CASE 3747: Application of DEPCO, INC. for an amendment to ORDER NO. R-2869, Eddy County, N.M.



CASE NO. 3747

APPEARANCES:

John M. Strader Division Engineer of Depco, Inc. 825 Petroleum Club Building Denver, Colorado 80202

U. M. Rose Rose and Johnson, Attorneys P. O. Box 159 Hobbs, New Mexico 88240

DEPCO, Inc.

Production & Exploration

May 8, 1968

825 Petroleum Club Bldg. DENVER, COLORADO 80202 AREA CODE 303 Phone No. 292-0980

New Mexico Oil Conservation Commission Box 2088 Santa Fe, New Mexico

Attention: Mr. A. L. Porter

21

Gentlemen:

Re: Waterflood Plan of Operation Authorized by Order R-2869-A Dunn "B" Lease Eddy Co., New Mexico

Reference is made to the fourth paragraph of your letter of April 30, 1968. A more detailed proposed plan of operation for our Dunn "B" Wells No. 13 and 30 is required.

In waterflooding the project area, Depco does intend to utilize those perforated intervals referred to in your letter. However, we believe it prudent to defer injection in these intervals until more is learned of the waterflood susceptibility of the pool in this area.

It is estimated that the cost of squeezing and later reperforating and restimulating will be \$5,000 per well. This type remedial work also invokes the possibility of causing irreversable damage to this pay zone. Therefore, it is believed that allowing Depco to initially isolate with a hook wall packer those zones having less secondary potential relative to the main pay will be in the interest of conservation and will provent waste.

In Dependence opinion the Promier Sand offers the best secondary recovery potential in the project area. This conclusion was formulated by reviewing natural production during drilling, electric logs and the persistence and continuity of this sand member. Although the Basal Queen, Loco Hills, Metex

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New Mexico Oil Conservation Commission Page Two May 8, 1968

and Lovington members more than likely have waterflood potential, it is felt that initially efforts should be focused on the Premier. This will allow operational problems to be resolved and the success of secondary recovery to be assured prior to expanding the flood vertically. Multizone flooding often obscures the source of troubles and delays the solution of the problem.

If additional data is required, you are invited to call the office collect.

Yours very truly,

John m. Straden

JOHN M. STRADER Division Engineer

JMS:pm

cc: New Mexico Oil Cons. Comm. Artesia, New Mexico

> Mr. R. D. Yeates, Odessa Mr. C. D. Crump

BEFORE THE OIL CONDERVATION COMMENSION OF THE STATE OF REW MEXICO

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

> CASE No. 3747 Order No. 8-2869-A

APPLICATION OF DEPCO, INC., FOR AN AMENDMENT TO ORDER NO. R-2869, EDDY COUNTY, NEW MEXICO.

CRDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 17, 1968. at Hobbs, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 29th day of April, 1968, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, 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.

(?) That by Order No. 2-2869, International Oil 5 Cas Corporation was authorized to institute a waterflood project in the Arteria fool by the infaction of water into the Gueen, Grayburg, and tan andres formations through mine wells in Sections 10 and 11, Township 18 South, Range 28 East, NMPH, Eddy County, New Sector.

(3) That the applicant, Lepco, Inc., as successor to International Gil & Tas Corporation, socks the amendment of said Order No. 3-2265 to substitute the following-coscribed water injection wells: -2-CASE No. 3747 Order No. R-2869-A

EDDY COUNTY, NEW MEXICO TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM

RELL				LOCATION	SECTION
Dunn	"B"	No.	5	NE/4 SE/4	11
Dunn	"A u	NO.).	SW/4 NE/4	12
Dunn	* B*	NO.	6	SW/4 SW/4	12

in lieu of the following-described wells which were included in the originally-authorized water injection wells:

EDDY COUNTY, NEW MEXICO TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM

WELL				LOCATION	SECTION
Dunn	³ 8 ⁹	No.	15	S#/4 N#/4	10
Dunn	»Вн	No.	19	SW/4 NE/4	10
Dunn	"В"	No.	21	SW/4 NW/4	11

(4) That approval of the subject application will not violate correlative rights and should increase the efficiency of the waterflood project and result in greater ultimate recovery of cil, thereby preventing wasts.

IF IS INERSFORS GROATLES:

(1) that Order No. 8-2869 is hereby amended by deleting from the water injection wells authorized therein the followingdescribed wells:

LLEY COURTY, NAM (LEXICO FORMALLY) & FOLDER, HANGE 28 EVER, NAPE

Contractor	<u>(COMPLON</u>	DECALC R
iven, "18 94. 15	5:14 2-14	10
Auril 37 30, 13	200/ 4 No/4	10
Duna "o" Ro. 21	51/4 214/4	2.2

and substituting in the charact as water injection wells the Following describes a line

-Ĵ-CASE No. 3747 Order No. R-2869-A

ļ

SDDY COUNTY, NEW MEXICO TOWNSHIP 18 SOUTH, RANGE 28 EAST, HMPM

WELL				LOCATION	SECTION
Dunn	"B"	Ro.	5	NE/4 SE/4	11
Dunn	${}^{H}\mathbf{A}^{H}$	NO.	1	SW/4 NE/4	12
Dunn	"B"	NO.	6	SW/4 SW/4	12

(2) 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 Hexico, on the day and year hereinabove

Sesignated.	
Sesignated. STATE OF NEW MEXICO OIL CONSERVATION CORPUSSION UNVID P. CARGO Chairman CONTON B. HAYS, Member A. G. 108YER, Jr. Member & Secretary	e e e e e e e e e e e e e e e e e e e

esr/







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

LAND COMMISSIONER GUYTON B. HAYS MEMBER

SANTA FE

April 29, 1968

Re: Case No. 3747 Order No. R-2869-A

Applicant:

Depco, Inc.

Mr. U. M. Rose Rose and Johnson Attorneys at Law Post Office Box 159 Hobbs, New Mexico 33240

Dear Sir:

Enclosed herewith is a copy of the above-referenced Commission order recently entered in the subject case. Letter pertaining to conditions of approval and maximum allowable to follow.

Very truly yours,

A. L. PORTER, Jr.

Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x Artesia OCC x Aztec OCC___ State Engineer_

State Engineer Office

Other___

DAVID F. CARGO CHAIRMAN

State of New Elexico Gil Conservation Commission

LAND COMMISSIONER GUYTON B. HAYS MEMBER P. O. BOX 2088 SANTA FE

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

April 30, 1968

Mr. U. M. Rose Rose and Johnson Attorneys at Law Post Office Box 159 Hobbs, New Mexico 88240

Dear Sir:

Reference is made to Commission Order No. R-2869-A, recently entered in Case No. 3747, amending Order No. R-2869, which approved the Artesia Dunn Waterflood Project.

Injection is to be through the nine authorized injection wells, six of which were authorized in the original order, and three of which were authorized by Order No. R-2869-A.

Each of the injection wells shall be equipped with a string of plasticcoated tubing set in a packer, with the packer to be located not more than 100 feet above the uppermost injection perforation or in the case of an open-hole completion, within 100 feet of the casing shoe.

The casing-tubing annulus in all wells should be loaded with a corrosion-inhibited fluid and left open at the surface or equipped with a pressure gauge to facilitate detection of leakage in the tubing or the packer. Unless it is Depco's intent to utilize the perforations at 2365'-2375' in Dunn "B" Well No. 13 and at 2453'-2457' in Dunn "B" Well No. 30, these perforations should be squeezed upon conversion of the wells to water injection.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 1134 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

-2-Mr. U. M. Rose Rose and Johnson Attorneys at Law Hobbs, New Mexico

April 30, 1968

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours, L. PORTER, Jr.

A. L. PORTER, Jr. Secretary-Director

ALP/ir

cc: Oil Conservation Commission Offices in Hobbs and Artesia
U. S. Geological Survey - Artesia, New Mexico
Mr. D. E. Gray, State Engineer Office, Santa Fe, N. Mex.

ROSE AND JOHNSON ATTORNEYS AT LAW

U. M. ROSE LAWRENCE H. JOHNSON

ROSE JENCE H. JOHN Love feile

SUITE 204 NEW MEXICO BANK & TRUST BUILDING 220 WEST BROADWAY P. O. BOX 159 HOBBS, NEW MEXICO 88240

393-7702

April 30, 1968

Mr. A. L. Porter, Jr. Secretary-Director New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Re: Case No. 3747 Order No. R-2869-A Depco, Inc., Applicant

Dear Mr. Porter:

We received your letter of April 29, 1968, containing the Order of the Commission shown in the caption. We have forwarded them to the operator.

We express our appreciation to the Commission and members of its staff for the prompt processing of this applica-tion. This expeditious handling helps the operator a great deal.

Sincerely yours,

ROSE AND JOHNSON

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UMR/fk

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ROSE AND JOHNSON ATTORNEYS AT LAW

> U. M. ROSE LAWRENCE H. JOHNSON

SUITE 204 NEW MEXICO BANK & TRUST BUILDING 220 WEST BRGADWAY P. O. BOX 159 HOBBS, NEW MEXICO 88240 393-7702

May 2, 1968

AIR MAIL

Mr. J. M. Strader Division Engineer Depco, Inc. 825 Petroleum Club Building Denver, Colorado 80202

> Re: Case No. 3747 Order No. R-2859-A Applicant: Depco, Inc.

Dear Mr. Strader:

Enclosed is a Xerox copy of the letter of the New Mexico Oil Conservation Commission covering the conditions of approval and allowable under the captioned order.

Sincerely yours,

ROSE AND JOHNSON

By 11. M. Kore.

Enclosure UMR/fk

cc: New Mexico Oil Conservation Commission

50 HAY 3 111 C 311

DEPCO, Inc.

XXXXXX 800 Contral ODEDOA. TEXAS 79760

Care 3141

March 7, 1968

New Mexico Oil Conservation Commission P. O. Box 871 Santa Fe, New Mexico

Exploration & Production

Gentlemen:

Subject: Permit for Injection Dunn "A" and Dunn "B" Leases Artesia Field Eddy County, New Mexico

By Case No. 3202 and Order No. R-2869 nine wells were approved for water injection on the subject lease. However, before the conversions were implemented, International Oil & Gas Corporation sold its holding to DEPCO. DEPCO, having a slightly different approach to secondary recovery, delayed waterflooding in the area until satisfactory lease line agreements were made.

DEPCO now requests administrative approval to substitute Dunn "B" No. 5 and 6 and Dunn "A" No. 1 for Dunn "B" No. 15, 19, and 21 (the latter were previously approved in Order No. R-2869). The new list of injection wells would then be:

	Township 18 South, Rand	qe 28 East, NMPM	
LEASE	WELLS	UNIT	SECTION
Dunn "B"	13	А	10
Duon ^H B ^H	17	C	10
Dunn ¹¹ B ¹¹	24	1	10
Dunn [∷] B∷	18	C	11
Dunn ¹¹ 81	29	G	11
Dunn "B"	5	1	11
Dunn ''B''	30	К	11
Dunn "A"	1	G	12
Dunn "₿"	6	М	12

The attached plat shows the location of proposed injectors, present water injectors, producing wells, and lease ownership within a two mile radius of the proposed injectors.

DOCKET MARED

Data 4-4-68

Page 2 March 7, 1968

The injection interval is in the Artesia (Queen, Grayburg, San Andres) Field. Initial injection rate will be about 500 BPD per well. The water source will be purchased from Double Eagle Corporation.

Also attached is a diagrammatic sketch of each injector showing the anticipated completion after conversion to water injection. Each of the injectors will have a hookwall packer set on plastic coated tubing at a point from 50 to 100 feet above the injection interval. Where available an electric log is shown over the zones of interest.

if you are unable to approve this plan administratively, please let this application serve as a request for a hearing.

Attached is a copy of a letter sent to the State Engineer Office transmitting a copy of this application.

Yours very truly,

Justadu

J. M. Strader Division Engineer

JMS:jm

cc: State Engineer Office

attachments

DEPCO, Inc.

Exploration & Production

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> Box 1028 800 Central ODESSA. TEXAS 79760

March 7, 1968

Care 3747

State Engineer Office Capitol Building Santa Fe, New Mexico

Gantlemen:

Subject: Permit for Injection Dunn "A" & Dunn "B" Leases Artesia Field Eddy County, New Mexico

This letter serves to transmit a copy of our Application, complete with all attachments, requesting a hearing for the proposed unit.

Yours very truly,

DEPCO, Inc.

J. M. Strader Division Engineer

JMS:jm



41/2" 9.5" 2530 \mathbb{A}

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ROSE AND JOHNSON

U. M. ROSE LAWRENCE H. JOHNSON SUITE 204 NEW MEXICO BANK & TRUST BUILDING 220 WEST BROADWAY P. O. BOX 159 HOBBS, NEW MEXICO 88240

393-77.02

April 10, 1968

-13 APR 11 AH 8 32

Mr. D. S. Nutter Chief Engineer New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Re: Case No. 3747, Application of Depco, Inc.

Dear Mr. Nutter:

Thank you for your generous expenditure of time when I called you today for some orientation on the captioned case in which I have just been employed.

Pursuant to our telephone conversation I am forwarding you a copy of the area of testimony which J. M. Strader, Division Engineer of the applicant, feels that he should be examined on.

If there are deletions of unnecessary material from this or other areas on which you feel that testimony should be introduced, our firm will appreciate your advice.

The Exhibit #1 to which Mr. Strader refers in his proposed testimony is the plat attached to the application. Exhibit #2 is not yet ready. I attach a copy of the proposed Exhibit #3 to his testimony. This Exhibit #3 may be the diagramatic sketch referred to in paragraph 2 of page 2 of Mr. Strader's application and which he attached to his application. If it is not, do you have any suggestions for further use of the diagramatic sketch referred to in the application?

Thank you again for your courtesy and assistance. We look forward to having you and the others of the Commission and staff in Hobbs next week.

Sincerely yours,

ROSE AND JOHNSON

By AMare

Enclosures UMR/fk

- What is your name, occupation and employer? John M. Strader, Division Engineer with Depco, Inc.
- Have you testified previously before this Commission? Yes, Case # 3652 and 3653.
- What is the purpose of this Application? To amend Order No. R-2869 which authorized waterflood operation on our Dunn "B" Lease.
- 4. Why do you feel it necessary to amend the existing order? Depco, as successor to International Oil and Gas Corp. who made the initial application, delayed waterflood operations until suitable lease line agreements could be made. And now wish to expand the project area to include a portion of our Dunn "A" Lease.
- 5. What is Exhibit #1
 - A map of the project area showing:
 - (a) Location of wells within a two (2) mile radius and lease ownership.
 - (b) Location of other waterfloods in the area.

6. What is Exhibit #2 Showing Individual well data creating cumulative production, current producing rate, well completion data and producing interval.

- 7. What is the producing zones shown in Exhibit #2? The Queen Grayburg and San Andres fromation of the Artesia Field. Exhibit #2 also indicates that the wells have reached a stripper state of depletion.
- 8. What is Exhibit #3? Electric logs (where available) and a diagrammatic sketch of proposed injection wells. Hole and casing size, calculated tops of cement, tubing and packer settings, injection intervals and total depths are shown.
- 9. Does Exhibit #3 show how the casing will be protected from the injection water? Yes, plastic coated tubing will be set on a packer approximately 100: above the injection interval.
- In what zone is injection to be confined? The Queen, Grayburg, and San Andres formations of the Artesia Field.
- 11. Is the State Engineer Office aware of your application to waterflood the project area? Yes, a copy of an application, complete with all attachments, was sent to that office on March 7, 1968.

- 12. What is the source of water: It is to be purchased from Double Eagle Water Corp.
- 13. Will produced water be reinjected? Yes
- 14. At what initial rates and pressure will water be injected? Approximately 500 BPD @ 1800 psi.
- 15: Does this proposed operation qualify as a Waterflood Project as defined by the NMOCC Rule 701 E? Yes
- 16. Does this proposed operation prevent waste and protect correlative rights? Yes.
- 17. Introduce Exhibits.





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injection interval 2415 to 2455, 2540-2580, & 2580-2620. .

7" casing set at 2278' with 50 sx Comment with calc top at 142".

Proposed packer set On plastic coated tubing at 2225'.

Docket No. 11-68

DOCKET: REGULAR HEARING - WEDNESDAY - APRIL 17, 1968

OIL CONSERVATION COMMISSION - 9 A.M. - THE HOLIDAY INN, 200 SOUTH LINAM, HOBBS, NEW MEXICO

ALLOWABLE: (1) Consideration of the oil allowable for May, 1968;

- (2) Consideration of the allowable production of gas for May, 1968, from thirteen prorated pools in Lea, Eddy, and Roosevelt Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for May, 1968.
- CASE 3745: 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 White City Unit Area comprising 5114 acres, more or less, of Federal, State, and Fee lands in Township 23 South, Ranges 25 and 26 East, Eddy County, New Mexico.
- CASE 3746: Application of Atlantic Richfield Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Cawley Unit Area comprising 4,480 acres, more or less, of Federal and State lands in Township 22 South, Range 22 East, Eddy County, New Mexico.
- CASE 3747: Application of Depco, Inc. for an amendment to Order No. R-2869, Eddy County, New Mexico. Applicant, as successor to International Oil & Gas Corporation, seeks the amendment of Order No. R-2869 to substitute its Dunn "B" Well No. 5 in Unit I of Section 11 and its Dunn "B" Well No. 6, and Dunn "A" Well No. 1 located in Units M and G, respectively, of Section 12 for its Dunn "B" Wells Nos. 15, 19, and 21 which were included in the originally authorized water injection wells for a waterflood project authorized by said order in Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico.

CASE 3711: (Reopened):

In the matter of Case No. 3711, originally heard January 24, 1968, and in which no order has yet been entered, being reopened on the motion of the Commission to hear additional testimony regarding the amendment of Rule 509 of the Commission Rules and Regulations; among other things, the Commission will consider the assignment of an oil discovery allowable to each zone of a multiple discovery well based on the depth of said zone from the surface of the ground.

CASE 3748: Southeastern New Mexico nomenclature case calling for an order for the creation, extension, abolishment, contraction and redefinition of certain pools in Chaves, Eddy, Lea and Roosevelt Counties, New Mexico. -2-Regular Hearing - April 17,1968

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Upper Pennsylvanian production and designated as the Antelope Sink-Upper Pennsylvanian Gas Pool. The discovery well is Marathon Oil Company, Antelope Sink Unit No. 1, located in Unit G of Section 18, Township 19 South, Range 24 East, NMPM. Said pool should comprise the following described acreage:

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM SECTION 18: N/2

(b) Create a new pool in Eddy County, New Mexico, classified as an oil pool for Delaware production and designated as the Big Eddy-Delaware Pool. The discovery well is Pan American Petroleum Corporation, Big Eddy Unit No. 11, located in Unit I of Section 7, Township 20 South, Range 31 East, NMPM. Said pool should comprise the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 31 EAST, NMPM SECTION 7: NE/4 SE/4

(c) Create a new pool in Lea County, New Mexico, classified as an oil pool for Abo production and designated as the House-Abo Pool. The discovery well is Pan American Petroleum Corporation, Howse "C" No. 1 located in Unit H of Section 11, Township 20 South, Range 38 East, NPMM. Said pool should comprise the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM SECTION 11: NE/4

(d) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Huapahce-Morrow Gas Pool. The discovery well is Humble Oil & Kefining Company, Huapache Unit No. 10, located in Unit F of Section 10, Township 23 South, Range 22 East, NMPM. Said pool should comprise the following described acreage:

TOWNSHIP 23 SOUTH, RANGE 22 EAST, NMPM SECTION 10: N/2

(e) Create a new pool in Lea County, New Mexico, classified as an oil pool for Tubb Drinkard production and designated as the Imperial Tubb-Drinkard Pool. The discovery well is Bronco Oil Corporation, E. C. Hill "A" No. 3, located in Unit O of Section 27, Township 23 South, Range 37 East, NMPM. Said pool should comprise the following described acreage:

> TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM SECTION 27: SE/4

(f) Contract the Cave-Grayburg Pool in Eddy County, New Mexico, by the deletion of the following described acreage:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM SECTION 15: NW/4 SECTION 17: NE/4 -5-Regular Hearing - April 17, 1968

Docket No. 11-68

(g) Extend the Grayburg-Jackson Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM SECTION 16: N/2 and SW/4

(h) Extend the West Bronco-Devonian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 13 SOUTH, RANGE 38 EAST, NMPM SECTION 6: SW/4

(i) Extend the East Brunson-McKee Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM SECTION 23: SW/4 SE/4

(j) Abolish the Middle Lane Permo-Pennsylvanian Pool in Lea County, New Mexico, described as:

TOWNSHIP 10 SOUTH, RANGE 33 EAST, NMPM SECTION 3: SE/4 SECTION 10: E/2 SECTION 11: All SECTION 13: S/2 SECTION 14: All SECTION 15: E/2 NW/4, NE/4, and S/2 SECTION 22: W/2 and NE/4 SECTION 23: N/2 and N/2 SW/4 SECTION 24: NW/4, N/2 SW/4, and SE/4

(k) Extend the Inbe Permo-Pennsylvanian Pool in Lea County, New Mexico, to include the area described above from the abolished Middle Lane Permo-Pennsylvanian Pool and also the following described area:

> TOWNSHIP 10 SOUTH, RANGE 33 EAST, NMPM SECTION 22: SE/4 SECTION 27: N/2

> TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM SECTION 26: NE/4

(1) Extend the North Indian Hills-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 24 EAST, NMPM SECTION 9: All

(m) Extend the McMillan-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

Docket No. 11-68

Regular Hearing - April 17, 1968

-4-

TOWNSHIP 20 SOUTH, RANGE 26 EAST, NMPM SECTION 24: All

(n) Extend the Tatum-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 13 SOUTH, RANGE 36 EAST, NMPM SECTION 5: NE/4

(o) Extend the Meague-Blinebry Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM SECTION 33: NE/4

(p) Extend the Todd-Lower San Andres Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 36 EAST, NMPM SECTION 29: NW/4 SECTION 32: NW/4

(q) Extend the Twin Lakes-San Andres Pool in Chaves County, New Mexico, to include therein:

> TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM SECTION 36: N/2 NW/4

(r) Redefine the vertical limits of the Cedar Hills-Wolfcamp Gas Pool in Eddy County, New Mexico, which comprises:

TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM SECTION 15: SE/4

to be the Upper Pennsylvanian formation rather than the Wolfcamp formation and rename said pool Cedar Hills-Upper Pennsylvanian Gas Pool.

Extend said Cedar Hills-Upper Pennsylvanian Gas Pool to include therein:

TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM SECTION 15: NE/4

(s) Contract the Monument (Grayburg-San Andres) Pool in Lea County, New Mexico, by the deletion of the following-described acreage:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM SECTION 19: N/2 NE/4

-5-

Regular Hearing - April 17, 1968

Docket 11-68

(t) Extend the Eunice (Grayburg-San Andres) Pool in Lea County, New Mexico, to include therein: TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM SECTION 19: N/2 NE/4 CASE 3749: Northwestern New Mexico nomenclature case calling for an order for the extension of certain pools in San Juan, Rio Arriba, Sandoval, and McKinley Counties, New Mexico: (a) Extend the Aztec-Pictured Cliffs Pool boundary in San Juan County, New Mexico, to include therein: TOWNSHIP 29 NORTH, RANGE 10 WEST, NMPM SECTION 11: SW/4 SECTION 13: SE/4 (b) Extend the Blanco-Pictured Cliffs Pool boundary in San Juan County, New Mexico, to include therein: TOWNSHIP 29 NORTH, RANGE 8 WEST, NMPM SECTION 7: S/2 SECTION 8: N/2 TOWNSHIP 30 NORTH, RANGE 8 WEST, NMPM SECTION 18: S/2 SECTION 30: S/2 SECTION 31: NW/4 TOWNSHIP 30 NORTH, RANGE 9 WEST, NMPM SECTION 25: S/2 SECTION 30: W/2 (c) Extend the South Blance-Pictured Cliffs Pool boundary in Rio Arriba, Sandoval, and San Juan Counties, New Mexico, TOWNSHIP 25 NORTH, RANGE 5 WEST, NMPM SECTION 35: All (d) Extend the Tapacito-Pictured Cliffs Pool boundary in Rio Arriba County, New Mexico, to include therein: TOWNSHIP 25 NORTH, RANGE 3 WEST, NMPM SECTION 6: SW/4 TOWNSHIP 27 NORTH, RANGE 3 WEST, NMPM SECTION 30: SW/4 SECTION 31: W/2 and SE/4

Regular Hearing - April 17, 1968

-6-

(e) Extend the Otero-Chacra Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 25 NOR	TH, RANGE 5 WEST, NMPM
Section 6: W/	/2
Section 7: Al	
Section 19: NW	1/4
	TH, RANGE 6 WEST, NMPM
SECTION 2: Al	
SECTION 3: S/	/2
SECTION 4: Al	
SECTION 5: N/	
SECTION 9: N/	/2
ALL OF SECTIONS	5 10, 11, AND 12
SECTION 13: W/	2 and SE/4
SECTION 14: A1	
SECTION 15: E/	/2
SECTION 22: E/	/2
SECTION 24: NE	6/4
TOWNSHIP 26 NOR	RTH, RANGE 6 WEST, NMPM
SECTION 29: SE	5/4
SECTION 31: S/	/2
SECTION 32: A1	11
SECTION 33: W/	
OPCITON 22. W	/2

(f) Extend the Blanco-Mesaverde Pool boundary in Rio Arriba and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 5 WEST, NMPM SECTION 15: N/2

TOWNSHIP 28 NORTH, RANGE 9 WEST, NMPM Section 30: W/2

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM SECTION 25: N/2

(g) Extend the South Hospah-Lower Sand Oil Pool boundary in McKinley County, New Mexico, to include therein:

TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM SECTION 7: NW/4 NE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM SECTION 12: NE/4, E/2 NW/4, and SW/4 NW/4

Docket 11-68

Regular Hearing - April 17, 1968

-7-

(h) Extend the South Hospah-Upper Sand Oil Pool boundary in McKinley County, New Mexico, to include therein:

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM SECTION 12: SW/4 NW/4

(i) Extend the Tapacito-Gallup Associated Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 5 WEST, NMPM SECTION 26: All

(j) Extend the Slick Rock-Dakota Oil Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 30 NORTH, RANGE 17 WEST, NMPM SECTION 36: N/2 SE/4 & SE/4 NE/4

(k) Extend the Tocito Dome-Pennsylvanian D Oil Pool boundary in San Juan County, New Mexico, to include therein:

> TOWNSHIP 26 NORTH, RANGE 18 WEST, NMPM SECTION 22: SW/4 SECTION 27: NW/4

DEPCO, Inc.

Exploration & Production



September 18, 1968

2 (1 371)

New Mexico Oil Conservation Commission P. 0 Box 871 Santa Fe, New Mexico 87501

Attention: Mr. D. S. Nutter

Re: Dunn Cooperative Waterflood Artesia Field Eddy County, New Mexico

Gentlemen:

This is to inform you that full compliance with obligations specified in the Order R-2869-A will soon be accomplished. Reference is made to letters originated by the New Mexico Oil Conservation Commission (Stamets, 8-30-68 and to Rose, 4-30-68) concerning perforations open to the annulus in Dunn 8 No. 13 and No. 30. It is proposed to raise the injection packers approximately 100' above the upper perforations in these two wells, thereby utilizing all perforations.

Fresh water treated with corrosion inhibitor has been placed in Dunn B No.'s 17 and 18. Inert fluids will be placed in the annulus of all recently converted injectors, after pressure is encountered subsequent to the start-up of water injection.

Yours very truly,

eater

R. Ø. Yeates Regional Engineer

RDY:jm

cc: R. L. Stamets, NMOCC J. A. Knauf, U.S.G.S.

J. M. Strader, DEPCO, Inc.

Form 9-531 (May 1963)	DFPART	UNITED STATES	SUBMIT IN TRIPLICA OR (Other Instructions on Verse side)	TE- Budget Bureau No. 42-R1424. 5. LEASE DESIGNATION AND BERIAL NO.
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DEPCO,				Dunn B
3. ADDRESS OF OPER	ATOR			9. WELL NO.
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See also space 17 At surface	below.)	citally and in accordance with any	State requirements.	Artesia
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				10 - 185 R.28E., NMPM
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				Eddy New Mex.
16.	Check A	ppropriate Box To Indicate N	lature of Notice, Report, o	or Other Data
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FRACTURE TREAT	·	MULTIPLE COMPLETE	FRACTURE TREATMENT	ALTERING CASING
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DEPCO, Inc.	<u></u>		Dunn B 9. WELL NO.		
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August 30, 1968

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Depco, Inc. 800 Central Odessa, Texas 79760

> Re: Dunn Waterflood Project, Artesia Pool, Eddy County, New Mexico, R 2869 A

Gentlemen:

j. .

By letter of April 30, 1968, the following requirements for injection wells in the subject waterflood were set forth:

"The casing-tubing annulus in all wells should be loaded with a corrosion-inhibited fluid and left open at the surface or equipped with a pressure gauge to facilitate detection of leakage in the tubing or the packer. Unless it is Depco's intent to utilize the perforations at 2365'-2375' in Dunn "B" Well No. 13 and at 2453'-2457' in Dunn "B" Well No. 30, these perforations should be squeezed upon conversion of the wells to water injection."

This office has now received reports of conversion of the Dunn B Tract 2 Wells No. 13, 17 and 18 to water injection . On these reports no mention was made of performing the work required above.

Though we do have a copy of a letter from Mr. John Strader

August 30, 1968

Depco, Inc. 800 Central Odessa, Texas 79760

requesting authority to leave the "extra" perforations open, we have no record of such authorization being given.

Please advise this office of Depco's plans to complete the required work or of the authorization to omit the same.

Very truly yours,

OIL CONSERVATION COMMISSION

R. L. Stamets Geologist

RLS/bh

-2-

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION SPECIALITING IN. DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS Hobbs, New Mexico April 17, 1968 REGULAR HEARING dearnley-meier reporting service. inc. 1120 SIMMS BLDG. . P. O. BOX 1092 . PHONE 243-6691 . ALBUQUERQUE, AEW MEXICO IN THE MATTER OF: Case 3747 Application of Depco, Inc. for) an amendment to Order No. R-2869) Eddy County, New Mexico. BEFORE: A.L. "Pete" Porter, Secretary-Director Guyton B. Hayes, Land Commissioner Governor David F. Cargo TRANSCRIPT OF HEARING

MR. PORTER: Now we'll take up Case 3746.

MR. HATCH: Case 3746. Application of Atlantic Richfield Company for a unit agreement, Eddy County, New Mexico.

MR. ROSE: If the Commission please, V.M. Rose of Rose and Johnson, Attorneys in Hobbs, New Mexico representing the Applicant. We have one witness to be sworn, John Strader, Chief Engineer of the Applicant Depco, Inc., Denver, Colorado. Will you stand and be sworn?

(Witness sworn)

(Whereupon, an off the record discussion was held)

MR. PORTER: Well, I didn't look at the docket either, Mr. Rose, so it's not entirely your fault, however, I did call the case in order. Since he has already gone to this much trouble, Mr. Rose, we have got this much in the record, suppose we change the designation of the case to 3747 and proceed, is that all right with you, Mr. Hinkle?

MR. HINKLE: Yes,

MR. HATCH: Case 3747. Application of Depco, Inc. for an amendment to Order No. R-2869, Eddy County, New Mexico.

JOHN STRADER

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

DIRECT EXAMINATION

BY MR. ROSE:

Q Will you state your name, your occupation and your employer?

A John Strader, with Depco. Inc., and I am the Division Engineer located in the main office in Denver, Colorado.

Q Have you previously testified before this Commission?

A Yes, I last testified in Case 3653.

Q You are representing the Applicant in this case and does this case seek an amendment to Order 2689 previously entered by the Commission?

A Yes, it does.

Q What is the purpose of the application for amendment of the existing order?

A The initial application that resulted in the existing order was made by International Oil and Gas Corporation who then operated the leases involved. Depco now operates these leases. The initial order designated

The injection wells for waterflood operation. We delayed commencing waterflood operations until suitable lease line agreements could be made. It is now our judgment that it is desirable and in the best interest of conservation that six of the injection wells designated by the initial order as injection wells be retained and that three of the designated injection wells be eliminated and that three other wells be substituted for the three which we believe is best to eliminate.

> (Whereupon, Applicant's Exhibits 1 through 4 marked for identification)

Q Now, will you refer to your Applicant's proposed Exhibit 1 which Mr. Porter has and will you state what that exhibit is?

A This is a map of the area showing a two-mile radius around the project area. It also shows other waterfloods in the area and the proposed injectors and those previously authorized by the order. Depco feels that three wells previously authorized will not be initially required. These are Dunn "B" 15 located in the southwest quarter of the northwest quarter of Section 10, Dunn "B" 19 in the southwest of the northeast quarter of Section 10, Dunn "B" 21 in the southwest of the northwest quarter

of Section 11. Agreements with other operators in the area allow us to expand to the east with the Dunn "B" No. 5 in the northeast of the southeast quarter of Section 11, Dunn "B" 6, the southwest of the southwest quarter of Section 12 and Dunn "A" No. 1 in the southwest of the northeast quarter of Section 12. All of the above wells are located in Township 18 South, Range 28 East, New Mexico Primer in Eddy County.

Q Are the other six wells that were authorized in the initial order, you intend to keep them the same?

A That's correct.

Q Why do you ask for this change or feel it is desirable?

A It is felt that the three wells which we are requesting to be operated are not initially required to effectively waterflood that portion of the project area. The additional wells which we are proposing will allow an expanded area to be stimulated by a waterflood.

MR, ROSE: Do any members of the Commission or the staff have any questions on this proposed exhibit 1?

MR. PORTER: Any questions on this witness? MR, ROSE: We have other exhibits and testimony, Will you refer to Exhibit 2 and state what it is?

A Exhibit 2 is individual well data, showing the cumulative production as of April 1, 1968, the average oil production in March of this year, the date of completion, the completion interval.

Q Will you read into the record just the general substance shown by that exhibit, please, sir?

A The producing interval is the Queen-Grayburg and San Andres formation of the Artesia field. Exhibit 2 indicates that the wells have reached a stripper state of depletion, the average production from these wells is four barrels per day.

MR. ROSE: Any questions of the witness on this Exhibit?

MR. PORTER: Approximately when were these wells drilled?

A The Exhibit 2 does give the date of completion. The first well was completed in December of 1949 and development has continued and the last well completed was in June of 1966.

MR. PORTER: They are not of the earliest development in the Artesia Pool which I believe goes back to about 1923 or 1924.

A They are not; these are fairly recent.

MR. PORTER: That's about the third, second or third stage of development over there, as I recall.

A That's correct.

MR. PORTER: Does anyone else have any question at this point on this exhibit?

Q (By Mr. Rose) Will you refer to Exhibit 3 and state what it is?

A This exhibit shows a schematic sketch of each of the nine injection wells which we wish to convert to injection, where available, an electric log is included.

Q Will you give some detail on what is shown on that exhibit?

A All of the proposed injectors are cased to at least 2,220 feet. A typical well conversion is shown by Dunn "B" 17, the first page of this exhibit. On the lefthand portion of the exhibit we have a gamma ray log and a neutron log. On the righthand portion is the schematic diagram on this particular well showing seven inch surface casing set at 510 feet with 200 sacks of cement, four and a half inch casing set at 2,572, cemented with 100 sacks of cement. The calculated top of the cement is 1,070 feet. We propose to mun plastic-coated tubing and set a packer at 2,388. On this particular well

a portion of the producing intervall is an open hole completion from the casing point to a total depth of 2649. We would propose to plug back to 2,540.

Q Have you shown on that exhibit how the casing would be protected from injection of water?

A Yes, plastic-coated tubing will be run and set on a packer which will be set from 36 to 86 feet above the injection interval.

Q Does that exhibit show that your injection is to be confined to the Queen-Grayburg and San Andres formation in the Artesia Field?

A Yes,

Q What is the source of the water you are going to procure?

A The water is to be purchased from Double Eagle Water Corporation.

Q Will produced water be reinjected?

A Yes, it will.

Q What initial rates and pressure do you propose to inject water?

A Approximately 500 barrels per day at 1,800 PSI.

Q Mr. Strader, in your opinion, does this proposed operation qualify as a waterflood project as defined by

New Mexico Oil Conservation Commission Rule 701-5E?

A Yes, it does. We anticipate three quarters of a million barrels of additional oil to be recovered as a result of waterflooding.

Q In your opinion will this --

MR. PORTER: What was that amount, please?

A Three quarters of a million, 750,000 barrels.

Q (By Mr. Rose) In your opinion, will this proposed operation be in the interest of conservation, prevent waste and protect correlative rights?

A In my opinion, it iwll.

MR, ROSE: Questions of the witness on this exhibit?

MR, PORTER: I had one question. You indicated that your source of water, I believe at the present time is fresh water?

A Yes, sir, it will be purchased -- it's some brine water, some fresh water, but it's to be purchased from Double Eagle Water Corporation.

Q (By Mr. Porter) At some later time you say that you do plan to reinject all produced water?

A That is correct.

Q (By Mr. Porter) Will you do this simultaneously,

will you mix the fresh water and salt water or will you slug it?

A Our present plans are to slug the water, alternate produced water and makeup water.

Q (By Mr. Porter) Have you used this procedure in other pools?

A Yes.

Q (By Mr. Porter) And it has worked successfully?

A That's correct. We have just started and don't have a long history to determine this, but we are using it.

Q (By Mr. Porter) It's your feeling that this can be accomplished satisfactorily?

A That's correct.

MR. PORTER: Does any of the staff have any questions on Exhibit 3 or any part of it?

MR. ROSE: Applicant' offers into evidence Exhibits 1,2 and 3.

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

(Whereupon, Applicant's Exhibits 1 through 3 were Offered and admitted in evidence)

MR. PORTER: Does this conclude the witness's

testimony?

MR. ROSE: This concludes the Applicant's presentation.

MR. PORTER: Does anyone have any question concerning any exhibits so far? Witness may be excused.

(Witness excused)

MR. ROSE: Thank you.

MR. PORTER: Is there anything further to be offered in this case? The Commission will take the case under advisement.

STATE OF NEW MEXICO) > ss COUNTY OF BERNALILLO)

I, KAY EMBREE, 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 29th day of April, 1968.

Lay Embrec INOTARY PUBLIC

My Commission Expires: November 19, 1971











2350 And the Colored Part of th • -----• Hole size . 3 5/8", 24# casing set at 565' with 75 sx cement, tope so' 2 ž S^{8"} Hole size -Plastic coated 2" EUE $| \rangle$ Proposed packer at 2470 • . 6. 4 1/2" 9.6# casing set at 2760 with 200 sx cement with top at 1710. • Injection interval . بر ا 2556-641 and 2595-26121 e e · · · ì - -- Proposed plug back į į Deforred injection Finterval 27-6-601.

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Ap. #2

INDIVIDUAL WELL DATA

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LEASE Dunn "A" Dunn "B"	WELL NO. NO.	CUMULATIVE 4-1-68 48,521 40,452 36,813 28,439 26,809 42,657 40,265 4,809 31,710 30,259 26,508 28,249 22,195 29,100 25,991 22,560 22,698 27,234 18,016 19,942 - 0 - 19,028 30,245 2,100 12,209 14,989 6,728 4,487 2,719	MARCH BOPD 4 4 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	DATE OF <u>COMPLETION</u> 12-20-49 12-4-57 9-8-52 11-19-52 12-31-52 2-15-53 4-22-53 5-3-53 2-12-56 3-2-56 4-27-56 10-20-56 12-11-56 10-3-56 3-20-57 12-30-56 2-19-57 6-21-57 10-26-57 12-31-57 5-3-58 4-14-58 2-27-64 3-16-64 3-14-65 4-21-66 5-11-66 6-13-66	$\begin{array}{r} \text{COMPLETION}\\ \text{INTERVAL}\\ \hline 2220 & - 2650\\ 2640 & - 2830\\ 2485 & - 2580\\ 2572 & - 2602\\ 2415 & - 2620\\ 2164 & - 2845\\ 2196 & - 2867\\ 2180 & - 2665\\ 2453 & - 2518\\ 2363 & - 2555\\ 2222 & - 2520\\ 2441 & - 2652\\ 2390 & - 2730\\ 2448 & - 2504\\ 2553 & - 2730\\ 2448 & - 2504\\ 2553 & - 2735\\ 2449 & - 2736\\ 2368 & - 2739\\ 2356 & - 2613\\ 2276 & - 3083\\ 2502 & - 2721\\ 2185 & - 2848\\ 2201 & - 2860\\ 2365 & - 2615\\ 2435 & - 2595\\ 2568 & - 2619\\ 2530 & - 2544\\ 2584 & - 2595\\ \hline \end{array}$	<u>STIMULATION</u> Shot w/500 qts. Frac w/38,000 gal. Frac w/5,250 gal. Frac w/2,250 gal. Frac w/2,250 gal. Frac w/2,162 gal. Frac w/82,162 gal. Frac. w/2,630 gal. Frac. w/2,630 gal. Frac. w/2,630 gal. Frac w/23,000 gal. Frac w/23,000 gal. Frac w/30,000 gal. Frac w/20,000 gal. Frac w/55,000 gal. Frac w/55,200 gal. Frac w/64,000 gal. Frac w/55,200 gal. Frac w/55,900 gal. Frac w/41,500 gal. Frac w/45,360 gal.
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Case No. 3747
Case NO.
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