Case Number 6008

Application

Transcripts.

Small Exhibits

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IN THE MATTER OF: Application of Texaco, Inc. for a pressure maintenance project, Lea County, New Mexico.

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

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For the New Mexico Oil Conservation Commission:

Lynn Teschendorf, Esq. Legal Counsel for the Commission State Land Office Building

CASE

6008

Santa Fe, New Mexico

For the Applicant: Ken Bateman, Esq.

WHITE, KOCH, KELLY & McCARTHY 220 Otero Street

Santa Fe, New Mexico

For Phillips Petroleum Company:

W. Thomas Kellahin, Esq. KELLAHIN & FOX 500 Don Gaspar Santa Fe, New Mexico

sid morrish reporting service Ceneral Court Reporting Service Calle Mejia, No. 122, Santa Fe, New Mexi∞ 87501 Phone (505) 982-9212 MR. STAMETS: Call next Case 6008.

MS. TESCHENDORF: Case 6008. Application of Texaco, Inc. for a pressure maintenance project, Lea County, New Mexico.

MR. STAMETS: I'll call for appearances.

MR. BATEMAN: Mr. Examiner, I'm Ken Bateman with White, Koch, Kelly and McCarthy, appearing on behalf of the Applicant, and this advertisement was given to insure that adequate notice was given of the pressure maintenance aspect of the application in Case 5970, and I request that the record of Case 5970 be incorporated in Case 6008.

MR. KELLAHIN: Tom Kellahin of Kellahin and Fox, Santa Fe, New Mexico, appearing on behalf of Phillips Petroleum Company and we concur in Mr. Bateman's request.

MR. STAMETS: The record in Case 5970 will be incorporated into the record today.

Anything further in this case?

The case will be taken under advisement.

(Hearing concluded.)

REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Certified Shorthand Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Sidney F. Morrish, C.S.R.

sid morrish reporting service
General Court Reporting Service
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501
Phone (505) 982-9212

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The Market of Casa Inc. 6008.

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Memo

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From

FLORENE DAVIDSON
ADMINISTRATIVE SECRETARY

To

a pressure maintenance project, Lea
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ito Central Vacuum Unit
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Water into the G-Sa
farm thru 54 wells

OIL CONSERVATION COMMISSION-SANTA FE



DIRECTOR JOE D. RAMEY

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO P. O. BOX 2088 - SANTA FE 87501

LAND COMMISSIONER PHIL R. LUCERO

Re:



STATE GEOLOGIST EMERY C. ARNOLD

6008

Mr. Kenneth Bateman	ORDER NO. R-5530	
white Koch, Kelly W Modern		
Attorneys at Law	Applicant:	
Santa Fe, New Mexico	Texaco Inc.	
	Texaco III.	
Dear Sir: Enclosed herewith are two controls order recently e	opies of the above-referenced in the subject case.	
Yours very truly, JOE D. RAMEY Director		•
JDR/fd Copy of order also sent to	:	
Hobbs OCC x Artesia OCC x Aztec OCC		
Other Tom Kellahin		

CASE NO.

See case 5948

50 in wells unorthodox locations

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

APPLICATION OF TEXACO, INC. FOR A PRESSURE MAINTENANCE PROJECT, LEA COUNTY, NEW MEXICO

CASE NO. 6008

APPLICATION

COMES NOW Texaco, Inc., by White, Koch, Kelly & McCarthy and moves the Commission for its order approving a pressure maintenance project in the Central Vacuum Unit, Lea County, New Mexico located on lands more particularly described as follows:

Township 17 South, Range 34 East Section 25: SE/4 NE/4 and S/2

Township 17 South, Range 35 East Section 30: All Section 31: N/2, SW/4 and SW/4 SE/4

Township 18 South, Range 34 East Section 12: N/2 NE/4

Township 18 South, Range 35 East Section 6: All Section 7: NW/4 and NW/4 NE/4

And as cause therefore respectfully shows the following:

- 1. Attached hereto marked Exhibit "A" is a plat showing the location of proposed injection wells and, in addition, the location of an existing producing well to be converted into an injection well, designated as well number 131 (Sun Oil Company "B" Lee State number 7) located in the southwest quarter of the northwest quarter of Section 7, Township 18 South, Range 35 East, N.M.P.M.
- 2. Attached hereto marked Exhibit "B" and incorporated herein by reference is a plat showing all wells within a radius of two miles from the proposed injection wells and a formation from which the wells are producing or have produced. In addition, the names of the lessees of off-setting acreage within a two miles radius is indicated.

- 3. Attached hereto as Exhibit "C" is a diagramatic sketch of the proposed injection wells showing the casing strings, including the diameters and setting depths, quantity use and tops of cement, the perforated and open hole intervals, tubing strings, including diameters and setting depths and the type and location of packers.
- 4. Attached hereto as Exhibit "E" is a diagramatic sketch of the Sun Oil Company "B" Lease State No. 7 indicating the proposed conversion of the well to an injection well.
- 5. The applicant proposes to inject fresh water from the Ogalala formation into the wells at the rate of 900 barrels per day per well to be injected into the producing formation, specifically the Grayburg-San Andres formation identified between the depths of 3,858 feet (plus 144 feet sub-sea) and 4,858 (minus 856 feet sub-sea) on the Welex Acoustic Yelocity Log run on November 15, 1963 in Texaco's State of New Mexico "O" (NPC-1) Well No. 23, located in the southwest quarter of the southeast quarter of Section 36, Township 17 South, Range 34 East, Lea County, New Mexico, and all sub-surface points throughout the unit area correlative to the identified depths.

WHEREFORE applicant prays that the Commission determine that a sufficient showing has been made of the conditions required by Rule 701; that the Commission make findings to that effect and promulgate its Order permitting pressure maintenance project as proposed by the applicant in the Central Vacuum Unit, Lea County, New Mexico.

Respectfully submitted,

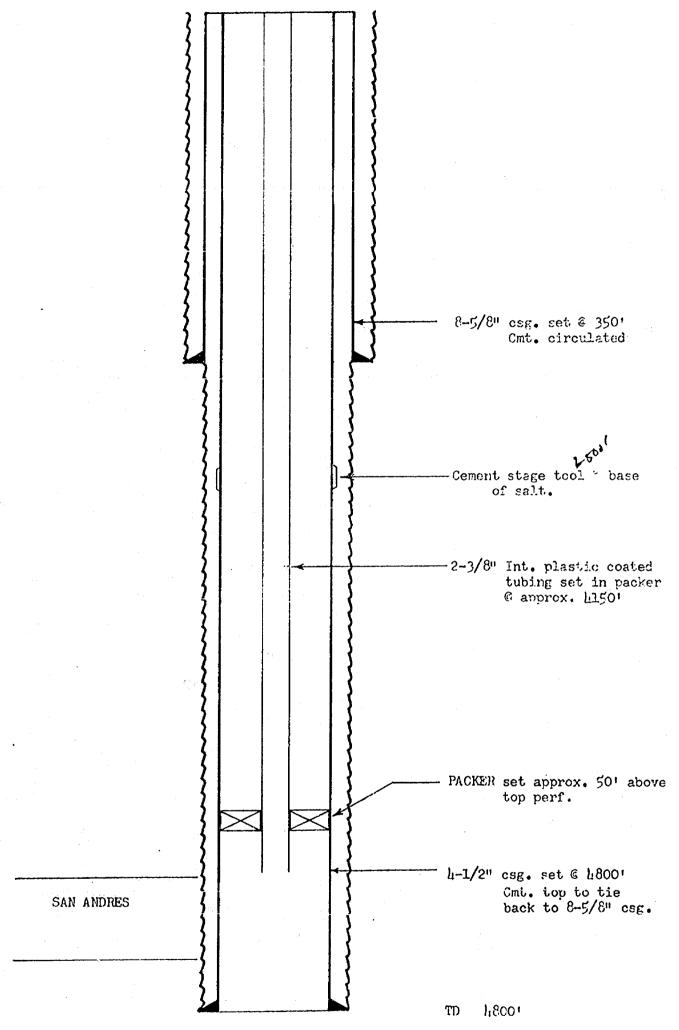
WHITE, KOCH, KELLY & MOCARTHY

By: / / MINICAL REMAN

Attorneys for Applicant -

Texaco, Inc. P. O. Box 787

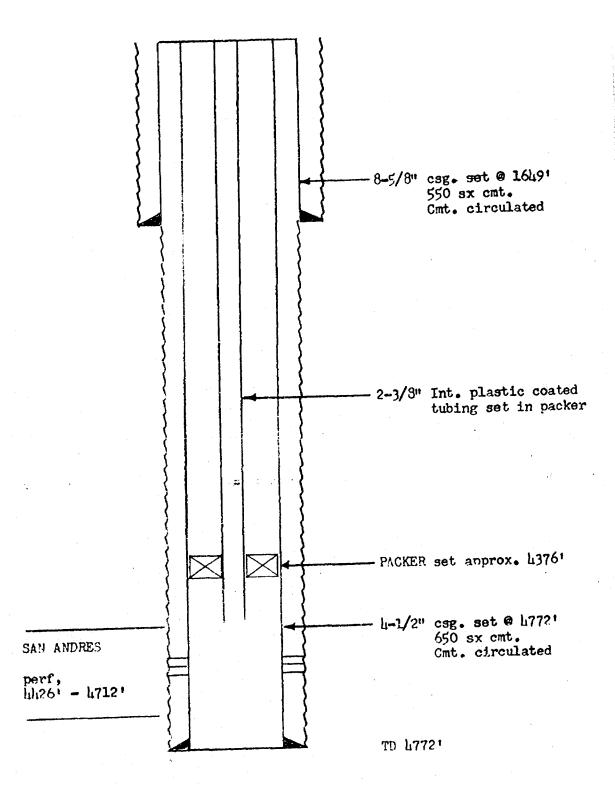
Santa Fe, New Mexico 87501



TYPICAL INJECTION WELL COMPLETION

TEXACO Inc.
PROPOSED
CENTRAL VACUUM UNIT
VACUUM (GRAYBURG-SAN ANDRES) FIELD
LEA COUNTY, NEW MEXICO

15



PROPOSED CVU NO. 131 WELL COMPLETION (SUN OIL CO. "B" LEE STATE NO. 7)

TEXACO Inc.
CENTRAL VACUUM UNIT
VACUUM (GRAVBURG-SAN ANDRES) FIELD LEA COUNTY, NEW LEXTCO

WRII/SVY

OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE, NEW MEXICO 87501

February 8, 1979

Texaco Inc. Drawer 728 Hobbs, New Mexico 88240

Attention: Mr. J. V. Gannon

Gentlemen:

After reviewing the information in your letter of January 29, 1979, it would appear that your New Mexico "Q" State Well No. 4 and the New Mexico "AB" State Well No. 5 have been cemented sufficiently so as to prevent migration of water injected into the San Andres formation.

It will therefore not be necessary to perform remedial work on these wells as stipulated in Order No. R-5530.

Yours very truly,

JOE D. RAMEY Director

JDR/fd



January 29, 1979

TEXACO INC. DRAWER 728 HOBBS, NEW MEXICO 88240

CENTRAL VACUUM UNIT LEA COUNTY, NEW MEXICO

6008

State of New Mexico Department of Energy and Minerals Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico, 87501

Attention: Mr. Joe D. Ramey Secretary-Director

Gentlemen:

Richard; What do you think.

In accordance with Paragraph 7 of NMOCC Order R-5530 and Exhibit "C" to Order R-5530, certain injection wells in the Central Vacuum Unit are restricted to injection below hydrostatic pressure until those wells on Exhibit "C" are repaired or it has been demonstrated that the wells will not serve as an avenue of escape for injection water.

In our opinion the Texaco-New Mexico "AB" State Well No. 5 and Texaco-New Mexico "Q" State Well No. 4 will not serve as avenues of escape for injection water in the San Andres formation. In the case of the New Mexico "AB" State No. 5, cement was circulated on the surface casing (340 feet) and intermediate casing (3070 feet) while the cement top on the production casing strings (set at 8849 and 8850 feet) is approximately 1250 feet. The cement top, which was reported on this well in conjunction with our application for the Central Vacuum Unit Pressure Maintenance Project, was inadvertently reported as being at 6200 feet. The enclosed Temperature Log shows the cement top to be at 1250 feet (the top of the Neat cement is at 6200 feet and is the source of the confusion on the cement top). Calculations of the cement volume used in cementing this well show that the cement volume exceeds the calculated annular volume up to the cement top (1250 feet) by 38 percent.

AB 5 J 6-18-35

State of New Mexico January 29, 1979 Since cement circulated on the intermediate casing and the cement top on the production casing is 1820 feet above the intermediate casing shoe, it is our opinion that this well will not serve as an avenue of escape for water injected into the San Andres forma-In the case of the New Mexico "Q" State Well No. 4, cement was circulated on the surface casing (385 feet) and intermediate casing (4799 feet) while the cement top on the production casing strings (set at 10,150, 10,176, and 11,468 feet) is calculated to tie into the intermediate casing by at least 500 feet. Calculations of the cement volume used in camenting this well show that the cement volume exceeds the calculated annular volume up to 4299 feet (500 feet above the intermediate casing show by 55 percent). Calculations on similar wells in the area with known cement tops show 53 percent excess. Furthermore, the intermediate casing is set approximately 70 feet below the lowermost San Andres injection interval. Therefore, it is our opinion that this well will not serve as an avenue of escape for water injected into the San Andres reservoir. Your early consideration and reply on this matter will be appreciated. Yours very truly, TEXACO INC. PRODUCING DEPARTMENT-CENTRAL U. S. AV Dannon wee-J. V. Gannon WRH: JEB District Superintendent Attachment

OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE, NEW MEXICO 87501

January 5, 1979

Mobil Oil Corporation Three Greenway Plaza East Suite 800 Houston, Texas 77046

Attention: Mr. J. A. Morris

Gentlemen:

After reviewing the schematic diagram of the wellbore of your State DD Well No. 1, it appears the well is cased and cemented in such a manner as to contain water injected into the San Andres pay zones.

It will therefore not be necessary to do additional work on the well as required by Order No. R-5530.

Yours very truly,

JOE D. RAMEY Director

JDR/fd

cc: Hobbs

Case File No. 6008

Memo

From

JERRY SEXTON
District Supervisor
January 3, 1979

To

Joe

Attached is a copy of the letter from Mobil requesting an exemption to Order R-5530 requiring them to recement their State DD we!1 #1 in Unit D of Sec. 31, T17S, R35E.

The letter explains what they have in the well, but a schematic and casing report have also been included.

NEW MEXICO OIL CONSERVATION COMMISSION - HOBBS, NEW MEXICO

Пана	

CLP

January 23, 1978

ROG

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Miller of the

Attn: Mr. Joe D. Ramey Secretary Director Q)A

7.01
MOBIL OIL CORPORATION STATE "DO"
WELL NO. 1 - CEVTRAL VACUUM
UNIT AREA, VACUUM-GRAYBURGSAN ANDRES POOL NACCC
ORDER NO. R-5530, EXHIBIT "C"

Gentlemen:

The captioned well is listed in your Exhibit "C", NMOCC Order No. R-5530 as a well completed in such a manner that it might serve as a channel for injected water to migrate from the San Andres Pay to other formations, or to the surface.

Please find attached a diagrammatic wellbore sketch of Mobil's State "DD" \$1, in the Vacuum North Abo Field, Lea County, New Mexico.

The wellbore sketch shows the cement behind the 9-5/8" casing circulated to the surface. The San Andres pay to be flooded is 4358'-4668'. The bottom of this pay is 232' above the 9-5/8" casing shoe. The formation below this pay is tight, with only a few streaked intervals of porosity down to the top of the Glorietta at 5900'. Considering the distance from the bottom of the flooded pay to the casing shoe, and the lack of consistent porosity through that interval, we feel that this wellhore will not serve as an avenue of escape of injected water, and needs no remedial work.

Yours very truly,

J. A. Morris Regulatory Engineering Supervisor

RMieaver/deln Hiw

NECC has reviewed your data and concur with your opinion.

BCC: AJALCOTT NE BOURLAND AJ HAKKINSON SIGNED

Secretary Director NACC

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FORM C-103

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OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE, NEW MEXICO 87501

January 5, 1979

Continental Oil Company Box 460 Hobbs, New Mexico

Gentlemen:

After reviewing the schematic diagram of the wellbore of your State H-35 Well No. 9, it appears the well is cased and cemented in such a manner as to contain water injected into the San Andres pay zones.

It will therefore not be necessary to do additional work on the well as required by Order No. R-5530.

Yours very truly,

JOE D. RAMEY Director

JDR/fd

cc: Houbs

Case File No. 6008

Memo

From

JERRY SEXTON District Supervisor

To Joe,

> Attached is the data on Continental State H-35 in the Vacuum field which Order No. R-5530 required that the well be recemented. It may not need to be recemented for the following reasons:

- The intermediate casing is set 200' below the lowest perf in the area.
- 2. A D.V. tool was used in the $5\frac{1}{2}$ " casing string and the Glorieta is covered with cement.

- Attached: 1. Schematic
 - 2. San Andres perf
 - 3. Casing erports

NEW MEXICO OIL CONSERVATION COMMISSION - HOBBS, NEW MEXICO

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Floors

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-35-17-34 Phillips - ME. Hale 41	Pred	4482- 4502
2-35-17-34 Phillips - M.E. Hole #3	Prod TA	1099- 4492
-35-17-34 Phillips - ME Halo #5	Prod	1097-4696
-35-17-34 Phillips - ME Hale #6	Pred	4089'-4721
-35-17-34 - Phillips - ME Hele # 2	Prod	4566-1664
		and demonstration county

SECTION 36 All

- 36-17-34 - Amerida - 5tate VO#1	P#A	
7-36-17-34-Texoco - c.v. unit #40	(Prod)	4 400 - 4701
-36-17-34 - Texaco - C.V. Mint # 41	(Inj.)	4380- 47/0
1-36-17-34-Texsco - co. unit # 42	(Inj)	4364- 4700
-36-17-34 - Texoco - CV unt # 43	(Inj)	4391- 4712
136-17-34 - Tetoco - C.U. Unt 451	(Pred)	4100- 4667
3-36-17-34 - Texoco - C.V. Unt # 52	(Prod)	4556- 4730
1-36-17-34 - Texico - C.V. unt #53	(And)	4094-4700
7-36-17-34- TEXOLO - C.V. and A 54	(wod)	4100 - 4705
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36-17-34-Texsco - C. V. mit #56	(ניינה)	4383 - 4710
3-36-17-34 Texaco - C.V. mit #54	(Inj.)	4282 - 4726
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F''W MEXICO OIL CONSERVATION COMMISSION Form C-1011 Santa Fe, New Mexico Revised 7/1/57

REQUEST FOR (OIL) - (CAS) ALLOWARLE

DEC | 3 | 10 07 | 1 '63 Recommences

Form C able wi month	:-104 is (II be ass of comp	to be su igned of oletion o	bmitted in Tective 7:0 or recomple	QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allow- 0 A.M. on date of completion or recompletion, provided this form is filed during calendar etio. The completion date shall be that date in the case of an oil well when new oil is deliv- st be reported on 15.025 psia at 60° Fahrenheit.
				Hobbs, New Mexico 12-10-63
			4.1	(Place) (Date)
				NG AN ALLOWABLE FOR A WELL KNOWN AS:
Con	cinen	car C	TT COM	pany State H-35 , Well No. 9 , in SE 1/4 NE 1/4,
1	(∞mp± H	ny or Op aa	35	(Lexic) T 17S R 34E NMPM., Vacuum Wolfcamp Pool
	Lea		****************	County Date Spudded 10-2-63 Pate Drilling Completed 11-26-63 Elevation 4022 Total Depth 10,094 XXX DOD 10,088
	Please in	idicate l	ocation:	Top 011/XX Pay 9854 Name of Fred. Form. Wolfcamp
D	C	В	A	
1	1	1		PRODUCING INTERVAL - 9604-17, 9622-28, 9716-25, 9728-34, 9744-
E	F	G	H	50, 9854-56, 9860-66, 9980-90, 10,008-50, and 10,068-74
		1 4	1 1	Open Hole Casing Shoe 10,094 Depth Tubing 9,600
			X	OIL WELL TEST -
L	K	J	I	Choke Natural Prod. Test: bbls.oil, bbls water in hrs, min. Size
1		{		
M	N	0	P	Test After Acid or Fracture Treatment (after recovery of volume of oil equal to volume of Choke
] "			-	load oil used): 275 bbls, oil, 12 bbls water in 23 hrs, min. Size 16/6
				GAS WELL TEST -
1980			FEL	Natural Prod. Test: MCF/Day; Hours flowed Choke Size
Lubing	(Foot) Casing	AGE) and Come	nting Recor	
Size		Feet	Sax	Test After Acid or Fracture Treatment: MCF/Day: Hours flowed
	,,]			Choke Size Method of Testing:
11-3	/4	385	450	Choke Size Rethoo of Testings
8-5	/8 4	OHO	600	Acid or Fracture Treatment (Give amounts of materials used, such as acid, water, oil, and sand): Acidized Wolfcamp 1st stage 9854-10,074 w/8000 male
1000	70 4	340		
5-1,	/2 10	094	450	Casing Tubing 350 Date first new Press. Press. 950 oil run to tanks 12-4-63
2-1	/10 9	600	·	Oil Transporter Magnolia Pipe Line Co.
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Remarks	*A	cidiz	ed Wolf	camp 2nd stage 9604-9750 w/8,000 gals.
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The	reby cer	tify tha	t the infor	mation given above is true and complete to the best of my knowledge.
Approved		DEC 8	A 1000	Continental Oil Company
Approved	J		Marian de la constante de la c	(Company or Operator)
	dir c	ONSER	VATION (COMMISSION By: (GHED: G. C. JAULESON (Signature)
	fort-			Assistant District Manager
Byr.C	C			THE Constitution of the state o
- Fitle			, ag Eduna	Send Communications regarding well to: Continental Oil Company
NMOCC	- 5 S	IO.	File	Box 460, Hobbs, New Mexico
1				Address

NEW MEXICO OIL CONSERVATION COMMISSION FORM C=103 (Rev 3-55) MISCELLANEOUS REPURITS ON WELLS (Submit to appropriate District Office pg Composite Nine)										
Name of Company Continental Oil Company Box 460, Hobbs, N. M.										
Lease		W.	ell No. Unit	Letter	Section	Township	1	lange		
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Deginin Pluggin	Beginning Drilling Operations									
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w/250 sx. Pozmix "S" 11 w/4% gel. Plug down at 3:30 A.M. on 11-27-63. DV tool set at 6916. Cemented 2nd stage thru DV tool w/200 sacks Pozmix 1:1 w/4% gel. Plug down at 8:15 A.M. on 11-28-63. Top of cement 5810 by temperature survey. WOC 36 hours. Tested casing to 1,750% for 30 minutes. Tested 0.K. CORRECTED COPY										
Witnessed by	Witnessed by R. A. Carlile Position Drlg. Foreman Company Continental Oil Company						Oll Company			
		FILL IN BELO			ORK RE					
D F Elev.			PBTD	GINAL WELL DATA Produci		Producing	Interval	Completion Date		
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Open Hole Interval			Producing Formation(s)							
RESULTS OF WORKOVER										
Test	Date of Test	Oil Production BPD	Gas Product MCFPD		Water Pr B F		GOR Cubic feet/Bbl	Gas Well Potential MCFPD		
Before Workover			;							
After Vorkover										
					I hereby cettify that the information given above is true and complete to the best of my knowledge.					
Approved by				Name)						
Tile				Position District Engineer						
Date page 3 125				Company Continental Oil Company						

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. 6008

Order No. R- 5030

APPLICATION OF TEXACO INC. FOR A PRESSURE MAINTENANCE PROJECT, LEA COUNTY, NEW MEXICO.

Ser Is

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 17 , 19 77 , at Santa Fe, New Mexico, before Examiner Richard L. Stamets

NOW, on this day of , 19 77, 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 by Commission Order No. R-5496 dated August 9, 1977, statutory unitization was approved for the Central Vacuum Unit Area, Lea County, New Mexico.

Of S

-2-Case No. 6008 Order No. R-

- (3) That the applicant Texaco Inc., seeks authority to the aforesaid institute a pressure maintenance project on its Central Vacuum Unit Area, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, by the injection of water into the San Andres formation through 55 wells as described on Exhibit A attached to this order.
- (4) That to permit an efficient injection pattern, the unorthodox locations of the 54 new injection wells to be dilled should be approved.
- (5) That the applicant further seeks the designation of a project area and the promulgation of special rules and regulations governing said project including special allowable provisions.
- (6) That the project area should consist of those proration units within the boundary of said Central Vacuum Unit upon which is located an injection well and any directly or diagonally offsetting proration unit which contains a producing well.

(1) That the total project allowasce should be some the same of the same project allowasce should be spline the water injection credit allowasce, and said total project allowasce should be limited to 80 berrile of oil per day times the number of developed 40-acre provation county in the project area Limes two.

(8) That the basic project allowable should be equal to so barrels of all per day Lines the number of Leveloped 40- sere prosation with in the project area.

(9) That the water injection credit allowance should be based on the following formula:

water Injection = (net water injected __ | basic project area consulte voidage | basic project area allowable voidage

and should be calculated as follows:

Water Injection

where Wi = Average daily mader injection during previous month, projectance Wp = Average daily water production during previous month, projecture BPAA : Basic Project Area Allowable : 80 x number of 40-acre

tracts in project area reservoir barrels per stock tenk barrel, Bo = Oil formation volume factor, was determined from

Exhibit B, for latest available Rp = Producing gas-oil ratio, during previous month, projectures Prom Exhibit B, for latest project area received presented

- By = Gas formation volume factor, ras determined

Exhibit B, for latest project area reservoir in no event should the water Sujection Crodit allowers to his (10) That the project allowable should be produced from the wells within the project in any proportion provided that any proration unit situated on the boundary of said Central Vacuum Unit which proration unit is not directly or diagonally offset by a San Andres injection well outside the unit should not be permitted to produce in excess of 80 barrels of oil per day.

plugged in such a manner that will not assure that they will not serve as channels for injected water to migrate from the San Andres formation to other formations or to the surface.

(16) That to prevent migration of water from the formation injection pressure of San Andres formation, wells offsetting the wells identified on said Exhibit Co such in should be limited to a surface injection pressure no greater than hydrostatic pressure until such time as the wells on said Exhibit C have been repaired or it shall otherwise be demonstrated to the Secretary-Director \mathbf{A} of the Commission that the same will not serve as avenues for escape of such waters.

case no. 6008 order No. R-

- (17) That the wells within the project should be equipped to facilitate periodic testing of the annular space between strings of production and surface casing.
- (18) That the operator should take all other steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, producing, or plugged and abandoned wells.
- (19) That approval of the subject application should result in the recovery of additional volumes of oil from the Central Vacuum Unit Area, thereby preventing waste.
 - (20) That the application should be approved.

IT IS THEREFORE ORDERED:

- (1) That the applicant, Texaco Inc., is hereby authorized to institute a pressure maintenance project in the Central Vacuum Unit Area, Vacuum-Grayburg-San Andres Pool, Lea County, New Mexico, by the injection of water into 55 wells at orthodox and unorthodox locations as set out on Exhibit A attached to this order and by yourna made a part fluid.

 (2) That each of the newly drilled injection wells shall be equipped with surface casing and production casing set at approximately
- (3) That injection shall be accomplished through 2 3/8-inch plastic coated tubing installed in a packer set approximately 50 feet above the uppermost perforation in the case of newly existing drilled wells and at approximately 4376 feet in the one well converted to injection.

350 feet and 4800 feet, respectively, and cemented to the surface.

(4) That the casing-tubing annulus in each injection well shall be filled with an inert fluid and a pressure gauge or approved leak detection device shall be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

- (5) That the injection wells or system shall be equipped with a pop-off valve or acceptable substitute which will limit the surface injection pressure to no more than 0.2 pounds per foot of depth to the uppermost perforations.
- (6) That the Secretary-Director of the Commission may administratively authorize a pressure limitation in excess of that setout under (5) above upon a showing by the operator that such higher pressure will not result in fracturing of the confining strata.
- (7) That the applicant shall not inject water into the formation of any wree located on a 40-acre track that has on it, or that directly or diagonally offsets a track that has on it, one of the 15 wrees identified on Exhibit C attached here to and by reference made a part hereof, at a pressure greater than hydrostatic until such well has brew kepaired on it has been shown to the satisfaction of the Secretary-Director of the Commission that such were will not serve as an avenue of escape for waters injected into be San Andrea Jormation, and he has authorized a higher than hydrostatic pressure,
 - (8) That the wells within the project area shall be equipped with risers or in another acceptable manner such as to facilitate the periodic testing of the bradenhead for pressure or fluid production.
 - (9) That the operator shall immediately notify the super
 of 7665

 visor of the appropriate Commission district offfice of the failure

-6-Case No. 6008 Order No. R-

- (10) That the pressure maintenance project shall be designated the Texaco Inc. Central Vacuum Unit Pressure Maintenance Project.
- (11) That the project area of said Central Vacuum Unit
 Pressure Maintenance Project shall consist of those proration
 units within the boundary of the Central Vacuum Unit upon which
 is located an injection well and any directly or diagonally
 a
 offsetting proration unit which contains/producing well.
- (12) That those ween within the Central Vacuum Unit area that are not included within the project area as defined above shall be proruted in accordance with the Pres and Regulations of the Commission.
- (13) That the project area shall kelewe a praject area allowable, and said project area allowable the sum of the basic project area allowable plue the water injection credit allowable, and shall be limited to 80 barrels of oil perday times the number of developed 40-acre project area times two.

(14) That the basic graject area allowable shall be low long to 80 barrels of oil per lay times the number of developed 40-acre provation units in the staject area.
(15) That the water injection credit allowable

(15) That the water injection credit allowable shall be based on the Jaccawing formula:

water Injection (net water injected) basic project area credit Attowable basic project area allowable voidage

and shace be calculated as follows:

Water Injection - Wi-Wp

Credit Allowable I BPAA [R+(RP-RC)0] -1/BPAA

where: Wi = Average daily water injection during previous
month, barrels per day, project area only
Wp = Average daily water produced during previous
month, barrels per day, project area only
BPAA = Basic Project Area Allowable = 80 x number
of 40-acre tracts in project area
Bo = Oil formation volume factor, reservoir barrels
per stock tank barrel, as determined from
Exhibit B (attached hereto and by
reference made a part hereof), for the
latest available project area reservoir

Rp = Producing gas-oil natio, cubic feet per barrel,
for previous month, project area only
Rs = Solution gas-oil natio, cubic feet per barrel,
as determined from Exhibit B, for
the latest available project area reservoir

By = Gar formation volume factor, reservoir barrels per MCF, as determined from Exhibit B, for latest available project

area reservoir pressure

In no event shall the water Injection Credit
Allowable be less than zero, i.e., ignore negative
numbers derived from application of the above formula
shall be ignored.

(8) Cen 6008

- well within the project area in any proportion provided, however, that proration units situated on the boundary of the Central Vacuum Unit which profittion unit is not directly or diagonally offset by a San Andres injection well outside which be permitted to produce in excess of 80 barrels of oil per day.
- (15) That each month the project operator shall submit to the Commission a Pressure Maintenance Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project as well as the total project allowable.

 The aforesaid Pressure Maintenance Project Operator's Report shall be filed in lieu of Form C-120 for the Project.
- and after any adjustments deemed necessary, calculate the the well-in the Project for the next succeeding month in accordance with these rules. The sum of the allowable so calculated shall be assigned to the Project and, except as provided under Order (14) above, may be produced from the wells in the Project in any proportion.
- (17) 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.

CENTRAL VACUUM UNIT Authorized Injection Wells

54 new wells to be drilled at the following locations.

				TOWNSHI	P RÅNGE	
	WEIL NO.	LOCATION	SECTION	SOUTE		
	5 6	1310' FNL & 1310' FWL	_	17	35	
	7	1310' FNL & 2630' FWL 1310' FNL & 1330' FEL		17 17	35 35	
	13	2630' FNI, \$ 10' FEL		17	3 ¹ 4	
	14	2630' FNL (1310' FWL		17	35	
	15	2630' FNL 4 2630' FWI	30	17	35	
	16	2630' FNL 4 1330' FEL	9 •	17	35	
	25	1330' FSI 4 1310' FWL		17	31;	
	26 27	1330' FSL & 2630' FWL		17 17	34	
	28	1330' FSL 2 10' FEL		17	34 34	
	29	1330' FSL # 1310' FWL	30	17	35	
	30	1330' FSL \$ 2630' FWL	30	17	35	
	31	1330' FSL 4 1330' FEL		17	35	es es es
	40	10' FSL & 1310' FWL		17	34 31	
	41 42	10' FSL & 2630' FWL 10' FSL & 1330' FEL		17 17	34 34	
	43	10' FSL & 10' FEL	25	17	34	
	44	10' FSL & 1310' FWL	30	17	35	
	45	10' FSL & 2630' FWL	30	17	35	
	116	10' FSL & 1330' FEL	30	17	35	r je se se
	55 50	1310' FNL & 1310' FWL	36	17	3 ¹ 4	
	56	1310' FNL & 2630' FWL 1310' FNL & 1330' FEL	36 36	17 17	3կ 3կ	
	57 58	1310' FNL & 10' FEL	36	17	34	i,
	59	1310' FNL & 1310' FWL	31	17	35	
	60	1310' FNL & 2630' FWL	31	17	. 35	
	61	1310' FNL & 1330' FEL	31	3.7	35	No. 1
	70	2630' FNL 2 1310' FWL	36	17	3 ¹ 4	
	71	2630' FNL * 2630' FWL	36 36	17	34 31	
	72 73	2630' FNI, 4 1330' FEL 2630' FNL 4 10' FEL	36 36	17 17	34 34	
	74 74	2630' FNL & 1310' FWL	31	17	35 35	
	8i	1330' FSL & 1310' FWL	36	17	34	and the second of
	82	1330' FSL & 2630' FWL	36	17	34	
	83	1330' FSL & 1330' FEL	36	17	34	
	84 85	1330' FSL & 10' FEL	36	17	34	
	85 93	1330' FSL & 1310' FWL 10' FSL & 1310' FWL	31 31	17 17	35 25	
	94	10' FSL & 2630' FWL	31	17	35 35	
	99	1310' FNL & 1310' FWL	6	18	35	
	100	1310' FNL & 2630' FWL	6	18	35	
	101	1310' FNL & 1330' FEL	6	<u> 1</u> 8	35	
	106 107	2520' FNL & 1040' FWL 2450' FWL	6	18	35	
	108	2630' FNL & 1480' FEL	6	18 18	35 35	
	113	1620' FSL & 1100' FVL	ĕ	18	35 35	
	114	1460' FSL & 2100' FWL	6	18	35	the second
	115	1600' FSL * 1500' FEL	6	J.8	35	
	121 120	60' FNL & 1100' FWL	7	18	35	
	122	400' FSL & 2380' FWL 350' FSL & 1560' FEL	6	18	35 35	
	128	1310, LNP # 500, LEP	6 3.2	18 18	35	2. The second se
ŧ	129	1310' INL & 2630' FWL	3.2 7	18	34 35	
_						as follows:
Die	ekisting	Well, Sun Oil Company	•			TO A DISTURNING
	131	2119' FNL & 918' FWL	7	.18	35	

Case No. 6008 Order No. R-6630 Exhibit A"

The second secon

		7690	State Bal				
Operator_	Lease wir	1/ No	214.	Be	c Twp	Rge	
Continental Oil Company	State H 35	9	Н	35	178	34E	
Getty Oil Company	State AN	8	P	7	18S	35E	
Getty Oil Company	State AN	9	I	7	185	35E	
Getty Oil Company	State BA	6	D	36	17S	34E	
Marathon Oil Company	Warn State A/c 2	б	K	б	185	35E,	
Marathon Oil Company	Warn State A/c 2	10	K	6	185	35E	
Mobil Oil Corporation	Bridges State	11	F	25	17S	34E	
Mobil Oil Corporation	State DD	1	D.	31	17\$	35E	
Phillips Petroleum Co.	Santa Fe	87	L	31	17S	35E	
Texaco Inc.	New Mexico "AB" State	5	J	6	185	35E	
Texaco Inc.	New Mexico "AE" State	4	F	12	18S	34E	
Texaco Inc.	New Mexico "O" State NCT-1	14	J	36	17S	34E	
Texaco Inc.	New Mexico "O" State NCT-1	18	н	36	178	34E	
Texaco Inc.	New Mexico "P" State	1	J	7	188	35E	
Texaco Inc.	New Mexico "Q" State	4	P	25	178	34E	

Case No. 6008 Order No. R-553°

Exhibit "C"

#87 21305 660 h

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

APPLICATION OF TEXACO, INC. FOR A PRESSURE MAINTENANCE PROJECT, LEA COUNTY, NEW MEXICO

CASE NO. 6008

APPLICATION

COMES NOW Texaco, Inc., by White, Koch, Kelly & McCarthy and moves the Commission for its order approving a pressure maintenance project in the Central Vacuum Unit, Lea County, New Mexico located on lands more particularly described as follows:

Township 17 South, Range 34 East Section 25: SE/4 NE/4 and S/2

Township 17 South, Range 35 East Section 30: All Section 31: N/2, SW/4 and SW/4 SE/4

Township 18 South, Range 34 East Section 12: N/2 NE/4

Township 18 South, Range 35 East Section 6: All Section 7: NW/4 and NW/4 NE/4

And as cause therefore respectfully shows the following:

- 1. Attached hereto marked Exhibit "A" is a plat showing the location of proposed injection wells and, in addition, the location of an existing producing well to be converted into an injection well, designated as well number 131 (Sun Oil Company "B" Lee State number 7) located in the southwest quarter of the northwest quarter of Section 7, Township 18 South, Range 35 East, N.M.P.M.
- 2. Attached hereto marked Exhibit "B" and incorporated herein by reference is a plat showing all wells within a radius of two miles from the proposed injection wells and a formation from which the wells are producing or have produced. In addition, the names of the lessees of off-setting acreage within a two miles radius is indicated.

- 3. Attached hereto as Exhibit "C" is a diagramatic sketch of the proposed injection wells showing the casing strings, including the diameters and setting depths, quantity use and tops of cement, the perforated and open hole intervals, tubing strings, including diameters and setting depths and the type and location of packers.
- 4. Attached hereto as Exhibit "E" is a diagramatic sketch of the Sun Oil Company "B" Lease State No. 7 indicating the proposed conversion of the well to an injection well.
- 5. The applicant proposes to inject fresh water from the Ogalala formation into the wells at the rate of 900 barrels per day per well to be injected into the producing formation, specifically the Grayburg-San Andres formation identified between the depths of 3,858 feet (plus 144 feet sub-sea) and 4,858 (minus 856 feet sub-sea) on the Welex Acoustic Felocity Log run on November 15, 1963 in Texaco's State of New Mexico "O" (NPC-1) Well No. 23, located in the southwest quarter of the southeast quarter of Section 36, Township 17 South, Range 34 East, Lea County, New Mexico, and all sub-surface points throughout the unit area correlative to the identified depths.

WHEREFORE applicant prays that the Commission determine that a sufficient showing has been made of the conditions required by Rule 701; that the Commission make findings to that effect and promulgate its Order permitting pressure maintenance project as proposed by the applicant in the Central Vacuum Unit, Lea County, New Mexico.

Respectfully submitted,

WHITE, KOCH, KELLY & MCCARTHY

KENNETH BATEMAN

Attorneys for Applicant -

Texaco, Inc.

P. O. Box 787

Santa Fe, New Mexico 87501

- CASE 601: Application of Tenneco 0il Company for downhole commingling, Rio Arriba County, New Mexico.

 Applicant, in the above-styled cause, seeks approval for the downhole commingling of Blanco
 Mesaverde and Basin Dakota production in the wellbores of its Jicarilla "A" Well No. 1 in Unit
 L of Section 18, "B" Well No. 8 in Unit B of Section 15, "C" Wells Nos. 4, 5, 6, 7, and 8, located,
 respectively, in Units F and I of Section 24, F of Section 14, and M and E of Section 13, all in
 Township 26 North, Range 5 West, Rio Arriba County, New Mexico.
- CASE 6012: Application of Tenneco 0il Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Strawn formation through the perforated interval from 11,17% feet to 11,236 feet in its Jones Federal Well No. 1, located in Unit K of Section 23, Township 19 South, Renge 31 East, Eddy County, New Mexico.
- Application of HNG Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the S/2 of Section 9, Township 24 South, Range 28 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 6014: Application of Atlantic Richfield Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 1980 feet from the South line and 330 feet from the West line of Section 6, Township 21 South, Range 27 East, Burton Flat-Morrow Gas Pool, Eddy County, New Mexico, the W/2 of said Section 6 to be dedicated to the well.
- CASE 6015: Application of Atlantic Richfield Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 1980 feet from the South line and 660 feet from the East line of Section 32, Township 20 South, Range 27 East, Avalon-Morrow Gas Pool, Eddy County, New Mexico, the S/2 of said Section 32 to be dedicated to the well.

Dockets Nos. 27-77 and 28-77 are tentatively set for hearing on August 31 and September 14, 1977. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: FXAMINER HEARING - WEDNESDAY - AUGUST 17, 1977

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

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for September, 1977, from fifteen prorated pools in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico.
 - (2) Consideration of the allowable production of gas for September, 1977, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.
- CASE 6001: (Continued from August 3, 1977, Examiner Hearing)

Application of Mesa Petroleum Co. for an exception to Order No. R-5459, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the provisions of Order No. R-5459 to exclude its Primo Well No. 1-A located in Unit D of Section 6, Township 31 North, Range 10 West, San Juan County, New Mexico, from the vertical limits of the Blanco-Mesaverde Pool as defined by said order.

- Application of Gulf Energy and Minerals Company for a non-standard proration unit, simultaneous dedication and unorthodox locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 600-acre non-standard proration unit comprising all of Section 4 except the NE/4 NW/4 thereof, Township 22 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to be simultaneously dedicated to its J. F. Janda Wells Nos. 7 located in Unit K and Nos. 12 and 13, at unorthodox locations in Units 0 and P, respectively, of said Section 4.
- CASE 6008: Application of Texaco Inc. for a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project on its Central Vacuum Unit Area, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, by the injection of water into the Grayburg-San Andres formation through 55 wells.
- CASE 6009: Application of Morris R. Antweil for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the S/2 of Section 29, Township 18 South, range 25 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 5992: (Readvertised)

Application of Burleson & Huff for compulsory pooling, a non-standard unit, and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the SE/4 NW/4 of Section 14, Township 24 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to form a non-standard 40-acre gas proration unit to be dedicated to applicant's Cooper Well No. 1 at an unorthodox location 2310 feet from the North and West lines of said Section 14, or in the alternative to drill another well at a standard location. Also to be considered will be the cost of recompletion or of drilling and completing the unit well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in recompleting or drilling said well.

Application of Manana Gas Inc. for compulsory pooling and an unorthodox location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the W/2 of Section 13, Township 30 North, Range 12 West, Basin-Dakota Pool, San Juan County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 840 feet from the South line and 1400 feet from the West line of said Section 13. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

Mobil Oil Corporation

THREE GREENWAY PLAZA EAST - SUITE 800 HOUSTON, TEXAS 7/046

January 23, 1978

New Mexico Oil Conservation Commission (3) P. O. Box 2088 Santa Fe, New Mexico 87501

Attn: Mr. Joe D. Ramey Secretary Director

7.01
MOBIL OIL CORPORATION STATE "DD"
WELL NO. 1 - CENTRAL VACUUM
UNIT AREA, VACUUM-GRAYBURGSAN ANDRES POOL NMOCC
ORDER NO. R-5530, EXHIBIT "C"

Gentlemen:

The captioned well is listed in your Exhibit "C", NMOCC Order No. R-5530 as a well completed in such a manner that it might serve as a channel for injected water to migrate from the San Andres Pay to other formations, or to the surface.

Please find attached a diagrammatic wellbore sketch of Mobil's State "DD" #1. in the Vacuum North Abo Field, Lea County, New Mexico.

The wellbore sketch shows the cement behind the 9-5/8" casing circulated to the surface. The San Andres pay to be flooded is 4358'-4668'. The bottom of this pay is 332' above the 9-5/8" casing shoe. The formation below this pay is tight, with only a few streaked intervals of porosity down to the top of the Glorietta at 5900'. Considering the distance from the bottom of the flooded pay to the casing shoe, and the lack of consistent porosity through that interval, we feel that this wellbore will not serve as an avenue of escape of injected water, and needs no remedial work.

Yours very truly,

J. A. Morris

Regulatory Engineering Supervisor

HFWeaver/dah

NMOCC has reviewed your data and concur with your

SIGNED ALC

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133/4" casing set at 370 with 350 sx of Incor West cement . Hole size 17/2 " cement circ. San Andres pay 4358-4663' Incor 6% gel + 95/8" casing set at 5000 with 3575 sx of Incor 1121 cement Hole size 121/4 " cement circ. _ 5,660' Cement top (Temp Survey) 2 1/3" tuking to 9,314' - Glerietta top 5900' Abo Perfs 9,297'- 9,320'
___ 9,390' PBTD
__ 9,400' CIBP + 10' of Hydromite Wolfcamp Perfs 9,875'-10,019' ___ 10,043' CIBP + 10' of Hydrocrite Penn Parts 10,028'-10,175' - 10,250'CIBP + 11' of Hydromite Penn Ports 10.479-10,521 Tr. Like- Which 25ts 7 " casing set at 10553 with 1520 sx of To 11-it cement on top Total Depth 10.555 | Hole size 2 1/4 "

