

ENRON OIL AND GAS CO.

IBLA 89-169

Decided February 13, 1991

Appeal from a decision of the New Mexico State Office, Bureau of Land Management, rejecting future interest noncompetitive oil and gas lease offer NM-70093 (OK).

Affirmed.

1. Oil and Gas Leases: Future and Fractional Interest Leases--Oil and Gas Leases: Known Geologic Structure--Oil and Gas Leases: Offers to Lease

BLM properly rejects a future interest noncompetitive oil and gas lease offer where the land has been determined to be within the known geologic structure of a producing oil or gas field because there is a reasonable probability that a producing structure continues across that land, and where the offeror has not established the contrary by a preponderance of the evidence.

APPEARANCES: Bruce M. Brady, Vice President and General Manager, Enron Oil and Gas Company, Midland, Texas, for appellant; Margaret C. Miller, Esq., Office of the Field Solicitor, U.S. Department of the Interior, Santa Fe, New Mexico, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE HUGHES

The Enron Oil and Gas Company (Enron) has appealed a decision of the New Mexico State Office, Bureau of Land Management (BLM), dated November 1, 1988, rejecting its future interest noncompetitive oil and gas lease offer, NM-70093 (OK), because the lands sought were situated within the known geologic structure (KGS) of a producing oil or gas field.

On September 14, 1987, Enron filed its lease offer for 80 acres of acquired land situated in the Black Kettle National Grassland in the S $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 22, T. 14 N., R. 25 W., Indian Meridian, Roger Mills County, Oklahoma, pursuant to section 5 of the Mineral Leasing Act for Acquired Lands, 30 U.S.C. § 354 (1988). ^{1/} That land had been acquired by the United States pursuant to a January 25, 1941, warranty deed (OK-LU-22-417),

^{1/} All subsequent land descriptions are in relation to Indian Meridian, Oklahoma.

which contained a 50-year reservation of minerals to the grantor set to expire on January 25, 1991. 2/

BLM's Tulsa, Oklahoma, District Manager prepared a memorandum that all of the lands in sec. 22 were within an addition to the West Cheyenne Field KGS, effective September 16, 1988. In its November 1988 decision, BLM rejected Enron's noncompetitive lease offer because the lands could only be leased competitively, owing to their inclusion in the KGS, and Enron appealed.

The record indicates that sec. 22 was added to the West Cheyenne Field KGS as a result of a geologic analysis initiated during the course of processing the subject lease offer. This analysis is contained in a Geologic Report prepared by a BLM geologist on September 16, 1988. 3/

In that report, sec. 22 is described as situated in the Anadarko Basin of western Oklahoma, an area generally underlain by thick sedimentary deposits dating from the Pennsylvanian age and known to contain oil and gas. BLM determined that the lands in sec. 22 have potential to produce gas, based on a projection of four areas that were producing gas from nearby wells, listed as follows in decreasing order of depth: the Puryear or Upper Morrow gas zone (Morrow group, Morrowan series), the Atoka gas zone (Atoka group, Atokan series), Upper Red Fork gas zone (Upper Cherokee group, Des Moinesian series), and the Upper Cherokee gas zone (Upper Cherokee group, Des Moinesian series) (Geologic Report, Cross-section B-B'). 4/ These areas are composed of siltstones, sandstones, and conglomerates whose main pay zones occur at depths of from 12,000 to

2/ The record indicates that successors in interest to the grantor of the subject land issued private oil and gas leases as to that land and that, by virtue of a July 8, 1987, assignment from Wager & Associates, Inc., Enron acquired the leasehold interest. Each of these leases was due to expire on Jan. 25, 1991.

3/ The Geologic Report was not filed with the Board until BLM filed its answer to appellant's statement of reasons. It is not clear whether appellant had the opportunity to review the Geologic Report prior to filing its statement of reasons, but BLM did serve a copy of it along with its answer, and appellant did not respond.

4/ BLM used two geologic cross-sections, using drill log data from wells in the area. For cross-section B-B', BLM started at the El Paso Natural Gas (El Paso) No. 1 well in sec. 6, T. 13 N., R. 24 W., then proceeded northwesterly, encompassing the El Paso No. 3 well in sec. 1, T. 13 N., R. 25 W., and the Grace Petroleum Corporation (Grace) No. 2-36, Trigg Drilling Company (Trigg) No. 1, and Dyco Petroleum Corporation (Dyco) No. 1-21 wells, respectively, in secs. 36, 26, and 21, T. 14 N., R. 25 W., then southwesterly and ending at the TXO Production Corporation (TXO) No. 1 well in sec. 28, T. 14 N., R. 25 W. The drilling logs reveal that the El Paso Nos. 1 and 3 and the Grace No. 2-36 wells had initial production from the upper Morrow formation, respectively, of 48,964, 30,338, and 2,410 MCFG (thousand cubic feet of gas) per day. Little or no production was reported from that formation in the

15,000 feet and dip to the south at the rate of approximately 200 feet per mile (Geologic Report, Exh. 4).

BLM addressed each formation specifically based upon drilling in the vicinity of sec. 22. BLM projected the 20-foot isopach of the Puryear sandstone as extending northwesterly across sec. 22, given the general "northwest trending nature of the sand in the West Cheyenne Field" (Geologic Report at 2). BLM also stated that "the Puryear sandstone occurs in long, sinuous, branching, lenticular deposits," and that it "is projected to extend, with erratic thinning and thickening, to the northwest through" sec. 22. Id. Although the thickness of the continuous sandstone formation across sec. 22 is indicated to be no more than 20 feet (Geologic Report, Exh. 3), BLM points to "thin Puryear sandstone development" in wells in nearby sections and indicates that "[a] significant gas test of the Puryear sand in sec. 21, [the neighboring section,] indicates that with sufficient thickness and porosity development, the Puryear gas sand should have good production potential, particularly through the area of the 20 foot isopach contour * * * that is projected through" sec. 22 (Geologic Report at 2). 5/

BLM projected the productive zone of the Atoka gas zone across sec. 22: "The gas well located in sec. 26, T. 14 N., R. 25 W., produces from an Atokan sand which can be projected to the northwest through the subject lease application area to the well in sec. 21, T. 14 N., R. 25 W." Id. at 3. 6/

BLM projected the zero, 10- and 20-foot isopachs of the Upper Red Fork gas zone as crossing sec. 22:

This pay zone consists of several lenticular, conglomeratic sands with very low porosities and permeabilities that average 9%

fn. 4 (continued)

from that formation in the case of the Trigg No. 1, Dyco No. 1-21, and TXO No. 1 wells. However, BLM mapped the formation all through cross-section B-B'.

Cross-section A-A' was run northeasterly from the Dyco No. 1-7 well in sec. 7, T. 13 N., R. 25 W., to the L.R. French, Jr., No. 1 well in sec. 5, T. 13 N., R. 25 W., and then to the Helmerich & Payne (H&P) No. 1-33, Patrick Petroleum Corporation (Patrick) No. 1-34, and Trigg No. 1 wells, respectively, in secs. 33, 34, and 26, T. 14 N., R. 25 W., finishing at the Grace No. 1-25 well in sec. 25, T. 14 N., R. 25 W. 5/ The well to which BLM refers, the Dyco No. 1-21 well, was spudded on June 7, 1979, and drilled to a total depth of 14,781 feet. The well was perforated in the Morrow formation, with an initial flow of 1,400 MCFG per day for a period of 9 hours followed by 12 MCFG per day for 13 hours.

6/ The well to which BLM refers, the Trigg No. 1 well, was spudded on Feb. 27, 1979, and drilled to a depth of 15,250 feet. The well was perforated in the Atoka formation, with an initial flow of 275 MCFG per day for a period of 24 hours.

and 0.1 millidarcies respectively. Although gas is almost always present where these sands are developed, wells completed in this zone often have (with some notable exceptions) low recoverable gas reserves. Most of the upper Red Fork gas reservoirs in this area can be described as multiple stratigraphic traps that occur at depths of about 12,500 feet. * * * [T]he gas well located 3/4 mile west of the KGS addition in sec. 28, T. 14 N., R. 25 W., produces from this zone. [7/] Also, the logs on the well in sec. 21, T. 14 N., R. 25 W., [indicate] that this zone should be capable of gas production.

Id. at 2-3.

BLM also identified the Upper Cherokee gas zone as extending under sec. 22:

Upper Cherokee gas production, from another sand zone approximately 300 feet above the upper Red Fork sand zone, also has some potential in the KGS addition. This zone is shown on the electric log for the well in the SE $\frac{1}{4}$ sec. 26, T. 14 N., R. 25 W., located on cross-section B-B'. The gas well in the SW $\frac{1}{4}$ sec. 25, T. 14 N., R. 25 W., and the gas well in sec. 30, T. 14 N., R. 24 W., produce from this upper Cherokee zone, 300 feet above the upper Red Fork gas zone.

Id. at 2-3. 8/

BLM concluded that sec. 22 should be designated part of the West Cheyenne Field KGS because

[n]ot only can the upper Morrow Puryear gas zone, the upper Red Fork gas zone, the upper Cherokee gas zone and the upper Atoka gas zone be reasonably projected into this KGS addition * * * but the addition also has an upper Red Fork [9/] gas well diagonally offsetting to the southwest, and an upper Atoka gas well diagonally offsetting to the southeast.

Id. at 3.

7/ The well to which BLM refers, the TXO No. 1 well, was spudded on Aug. 22, 1983, and drilled to a total depth of 15,210 feet. The well was perforated in the upper Cherokee formation, with an initial flow of 840 MCFG per day for 24 hours.

8/ BLM does not offer any information regarding the well located in sec. 30, T. 14 N., R. 24 W. However, the well in sec. 25, T. 14 N., R. 25 W., is the Grace No. 1-25 well. That well was spudded on July 20, 1978, and drilled to a total depth of 15,025 feet. The well was perforated in the Cherokee formation, with an initial flow of 1,030 MCFG per day.

9/ The pay area for the well to the southwest (the TXO No. 1) appears actually to be the Upper Cherokee formation (Geologic Report, Exh. 2).

In its statement of reasons for appeal, appellant contends that sec. 22 should not have been designated part of the West Cheyenne Field KGS because it does not overlie a producing oil and/or gas structure. Appellant argues that the producing structure in the Upper Morrow (Puryear) sandstone formation underlying the KGS "pinches-out" in sec. 31, T. 14 N., R. 24 W., and sec. 36, T. 14 N., R. 25 W., southeast of the subject land, and, therefore, does not reach sec. 22. 10/

Appellant has submitted a stratigraphic cross-section and an isopach map depicting a complete break in the Puryear sandstone isopachs in the area of the common corner of secs. 25, 26, 35, and 36, T. 14 N., R. 25 W., thus denoting that the Puryear sandstone, which is reflected as productive in the three wells furthest to the southeast from sec. 22 within the original KGS boundary, does not continue across that area but only goes as far as sec. 36, T. 14 N., R. 25 W. Appellant shows another structure underlying sec. 22 that begins in sec. 26, T. 14 N., R. 25 W., and continues to the northwest, after a hiatus of approximately 1 mile where the formation is not found.

Thus, although appellant depicts sec. 22 atop a structure, it argues that it is separate and distinct from the producing structure of the existing KGS. Appellant suggests that this structure has not been proven to be productive because there are "existing dry holes and [the] absence of production within a radius of several miles of" sec. 22.

In response to appellant's statement of reasons, BLM has submitted a report prepared by the BLM geologist responsible for the Geologic Report. In that report, BLM disputes appellant's contention that the Puryear sandstone does not underlie sec. 22. BLM also points out that appellant failed to address whether the three other producing structures described in the Geologic Report also underlie sec. 22.

[1] The Mineral Leasing Act for Acquired Lands authorizes the Department to issue future interest oil and gas leases for acquired lands leased "under the same conditions as contained in the leasing provisions of the mineral leasing laws." 30 U.S.C. § 352 (1988). Prior to its most recent amendment, section 17(b) of the Mineral Leasing Act, as amended, 30 U.S.C. § 226(b) (1982), provided that "[i]f the lands to be leased are within

any known geological structure of a producing oil or gas field, they shall be leased to the highest responsible qualified bidder by competitive

10/ As proof that a separate structure underlies sec. 22, appellant has submitted its own cross-section which runs from the H&P No. 1-10A well in sec. 10, T. 13 N., R. 24 W., to the Hoover & Bracken No. 1A well in sec. 4, T. 13 N., R. 24 W., the Grace No. 2-36 well in sec. 36 T., 14 N., R. 25 W., the El Paso No. 3 well in sec. 1, T. 13 N., R. 25 W., the Texas Oil & Gas No. 1-28 well in sec. 28, T. 14 N., R. 25 W., and finishing at the Dyco No. 1-21 well in sec. 21, T. 14 N., R. 25 W.

bidding." ^{11/} Accordingly, it is well established that the Department has no discretion to issue a noncompetitive oil and gas lease for land situated within a KGS. See McDonald v. Clark, 771 F.2d 460, 464 (10th Cir. 1985); McDade v. Morton, 353 F. Supp. 1006 (D.D.C. 1973), aff'd, 494 F.2d 1156 (D.C. Cir. 1974). Rather, the Department is required to reject a noncompetitive lease offer for such lands. See Excelsior Exploration Corp., 113 IBLA 177, 183 (1990). That rule applies equally in the case of non-competitive lease offers for acquired lands (Beard Oil Co., 99 IBLA 40, 43 (1987)) and future interest noncompetitive lease offers. Edgar W. White, 85 IBLA 161, 163 (1985), and cases cited.

Appellant does not dispute BLM's authority to reject its noncompetitive future interest oil and gas lease offer but challenges BLM's inclusion of the subject land within the West Cheyenne Field KGS. Thus, the sole question presented by this appeal is whether the subject land was properly included in the KGS.

A KGS has long been defined by Departmental regulations as "technically the trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptively productive." 43 CFR 3100.0-5(l) (1987). As interpreted by the Board, delineation of a KGS recognizes the existence of a continuous entrapping structure, either stratigraphic, structural, or a combination of both in nature, on some part of which there is production. See Thunderbird Oil Corp., 91 IBLA 195, 202 (1986), aff'd sub nom., Planet Corp. v. Hodel, No. 86-679 HB (D.N.M. May 6, 1987). While there must be a determination that a structural and/or stratigraphic trap contains oil or gas, usually by completion of a producing well, the limits of a KGS are not simply the immediate area around that well or land itself determined to be productive, but all land where geologic or other evidence indicates that there is a reasonable probability that the land is underlain by the trap or a series of related traps in the same formations. See Beard Oil Co., supra at 44. Where such evidence is present, we have held that BLM properly regards the land as presumptively productive and, thus, properly included in a KGS.

The burden of establishing that a KGS determination was improperly made because the land does not encompass a continuous entrapping structure on some part of which there is production rests with one challenging the determination. See Source Petroleum Co., 112 IBLA 184, 189 (1989). Such a party must discharge that burden by establishing error by a preponderance

^{11/} On Dec. 22, 1987, Congress amended section 17(b) of the Mineral Leasing Act to provide for the initial competitive leasing of all Federal lands for oil and gas purposes, to be followed under certain circumstances by noncompetitive leasing. See 101 Stat. 1330-256 (1987). Thus, the statute no longer provides for the competitive leasing of lands within a KGS. However, lease offers pending at the time of the amendment are to be processed according to the procedures in effect prior to the amendment. See 101 Stat. 1330-259 (1987).

of the evidence. Id. In order to do so, the party must establish either that the land is not underlain by the producing structure or that, if it is, the structure would not be productive from that land. See Thunderbird Oil Corp., supra at 202.

The principal basis for BLM's decision to include sec. 22 in the West Cheyenne Field KGS is its conclusion that there is a reasonable probability that the land is underlain by four structures that have been determined to be productive of gas in the vicinity of that section, thus giving rise to the presumption that the lands in sec. 22 would likewise be productive of gas. Appellant challenges this finding, but only insofar as it rests on evidence concerning the Puryear sandstone.

There is inadequate evidence to support appellant's conclusion that the Puryear sandstone, which is productive in the area approximately 2 miles southeast of sec. 22 within the original KGS boundaries, does not, as BLM found, continue its northwest trend across sec. 22. Appellant has submitted no evidence taken from a well in the area of the asserted break in the northwest trend of the upper Morrow formation, or any other evidence establishing that this formation "pinches-out" at that point. 12/ Appellant has failed to establish that "there exists a boundary to the reservoirs [southeast of sec. 22 within the original KGS] which renders the subject land necessarily not capable of producing any gas." Ricky J. Calhoon, 110 IBLA 112, 115 (1989).

The evidence indicates that the Puryear sandstone in the upper Morrow formation was encountered in the Trigg No. 1, well situated in sec. 26, T. 14 N., R. 25 W., northeast of and near where appellant postulates that the break occurs, and that this sand "definitely correlates with the 'Puryear' sand in wells to the * * * southeast" (Report Addressing statement of reasons at 4). This evidence suggests that the producing structure in the upper Morrow formation not only continues across the area but then continues northwest across sec. 22.

Even assuming, however, that the producing structure in the upper Morrow formation does not continue from southeast of sec. 22 across that section, we conclude that appellant has not overcome BLM's determination to include the section within the KGS, as it made no effort to discount the continuation of other formations, especially the Upper Red Fork gas zone, which has been shown to be productive in the vicinity of that section. 13/

12/ We note that appellant and BLM agree that the 20-foot isopach of the Puryear sandstone does not continue uninterrupted in a northwest trend. However, appellant failed to refute BLM's conclusion that the zero-foot isopach does continue, albeit at a thickness of only between 0 and 20 feet. As discussed above, BLM also found that production was possible from the Puryear sandstone even at this thickness, and appellant has not rebutted this finding.

13/ That formation appears not only in the TXO No. 1 and Dyco No. 1-21 wells situated in secs. 21 and 28, T. 14 N., R. 25 W., less than a mile

Thus, unrebutted evidence shows that there is a reasonable probability that the producing structure of the Upper Red Fork gas zone underlies sec. 22 and that it will likewise be productive of gas from that land, further supporting BLM's determination that the land is presumptively productive. See Mary Lee H. Picou, 88 IBLA 356, 358-59 (1985).

Appellant also makes much of the fact that there are "dry holes and [the] absence of production" in the vicinity of sec. 22. That is not strictly true. Of the three wells closest to that section on which the record contains drilling information, the Trigg No. 1, Dycos No. 1-21, and TXO No. 1 wells, all had initial production in either the Morrow, Upper Cherokee, or Atoka formations. The Trigg No. 1 well was shut in after flowing at the rate of 275 MCFG per day for 24 hours and the Dycos No. 1-21 well was deemed dry and abandoned after flowing at the rate of 1,400 and 12 MCFG per day for 22 hours. All of the wells indicated the presence of gas in different quantities in the target formations. ^{14/} See L. M. Grace, Jr., 105 IBLA 166, 169 (1988). In addition, so long as the wells are capable of production, it does not matter that they are not commercially productive. See Beard Oil Co., supra at 47. Moreover, it is now well established that, even assuming that the subject lands were surrounded by dry holes, that fact does not necessarily undercut BLM's conclusion that the area is generally underlain by a producing structure. See Source Petroleum Co., supra at 191, and cases cited.

Accordingly, we conclude that BLM properly designated sec. 22 as part of the West Cheyenne Field KGS and, thus, properly rejected appellant's future interest noncompetitive oil and gas lease offer for land within that section.

Appellant also states that, prior to obtaining the private oil and gas leases for these lands, it was informed in May 1987 by a BLM employee that the land would not be considered as KGS. In the absence of a record of the complete conversation, it is unclear whether the BLM employee meant that the land was not included in a KGS at that time or that it would never be included in a KGS. In any case, if intended to convey the latter impression, the statement was mistaken, as BLM has the authority to designate land as situated within a KGS until the time a noncompetitive oil and gas lease is issued. McDonald v. Clark, supra; Eugen Dumitru Georgescu,

fn. 13 (continued)

west of sec. 22, but also in the Grace No. 1-25 well situated in sec. 25, T. 14 N., R. 25 W., less than two miles southeast of sec. 22. It is productive in the TXO No. 1 well.

^{14/} BLM also states that, although the Dycos No. 1-21 well, which is the closest to the subject land, was plugged and abandoned, drilling information for that well indicated that, "with sufficient sand development of the 'Puryear' in the area of the subject tract, 'Puryear' gas production is very likely" (Report Addressing statement of reasons at 4). BLM then noted: "Both Enron and BLM isopach maps show sufficient 'Puryear' sand thickness (for gas production) near the above well in section 21, and under the subject tract." Id.

109 IBLA 317, 318 (1989); Wilfred Plomis, 102 IBLA 337, 339-40 (1988).

Reliance on misstatements by BLM employees does not operate to vest any right not authorized by law. 43 CFR 1810.3(c); Bob F. Abernathy, 71 IBLA 149, 151 (1983).

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision appealed from is affirmed.

David L. Hughes
Administrative Judge

I concur:

Bruce R. Harris
Administrative Judge