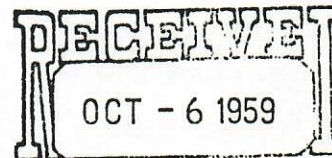


Dune Ridge

"D" sand

Application  
Commission Order

Volume 3500 bbl/day



BEFORE THE OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF COLORADO

IN THE MATTER OF THE APPLICATION  
OF SHELL OIL COMPANY FOR APPROVAL  
OF PROPOSED ENLARGEMENT OF WATER  
FLOOD OPERATION IN THE DUNE RIDGE  
FIELD, LOGAN COUNTY, COLORADO.

CAUSE NO. 54 OIL & GAS  
FILE NO. \_\_\_\_\_ CONSERVATION COMMISSION  
HEARING SET 10-20-59

A P P L I C A T I O N

Comes now SHELL OIL COMPANY, and respectfully shows to the Oil and Gas Conservation Commission of the State of Colorado, as follows:

1. That applicant is a Delaware corporation duly authorized to transact business as a foreign corporation in the State of Colorado.

2. That on December 10, 1957, the Commission entered its order in Cause No. 54-4 approving applicant's proposed water flood of the "D" sand formation of Dune Ridge Unit Area, embracing the following described land located in Logan County, Colorado:

The  $SE\frac{1}{4}SW\frac{1}{4}$  and the  $SW\frac{1}{4}SE\frac{1}{4}$  of Section 29,  $E\frac{1}{2}SE\frac{1}{4}$  of Section 31,  $E\frac{1}{2}NW\frac{1}{4}$ ,  $SW\frac{1}{4}NW\frac{1}{4}$ ,  $W\frac{1}{2}NE\frac{1}{4}$ ,  $SW\frac{1}{4}$ , and  $NW\frac{1}{4}SE\frac{1}{4}$  of Section 32, all in Township 7 North, Range 52 West, 6th P. M.

3. That applicant now proposes to enlarge such water flood operation and to include within said Unit Area the following described additional land located in Logan County, Colorado:

The  $NE\frac{1}{4}SW\frac{1}{4}$ ,  $SW\frac{1}{4}SW\frac{1}{4}$ ,  $NW\frac{1}{4}SE\frac{1}{4}$ , and  $SE\frac{1}{4}SE\frac{1}{4}$  of Section 29,  $SE\frac{1}{4}NE\frac{1}{4}$  of Section 31,  $NW\frac{1}{4}NW\frac{1}{4}$ ,  $SW\frac{1}{4}SE\frac{1}{4}$ , and  $E\frac{1}{2}E\frac{1}{2}$  of Section 32, all in Township 7 North, Range 52 West; and

Lots 1, 2, 3, and 4,  $SW\frac{1}{4}NW\frac{1}{4}$  of Section 5,  $E\frac{1}{2}NE\frac{1}{4}$  of Section 6, all in Township 6 North, Range 52 West.

4. That, as enlarged in accordance with this application, said Unit Area will embrace all of the following described land in Logan County, Colorado:

The  $NE\frac{1}{4}SW\frac{1}{4}$ ,  $NW\frac{1}{4}SE\frac{1}{4}$ , and the  $S\frac{1}{2}S\frac{1}{2}$  of Section 29,  $SE\frac{1}{4}NE\frac{1}{4}$ ,  $E\frac{1}{2}SE\frac{1}{4}$  of Section 31, all of Section 32, all in Township 7 North, Range 52 West; and

Lots 1, 2, 3, and 4,  $SW\frac{1}{4}NW\frac{1}{4}$  of Section 5,  $E\frac{1}{2}NE\frac{1}{4}$  of Section 6, all in Township 6 North, Range 52 West.

5. That attached hereto and made a part hereof and marked Exhibit 1 is a plat showing the area involved, together with the wells located thereon



properly designated, including the eight producing wells, six injection wells and two water source wells now included within the water flood operation.

6. That the locations of the proposed additional injection well and proposed additional producing well are shown on Exhibit 1.

7. That the names and addresses of lease owners other than applicant within one mile of the intake wells are as follows:

Olen Featherstone  
Roswell Petroleum Building  
Roswell, New Mexico

E. L. Doheny and Patrick A. Doheny  
9463 Charleville Boulevard  
Beverly Hills, California

All State Oil Company  
Suite 1217  
Mile High Center  
Denver, Colorado

Skelly Oil Company  
Suite 900  
655 Broadway  
Denver, Colorado

Excelsior Oil Company  
c/o Kansas-Nebraska Natural Gas Company, Inc.  
300 North Street  
St. Joseph, Missouri

C. L. Lough  
5157 Shore Drive  
Carlsbad, California

Pan American Petroleum Corporation  
Denver Club Building  
Denver, Colorado

Samuel Gary  
Mile High Center  
Denver, Colorado

Ryan Oil Company  
Midland Savings Building  
Denver, Colorado

Lowell Williamson  
303 Empire Building  
Calgary, Alberta, Canada

Vaughey & Vaughey (Seeligson)  
1650 Denver Club Building  
Denver, Colorado

Blackwood & Nickols  
Box 1237  
Durango, Colorado

*Affidavit @  
Carlsbad  
of EX. Oil Co.*



R. K. Kelley  
P. O. Box 1127  
Sterling, Colorado

8. That the purposes of the proposed enlargement for which approval is requested are (a) to include the Shell-State of Colorado 694-2 oil well and the Shell-C. Luft, Sr. "A" No. 3 (both of which are indicated on Exhibit 1) within the unit, to permit the Luft "A" No. 3 to be used as an injection well and therefore allow greater efficiency in the operation of the flood; and (b) to include within the unit additional acreage which engineering evidence indicates may contain possible reservoir sandstone, thus permitting the drilling of additional injection or producing wells if the necessity therefor arises in order to promote conservation and increase ultimate recovery.

9. That attached hereto and made a part hereof and marked Exhibit 2 is a copy of the Amendatory Agreement dated September 25, 1959, between Shell Oil Company and the royalty owners under leases covering the above-described land. Shell Oil Company owns the full working interest in all the land covered by this application.

10. That the wells in the area involved are producing from the Muddy Sandstone reservoir.

11. That attached hereto and made a part hereof and marked Exhibit 3 is the log of the proposed additional injection well.

12. That in addition to the information contained in paragraph 11, Exhibit 3 contains the description of the casing of the proposed additional injection well. Applicant proposes to test the casing in such well by setting a packer on tubing above the casing shoe, filling the annulus with oil, and pressure testing to 1500 pounds per square inch guage.

13. That water, the sources of which are shallow water sands occurring from approximately 150 to 550 feet below the surface, is being used for injection purposes. No additional water source wells are proposed, and it is estimated that the amount of water injected daily will remain approximately 3500 barrels.

14. That the applicant, Shell Oil Company, is the sole operator of the proposed project and that the address of the applicant is 1700 Broadway, Denver 2, Colorado.



15. That applicant has given notice of this application to each owner of record of leases within one mile of the proposed additional injection well and of the enlarged Unit Area by mailing a copy of this application, together with exhibits, to such owners at the addresses shown in paragraph 7, and that attached hereto is an affidavit showing the parties on whom the notice has been served and their addresses.

16. That the injection wells, including the proposed additional injection well, are cased with safe and adequate casing so as to prevent leakage and are so cemented that damage will not be caused to oil, gas, or fresh water resources.

17. That applicant believes and therefore alleges that in the interest of conservation, to prevent waste as defined in the Colorado Oil and Gas Conservation Act of 1951, as amended, this Commission should enter its order approving the proposed enlargement of the water flood operation.

WHEREFORE, APPLICANT PRAYS that this matter be set down for hearing, that notice be given as provided by the Colorado Oil and Gas Conservation Act and the Rules and Regulations of the Oil and Gas Conservation Commission for the State of Colorado, and that upon such hearing, this Commission enter its order authorizing completion of the C. Luft, Sr. "A" No. 3 well as an injection well and approving the proposed enlargement of the water flood operation.

SHELL OIL COMPANY - Applicant

By

L. W. Elderkin  
L. W. Elderkin

STATE OF COLORADO

CITY AND COUNTY OF DENVER

}  
} SS  
)

L. W. Elderkin, being first duly sworn on oath, states that he is the Division Production Superintendent for SHELL OIL COMPANY; that he has read the foregoing application and that the matters and things therein contained are true of his own knowledge.

L. W. Elderkin  
L. W. Elderkin

Subscribed and sworn to before me this 6th day of October, 1959.

My Commission Expires:  
September 15, 1962

Donna M. Mostain  
Notary Public

SHELL OIL COMPANY

By

Jerrold E. Park  
Its Attorney



BEFORE THE OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF COLORADO

IN THE MATTER OF THE INVESTIGATION |  
TO TAKE MEASURES TO PREVENT WASTE |  
OF OIL AND GAS IN THE DUNE RIDGE |  
FIELD, LOGAN COUNTY, COLORADO |

CAUSE NO. 54  
ORDER NO. 54-5

REPORT OF THE COMMISSION

This cause came on for hearing before the Commission on October 20, 1959, at 10:00 a. m., in the Game Room of the Albany Hotel, Denver, Colorado, after publication of Notice of Hearing as required by law, on the application of the Shell Oil Company for an order authorizing completion of the C. Luft, Sr. "A" No. 3 well as an injection well, and approving the proposed enlargement of its water flood operation to include within the previously approved Unit Area additional lands located in Logan County, Colorado.

FINDINGS

The Commission finds as follows:

1. That due notice of the time, place and purpose of the hearing has been given in all respects as required by law.
2. That the Commission has jurisdiction over the subject matter embraced in said Notice, and of the parties interested therein, and jurisdiction to promulgate the hereinafter prescribed order.
3. That the "D" Sand formation constitutes a common source of supply of oil and gas underlying, in addition to the Unit Area set forth in Order No. 54-4, the following described lands in Logan County, Colorado, to-wit:

Township 7 North, Range 52 West, 6th P.M.

Section 29: NE $\frac{1}{4}$  SW $\frac{1}{4}$ , SW $\frac{1}{4}$  SW $\frac{1}{4}$ , NW $\frac{1}{4}$  SE $\frac{1}{4}$ ,  
and SE $\frac{1}{4}$  SE $\frac{1}{4}$

Section 31: SE $\frac{1}{4}$  NE $\frac{1}{4}$

Section 32: NW $\frac{1}{4}$  NW $\frac{1}{4}$ , SW $\frac{1}{4}$  SE $\frac{1}{4}$ , and E $\frac{1}{2}$  E $\frac{1}{2}$

Township 6 North, Range 52 West, 6th P.M.

Section 5: Lots 1, 2, 3, 4, and SW $\frac{1}{4}$  NW $\frac{1}{4}$

Section 6: E $\frac{1}{2}$  NE $\frac{1}{4}$

4. That the Amendatory Agreement, as presented by Applicant, sets forth a proposed enlargement of the water flood operation to include within the Unit Area the additional lands described in Finding 3 above, and is necessary to increase the ultimate recovery of oil and gas from the Dune Ridge Field, and should therefore be approved as being in the public interest for conservation.

5. That the expansion of the waterflood project as requested by applicant by the completion of the C. Luft, Sr. "A" No. 3 well as an injection well is essential for efficient operation of said waterflood project and should be approved.



6. That avoidable waste of oil and gas will be prevented by the operation proposed by Applicant, and the correlative rights of all parties in the Dune Ridge Field will not be adversely affected and will be reasonably protected under such a plan of operation.

### ORDER

NOW, THEREFORE, IT IS ORDERED, that the following rules and regulations shall apply hereafter to the lands set forth in this order, in addition to other applicable rules and regulations and orders of the Commission, if any, heretofore adopted and not in conflict herewith:

Rule 1. The "D" Sand formation constitutes a common source of supply of oil and gas underlying the following described lands in Logan County, Colorado, which include the Dune Ridge Unit Area as set forth in Order No. 54-4, and the additional area herein described in Finding 3 which, by reference, is made a part hereof:

Northeast Quarter of the Southwest Quarter ( $NE\frac{1}{4} SW\frac{1}{4}$ ), Northwest Quarter of the Southeast Quarter ( $NW\frac{1}{4} SE\frac{1}{4}$ ), and South Half of the South Half ( $S\frac{1}{2} S\frac{1}{2}$ ) of Section Twenty-nine (29); Southeast Quarter of the Northeast Quarter ( $SE\frac{1}{4} NE\frac{1}{4}$ ), and East Half of the Southeast Quarter ( $E\frac{1}{2} SE\frac{1}{4}$ ) of Section Thirty-one (31); all of Section Thirty-two (32), Township Seven (7) North, Range Fifty-two (52) West of the 6th P.M.; and

Lots One (1), Two (2), Three (3) and Four (4); Southwest Quarter of the Northwest Quarter ( $SW\frac{1}{4} NW\frac{1}{4}$ ) of Section Five (5); and East Half of the Northeast Quarter ( $E\frac{1}{2} NE\frac{1}{4}$ ) of Section Six (6), all in Township Six (6) North, Range Fifty-two (52) West of the 6th P.M.,

which area is presently known as the Dune Ridge Unit Area.

Rule 2. The Amendatory Agreement covering the Dune Ridge Unit Area herein defined, and providing for Unit operations of the "D" Sand underlying said Unit Area, is hereby approved.

Rule 3. The expansion of the waterflood project by the completion of the C. Luft, Sr. "A" No. 3 well, located in the center of the Southeast Quarter of the Northeast Quarter ( $C SE\frac{1}{4} NE\frac{1}{4}$ ) of Section Six (6), Township Six (6) North, Range Fifty-two (52) West, 6th P.M., Logan County, Colorado, as an injection well in the "D" Sand of the Dune Ridge Unit Area, is hereby approved, and Applicant is authorized to inject water into said formation through said well in such quantities as shall be reasonably determined by Applicant to best achieve the maximum recovery of oil and gas without waste.



IT IS FURTHER ORDERED, that the Commission expressly reserves its right, after notice and hearing, to alter, amend or repeal any and/or all of the above orders, rules and regulations:

ORDERED this 20th day of October, 1959.

THE OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF COLORADO

By Annabel Hogsett  
Annabel Hogsett, Secretary