CAGE SOLL: Appli. OF CONTINENTAL NOW A WATERFLOOD PROJECT, LEA COUNTY, HEM MEXICO.

CASE 170. 506/

Application,

Transcripts,

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BEFORE THE

NEW MEXICO OIL CONSERVATION COMMISSION

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

September 5, 1973

EXAMINER HEARING

IN THE MATTER OF:) Case No. 5061

The Application of Continental Oil Company for a waterflood project, Lea County, New Mexico

BEFORE: ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING

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BLDG.+P.O. BOX 1092-PHONE 243-6691"ALBUQUERQUE; NEW MEXICO 87103 1857 NATIONAL BANK BLDG. EAST+ALIBUQUERQUE; NEW MEXICO 87108 MR. UTZ: Call Case 5061.

MR. CARR: Case 5061, Application of Continental
Oil Company for a waterflood project, Lea County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Kellahin & Fox,
Santa Fe, New Mexico, appearing on behalf of the Applicant
Continental Oil Company, and I have one witness who has been
previously sworn.

MR. UTZ: Let the record show that this witness has been sworn in the previous case.

MR. KELLAHIN: May the record also reflect that he has been previously qualified as an expert, Mr. Examiner?

MR. UTZ: It will so show. You may proceed.

VICTOR T. LYON,

was called as a witness and after being duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

- Mr. Lyon, will you please state briefly what the applicant seeks by this Application in Case 5061?
- Case 5061 is the Application of Continental Oil Company for authority to conduct a waterflood operation in the Penrose-Skelly Pool on its Elliott A-15 lease located in Section 15, Township 22 South, Ranch 37 East, Lea County, New Mexico.
- Q will you please refer to what has been marked as

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Applicant's Exhibit No. 1, identify it, and explain what information it contains?

Exhibit No. 1 is a plat showing the location of the Elliott A-15 lease outlined in red, and consisting of the south half of the southeast quarter, Section 15, and showing the location of the properties and the wells located thereon in an area at least two miles in each direction from our lease.

You will note the dashed line to the south and also to the east of the Elliott A-15 lease, which is the boundary of the Anadarko-operated Langlie Mattix Penrose sand unit. There is a waterflood project presently underway in that unit, and this waterflood project, our Application, is intended to supplement and compliment the waterflood in that unit.

- Who operates the waterflood in that unit?
- Anadarko Production Company.
- Are there any other waterfloods in the area?
- There is a pilot waterf ood in the south Penrose-Skelly unit to the north, but this project has been abandoned and there is consideration of terminating that unit.
- Please refer to what has been marked as Applicant's Exhibit No. 2, identify it, and explain what information it contains.
- Exhibit No. 2 is a schematic diagram showing the manner

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209 SIMMS BLDG. & P.O. BOX 1092 & PHONE 243-8691 & ALBUQUERQUE, NEW MEXICO 87103 1216 FIRST NATIONAL BANK BLDG. EAST # ALBUQUERQUE, NEW MEXICO 87108 in which the Elliott A-15 No. 1, which incidentally is marked by a red triangle on Exhibit 1, will be equipped for injection. We show the size, setting depth, and the amount of cement used in setting the various strings of casing. I see they didn't show the tubing. It does have a remark on here that the 2 and 7/8-inch tubing will be set at 3682.

- Q Will the annular space between the tubing and casing be filled with an inert fluid?
- A Yes, it will.
- Q And will the surface connection on the surface be so arranged that the pressure at the surface will be readily detectable?
- A Yes.
- Q And where will you set -- I see the cement-lined tubing will be set on a packer?
- Yes, the packer will be set above the liner providing that the liner is not pulled. You will note that there is a 5 and 1/2-inch liner set from 3370 to 3556. It is not cemented, and our current plans, according to our production engineering supervisor, just before I left the office, was that they would set the packer above that liner.

 The tubing will be cement-lined and then, of course, we will fill the annular space with an inert fluid.

 So their plans at that time were not to pull that liner.

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NUEL NEW MEXICO 871(3)

MR. UTZ: You don't think he's changed his mind? THE WITNESS: I never know.

(By Mr. Kellahin) What's the producing interval in this Õ well?

The producing interval in the Penrose-Skelly Pool is the Grayburg formation, and you will note that the area to the south is not Penrose-Skelly, it's Langlie Mattix. This lease is located on the boundary of the Penrose-Skelly Pool and the structure is rising to the north. There is probably an overlap of zones. You see, the Langlie Mattix produces from the Queen and Lower Seven Rivers. There is probably some overlap across this boundary.

We have checked our logs on twin wells to this well. There is no log on our proposed injection well. We have correlated logs across this boundary and we find that the injection intervals and producing intervals are the same. We have similar differences of opinion between Anadarko and Continental as to where the top of the Grayburg is. It isn't really that distinct. But, in essence, these wells have been produced for some 30 years, and all we are doing is waterflooding the zones which have been produced for those here.

Your lease has two Penrose-Skelly wells on it, is that correct?

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Yes.

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3	Δ	yes, 1 and 2.	
4	Ω	And the injection well will be No. 1?	l
5	A	Yes, sir.	
ć		Yes, sir. What's the total production for those two wells? Between the two of them, they have produced 178,115	
	8 A	barrels.	
	9 Q		on
	11 A	The reason	
!	12	will be no water	
87108	13	area project. The woll-	\ \
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E 243-6691 East oal	18	will you state again for me the sould	
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00.00.	22	injection programs injection programs what volume of water do you intend to inject? what volume of water do you intend to inject?	
MMS BL	23	have to inject initially up to so	
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And they are Wells Nos. 1 and 2?

dearnley, meier & associates

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NEW MEXICO 87103	MEXICO 87108
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		PAGE 8
1	A	It will be under pressure, probably not initially, but
2		it eventually will be pressured with a maximum of
3		2000 pounds pressure.
	Q	What's your estimated life of your secondary recovery?
	A	Approximately seven to eight years.
	Q	In your opinion, has production from this lease declined
.		to such a point that you would recommend instituting
		secondary recovery by waterflooding?
	A	Yes, sir, both of these wells have been shut-in for some
		time.
	Q	And, in your opinion, can this area be successfully and
		economically waterflooded?
	A	Yes.
	Q.	Will this program result in the recovery of oil that
		would otherwise not be recovered, thereby preventing
		waste?
	A	Yes, it will.
	Q	And will the proposed waterflooding adversely affect the
		correlative rights of others?
	A	We believe that correlative rights are being protected
		under this program.
	Ω	Do you have anything else you would like to add to your
		testimony?
	A	I believe not.

MR. KELLAHIN: Mr. Examiner, we move for the

dearnley, meier & associates	5 BY 6 Q 7 8 A	MR. utz: I notice 3556; t yes, th well.	UTZ: Without to the record CROSS e in Exhibit that's in the nat's the reas IR. UTZ: Are (No response.) MR. UTZ: He se? (No response	EXAMINATION 2 it shows open liner? son that the line there other que may be excused.	hole shot 3500 and her was placed in the estions of the witness? Are there statements taken under advisement.	
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STATE OF NEW MEXICO SS COUNTY OF BERNALILLO

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

I do heroby couldly that the foregoing us a compliant account of the proceedings in the Engather hearing of Case No. 50.6.4.

, Examiner New Mexico Oil Conservation Commission

209 SIMMS BLDG.+P.O. BOX 1082+PHONE 243-6691+ALBUQUERQUE. 1216 FIRST NATIONAL BANK BLDG. EAST+ALBUQUERQUE. NE.

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OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO P. O. BOX 2088 - SANTA FE 87501 I. R. TRUJHLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

September 17, 1973

Mr. Tom Kellahin Kellahin & Fox Attorneys at Law Post Office Box 1769 Santa Fe, New Mexico Re: CASE NO. <u>5060 and 5061</u>
ORDER NO. <u>R-4629 and R-4630</u>

Applicant:

Continental Oil Company

Dear Sir:

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

Very truly yours,

(A. L. Porter, Jr.

Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other R-6629 to Unit Division

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

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

CASE HO. 5061 Order No. R-4630

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

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 5, 1973, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 13th day of September, 1973, 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, Continental Oil Company, seeks authority to institute a waterflied project in the Penrose-Skelly Pool, by the injection of water into the Grayburg formation in its Elliott A-15 Well No. 1 located in Unit P of Section 15, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.
- (3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.
- (4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.
- (5) That the operator should take all 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, production, or plugged and abandoned wells.
- (6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

Case No. 5061 Order No. R-4630

IT IS THEREFORE ORDERED:

- (1) That the applicant, Continental Oil Company, is hereby authorized to institute a waterflood project in the Penrose-Skelly Pool, Lea County, New Mexico, by the injection of water into the Penrose sand in the open-hole interval from 3411 feet to 3685 feet in its Elliott A-15 Well No. 1 located 330 feet from the South line and 400 feet from the East line of Section 15, Township 22 South, Range 37 East, NMPM.
- That injection into said well shall be through cementlined tubing, set in a packer which shall be located as near as practicable to the casingshoe; that the casing-tubing annulus of the injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.
- That the operator shall immediately notify the supervisor of the Commission's Hobbs district office of the failure of the tubing or packer in the said injection well, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.
- That the subject waterflood project is hereby designated the Continental Penrose-Skelly Elliott A-15 Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.
- (5) 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.
- 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

I. R. TRUJILLO, Chairman

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well will inject think 2 78 tubing + under a pricker set at appropries 3 \$60 + into Penros Skelly Pool thur open Cliniles to be fills winters fluid swith facelilies to detect pressure cit surface

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CASE 5059: A E

Application of Cities Service Oil Company for compulsory pooling. Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface of the ground down to and including the Devonian formation underlying the S/2 of Section 14, Township 20 South, Range 28 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard gas well location in Unit K of said Section 14. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5060:

Application of Continental Oil Company for a unit agreement and for a waterflood expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the North El Mar Unit Area comprising 2361 acres, more or less, of State and Federal lands in Township 26 South, Ranges 32 and 33 East, Lea County, New Mexico. Applicant further seeks authority to expand its El Mar Payne waterflood project within said unit area previously authorized by Order No. R-3540.

CASE 5061:

Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg formation in its Elliott A-15 Well No. 1 located in Unit P of Section 15, Township 22 South, Range 37 East, Penrose-Skelly Pool, Lea County, New Mexico.

CASE 5062:

Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg-San Andres formation in its Mitchell Wells Nos. 2 and 6 located in Units P and J, respectively, of Section 5, Township 17 South, Range 32 East, Maljamar Pool, Lea County, New Mexico.

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 5, 1973

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 Richard L. Stamets, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for October, 1973, from seventeen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico;
 - (2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for October, 1973.
- CASE 5055: Application of Merrion & Bayless for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Gallup and Dakota oil and gas production within the wellbore of the Canada Mesa Well No. 3 located in Unit A of Section 14, Township 24 North, Range 6 West, Basin-Dakota and Devils Fork-Gallup Pools, Rio Arriba County, New Mexico.
- CASE 5056: Application of Depco, Inc. for an unorthodox location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a proposed gas well at an unorthodox location 990 feet from the North line and 1980 feet from the East line of Section 24, Township 15 South, Range 27 East, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico.
- CASE 5057: Application of Coquina Oil Corporation for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a proposed gas well at an unorthodox location 660 feet from the South and East lines of Section 12, Township 18 South, Range 25 East. West Atoka-Morrow Cas Pool, Eddy County, New Mexico, the S/2 of Section 12 to be dedicated to the well.
- CASE 5058: Application of Corinne Grace for a dual completion and unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of her Gradonoco Well No. 1 located in Section 2, Township 23 South, Range 26 East, Eddy County, New Mexico, in such a manner as to produce gas from an undesignated Wolfcamp pool and from the South Carlsbad-Morrow Gas Pool through tubing and the tubing-casing annulus, respectively, by a means of a cross-over assembly. Applicant further seeks approval of the unorthodox location of said well in the Wolfcamp formation at a point 2500 feet from the North line and 330 feet from the East line of said Section 2, which location has previously been approved for the Morrow formation.

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	SCRYATION COLVALISION - LECTURET NO. /
CASE NO.	5061
Submided (Continenta) 0,160 Sept. 5, 1973

ELLIOTT A-15 NO. 1

Unit P - 330' FSL & 400' FWE FEL SEC. 15 T22S R37E LEA COUNTY, NEW MEXICO ELEV - 3544' G.L. - 33541

JAG 3-20-73

16" O D CASING SET AT 228' W/100 SX (CIRC)

8 5/8" O D CASING SET AT 1132' W/300 SX (CIRC)

Blurghie Linear

D 17# LINER SET @ 3370-3556', NOT CEMENTED 86

3411' 7" 24# CASING SET AT 3411' W/300 SX (TOC - EST 1800')

2 7/8" OD TUBING SET @ 36821

OH SHOT: 3500-3556' - 200 QTS

ACIDIZED 3600-3640' W/3000 GALLONS

T.D. 3685

LINER SET AFTER OH SHOT - LOST BIT IN HOLE. C O & DRILLED BY BIT. RAN LINER TO PREVENT CAVINGS. T D WAS 3640'.

JULY 1938: DEEPENED W/CABLE TOOLS TO 3685' AND TREATED W/2000 GAL. ACID.

BEFORE INDANS 1 1172 OIL CONSCAVANICH COMUMISSION CASE NO. 5061 Submitted 1: Continental 0:16 Haaring Das Sept 5, 1973

BEFORE THE OIL CONSERVATION

COMMISSION OF THE STATE OF NEW MEXICO

Care 5061

IN THE MATTER OF THE APPLICATION OF CONTINENTAL OIL COMPANY FOR AUTHORITY TO CONDUCT A WATERFLOOD BY INJECTING WATER INTO THE PENROSE-SKELLY PAY INTERVAL IN ITS ELLIOTT A-15 WELL NO. 1 LOCATED IN UNIT 'P' OF SECTION 15, TOWNSHIP 22 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO

APPLICATION

Applicant, Continental Oil Company, respectfully requests approval to conduct a waterflood project by injecting water into the Penrose-Skelly Pool Interval in its Elliott A-15 Well No. I located in Unit "P" of Section 15, Township 22 South, Range 37 East, Lea County, New Mexico, and in support thereof would show;

- Applicant is the operator and co-owner for the Elliott A-15 lease consisting of S/2 SE/4 Section 15, Township 22 South, Range 37 East, Lea County, New Mexico.
- Said lease directly offsets the Langlie Mattix-Penrose Sand Unit operated by Anadarko Production Company.
- 3. In cooperation with the waterflood project being conducted on said unit, applicant proposes to inject water into the Penrose-Skelly pay interval in its Elliott A-15 Well No. 2 located 330' from the south line and 400' from the east line of said Section 15.
- 4. The injection as proposed by applicant will result in the recovery of oil which otherwise would not be recovered and will protect correlative rights.

Wherefore applicant respectfully requests that this matter be set for hearing before the Commission's duly appointed examiner and that upon hearing an order be entered authorizing the waterflood project and injection into applicant's Elliott A-15 Well No. 1 as described above.

Respectfully submitted,
CONTINENTAL OIL COMPANY

Mole

L.P. Thompson'
Division Manager of Production

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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. 5061

Order No. R- 7630

(JWW

APPLICATION OF CONTINENTAL OIL COMPANY FOR A WATERFLOOD PROJECT, LFA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on <u>September 5</u>, 1973 at Santa Fe, New Mexico, before Examiner <u>Flvis A. Utz</u>

NOW, on this day of <u>September</u>, 1973, 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, Continental Oil Company, seeks authority to institute a waterflood project in the Penrose-Skelly Pool, by the injection of water into the Grayburg formation in its Elliott A-15 Well No. 1 located in Unit P of Section 15, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.

-2-Case No. 5061 Order No. R-

- (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 operator should take all 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, production, or plugged and abandoned wells.
- (6) That an administrative procedure should be established whereby additional injection and producing wells at orthodox and unwrthodox locations in the project area may be approved without notice and hearing.
- (b) 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, Continental Oil Company, is hereby authorized to institute a waterflood project in the Penrose-skelly Pool, Lca County, New Mexico, by the injection of water
- (2) That the subject waterflood project is hereby designated the Penrose-Skelly Elliott A-15 Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.
- (2) That injection into each of said well shall be through cement-lined tubing, set in a packer which shall be located as near as practicable to the uppermost perforation, or in the case of open-hole completions; as near as practicable to the casing-shoe; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

-3-Case No. 5061 Order No. R-

- visor of the Commission's Hobbs district office of the failure of the tubing or packer in any of said injection well, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.
- (4) That the subject waterflood project is hereby designated the Penrose-Skelly Elliott A-15 Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.
- (5) 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.
- (6) 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.