

CELESTE C. GRYNBERG

IBLA 86-636
86-1061

Decided March 9, 1987

Appeals from decisions of the Wyoming State Office, Bureau of Land Management, increasing the rental rates for noncompetitive oil and gas leases W-63494 and W-74315.

Affirmed.

1. Oil and Gas Leases: Known Geologic Structure—Oil and Gas Leases: Noncompetitive Leases

The Board will sustain a determination by BLM that land in a noncompetitive oil and gas lease is situated within the known geologic structure of a producing oil or gas field where the lessee has not established by a preponderance of the evidence that the land is down dip of the gas/water contact in the productive formation or that the productive formation underlying the land is devoid of oil or gas in commercial quantities.

Appearances: Celeste C. Grynberg, pro se; Lowell L. Madsen, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Denver, Colorado, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE MULLEN

Celeste C. Grynberg has appealed from two decisions of the Wyoming State Office, Bureau of Land Management (BLM), dated February 21 and 27, 1986, increasing the rental rates for appellant's noncompetitive oil and gas leases, W-63494 and W-74315, because all or part of the land subject to the leases is situated within the Big Piney-LaBarge Known Geologic Structure (KGS) designated effective May 25, 1984. We have consolidated these cases sua sponte because of the substantial similarity of legal and factual issues involved.

Effective June 1, 1978, BLM issued noncompetitive oil and gas lease W-63494 to Maurice Oil, Inc., for 160 acres of land situated in the NW $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$, and E $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 14, T. 30 N., R. 114 W., sixth principal meridian, Sublette County, Wyoming, pursuant to section 17 of the Mineral Leasing Act, as amended, 30 U.S.C. § 226 (1982). BLM approved an assignment of an undivided 50-percent interest to Jack J. Grynberg and then

to appellant, effective, respectively, September 1, 1978, and December 1, 1980. The other 50-percent interest is currently held by Meridian Oil, Inc.

Effective November 1, 1982, BLM issued noncompetitive oil and gas lease W-74315 to appellant for 120 acres of land situated in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ and S $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 5, T. 25 N., R. 113 W., sixth principal meridian, Lincoln County, Wyoming, pursuant to section 17 of the Mineral Leasing Act. In its February 1986 decisions, BLM notified appellant that the rental rates would be increased to \$2 per acre or fraction thereof "[b]eginning with the lease year which starts at least 30 days from your receipt of this notice," as a result of the KGS designation. Appellant has appealed from those BLM decisions.

In her statement of reasons for appeal, appellant does not challenge BLM's authority to increase the rental rates when all or part of the land in her noncompetitive oil and gas leases is designated as within a KGS. At the time appellant's leases were issued, Departmental regulation required that the annual rental would be payable at the rate of \$2 per acre or fraction thereof for noncompetitive leases "wholly or partly within the known geologic structure of a producing oil [or] gas field." 1/ 43 CFR 3103.2-2(b) (1978). Thus, it is well established that BLM properly requires a lessee to pay the increased rental for the entire leasehold when all or part of the land is determined to be within a KGS. J. A. Masek, 92 IBLA 12 (1986). Appellant has challenged the designation of the land subject to her leases as being within the Big Piney-LaBarge KGS.

1/ Effective Feb. 19, 1982, the Department amended the regulations applicable to advance rental payments to provide that, for leases issued under the simultaneous leasing system (43 CFR Subpart 3112) after that date, the rental rate would be "\$1 per acre or fraction thereof for each of the first 5 years and \$3 per acre or fraction thereof thereafter." 43 CFR 3103.3-2(f) (47 FR 2864 (Jan. 20, 1982)). The amended regulation also provided with respect to such leases: "During the first 5 years of the lease the rental is subject to increase under paragraph (b)(1) of this section. However, paragraph (b)(1) is not applicable to leases for which the annual rental is \$3." Id. Paragraph (b)(1) provided for the increase in rental rates of \$2 per acre or fraction thereof in the case of inclusion within a KGS. Thus, under this regulation, for leases issued after Feb. 19, 1982, the rental rate would increase to \$3 per acre or fraction thereof on the sixth year, regardless of whether the land was situated within a KGS. This practice is continued under the current regulatory scheme (see 43 CFR 3103.2-2(a) and (d)) and is set forth in the Feb. 27, 1986, BLM decision applicable to lease W-74315, which was issued under the simultaneous leasing system. We note in passing that by Instruction Memorandum No. 87-4, dated Oct. 2, 1986, the Director, BLM, notified all state directors that the Secretary had "granted a rental reduction for one lease year for all simultaneous oil and gas leases entering their sixth year, from \$3 per acre or fraction thereof to \$1 per acre or fraction thereof." See 51 FR 37793 (Oct. 24, 1986).

[1] A KGS is defined by the Department as 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(1) (emphasis added). While there must be a determination that a structural and/or stratigraphic trap contains oil or gas in commercial quantities, 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 formation(s). Thunderbird Oil Corp., 91 IBLA 195 (1986), appeal filed, Planet Corp. v. Hodel, Civ. No. 86-679 HB (D.N.M. June 10, 1986); B. K. Killion, 90 IBLA 378 (1986); Angelina Holly Corp., 70 IBLA 294 (1983), aff'd, Angelina Holly Corp. v. Clark, 587 F. Supp. 1152 (D.D.C. 1984). Such additional land is considered to be "presumptively productive," and is properly included in the KGS. Lloyd Chemical Sales, Inc., 82 IBLA 182 (1974).

One challenging a KGS determination has the burden of establishing by a preponderance of the evidence that BLM's inclusion of the land in the KGS is erroneous. Bender v. Clark, 744 F.2d 1424 (10th Cir. 1984). In essence, challengers must demonstrate that their conclusion is more convincing. See generally Woods Petroleum Co., 86 IBLA 46 (1985), and cases cited therein. This proof should generally consist of evidence that any purported traps do not occur at all under the land in question or that the entire purported accumulation of oil and gas which does exist is not productive of oil or gas in commercial quantities, thereby rebutting the presumption of productivity raised by BLM's placement of the land within the KGS. See Thunderbird Oil Corp., supra at 202. We must emphasize that this is admittedly a strenuous burden. However, the burden may vary by degree, depending on the evidence offered by BLM in support of its KGS determination. As we stated in B. K. Killion, supra at 386:

Where * * * differences of [expert] opinion exist and the appellant has not shown that his interpretation of the data is more likely to be correct than that of the BLM, the Board will sustain the BLM finding. Sherbourne Partnership, 90 IBLA 130 (1985); Edward W. Eicht, [89 IBLA 270 (1985)]. [Footnote omitted.]

This statement stems from the standard of proof, i.e., by a preponderance of the evidence, and is reinforced by the traditional deference which the Secretary gives to his technical experts. See Thunderbird Oil Corp., supra at 202; Ronald C. Agel, 87 IBLA 255, 259 (1985).

The record contains a BLM "Geologic Report," prepared by Dean P. Stilwell, dated July 11, 1984, which discusses the basis for the May 25, 1984, expansion of the Big Piney-LaBarge KGS, originally designated in 1933. According to the report, the KGS was expanded to include the productive limits of the Madison formation, described as an "elongated anticline lying along the axis

of the Moxa Arch" ^{2/} (Geologic Report at 1). This anticline trends N. 45° W. and is cut by Prospect and Darby Thrust faults along its western and northwestern edges. The report states the productive capability of the Madison formation was evaluated on the basis of 15 wells which had penetrated the formation:

Eight wells have been completed as shut-in Madison gas wells, three have been completed in other formations with excellent Madison gas shows, and four wells have been drilled and operations have been suspended * * *. One of these four wells had an excellent Madison gas test, but no details of any tests are available on the other three wells.

Id. at 2. The thickness of the Madison formation was estimated to range from 796 to 913 feet, "with thicknesses increasing to the northwest."

Id. at 1. Expansion of the Big Piney-LaBarge KGS was based on the following conclusions:

Thick sections of the Madison are productive or potentially productive as indicated by well data. Productive intervals are apparently related to Intercrystalline porosity, fracturing, partings, and vugginess. Dixon (1982) indicates high angle faulting to basement may occur in this area, but structural mapping does not indicate normal faulting. If faults are present, they do not appear to have affected productivity in the Madison Limestone. Since all completed wells are productive or had excellent tests, the limit of the reservoir is considered to be the lowest productive tested section in the well at the lowest point on the structure. This well, located in Section 35, T.26N, R.112W., tested 3,851, thousand cubic feet of gas per day on a drill stem test from 15,050 to 15,251 feet. This depth is approximately equivalent to the minus 8400 foot contour line * * *. This closing contour, therefore, is considered to be the outer limit of the presumptively productive reservoir. Where the minus 8400 foot is cut by the two thrust faults, the faults mark the reservoir limit. The undefined addition to the Big Piney-LaBarge field KGS is hereby established to include all 640-acre spacing units, or portions thereof, cut by the minus 8400 foot structure contour on the Madison Limestone * * *. This spacing was used because plans to develop this deep gas resource are based on a minimum of 640 acres per well.

Id. at 2. As a result of this expansion, approximately 213,602.56 acres were added to the KGS.

^{2/} The Moxa Arch is described as a "broad, gently folded basement uplift extending from the north flank of the Uinta Mountains at the Utah-Wyoming state line into the study area" (Geologic Report at 1).

On appeal, appellant does not dispute BLM's placement of the minus 8,400-foot structural contour of the Madison formation, but disagrees with BLM's reliance on a "huge reservoir in the Madison formation * * * with a gas column of 2,900 feet and covering 779 square miles" (Response to Answer, dated Apr. 22, 1986 (Response), at 2). Appellant states that such a reservoir "would be unprecedented with respect to producing geologic structures within the Rocky Mountain area." Id. Appellant states a "universal gas-water contact for the entire KGS area" cannot be justified. Id. at 5. Rather, appellant argues that a stratigraphic cross-section of the area encompassing eight wells establishes that, due to stratigraphic variations and porosity pinch outs, the area is characterized by "multiple [localized] pay zones." Id. at 2. Appellant also contends, based upon this cross-section and data with respect to the "nearest Madison wells," that each of her leases is "structurally low" to the lowest producing reservoir in the Madison formation, or the gas/water contact. 3/ Id. at 3, 4.

In response to appellant's statement of reasons, BLM submits an additional geologic report, dated May 30, 1986, and prepared by Stilwell, which addresses the points raised by appellant. The report states that the Madison formation is a "large continuous structurally controlled reservoir lying on the Moxa Arch," which is "generally gas filled * * * across the structure" (Report at 2, 3). The report notes that this conclusion is based on existing well data:

Wells tested to date in the Madison Formation show uniformly high gas production rates and flowing pressure. Static reservoir pressure within the Madison varies predictably with the sub-sea depth of the completions, pressure increases with depth, indicating that reservoir pressure was originally uniform throughout, prior to structural deformation. The gas compositions are all similar (low BTU, CO² rich sour gas) and also vary predictably with depth on the structure. Methane (CH⁴) which is lighter decreases in percentage with depth and heavier carbon dioxide (CO²) increases in percentage with depth due to density stratification of the two primary gas constituents in this reservoir.

Id. at 3. However, the report also notes "some stratigraphic implications" which apparently result in "various high porosity zones throughout the [formation]" and that there are "some isolated [or perched] water bearing zones

3/ Initially, appellant filed a statement of reasons in the case of lease W-63494, contending inclusion of the land in the KGS was "inappropriate" because the nearest producing wells were 2 ½ miles to the east and the closest wells were "dry holes." See Evelyn D. Ruckstuhl, 85 IBLA 69, 72 (1985). In its answer, BLM responded that all of the wells were "completed in shallower formations and did not penetrate the Madison Formation," upon which the recent KGS expansion was based. Appellant does not dispute this assertion.

in the formation." 4/ Id. at 2, 5. In conjunction with his preparation of the geologic report, Stilwell prepared a stratigraphic cross-section using seven of the same wells used by appellant. 5/ Id. at 3. The report states that the "high degree of correlation between equivalent stratigraphic intervals in each well [especially as to porosity] strongly suggests that the reservoir is continuous across the entire structure." Id. at 3. The report also notes that subsequent well data has caused BLM to conclude that the productive limits of the Madison formation are "at a lower elevation," specifically the minus 8,900-foot structural contour. Id. at 2. BLM submits a copy of a December 20, 1984, Geologic Report, also prepared by Stilwell, which was used to justify a further expansion of the Big Piney-LaBarge KGS, effective December 20, 1984, based on those 640-acre spacing units, or portions thereof, cut by the minus 8,900-foot structural contour. That contour had been determined to be the lowest productive tested section in the Madison formation in the Rock Creek Unit No. 1 well, drilled by the Arco Oil and Gas Company in sec. 28, T. 32 N., R. 116 W., sixth principal meridian, Wyoming, northwest of the original KGS. This resulted in the expansion of the KGS generally to the northwest, along the trend of the anticline.

As noted supra, appellant uses her stratigraphic cross-section (Exhibit II) to demonstrate two points: one, that the area of the KGS is characterized by multiple localized pay zones and two, that appellant's leases are structurally low to the gas/water contact. The northernmost point of the cross-section (point A) is the North Riley Ridge Unit No. 33-24 (No. 33-24) well situated in the SW $\frac{1}{4}$ sec. 33, T. 30 N., R. 114 W., sixth principal meridian Wyoming, approximately 5 miles southwest of appellant's lease W-63494. Appellant notes that while a portion of the Madison formation, "from 15,940 to 15,960 feet," appears to be productive on the electric log of that well, the resistivity "drops off rapidly * * * from 15,950 to 15,960 feet indicating that the lower portion of this pay zone is either wet or not far above the gas-water contact" (Response at 3). Appellant states that this assumption is supported by the fact that the well, perforated in the Madison formation between 15,894 and 15,954 feet, produced water "along with the gas." Id.; see Appellant's Exhibit IV. Appellant places the gas/water contact "conservatively" at the minus 7,700-foot structural contour, or updip of appellant's lease W-63494. Id.

4/ In her response, at page 2, appellant states that BLM had determined the "common" gas/water contact was at the minus 8,400-foot structural contour. BLM states that the gas/water contact "has not yet been tested in the Madison reservoir" (Report at 2). We find nothing in the July 1984 Geologic Report which suggests that BLM has determined the gas/water contact.

The minus 8,400-foot structural contour is instead described as the "lowest productive tested section" in the formation (Geologic Report at 2).

5/ The geologic report states that BLM did not use the well situated in sec. 2, T. 28 N., R. 114 W., sixth principal meridian, Wyoming, because "we did not have the same scale logs as for the other wells" (Report at 3). We note that this well is not discussed on appeal by appellant and will not be considered herein.

On the other hand, BLM contends that the entire pay zone in well No. 33-24 is gas bearing even though the resistivity is lower in portions of the zone (Report at 3). BLM states that core analyses from the zone (Exhibit IV) show "low water saturation * * * further indicating this zone is gas bearing. Id. BLM attributes the small production of water to either poor cement bonding of the production casing or the production of large volumes of gas at high flowing pressure. 6/ BLM states that the data does not support a gas/water contact at the minus 7,700-foot structural contour.

We find little to refute BLM's conclusion that production from the particular pay zone identified in the electric log for well No. 33-24 was a combination of gas and water. BLM has submitted a plausible explanation for this combined production. Appellant argues simply that the zone is "either wet or not far above the gas-water contact" (Response at 3). However, appellant has not established (by electric log or other evidence) that the gas/water contact occurs in or just below the zone. She has not rebutted BLM's conclusion that the lower resistivity is still indicative of the presence of gas. Moreover, appellant has provided no evidence that the gas/water contact actually occurs at the minus 7,700-foot structural contours, i.e., at the 15,997-foot level on the electric log. Indeed, at that level the electric log indicates resistivity indicative of what BLM would consider to be the presence of gas. We, therefore, cannot conclude appellant has carried the burden of proof that appellant's lease W-63494 is downdip of the gas/water contact.

The southernmost point of the cross-section (point A¹) is the Fontenelle II Unit No. 35-22 (No. 35-22) well situated in the NW ¼ sec. 35, T. 26 N., R. 112 W., sixth principal meridian, Wyoming, approximately 9 miles west of appellant's lease W-74315. This well is referred to in BLM's Geologic Report at page 2, and used by BLM to establish the minus 8,400-foot structural contour as the "lowest productive tested section" in the Madison formation. Appellant states that the well was subjected to two drill stem tests in the Madison formation, from 14,760 to 14,960 feet from 15,050 to 15,251 feet. See Appellant's Exhibit VII. Appellant concludes that the gas flow in both tests indicates "two potential reservoirs," but that because neither "porosity zone" can be correlated updip into the Graphite Unit No. 1 (No.1) well situated in the NW ¼ sec. 16, T. 27 N., R. 114 W., sixth principal meridian, Wyoming (approximately 17 miles northwest of the No. 35-22 well), the porosity zones stratigraphically pinch out (Response at 4). See Appellant's Exhibits I and II. Appellant states that the lower drill stem test "intersected the gas-water contact for this zone," as indicated by the presence of "formation water" and a "sharp decline" in resistivity at approximately 15,123 feet (Response at 4). Appellant places the gas/water contact "conservative[ly]" at the minus 8,296-foot structural contour, updip of appellant's lease W-74315. Id.

6/ Appellant's Exhibit IV indicates that well No. 33-24 flowed 9,197 MCFG and 47 BW, with an FTP of 2014.

BLM contends that the two drill stem tests do not indicate the existence of two separate potential reservoirs. BLM also states its records indicate the lower drill stem test did not encounter formation water and that the decline in resistivity is "only slight" ^{7/} (Report at 5; see BLM's Exhibit IX and X). BLM reiterates that the gas/water contact has not been identified at the minus 8,400-foot structural contours, or any other contour.

Again, we must agree with BLM that appellant has not established the location of the gas/water contact in well No. 35-22. Appellant postulates that formation water was encountered in a drill stem test of the well because, while a "water cushion" unloaded prior to the flow of gas, the operator nevertheless "reversed out" an undetermined amount of "fluid" after the test (Response at 4). This is indicated on Appellant's Exhibit VII, the record of the test filed with the Petroleum Information Corporation. Exhibit IX submitted by BLM is a record of the test filed with Lynes, Inc. The latter report does not indicate that any fluid was "reversed out" after the test, and notes that gas was "measured at flareline after shut-in." We cannot conclude, based on the evidence before us, that formation water was encountered in the well. We also cannot conclude that appellant has identified a significant decline in resistivity at the 15,123 foot level, indicative of the gas/water contact. BLM has submitted a blow-up of the electric log at the depth (Exhibit X), which indicates that there is a decline. However, this decline is similar to a decline at the 15,100-foot level. We are unable to find appellant has demonstrated that the decline signifies the presence of the gas/water contact. Appellant has not carried the burden of proof that the gas/water contact occurs at the minus 8,296-foot structural contour, i.e., at the 15,150-foot level on the electric log. We, therefore, cannot conclude that appellant's lease W-74315 is downdip of the gas/water contact.

The remaining question raised in connection with the wells in appellant's cross-section (A-A¹), is whether there are multiple localized pay zones or a single continuous productive reservoir across the Big Piney-LaBarge structure. BLM argues that appellant is correct regarding "multiple pay zones * * * in that there are various high porosity zones throughout the Madison [formation]," but that the formation is "generally gas filled * * * across the structure" (Report at 2). Thus, for well No. 35-22, BLM states the porosity zone identified by appellant as pinching out to the northwest is "not the only producing interval in the Madison reservoir," but the "entire thickness of the reservoir is capable of producing gas." Id. at 4 (emphasis added). BLM argues that,

^{7/} BLM states there are three resistivity curves on an electric log, but that the important curve is the deep resistivity (LLD) curve. BLM explains that

"[w]hen salt water drilling muds * * * invade hydrocarbon-bearing zones, there is low resistivity in the flushed zone (RXO curve) intermediate resistivity in the invaded zone (LLS curve) and high resistivity in the uninvaded zone (LLD curve). The reason for an increase in resistivities as the tool signal penetrates deeper into the formation is because of the increasing hydrocarbon saturation with distance from the borehole (Asquith, 1982)" (Report at 3-4).

while a particular high-porosity zone within the Madison formation may indeed not continue across structure, a productive reservoir does continue across structure. BLM states that "[l]og data indicates that even intervals of low porosity * * * are gas saturated." Id. at 2.

BLM and appellant essentially rely on the same cross-sectional analysis between well Nos. 1 and 35-22. This portion of the cross-section has particular relevance to appellant's lease W-74315, because it provides evidence of the continuation of any productive reservoir to the west towards appellant's lease. Where BLM sees a "stratigraphic correlation" (Report at 4), appellant sees a lack of correlation (Response at 4). At best this represents a divergence of expert opinion, and is not sufficient to rebut BLM's conclusion by a preponderance of the evidence. B. K. Killion, supra at 386. The same is true of BLM's conclusion that there is a stratigraphic correlation between well No. 1 and the next well along the cross-section, i.e., the Tip Top Unit No. 22-19 (No. 22-19) well situated northeast of well No. 1 in the NW ¼ sec. 19, T. 28 N., R. 113 W., sixth principal meridian, Wyoming.

Appellant also notes that the porosity zone which produces in well No. 33-24 may appear in the Riley Ridge Unit well No. 8-24 (No. 8-24) situated southwest of well No. 33-24 in the SW ¼ sec. 8, T. 29 N., R. 114 W., sixth principal meridian, Wyoming, but contends that, further southeast along the trend of the anticline, this porosity zone "thins" in the Tip Top Unit No. T27-6G (No. T27-6G) well situated in the SW ¼ sec. 6, T. 28 N., R. 113 W., sixth principal meridian, Wyoming, and disappears in two other Tip Top Unit wells (well Nos. F14-13G and 22-19) §/ (Response at 3). Appellant notes that between well Nos. 33-24 and 8-24 there are indications that the porosity zone is not the "same correlative zone," because of the lower resistivity and different gas composition of well No. 8-24. Id. On this point, BLM argues that the porosity zone is the "same" (Report at 4). BLM explains that the LLD curve for well No. 8-24 indicates a higher resistivity than in well No. 33-24 and that the difference in gas composition is the result of the "density stratification of the reservoir" in both wells. See BLM's Exhibits V and VII. Again, we find there to be a divergence of expert opinion.

Both appellant and BLM conclude that the porosity zone continues between well Nos. 33-24 and 8-24. BLM also argues that its cross-sectional analysis further demonstrates that the porosity zone continues through well Nos. T27-6G.

§/ Appellant argues that well No. F14-13G, drilled by Mobil Oil Corporation (Mobil) and completed in 1979, is "non-productive," even though "several zones" were perforated (Response at 3, 4). BLM states that Mobil obtained "rich" carbon dioxide gas from the Madison formation (Report at 4). BLM also submits a sundry notice for the well (Exhibit VIII), which indicates that a test of this gas indicates that it is intermingled with hydrocarbon gas. This evidence confirms that the well is underlain by a structure in the Madison formation which is presumptively productive of gas. See Thomas Bohr, Jr., 89 IBLA 384, 386 (1985). Appellant has simply not established that the structure is not productive.

F14-13G, and 22-19, *i.e.*, "along the entire section" (Report at 4). In the absence of evidence that appellant's expert opinion is correct and BLM's is not, we must conclude that appellant has not overcome by a preponderance of the evidence BLM's assertion of a continuous producing structure along the cross-section. B. K. Killion, supra.

We find appellant has not established by a preponderance of the evidence that the producing structure of the Madison formation identified in well Nos. 33-24 and 35-22 is a localized pay zone which hits the gas/water contact or pinches out as it continues downdip toward appellant's leases W-63494 and W-74315. There remains a reasonable probability that appellant's leases are underlain by that producing structure. See Mary Lee H. Picou, 88 IBLA 356 (1985); R. K. O'Connell, 85 IBLA 29 (1985). Thus, we uphold BLM's finding that appellant's leases are situated on land presumptively productive of oil or gas, and designated as being within the Big Piney-LaBarge KGS. ^{9/} BLM properly increased the rental rates for appellant's leases in accordance with Departmental regulation.

Pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decisions appealed from are affirmed.

R.W. Mullen
Administrative Judge

We concur:

Wm. Philip Horton C. Randal Grant, Jr.
Chief Administrative Judge

Administrative Judge

^{9/} We note that a portion of the land in both of appellant's leases is outside the minus 8,400-foot structural contour. In Pamela S. Crocker-Davis, 94 IBLA 328 (1986), we recently reversed a BLM decision to the extent that it included land in the KGS merely because it was within 640-acre state spacing unit cut by the stratigraphic limit of production, *i.e.*, the zero net effective reservoir isopach. However, we left standing the administrative practice approved in Charles J. Babington, 4 IBLA 43 (1971), of including the smallest legal subdivision (quarter quarter section) cut by the structural limits of production. See also Charles J. Frank, 90 IBLA 33 (1985). We note that all of the land in appellant's leases is properly included in the Big Piney-LaBarge KGS in accordance with the latter rule. Moreover, with the expansion of the KGS to the minus 8,900-foot structural contour all of the land in appellant's leases is clearly within the KGS.