there's no change in the Oil or water production so therefore putting water back to the Devonian an adjacent well had no effect on it.

Exhibit 4 A is a curve just to compare with this curve on Exhibit 4, and it is a well that somewhat removed from the disposal well itself, and the production.

Q Would you locate the well on your plat?

A Yes, this Exhibit 4A is the performance curve for Amerada State ECF located in Unit M of Section 11, Township 12 South, Range 32 East, and as can be seen it was somewhat removed from the disposal well and it was diagonal and adjacent

to the disposal well, same type of performance is had as compared to the disposal well.

Q You have a performance curve marked Exhibit 5 which is in the subject pool?

A Yes, this is a performance curve Texaco State Well for the subject well that we are asking for permission to use for salt water disposal. This performance curve is typical of all wells in the Moore-Devonian Pool that produces water. As can be seen it's very similar and typical of the East Caprock performance data.

Q In your expert opinion does the injection of salt water, reinjection, have any effect as far as increase or any effect at all on production?

A I don't believe so.

Q This is in no way a secondary recovery project?

A That's correct.

Q Referring to your schematic diagram would you briefly explain the proposed installation for the disposal well?

A Yes, as prior mentioned the disposal interval will be through perforations of a total depth of 10,604 feet to 10,629 and into an open hole section which is to be drilled from the total depth of 10,630 to 10,780. The top of the perforation is in the top of the Devonian Reservoir and its subsea depth is -6256 feet as compared to the oil-water contact subsea

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depth of -6220 feet. We expect better permeability. To be sure that the water will graft in the tubing is to be internally plastic coated from top to bottom, to be corrosion resistant. The packer is a Baker Model 'A' Tension packer. The top is to be plastic coated and its to be set at approximately 10,550 feet. The annular space between the tubing and casing is to be filled with corrosion-inhibited water. That should give protection to all subsurface equipment in the disposal well.

Q I notice that you, when you perforated your Wolfcamp these have not been cement squeezed. Do you propose to loose any fluid?

A No, we propose to leave that open to produce our costs of equipment of the wells, and the thinking behind that is as can be seen there by the perforated intervals above the top of the primary cement. It is quite a bit of cement to isolate this Wolfcamp from all other zones and we perforated and quite extensively acidized it. The well swabbed dry; the acidizing pressures were above 5,000 pounds, so therefore we feel that having casing, tubing, annulus load this heavy the fresh water will stay in place.

Q What would be the effect if this application were denied as far as your plans for disposal or life of the pool?

A Well, really it would considerably hasten the abandonment date of these wells, estimated roughly at

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cumulative cost of disposal from now to the life of the pool at approximately two cents a barrel for salt water operating costs, that is with these high pressure or high volume pumps, and estimate that this would in turn mean to abandon a well when it was producing 15 or 18 barrels a day where we could take them down to 7 or 8 barrels a day. They were producing 1,000 barrels of water at two cents a barrel and--

Q What is your pressure on your injection well now?

A It's approximately 2500 PSI and there are indications that the receptivity of the reservoirs into each, we're injecting now, the limit would be reached before we reached a disposal rate of 5,000 barrels of water a day which we anticipate before abandonment of the wells in the pools. We don't know that will happen but there is an indication that this receptivity would be reached before we reach our maximum.

Q Would this promote the efficient production of the oil in place?

A Yes, as mentioned before, these operating expenses would prolong the life of the entire field.

Q Were Exhibits 1 through 6 prepared by you or under your supervision?

A Yes.

Q Have you also received a letter from the State

Engineers office giving his consent to the procedure?

A Yes, we have it certified. This is to set the packer below the cement top and injection interval.

MR. KELLY: I believe the outline was sent to you?

MR. UTZ: Yes, it's in the file.

MR. KELLY: I move the introduction of Applicant's Exhibits 1 through 6.

(Whereupon, Applicant's Exhibits 1 through 6 were offered into evidence.)

MR. UTZ: If there are no objections the exhibits will be admitted.

(Whereupon, Applicant's Exhibits 1 through 6 were admitted into evidence.)

CROSS-EXAMINATION

BY MR. UTZ:

Q I believe it's your testimony that this injection will be the water-oil contact?

A Yes, that is correct.

Q And I believe you did say you were going to load the annulus with fresh water?

A Corrosion inhibited, we use this to check our leaks and communication.

Q You would have a good check on any leakage of water other than into the injection zone?

A Yes, that's true. Normally when we load the annulus in these type of wells we will leave 1500 pounds of pressure on the back side there with a pressure gauge on there so you can have a ready check by the system operator.

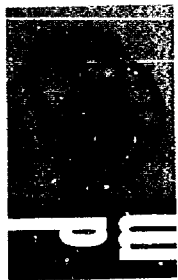
Q I think I missed your testimony on the name of the first injection well in this pool?

A That, I believe at the time it was installed, carried the old name of State of New Mexico BNNC, the one Well Number 1 SWD. The current one is the Texaco BNNC, the Well Number 1 which is the Texaco producing well.

Q Where is that located?

A It's the one indicated by the green color on the plat just North of the Dewey Lake Well. That is the current well being used for disposal.

MR. UTZ: Any other questions of the witness? The witness may be excused. Any other statements in this case? The case will be taken under advisement.

I N D E X

WITNESS	PAGE
WILLIAM P. YOST	
Direct Examination by Mr. Kelly	2
Cross-Examination by Mr. Utz	13

E X H I B I T S

<u>NUMBER</u>	<u>MARKED FOR IDENTIFICATION</u>	<u>OFFERED</u>	<u>ADMITTED</u>
Applt's. 1	2	13	13
Applt's. 2	2	13	13
Applt's. 3	2	13	13
Applt's. 4	2	13	13
Applt's. 5	2	13	13
Applt's. 6	2	13	13

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STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, BOBBY J. DAVIS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 25th day of March, 1966.

Bobby J. Davis
NOTARY PUBLIC

My Commission Expires:

March 13, 1969

I do hereby certify that the foregoing is a complete record of the proceedings in the trial and hearing of case no. 3369, heard at St. Paul, Jan. 28, 1966.

Thurston, Engineer
New Mexico Oil Conservation Commission

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 26, 1966

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

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

CASE 2720: (Reopened and continued from the January 5, 1966 Examiner Hearing)

In the matter of Case No. 2720 being reopened pursuant to the provisions of Order No. R-2397-B which continued the original order for an additional year, establishing special rules governing the production of oil and gas wells in the Double-X Delaware Pool, Lea County, New Mexico, including classification of wells as gas wells when the gas-liquid hydrocarbon ratio exceeds 30,000 to one.

CASE 3365: Application of Humble Oil & Refining Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the North Cedar Hills Unit Area comprising approximately 8,500 acres of Federal, State and Fee lands in Township 20 South, Range 28 East, and Township 21 South, Range 27 East, Eddy County, New Mexico.

CASE 3366: Application of Coastal States Gas Producing Company for a pilot pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot pressure maintenance project by the injection of water into the San Andres formation through three wells in Sections 15, 21 and 33, Township 9 South, Range 33 East, Flying "M" San Andres Pool, Lea County, New Mexico; applicant further seeks rules governing said project including a provision for administrative approval for the conversion of additional wells to water injection.

CASE 3367: Application of Penroc Oil Corporation for a non-standard oil proration unit and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a non-standard oil proration unit comprising the NE/4 SW/4, N/2 SE/4, and SW/4 SE/4 of Section 7, Township 19 South, Range 32 East, Lusk-Strawn Pool, Lea County, New Mexico, said unit to be dedicated to a well to be drilled at an unorthodox location for said pool 660 feet from the South line and 1650 feet from the East line of said Section 7.

CASE 3368: Application of Standard Oil Company of Texas for a waterflood expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Maljamar Waterflood Project, formerly the Leonard Nichols Maljamar Waterflood Project, by the conversion to water injection of nine wells located in Sections 3, 4, 9, 10, 11 and 15, Township 17 South, Range 32 East, Lea County, New Mexico.

January 26, 1966 Examiner Hearing

CASE 3369: Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Devonian formation through perforations from 10,604 to 10,780 feet in its State "BO" Well No. 4 located in Unit M, Section 13, Township 11 South, Range 32 East, Moore-Devonian Pool, Lea County, New Mexico.

CASE 3370: Application of Shell Oil Company for an exception to Rule 8 of Order No. R-2065 and to Rule 301, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 8 of Order No. R-2065 and to Rule 301 of the Commission rules and regulations to permit discontinuance of individual gas-oil ratio tests in its Carson Bisti-Lower Gallup Pressure Maintenance Project, Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico. Applicant proposes to report gas production and ratios on a unit-wide basis rather than individual well GOR data.

CASE 3371: Application of Midwest Oil Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Harris State Well No. 1 at an unorthodox location 660 feet from the South line and 1980 feet from the West line of Section 29, Township 13 South, Range 34 East, Nonombre-Pennsylvanian Field, Lea County, New Mexico.

CASE 3372: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the amendment to Rule 104 F of the Commission rules and regulations to provide administrative procedure for the approval of an unorthodox location necessitated by recompletion of a well previously drilled to another horizon.

CASE 3373: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider amendment of Rule 301 to provide executive authority for the Secretary-Director to exempt, for good cause, certain pools from the annual gas-oil ratio test requirements; further, the Secretary-Director could, where necessary, order annual oil production tests in lieu of gas-oil ratio tests.

CASE 3374: In the matter of the hearing called by the Oil Conservation Commission on its own motion to amend Rule 302 of the Commission rules and regulations to eliminate the requirement for calibration of bottom-hole pressure test bombs prior and subsequent to each pressure test.

Case 3369

Filed 1-26-66

Rec. 1-27-66

1. Approve Texaco's SWP well in Moore Devonian Pool. The well ~~is~~ is then St. New Mex. 'BO' Well #4 N 13-115-32E.
2. Water shall be injected down 3 1/2" plastic coated tubing & under a Baker Model 'A' packer set at approx. 10,550.
3. Injection shall be in the Devonian at approx. 10,604 to 10,629.

This A. W. B.

DRAFT
JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CF Subj. _____

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

CASE No. 3369

Order No. R- 3034

APPLICATION OF TEXACO INC. FOR
SALT WATER DISPOSAL, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
January 26, 1966, at Santa Fe, New Mexico, before Examiner
Elvis A. Utz.

NOW, on this 26th day of Feb., 1966, 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., is the owner and
operator of the State "B0" Well No. 4 located in Unit M of Sec-
tion 13, Township 11 South, Range 32 East, NMPM, Moore-Devonian
Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to
dispose of produced salt water into the Devonian formation, with

injection ^{through} ^{approximately 10,629} into perforations from 10,604 to ~~10,780~~ feet and into the
^{open hole interval from 10,630 to 10,780 feet.}

(4) That the injection should be accomplished through
3 1/2-inch internally plastic-coated tubing installed in a
packer set at approximately 10,550 feet; that the casing-tubing
annulus should be filled with ^{an inert fluid} ~~corrosion-inhibited water~~; and

that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

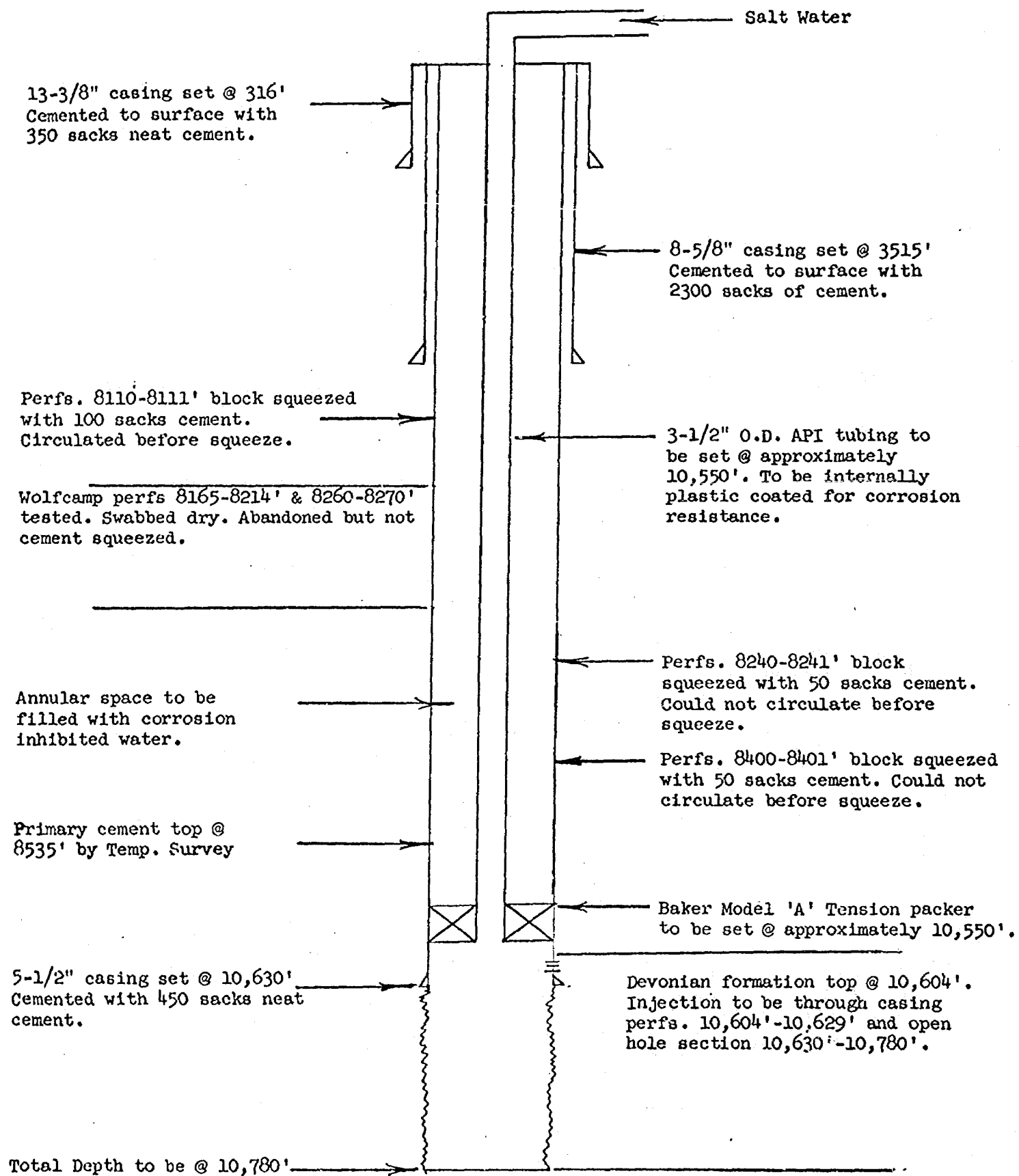
(1) That the applicant, Texaco Inc., is hereby authorized to utilize its State "BO" Well No. 4 located in Unit M of Section 13, Township 11 South, Range 32 East, NMPM, Moore-Devonian Pool, Lea County, New Mexico, to dispose of produced salt water into the Devonian formation, injection to be accomplished through 3 1/2 - inch tubing installed in a packer set at approximately 10,550 feet, with injection into the perforated interval from ^{approximately} 10,604 to ^{10,629} ~~10,780~~ feet and into the open hole interval from ^{10,630} ~~10,630~~ to 10,780 feet.

PROVIDED HOWEVER, that the tubing shall be internally plastic-coated; that the casing-tubing annulus shall be filled with ~~corrosion inhibited water~~ ^{an inert fluid}; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(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.



TEXACO Inc.

Diagrammatic Sketch - Proposed SWD Well
State of New Mexico 'BO' Well No. 4
Moore (Devonian) Field
Lea County, New Mexico

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 3369
Order No. R-3034

APPLICATION OF TEXACO INC.
FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
January 26, 1966, at Santa Fe, New Mexico, before Examiner
Elvis A. Utz.

NOW, on this 3rd day of February, 1966, 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., is the owner and
operator of the State "BO" Well No. 4 located in Unit M of Sec-
tion 13, Township 11 South, Range 32 East, NMPM, Moore-Devonian
Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to
dispose of produced salt water into the Devonian formation, with
injection through perforations from approximately 10,604 to 10,629
feet and into the open hole interval from 10,630 to 10,780 feet.

(4) That the injection should be accomplished through
3 1/2-inch internally plastic-coated tubing installed in a packer
set at approximately 10,550 feet; that the casing-tubing annulus

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CASE No. 3369
Order No. R-3034

should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to utilize its State "BO" Well No. 4 located in Unit M of Section 13, Township 11 South, Range 32 East, NMPH, Moore-Devonian Pool, Lea County, New Mexico, to dispose of produced salt water into the Devonian formation, injection to be accomplished through 3 1/2-inch tubing installed in a packer set at approximately 10,550 feet, with injection into the perforated interval from approximately 10,604 to 10,629 feet and into the open hole interval from 10,630 to 10,780 feet;

PROVIDED HOWEVER, that the tubing shall be internally plastic-coated; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

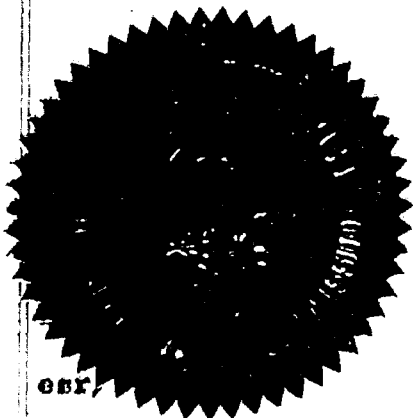
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

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



csr

State of New Mexico
Oil Conservation Commission



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

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

Re: Case No. 3369
Order No. R-3034
Applicant:

TEXACO INC.

Dear Sir:

Dear Sir:

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

Truly yours,

Very truly yours,

Very truly yours,
A. L. Carter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
 Artesia OCC
 Aztec OCC

other.

Diagrammatic Sketch - Proposed SMD Well
 State of New Mexico, BO' Well No. 4
 Moore (Devonian) Field
 Lea County, New Mexico

TEXACO Inc.

