
* KEY ISSUES: CONFISCATION *
* Waterflood *
* Economic regular location *
* *
* FINAL ORDER: R37 EXCEPTION _____ *

**OIL & GAS DOCKET No. 0202364
PROPOSAL FOR DECISION**

AN APPLICATION BY KIMBELL OIL COMPANY FOR AN EXCEPTION TO STATEWIDE
RULE 37 TO DRILL WELL No. 23 ON THE WILSON LEASE, ROY WILSON FIELD,
COOKE COUNTY, TEXAS

APPLICANT: Kimbell Oil Company
FOR APPLICANT: Robert Grable, Jack Redding, Robert Ravnaas

PROTESTANTS: Taylor & Smith, Virgil Taylor Drilling Co.
FOR PROTESTANTS: Carroll Martin (both), Greg Cloud (Taylor & Smith), Kenny Smith
(Virgil Taylor Drilling Co.)

HEARINGS EXAMINER: Dwight Martin
TECHNICAL EXAMINER: James M. Irwin, Jr., P.E.

PROCEDURAL HISTORY

APPLICATION FILED: 6-21-93	TRANSCRIPT DATE: 9-21-93
HEARING NOTICE DATE: 7-22-93	PFD CIRCULATION DATE: 1-7-94
HEARING DATE: 9-8-93	CURRENT STATUS: Protested

STATEMENT OF THE CASE

The 125 acre Kimbell Oil Company Roy Wilson lease is located in Cooke County, 5 miles east of Gainesville, Texas. Field rules for the Wilson Field call for 10 acre drilling units with 330 feet lease-line spacing and 660 feet between wells. The Wilson Field operates under a special field rule applying the 660 foot between-well spacing requirement only to those wells producing from the "same sand reservoir," one of which is the 2200 or Bruhlmeier Sand, a distributary channel deposit of Pennsylvanian age. Applicant seeks an exception to both the lease-line and between-well provisions of Tex. R.R. Comm'n, 16 TEX. ADMIN. CODE § 3.37 (Statewide Rule 37) to prevent waste and confiscation, and proposes to drill Well No. 23 to the Bruhlmeier at a location 50 feet from the east line and 600 feet from the north line of the Roy Wilson Lease, and 50 feet from the east

line and 780 feet from the south line of the B. Sullivant Survey, Abstract No. A-581. The proposed well will be about 365 feet from the No. 15 Well, a Bruhlmeier producer; Applicant proposes a total depth of 2400 feet.

DISCUSSION OF THE EVIDENCE

(Please refer to Applicant's Exhibit No. 7, attached, for orientation.)

In the area relevant to this application, Applicant's tract has two Bruhlmeier producers, No. 1-K in the north central portion, and No. 15 in the northeast quadrant. The reservoir recently reached the end-point of its primary production, and waterflooding has commenced using two injectors, No. 7 in the center of the tract and No. 6 in the northwest quadrant. The northernmost portion of the lease is separated from the remainder of the lease by a sealing fault running west-southwest to east-northeast from the southwest corner of the tract and a permeability barrier running to the southeast from just south of the northwest corner of the tract. These barriers to flow force the waterflood to advance in a generally easterly direction toward the Protestant's tract, where Well No. 2 on the Taylor & Smith Herrmann Lease produces between 3 and 4 barrels per day from the Bruhlmeier Sand without the aid of a waterflood. The existing producers have shown a response to the injection (especially the No. 15 Well, which went from two barrels per day to 55, with 50% water cut), but their location is too far toward the center of the tract for optimal recovery. As the flood front progresses toward the east and the Protestant's tract, No. 1-K and then No. 15 will water out, leaving an estimated 22,000 barrels of recoverable oil under the Applicant's tract. Without an additional well, Applicant will terminate its waterflood when Well No. 15 waters out.

Applicant's plan is to maximize recovery of its moveable oil by drilling a new well at a location 50 feet from its eastern lease line, where it can intercept much of the oil as it moves toward the Protestant's tract. Owing to the location of the porosity and fault boundaries and the placement of the two existing Bruhlmeier wells, there is no regular location available on the lease. Even if Well No. 1-K were to be shut in, the only regular locations on the lease would fall in a small area right next to Well No. 6, an injector.

In order for Applicant's plan to work, injection operations must continue after Well No. 15 waters out at a rate sufficient to sweep the 22,000 barrels of recoverable oil remaining in the Bruhlmeier under the lease toward the proposed well. Applicant expects the proposed well to recover about 16,000 barrels of this oil, which would otherwise remain in place under the Applicant's tract when the injection ceases after the No. 15 Well waters out. According to Applicant, the proposed well will not drain the Protestant's acreage. On the contrary, urges the Applicant, because the granting of the application will ensure the continuation of the waterflood after Well No. 15 waters out, about 6,000 barrels of Applicant's producible reserves not recovered by the proposed well will be swept eastward onto Protestant's tract.

Assuming that a well at the proposed location would drain radially for a distance of 263 feet when first completed, Protestant complains that its oil would be confiscated in a surge of what is called "flush" production. Protestant urges that an economic well may be drilled at a location regular

(330 feet) from lease lines or at some less irregular distance. Protestant recognizes that such a well would recover substantially fewer barrels of Applicant's recoverable oil than would a well at the proposed location; such a well would still require a well-spacing exception.

Applicant responds that low reservoir pressure at primary depletion, combined with high reservoir permeability, will prevent a significant "flush" production from a newly completed well in this reservoir. Applicant also responds that to the extent the injection of water to the west may have affected the reservoir pressure in the area of the proposed well, the pressure gradient will ensure that the drainage area of the proposed well will be large toward west (the pressure source) and negligible toward the east lease line; reliance on a radial drainage model is therefore untenable.

EXAMINERS' OPINION

Because the Applicant was unable to show that denial of the application would result in the ultimate loss of oil, the examiners recommend granting the application to prevent confiscation only. The evidence shows that the existing wells on Applicant's tract will water out with an estimated 22,000 barrels of recoverable oil remaining under the tract, and that without the proposed exception, this oil will remain in place under the Applicant's tract. If the proposed exception is granted and the waterflood is continued, Applicant will be able to recover about 16,000 barrels of this oil. Protestant will also benefit from the continuation of the waterflood, which the evidence shows will sweep an additional 6,000 barrels of this oil onto Protestant's tract. Because the merit of the exception location depends wholly upon the continuation of the waterflood substantially as presented at the hearing, the examiners have added such a condition as Condition No. 10 in the Final Order.

That an economical well may be drilled at an alternate location regular or less irregular to lease lines (but still irregular to existing wells) does not refute the proposed location when (1) the alternate location denies the Applicant a reasonable opportunity to produce its fair share of the oil in place under its tract and (2) a well at the proposed location will benefit or at least not harm the Protestant.

PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

Findings of Fact

1. Notice of hearing was sent on July 22, 1993, to all designated operators, lessees of record for tracts having no designated operator, and owners of record of unleased mineral interests, for each adjacent tract and each tract nearer than 330 feet to Applicant's proposed well.
2. Applicant has applied on Form W-1 to drill well No. 23 at a location 50 feet from the east line and 600 feet from the north line of the Roy Wilson et al. Lease, and 50 feet from the east line and 780 feet from the south line of the B. Sullivant Survey, Abstract No. A-581. Proposed completion is in the Bruhlmeier Formation of the Wilson Field, with a total depth of 2400 feet. Field rules

require a lease-line spacing of 330 feet and a between-well spacing of 660 feet, with ten-acre density.

3. The Applicant is using two injectors to waterflood its lease from west to east; it is the only operator in the field conducting any kind of secondary recovery.

4. The two existing Bruhlmeier producers on the lease have shown a positive response to the waterflood.

5. When the second of the existing producers waters out, about 22,000 barrels of recoverable oil will be left in place under the Applicant's lease. If the waterflood is continued, a well at the proposed location will recover about 16,000 barrels of this oil.

6. Protestant operates the easterly adjacent lease, from which one well is currently producing under primary recovery; the waterflood needed to produce Applicant's 16,000 barrels of oil through the proposed well will drive about 6,000 barrels of this oil onto the Protestant's lease.

7. There are no locations on the lease regular both to lease lines and to existing wells. Locations can be found which are regular or less irregular to lease lines, but a well drilled at any of them would recover substantially fewer barrels of Applicant's recoverable oil than would a well at the proposed location:

- a. @ 50 feet - 16,000 barrels (proposed location).
- b. @ 165 feet - 11,500 barrels (4,500 fewer than proposed location).
- c. @ 330 feet - 7,000 barrels (9,000 fewer than proposed location).

8. Even if Well No. 1-K, the poorer of the Applicant's existing producers, were abandoned, the resulting wholly regular location on Applicant's lease would be in the immediate proximity of one of the injectors. A well at such a location could not produce any of the 22,000 barrels of recoverable oil that will remain in place under the lease when the last existing producer waters out.

9. The proposed location is reasonable in light of Applicant's injection program, which will prevent drainage of the Protestant's tract; denial of the application would deprive the Applicant of its opportunity to recover 16,000 barrels of recoverable oil under its tract.

10. Denial of the application would not result in the ultimate loss of the 22,000 barrels of oil which will be left in place under Applicant's tract when Well No. 15 waters out.

Conclusions of Law

1. Timely and legally sufficient notice was given to all persons legally entitled thereto.
2. Applicant properly filed Railroad Commission Form W-1.
3. The Railroad Commission has jurisdiction over the Applicant, the Protestant, and the subject

matter of the application.

4. The Roy Wilson et al. Lease is a 125 acre regular tract.
5. The proposed location is reasonable in light of Applicant's injection program; Applicant is entitled to an exception to Statewide Rule 37 to prevent confiscation. Applicant is not entitled to the proposed well to prevent waste.
6. Approval of a permit to drill at the proposed location is necessary to give Applicant a reasonable opportunity to recover its fair share of the hydrocarbons underlying its lease and to avoid confiscation.

RECOMMENDATION

The examiners recommend approval of the application as set forth in the attached Final Order.

Respectfully submitted,

James M. Irwin, Jr., P.E.
Technical Examiner

Dwight Martin
Hearings Examiner