

CASE 3254: Application of DIXON &
YATES OIL COMPANY FOR A WATERFLOOD
PROJECT, EDDY COUNTY, NEW MEXICO.

CASE No.
3254

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

Memo

From

JAMES M. DURRETT JR.
GENERAL COUNSEL

To 77 Loren 6-24

Gave verbal advice
to place well in injection
& advised that order would
be in effect for 30 days.

Memo

From

JAMES M. DURRETT JR.
GENERAL COUNSEL

To T. L. Lawson 6-23

Wife & child
& capital stock

AT&T are now in process
by the state
delivered to the state
which is important

OIL CONSERVATION COMMISSION

P. O. BOX 2088
SANTA FE, NEW MEXICO

June 30, 1965

C
O
P
Y

Mr. A. J. Losee
Losee & Stewart
Attorneys at Law
Post Office Box 239
Artesia, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-2933, entered in Case No. 3254, approving the Dixon-Yates Oil Company 1000 Hills Water-Flood Project.

Injection is to be through the casing of applicant's Boulter Well No. 3, which shall be pressure-tested to a minimum of 1800 psi prior to commencement of water injection. Please notify the Artesia District Office of the Commission of the date and hour said pressure test is to be conducted.

As to allowable, our calculations indicate that when the authorized injection well has 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 84 barrels per day.

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

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify

-2-

Mr. A. J. Losee

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

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,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSM/lr

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

Oil Conservation Commission
Drawer DD
Artesia, New Mexico

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 3254
Order No. R-2933

APPLICATION OF DIXON & YATES OIL COMPANY
FOR A WATERFLOOD PROJECT, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 26, 1965, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 30th day of June, 1965, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Dixon & Yates Oil Company, seeks permission to institute a waterflood project in the Loco Hills Pool by the injection of water into the Grayburg formation through its Boulter Well No. 3, located 660 feet from the North line and 660 feet from the West line of Section 14, Township 18 South, Range 29 East, NMPM, Eddy County, New Mexico.

(3) That the applicant also seeks designation of the N/2 NW/4 of said Section 14 as a capacity-type waterflood project.

(4) That the project area is offset to the North and West by a prorated waterflood project wherein transfer of allowables is permitted.

(5) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(6) That the institution of a waterflood project in the project area should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(7) That the applicant and the operator of the waterflood project to the North and West have entered into an agreement for cooperative waterflooding across lease lines.

(8) That the applicant has not established that the wells in the project area would be capable of producing more than the allowable that they would receive under a prorated waterflood project.

(9) That the applicant has not established that designation of the N/2 NW/4 of said Section 14 as a capacity-type waterflood project is necessary in order to prevent waste or protect correlative rights.

(10) That the applicant should be authorized to institute a waterflood project in the proposed area and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(11) That the applicant's request that the N/2 NW/4 of said Section 14 be designated a capacity-type waterflood project should be denied.

IT IS THEREFORE ORDERED:

(1) That the applicant, Dixon & Yates Oil Company, is hereby authorized to institute a waterflood project in the Loco Hills Pool by the injection of water into the Grayburg formation through its Boulter Well No. 3, located 660 feet from the North line and 660 feet from the West line of Section 14, Township 18 South, Range 29 East, NMPM, Eddy County, New Mexico.

(2) That the applicant's request that the N/2 NW/4 of said Section 14 be designated a capacity-type waterflood project is hereby denied.

-3-

CASE No. 3254

Order No. R-2933

(3) That the waterflood project herein authorized shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(4) 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.

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


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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



JACK M. CAMPBELL, Chairman


GUYTON B. HAYS, Member


A. L. PORTER, Jr., Member & Secretary

esr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF
DIXON & YATES OIL COMPANY FOR A
SECONDARY RECOVERY PROJECT, LOCO HILLS
FIELD, EDDY COUNTY, NEW MEXICO

:
:
: No. 3254
:

APPLICATION

COMES DIXON & YATES OIL COMPANY, by its attorneys,
Losee and Stewart, and states:

1. That it is the operator of two producing oil
wells located within the Loco Hills Field, Eddy County, New
Mexico, and within the following described project area
covered by this Application, to-wit:

Township 18 South, Range 29 East, N.M.P.M.,

Section 14: N/2 NW/4

containing 80 acres, more or less.

2. There is attached hereto and by reference made
a part hereof a plat showing the location of the proposed
injection well and the location of all other wells and
lessees within a radius of one mile from said proposed in-
jection well, and the formations from which said wells are
producing.

3. That said wells have reached the advanced or
stripper state of depletion and Applicant proposes to inject
water into the Loco Hills Sand of the Grayburg formation in
sufficient quantities and under sufficient pressure to

stimulate the production of oil from the producing well in the project area.

4. That Applicant proposes to inject water into the producing Loco Hills Sand of the Grayburg formation through its Boulter No. 3 Well located 660 feet from the north and west lines of Section 14, Township 18 South, Range 29 East, N.M.P.M.

5. There is attached hereto and by reference made a part hereof a copy of the electric log on the Dixon & Yates Boulter No. 3 Well.

6. There is attached hereto and by reference made a part hereof graphic description of the proposed injection well casing program. Before injection is commenced Applicant proposes to test the casing at a surface pressure of approximately 1800 p.s.i. and if no leakage is discovered Applicant proposes to inject water down the 4-1/2" casing which was run in the well in November of 1964.

7. The Applicant proposes to inject water into the injection well at a pressure of 1400 to 1500 p.s.i. and at the rate of 500 barrels per day.

8. Applicant proposes to contract for the purchase of injection water from Newmont Oil Company as operator of the West Loco Hills Grayburg Sand No. 4 Unit.

9. The wells offsetting the project area to the north and to the west are located within the West Loco Hills Grayburg Sand No. 4 Unit and by reason of the transfer of allowable provisions of the previous orders of the Oil Conservation Commission of New Mexico relating to such Unit,

the Operator of the Unit will be permitted to produce at capacity the wells offsetting the project area covered by this Application. The Applicant therefore requests that the project area be given buffer zone treatment with capacity allowable.

10. The approval of this secondary recovery project will be in the interest of conservation, will prevent waste and correlative rights will be protected.

WHEREFORE, Applicant prays the orders of the Commission as follows:

1. That this matter be set for hearing before an examiner duly appointed by the Commission and that due notice be given thereof as required by law.

2. That after hearing an order be entered authorizing the Applicant to institute the aforesaid secondary recovery project by the injection of water into the producing Loco Hills Sand of the Grayburg formation through the injection well hereinabove described and that capacity allowables be established for the project area as a buffer zone to the West Loco Hills Grayburg Sand No. 4 Unit.

3. And for such other relief as may be just in the premises.

DIXON & YATES OIL COMPANY

By


A. J. Losee of

Losee and Stewart
Attorneys for Applicant
P. O. Drawer 239
Artesia, New Mexico

WELL DATA
DIXON & YATES OIL COMPANY

BOULTER #1

Completed 11-7-44

T. D. - 3430' PB to 3418'

7" csg. @ 2715 w/100 sx.

8-5/8" @ 385' w/50 sx.

T. Salt - 380' B. Salt - 920'

Oil Pay - 2830-45

IPF - 21 BO/6 hrs.

Elevation - 3511'

Shot 2930-2830 w/390 qts.

March 1965 - Perforated 7" 2622-36 w/2 shots/ft. Fraced with 500 bbls.
oil plus 17,000# sand.

BOULTER #3

8-5/8" @ 435' with 50 sx.

4 1/2" @ 2590' with 100 sx.

T. D. - 2650

Fraced 2600-14' w/500 barrels oil plus 30,000# sand.

Elevation - 3513 K.B.

Not yet officially completed.

Exhibit 2

DIXON & YATES OIL COMPANY
BOULTER NO. 3
660' FNL & 660' FWL
Section 14-18S-29E

To be Completed as
an Injection Well

Drilled Nov. 1964

KBE. 3513'
G.L. 3505'

Top of Salt 415'-----

245' calculated top of cement

8 5/8" @ 435' w/50 sxs

2365' calculated top of cement

Top of Loco Hills Sand 2590'

Packer Shoe @ 2590'-----

4 1/2" @ 2590' w/100sxs

Frac: 2600'-2614'

w/500 BO & 30,000# sand

T.D. 2650'

NOTE: All measurements from
KDB - Height of KDB 8'
above G.L.

Exhibit 3

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 26, 1965

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

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

- CASE 3250: Application of Amerada Petroleum Corporation for special rules for the Goodwin-Abo Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Goodwin-Abo Pool, in Sections 30 and 31, Township 18 South, Range 37 East, Lea County, New Mexico, including a provision for 80-acre proration units.
- CASE 3251: Application of Continental Oil Company for a waterflood project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Rattlesnake Dakota Pool, San Juan County, New Mexico, by the injection of water into the upper and middle zones of the Dakota formation, through three injection wells in Sections 12 and 13, Township 29 North, Range 19 West.
- CASE 3252: Application of Harvey E. Yates and Yates Drilling Company for the creation of a new gas pool and for special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Pennsylvanian gas pool comprising all of Section 13, Township 20 South, Range 26 East, and all of Sections 7 and 18, Township 18 South, Range 27 East, Eddy County, New Mexico, and the promulgation of special pool rules for said pool, including a provision for 640-acre spacing and proration units.
- CASE 3253: Application of Kennedy Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Square Lake Pool by the injection of water into the Grayburg and San Andres formations through one or two proposed injection wells, the DOB A Well No. 3 located in Unit M of Section 21 and the Kennedy Federal Well No. 3 to be located in Unit C of Section 28, Township 16 South, Range 31 East, Eddy County, New Mexico. Applicant further seeks the designation of the SW/4 SW/4 of Section 21 and the N/2 NW/4 of Section 28 as a waterflood buffer zone offsetting a capacity-type waterflood to the West and South.
- CASE 3254: Application of Dixon & Yates Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Loco Hills Pool by the injection of water into the Grayburg formation through one well located in Unit D of Section 14, Township 18 South, Range 29 East. Applicant further seeks the designation of the N/2 NW/4 of said Section 14 as a waterflood buffer zone offsetting a capacity-type waterflood to the North and West.

MAY 26, 1965 EXAMINER HEARING

CASE 3255: Application of Socony Mobil Oil Company, Inc. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the E-K Queen Unit Area comprising 2,895 acres, more or less, of Federal and State lands in Township 18 South, Ranges 33 and 34 East, Lea County, New Mexico.

CASE 3256: Application of Socony Mobil Oil Company, Inc. for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the E-K Queen Pool, Lea County, New Mexico, in its E-K Queen Unit Area by the injection of water into the Queen formation through twenty-six wells in Sections 13, 14, 23, and 24, Township 18 South, Range 33 East, and Sections 18 and 19, Township 18 South, Range 34 East.

CASE 3257: Application of Skelly Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Skelly Penrose "B" Unit Area comprising 2,612 acres, more or less, of State and fee lands in Townships 22 and 23 South, Range 37 East, Lea County, New Mexico.

CASE 3258: Application of Midwest Oil Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State "C" Well No. 1 located in Unit K of Section 32, Township 13 South, Range 34 East, Lea County, New Mexico, to produce oil from the Upper and Lower Pennsylvanian formations through parallel strings of tubing.

CASE 3259: Application of Midwest Oil Corporation for the creation of two new oil pools, and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of two new oil pools for Pennsylvanian production for its dually completed State "C" Well No. 1 located in Unit K of Section 32, Township 13 South, Range 34 East, Lea County, New Mexico, and for the establishment of special pool rules, including a provision for 80-acre proration units.

CASE 3225 (Readvertised from April 7, 1965 Examiner Hearing):

Application of Harold L. Runnels for directional drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill his Millard Eidson B Well No. 3, the surface location which is 660 feet from the South line and 1980 feet from the East line of Section 26, Township 16 South, Range 35 East, Shoebar Field, Lea County, New Mexico. Applicant proposes to set a whipstock at 6800 feet and directionally drill in a northwesterly direction bottoming said well at a true vertical depth of approximately 10,400 feet in the Permo-Pennsylvanian pay at the point not closer than 330 feet to the North and West lines of the NW/4 SE/4 of said Section 26.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 26, 1965

EXAMINER HEARING

IN THE MATTER OF:

APPLICATION OF DIXON & YATES OIL COMPANY
FOR A WATERFLOOD PROJECT, EDDY COUNTY,
NEW MEXICO

Case No. 3254

BEFORE:

DANIEL S. NUTTER

TRANSCRIPT OF HEARING

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 963-3971

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

MR. NUTTER: Call Case Number 3254.

MR. DURRETT: Application of Dixon & Yates Oil Company for a waterflood project, Eddy County, New Mexico.

MR. LOSEE: A. J. Losee of Losee & Stewart, Artesia, New Mexico, appearing on behalf of the applicant. I have one witness, Mr. Ralph Gray.

MR. DURRETT: Let the record show that Mr. Gray was sworn in the previous case, and is still under oath.

R A L P H L. G R A Y, the witness, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. LOSEE:

Q State your name, residence and occupation.

A Ralph L. Gray; I reside in Artesia, New Mexico. My business is consulting engineer.

Q You are the same Mr. Gray who testified earlier today, and had your qualifications accepted as an expert in the field?

A Yes, sir.

MR. LOSEE: Are Mr. Gray's qualifications still acceptable?

MR. NUTTER: Yes, sir.

MR. LOSEE: Mr. Gray, will you briefly explain what the applicant seeks in this hearing?

A Yes, sir. The applicant, Dixon & Yates, has two wells which presently offset the Newmont West Loco Hills unit, which is a waterflood project. The applicant proposes to inject water into their Bolter Number 3, and also they request capacity allowable for the Number 1 Bolter well.

Q Please refer to what has been marked Exhibit 1, and explain what it portrays.

A Exhibit 1 is a map which shows the outline of the Newmont Oil Company West Loco Hills unit. This map also shows the present water injection wells by red circles. The Dixon & Yates Bolter Number 1 and Number 3 wells are located in the north half of the northwest quarter of Section 14, which offsets the unit to the south. Dixon & Yates and Newmont Oil Company have made an agreement for a cooperative flood across their lease line. Newmont Oil Company has agreed to convert their Tract 17 Well Number 6 well as an injection well, and Tract 11 Number 10 well as an injection well, and to offset these two, Dixon & Yates will convert their Bolter Number 3 well as an injection well. All three of these are indicated on the map with blue circles.

Q Please refer to what has been marked Exhibit 2, and explain what is reflected by that exhibit.

A Exhibit 2 shows well data for the Bolter Number 1 and Number 3 wells. The Number 1 was completed November 7, 1944 at a total depth of 3430 feet. Seven-inch casing was

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set at 2,715 feet with 100 sacks. Oil pay was encountered from 2,830 feet to 2,845 feet and from 2,622 feet to 2,636 feet with two shots per foot, and backed with 500 barrels of oil plus 17,000 pounds of sand. The latter interval is what is called the Loco Hills Sand, and it is the zone which is presently being waterflooded. The Bolter Number 3 well has not yet officially been completed, although mechanically it is ready for injection. This well has 8-5/8 inch casing at 435 feet with 50 sacks of cement and 4 1/2-inch casing at 2,590 feet with 100 sacks. Total depth is 2,650 feet. The pay was encountered from 2,600 to 2,614 feet, and this was fractured with 500 barrels of oil plus 30,000 pounds of sand.

Q Do you know the cumulative production from the Bolter Number 1?

A Yes. The cumulative oil production as of January 1, 1965 was 7,441 barrels. Since that time the well produced 15 barrels of oil during January, 1965; five in February and 15 in March.

Q In your opinion is that well in an advanced or stripper state of completion?

A Yes, it is.

Q Do you have an opinion as to the amount of actual oil that will be recovered in this project?

A My opinion would be very rough. It would be at

best a guess, because actually I haven't made a detailed study of what results are being obtained.

Q Rather than make a guess, will this project recover oil that would not otherwise be recovered?

A Yes, it would very definitely recover oil that would not otherwise be recovered.

Q Please refer to what has been marked Exhibit 3, and state what it portrays.

A Exhibit 3 is a diagramatic sketch of the Bolter Number 3, and shows the surface casing, 8-5/8 inch set at 435 feet, which is into the top of the salt, and the calculated top of the cement behind that would be 245 feet. The 4½-inch casing is set at 2,590 and the calculated top of the cement behind that would be 2,365 feet.

Q Was that 4½-inch casing new or used?

A That was new pipe, 9.5 pound J-55.

Q And that was just run into this newly drilled well?

A Yes, sir.

Q Please refer to Exhibit 4 and explain what that portrays.

A Exhibit 4 is a portion of a gamma ray density log which was run on the Bolter Number 3 well. We have indicated in red color the location of the Loco Hills sand-oil pay.

Q What formation is proposed to be flooded in this

project?

A The formation to be flooded is the Grayburg formation. If I might anticipate further your questions, the water being used to flood with is water furnished by the Newmont Oil Company from their injection plant. Source of the water is the Ogalalla formation. It is expected that up to 500 barrels of water per day will be injected, and ultimate injection pressure is anticipated at approximately 1,500 PSI.

Q Does the applicant propose to test casing pressure on this Bolter Number 3 well?

A Yes, this casing will be pressure-tested up to approximately 1,800 pounds per square inch.

Q And if it stands that pressure, the applicant proposes, I suppose, to inject down the casing?

A That's correct. That is the same program which the Newmont Oil Company is using in their unit.

Q What if the casing--what if a leak develops in this pressure test?

A Internal yield pressure on this weight and grade of new casing is 4,380 pounds per square inch, which is substantially higher than the pressure expected to be applied to it. However, because of a thread leak or some other reason, if a leak should be found the operator would probably run tubing with a packer and inject below the leak, or possibly

squeeze off the leak with cement.

Q What do you anticipate to be the life of this project?

A It would be expected that the life of this project would be somewhere between six to ten years, for that particular area.

Q Do you know if the applicant proposes to re-inject produced water into this well?

A No plans have been formulated for handling of produced water. For one thing, this is a one-producing well project, and of course it would not be economically feasible to install facilities to handle a very small amount of water. However, it's a little difficult to state exactly what conditions might arise at a later date. It's possible that Newmont Oil Company would take the water and it could be fitted into such a program, but right at this moment, without any definite plans, I would expect that the produced water would be handled in the normal manner, which would be in a pit.

Q What success, if any, has Newmont Oil Company had in operating its wells in this Loco Hills--West Loco Hills flood?

A The Newmont Oil Company has obtained a very favorable response, and they have expanded the original program, and it is indicated very definitely that the project will be success-

ful.

Q At what rates are some of the wells in the project area producing, if you know?

A I might state that originally there was a buffer zone created between the West Loco Hills unit and an area to the east which had previously been under waterflood, and in this buffer zone permission was granted for capacity allowances. I have consulted the March production figure--March, 1965; and just to give you a few of those, in the buffer zone in Section 7 of Township 18 South, Range 30 East, Tract 1 Well Number 2 produced 267 barrels of oil per day; Tract 1 Well Number 6 produced 258 barrels of oil per day; and Tract 1 Well Number 3 in the southwest quarter of that section produced 334 barrels of oil per day. The latter well is outside the buffer zone. Other wells outside the buffer zone--the Tract 38 Well Number 2 in Section 2, Township 18 South, Range 29 East, produced 382 barrels of oil per day. In a different area outside the buffer zone, in Section 12, Township 18 South, Range 29 East, the Tract 6 Well Number 2 averaged 172 barrels of oil per day, and the Tract 6 Number 4 Well produced 128 barrels of oil per day.

Q Now, actually the project area of the Dixon & Yates is not offsetting a capacity allowable well or wells that have capacity allowables. Would you explain briefly why you feel

the applicant is entitled to capacity allowable on his wells.

A Under the allowable method under which the West Loco Hills unit is operating, they are assigned a project allowable, and this takes into consideration the number of units on which they have water injection wells, and also wells that have shown response to flood, which might be offsetting these injection wells, so in effect the operator is granted a project allowable which he can distribute within the unit as he sees necessary, and as a matter of--the way these things are actually handled, of course, the wells that show response are given larger amounts of allowable, and the wells that are not responding very well can be assigned a very small allowable, so that with the flexibility of being able to distribute the allowable as he sees fit or necessary in the unit, this allows him in effect to be able to produce allowables from some wells that are capacity.

Q So that actually it would be conceivable that the wells offsetting this Dixon & Yates would be producing in excess of an 84-barrel allowable?

A That's very possible.

Q If this project, or actually this Well Number 1 were restricted to a 701 allowable of 84 barrels, would correlative rights be protected?

A No, I don't think they would, because it's possible that the offset wells could be allowed to produce at capacity,

and by doing so they would greatly reduce the reservoir pressure on their side of the line, which could very well cause movement of oil across the lease line.

Q Were Exhibits 1 through 4 prepared by you or under your direction?

A Yes, they were.

MR. LOSEE: We offer Exhibits 1 through 4 into evidence.

MR. NUTTER: Applicant's Exhibits 1 through 4 will be admitted in evidence.

MR. LOSEE: That is the applicant's case.

MR. NUTTER: Does anyone have any questions of this witness?

MR. IRBY: Yes, sir. Frank Irby, State Engineer's Office. Mr. Gray, you anticipate that the produced water will be put into a pit. Will you describe that pit to me, please, if you can.

A As far as I know right now there's no pit existing, so it would be a little difficult for me to describe what the pit might be--what the pit actually would be like, at such time as one is necessary. But as a general rule these are just earthen pits without any lining, and they are constructed by bulldozer; and I might point out that in this area here there has never been any shallow water found in the shallow

formation, so we don't have the problem of contaminating surface waters, because surface waters do not exist. So that's just the common practice--to construct one of these earthen pits, unless very large volumes of water are produced; and of course in that event there would be some special arrangement made, I'm sure, to take care of it.

Q What are the volumes generally produced by the producing wells in these adjacent waterfloods, and in this waterflood, per well?

A We can't really state any definite figure, because the volumes of water vary over such a wide range. Some wells in these projects make small amounts of water, and other wells make large amounts, if we put it in terms of percentage of water produced as compared to oil produced; but there is such a variation in volume that I don't know really how we would say that any particular figure would be an average or representative figure. In this particular area the oil wells are not prolific--it's on the edge of the field, so that, comparatively speaking we would expect a rather small volume of water from these wells.

Q Would you give me an estimate on the range, from the minimum to the maximum, after you get your flood going? I know when you start you're not going to get any water.

A No, generally you don't get any water until you

have produced maybe 30 to 50% of the oil that's going to be produced by secondary methods, and then you will start producing water, and it will gradually increase. Of course you do have a possibility of water going through some of these thief sections and coming into the well bore prematurely--that happens sometimes. I don't know how I could give you any figure that would be very reliable, because it not only depends on the permeability that might exist from the water injection well to this producing well, but also it would depend upon the volumes which were injected. Oh, I might just give you a rough guess--the maximum amount of water that might be produced from this well would be--oh, probably 50 to 100 barrels a day. That isn't any average figure--it would be what I would consider a maximum.

Q I'm sure glad you got around to it--mine would have been a lot higher.

A I hesitate to give you a volume. The reason I went through all this rigamarole, there are so many incidental factors that would affect it.

MR. IRBY: Thank you, that's all.

MR. NUTTER: Mr. Gray, down here on the south edge of this pool, Newmont's Tract 8-D Number 5 is already on injection. That's more or less an edge well. Has it taken 500 barrels a day?

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

A It took 13,100 barrels during the month of February, 1965.

Q Pretty close to that, then? 450 a day, anyway?

A At a pressure of 1,150 pounds.

Q I wondered if those edge wells would take that much. You mentioned that the reason it was necessary for Dixon & Yates to have a capacity type allowable assigned to this little yellow tract on Exhibit 1 was to prevent movement of oil across lease lines. Isn't that the purpose of a line agreement with injection wells--that you're going to be moving oil across the lines, but equally?

A There's two reasons, really. One is that by having capacity allowables, production on both sides of the line will be more or less in balance, which should prevent movement of oil across the lease line; and secondly, it is recognized in waterfloods that in order to have efficient flooding of the formation necessary to keep these producing wells pumped down, you have to keep the flood level pumped down to the bottom, and of course if the well had a producing capacity in excess of your allowable under Rule 701, that would mean that you couldn't pump that fluid down, and would actually mean that your flooding efficiency would be lower and you wouldn't recover the oil you should.

Q Injection rates can be tailored so that the producing rate will keep the well pumped down?

A We won't have any control over the two offsetting injection wells. Dixon & Yates would have one input well which they could control injection into, to the offsetting wells.

Q The only one that would affect you would be the Tract 11 Number 10?

A The Tract 17 Number 6 is a diagonal offset. I would say it would affect it.

Q But it isn't an offset to a producing well?

A No, but it is an offset to an injection well.

Q Have Dixon & Yates and Newmont already worked out a line agreement?

A Yes, sir.

Q And the line agreement calls for similar rates of injection?

A I don't believe that the agreement makes any actual statement on that. Do you know, Jerry?

MR. LOSEE: I haven't seen it.

MR. NUTTER: This Number 3 well was recently drilled, but it hasn't been put on injection or production, has it?

A That's correct.

Q Did it potential for any amount of oil when it was completed?

A The operator has not recorded any capacity at all

--any producing capacity on that well, as far as I know. Whether it has actually been produced or not I really couldn't state.

Q The Bolter Number 1 well was completed 'way back in 1944, and has a cumulative production of 7,441 barrels, and then it was re-perforated in a higher section, being the Loco Hills Sand, in March, 1965. Has it been producing from the lower sand all of this time?

A Yes, sir.

Q Is it capable of producing anything from the lower sand now?

A The latest production figure was 15 barrels a month.

Q Is the lower sand still perforated, or is it all coming from the new upper zone?

A I don't have any production figures since it was re-perforated.

Q But all the zones are open to the well bore?

A Yes, sir.

MR. NUTTER: Are there any further questions? The witness may be excused. Do you have anything further, Mr. Losee?

MR. LOSEE: No, sir.

MR. NUTTER: Does anyone have anything he wishes

to offer in Case Number 3254?

MR. DURRETT: I'd like to state for the record that the Commission has received a letter from the Newmont Oil Company, stating that they support the Dixon & Yates application to convert Well Number 3 to water injection, and for buffer zone treatment for this project area.

MR. NUTTER: Thank you. Is there anything further to offer in this case? ... We will take the case under advisement, and will recess the hearing until one-thirty.

* * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ELIZABETH K. HALE, Notary Public and Court Reporter, do hereby certify that the proceedings in the foregoing case were taken and transcribed by me, and that the foregoing is a true and correct transcript of proceedings to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF, my hand and seal of office this 3rd day of June, 1965.

Elizabeth K. Hale

Notary Public

My commission expires May 23, 1968. I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3254, heard by me on May 26, 1965.

[Signature]

Examiner
New Mexico Oil Conservation Commission

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

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

P. O. BOX 2088
SANTA FE

June 15, 1965

MEMORANDUM

TO: THE COMMISSION

FROM: D. S. NUTTER, EXAMINER

SUBJECT: CASE NO. 3254

Case No. 3254 is the application of Dixon & Yates Oil Company for an 80-acre waterflood project (one injection well and one producing well) offsetting the West Loco Hills Grayburg No. 4 Sand Unit Waterflood Project. Applicant also seeks the assignment of capacity allowables to the wells in this project on the basis that although the offsetting project is prorated, the transfer of allowables within the project area results in de facto capacity allowables to some wells.

Inasmuch as this is a landmark case in which capacity allowables to offset a prorated flood are being requested for the first time since the waterflood rules were promulgated in 1959, it warrants very careful consideration.

My recommendation for an order in this case is approval of the waterflood project but denial of the capacity allowable.

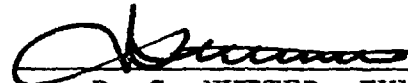
The following reasons for the denial are offered:

1. The subject acreage could in all probability be unitized with the West Loco Hills Unit, thereby coming under the unit's allowable and allowable

June 15, 1965

transfer provisions. Such unitization usually leads to more efficient operation of the flood as a whole.

2. In the absence of unitization, the water injection rates on either side of the line can be tailored by lease line agreement to equal each other so that production can be held within the assignable allowable without waste and correlative rights can be protected. This should not be too difficult, particularly in the subject area where permeabilities and porosities are low as evidenced by the extremely low primary recovery (7476 barrels from Boulter Well No. 1 from November, 1944, through March, 1965).
3. Finally, there exists the possibility in assigning capacity allowables to projects adjacent to prorated floods, and finding that the prorated allowable, even with transfer, does not equal capacity. In this event the operator of the prorated area could ask for the assignment of capacity allowables for his project. The net result could be that many of the presently prorated floods would be reclassified as capacity.


D. S. NUTTER, EXAMINER

DSN/esr

NEWMONT OIL COMPANY

1300 MAIN - AT POLK
HOUSTON, TEXAS 77002

207
Case 3254

April 8, 1965

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

Re: Dixon-Yates Oil Company's
Application to Convert
Boulter Well No. 3 to Water
Injection, Loco Hills Field,
Eddy County, New Mexico

Gentlemen:

Newmont Oil Company, as Operator of the West Loco Hills Grayburg No. 4 Sand Unit (Unit), Eddy County, New Mexico, has executed a co-operative waterflood agreement with the Dixon-Yates Oil Company. This agreement provided that the Unit would convert Well No. 17-6, located in the NE/4 SE/4 SE/4 Section 10, T18S, R29E, and Well No. 11-10, located in the SE/4 SW/4 Section 11, T18S, R29E, to water injection and that Dixon-Yates would convert Boulter Well No. 3, located in the NW/4 NW/4 Section 14, T18S, R29E, to water injection. Hence, Newmont supports Dixon-Yates' Application to convert their Boulter No. 3 well to water injection.

Yours very truly,

Charlie Seely
Charlie Seely,
Chief Engineer

CS:ajg

cc: Dixon-Yates Oil Company
Attn: Mr. Martin Yates, III

NEWMONT OIL COMPANY

ROOM 303, FIRST NATIONAL BANK BUILDING

ARTESIA, NEW MEXICO 88210

May 24, 1965

NEW MEXICO
DISTRICT OFFICE

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

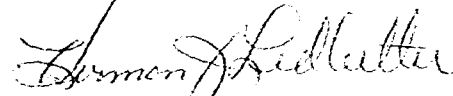
Re: Dixon-Yates Oil Company's
Application to Convert
Boulter Well No. 3 to Water
Injection, Loco Hills Field,
Eddy County, New Mexico

Gentlemen:

Newmont Oil Company, as Operator of the West Loco Hills Grayburg No. 4 Sand Unit (Unit), Eddy County, New Mexico, has executed a co-operative waterflood agreement with the Dixon-Yates Oil Company. This agreement provided that the Unit would convert Well No. 17-6, located in the NE/4 SE/4 SE/4 Section 10, T18S, R29E, and Well No. 11-10, located in the SE/4 SW/4 Section 11, T18S, R29E, to water injection and that Dixon-Yates would convert Boulter Well No. 3, located in the NW/4 NW/4 Section 14, T18S, R29E, to water injection. Hence, Newmont supports Dixon-Yates' Application to convert their Boulter No. 3 well to water injection and for Buffer Zone treatment with capacity allowable for the project area comprising the N/2 NW/4 of Section 14.

Yours very truly,

NEWMONT OIL COMPANY



Herman J. Ledbetter
Division Superintendent

HJL-saf

Carbon to: Dixon-Yates Oil Company
Attn: Mr. Martin Yates, III

A. J. LOSEE
EDWARD B. STEWART

LAW OFFICES
LOSEE AND STEWART
CARPER BUILDING - P. O. DRAWER 239
ARTESIA, NEW MEXICO

AREA CODE 505
746-3508

28 April 1965

Page 3254

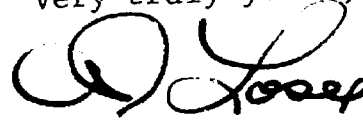
Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Dear Mr. Porter:

Enclosed are three copies of the Application of Dixon & Yates Oil Company for a secondary recovery project in the Loco Hills Field, Eddy County, New Mexico, together with the enclosures therein described. Please set this matter for hearing before an examiner at the next regularly scheduled hearing date.

With a carbon copy of this letter we are sending, certified mail, return receipt requested, to Mr. Frank E. Irby, State Engineer's Office, Capitol Building, Santa Fe, New Mexico, a copy of this Application together with the enclosures therein described.

Very truly yours,


A. J. Losee

AJL:rh
Enclosures
cc: Mr. Frank E. Irby
State Engineer's Office
Capitol Building
Santa Fe, New Mexico

DOCKET MAILED

Date 5-12-65

WELL DATA

DIXON & YATES OIL COMPANY

BOULTER #1

Completed 11-7-44

T. D. - 3430' PB to 3418'

7" csg. @ 2715 w/100 sx.

8-5/8" @ 385' w/50 sx.

T. Salt - 380' B. Salt - 920'

Oil Pay - 2830-45

IPF - 21 BO/6 hrs.

Elevation - 3511'

Shot 2930-2830 w/390 qts.

March 1965 - Perforated 7" 2622-36 w/2 shots/ft. Fraced with 500 bbls.
oil plus 17,000# sand.

BOULTER #3

8-5/8" @ 435' with 50 sx.

4 1/2" @ 2590' with 100 sx.

T. D. - 2650

Fraced 2600-14' w/500 barrels oil plus 30,000# sand.

Elevation - 3513 K.B.

Not yet officially completed.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 3254

Exhibit 2

DIXON & YATES OIL COMPANY
BOULTER NO. 3
660' FNL & 660' FWL
Section 14-18S-29E

To be Completed as
an Injection Well

Drilled Nov. 1964

KBE. 3513'
G.L. 3505'

Top of Salt 415'-----

245' calculated top of cement

8 5/8" @ 435' w/50 sxs

2365' calculated top of cement

Top of Loco Hills Sand 2590'

Packer Shoe @ 2590'-----

4 1/2" @ 2590' w/100sxs

Frac: 2600'-2614'

w/500 BO & 30,000# sand

T.D. 2650'

NOTE: All measurements from
KDB - Height of KDB 8'
above G.L.

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
EXHIBIT NO.	3
CASE NO.	3284

Exhibit 3