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DEVELOPMENT COVENANTS IN SOLID MINERAL LEASES

ROBERT W. SWENSON*

Mining agreements involving the so-called solid or hard minerals¹ evidence so much variation in form that it is often difficult to categorize the interests created by these arrangements. The nature of the legal relationship between the landowner and the miner presumably depends upon the intention of the parties as manifested in their agreement. Thus, an informal arrangement may be merely a grubstake agreement or other employment contract,² or it may create a revocable license.³ Formal conveyances, on the other hand, may transfer the fee to the minerals in place⁴ or may create a profit á prendre.⁵ In addition to these possibilities, there has evolved a hybrid arrangement which many courts are content merely to describe as a "mining lease" without attempting to tag it with a traditional conceptualistic label. This comment is concerned primarily with this type of agreement, and, more specifically, with a narrow facet of mining law which involves the duty of the lessee to commence mining operations within a reasonable time and to continue mining with due diligence thereafter.

A large body of case law on the development obligations of the oil and gas lessee⁶ has been built up around a fairly well-established lease form.⁷ The mining lease, however, has not generally employed the stereotyped form which we have become accustomed to associate with the modern oil and gas lease. Instead, it appears to vary greatly in form. There are, no doubt, numerous reasons why there has been no development parallel to the evolution of the oil and gas lease. In the first place, the content of the mining lease depends to a great extent on the type of mineral and the nature of the mining techniques involved. Coal leases

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^{1.} The terms "hard" or "solid" here have a popular rather than scientific meaning and are intended to exclude particularly the various hydrocarbons.

^{2.} Van Goerlitz v. Turner, 65 Cal. App. 2d 425, 150 P.2d 278 (1944). Grubstake contracts are discussed in 3 Am. Law of Mining § § 14.8-14.19 (1960).

^{3.} Saxman v. Christman, 52 Ariz. 149, 79 P.2d 520 (1938) (government permit to mine in a national forest is a simple license); Emery v. Graber, 176 Kan. 17, 268 P.2d 950 (1954) (oral agreement to dig lake in return for the right to remove sand is a simple contract creating a mere license).

^{4.} See 3 Am. Law of Mining § 15.13 (1960) for a discussion of the distinction between a conveyance of minerals in place and a mining lease.

^{5.} Jo-Mark Sand & Gravel Co. v. Pantanella, 139 Conn. 598, 96 A.2d 217 (1953) (exclusive right to remove sand, stone and gravel creates a profit unless the exclusive right to possession of the surface is also given in which case it may be a lease).

^{6.} See Meyers, Two Drilling Covenants Implied in Oil and Gas Leases, 38 Minn. L. Rev. 127 (1954); Meyers, The Implied Covenant of Further Exploration, 34 Texas L. Rev. 553 (1956).

^{7.} For a brief outline of typical oil and gas lease clauses, see Williams, The Delay Rental and Related Clauses of Oil and Gas Leases, 38 Minn. L. Rev. 97 (1954).

in the Eastern states have become fairly well crystallized after years of experience with them and after numerous decisions have defined the rights of the parties.⁸ Iron ore leases in the Great Lakes area took on a provincial flavor at an early date.⁹ Gravel leases in the Mid-West did not require the same structural detail and were often informally drafted.¹⁰ Leases in the Far West frequently involve unpatented mining claims in which the existence and extent of mineralized ore is often a highly speculative matter. Unpatented mining locations require special clauses which would be unnecessary in fee leases.¹¹

Secondly, the judicial inclination to regard the hard mineral lease as sui generis was, in the past at least, thought to be a necessary consequence of the migratory nature of oil and gas deposits. Current knowledge about such formations has dispelled the notion that oil is migratory in the same way as, for example, certain types of ground water. Generally there is little migration unless the reservoir is in some way tapped so as to produce drainage. In the case of hard minerals, there is, of course, a stationary body of ore, and if the lessee fails to develop the mine with due diligence, the potential damage to the lessor is the loss of capital represented by future royalties. The default on the part of the lessee is either in failing to remove the ore at all or in failing to mine it fast enough. There is danger in the case of oil of permanent loss through failing to drill offset wells. This would have no parallel in the case of hard minerals. It is possible, however, that mining operations may be carried out in such a negligent manner that subsequent mining by someone else may be more difficult. These factors are recognized in the hard mineral cases dealing with the development obligations of the lessee.

The mining leases in a few recent decisions were, however, obviously fashioned after the contemporary oil and gas lease.¹² Thus, there may be a short fixed primary term, with an option to renew or to purchase¹³ and a provision that the

12. See cases cited in note 16 infra.

13. See the lease forms in American Mining Co. v. Himrod-Kimball Mines Co., 124 Colo. 186, 235 P.2d 804 (1951) (such mining leases are commonly referred to in Colorado as a "lease and bond"); and McLaren Gold Mine Co. v. Morton, 124 Mont. 382, 224 P.2d 975 (1950) (lessee's option to purchase contained in mining lease held specifically enforceable).

^{8.} See 3 Am. Law of Mining § 16.1 (1960).

^{9.} In State v. Royal Mineral Ass'n, 132 Minn. 232, 233, 156 N.W. 128, 129 (1916), the court stated: "At the outset it is important to consider the nature of these so-called mining leases. Their nature is not an open question in this state. It is settled that they are leases in fact, as well as in name."

^{10.} Note, 39 Neb. L. Rev. 604 (1960).

^{11.} It is common to insert a clause requiring the lessee to perform the annual assessment work required under federal mining statutes. Also, because of the uncertainties inherent in a mining locator's title, the locator-lessor may not want to include the usual covenants for title. On mining titles generally, see 1 Am. Law of Mining § 1.22 (1960); 2 Id. § 11.1. Uranium leases are discussed in Strong & Martin, Uranium Mining Lease, 27 Rocky Mt. L. Rev. 425 (1955); Davison, The Uranium Mining Lease, 4 Rocky Mt. Mineral Law Inst. 181 (1958); Greene, Conveyancing Problems in Uranium Mining Rights, 5 Utah L. Rev. 29 (1956).

lease shall continue in effect after the end of the term so long as ore is being mined. A royalty (rather than a lump sum consideration) is payable on all ore which is produced. A minimum royalty is sometimes included, often with a credit being allowed against the usual royalties which accrue after minerals are produced. In rare instances, a rental may be payable periodically after a designated date in lieu of production,¹⁴ or mining operations may be required to commence within a specified period of time.¹⁵ The courts seem inclined to recognize the applicability of oil and gas case law in connection with leases of this type.¹⁶ The nature of the lessee's interest in the land is rarely described with exactness, but after the primary term at least, he would probably be regarded in most states as having a fee simple determinable.¹⁷ The lessor's interest is a possibility of reverter, and the estate of the lessee terminates when production ceases.

In contrast to the mining leases which reflect the influence of the oil and gas lease, many mining leases either have a very long fixed term or have no designated period of duration but are to continue indefinitely so long as mining operations continue. The latter are generally not held to be void for indefiniteness where the lease specifies that the lessee must engage in mining during specified periods of each year,¹⁸ or where it is possible to imply a covenant on the part of the lessee to commence operations within a reasonable time.¹⁹ Early coal leases were frequently for long fixed periods. These perhaps were patterned after the early long-term oil and gas lease. Even in very long-term leases, as will be indicated below, the lessee is not permitted to hold the lease indefinitely without commencing mining operations, and it is generally held that the lease terminates when the ore is exhausted.

15. See the lease form in Aden v. Dalton, 341 Mo. 454, 107 S.W.2d 1070 (1937).

16. See, e.g., Smith v. Holmes, 181 Kan. 438, 312 P.2d 228 (1957); Treasure County v. Mountain States Clay Products, 132 Mont. 12, 313 P.2d 1028 (1957); Darr v. Eldridge, 66 N.M. 260, 346 P.2d 1041 (1959).

17. Dougherty v. Greene, 218 Miss. 250, 67 So. 2d 297 (1953); Blair v. Shannon, 349 Pa. 550, 37 A.2d 563 (1944).

18. D.A.C. Uranium Co. v. Benton, 149 F.Supp. 667 (D. Colo. 1956).

19. Mooney v. Gantt, 219 Ark. 485, 243 S.W.2d 9 (1951) (where term was indefinite and lessee could terminate at any time, it was held there was no lack of mutality because of the implied covenant to develop within a reasonable time); Arkola Bauxite Co. v. Horn, 184 Ark. 1044, 44 S.W.2d 352 (1931) (delay rental for privilege of continuing the lease from year to year).

Where a short primary term is coupled with a privilege to renew from year to year if the lessee works the mine continuously, the perpetual renewal clause is not void under the Rule Against Perpetuities. Montana Consol. Mines Corp. v. O'Connell, 107 Mont. 273, 85 P.2d 345 (1938); Haeffner v. A.P. Green Fire Brick Co., 76 S.W.2d 122 (Mo. 1934).

^{14.} A case illustrating the impact of the oil and gas lease on the hard mineral lease is Smith v. Holmes, 181 Kan. 438, 312 P.2d 228 (1957), holding that a rock quarry lease may not be kept alive without production after the primary term by paying the stipulated annual rental. The annual rental provision was used, it was said, to encourage production during the primary term rather than to give the lessee the right to prolong the lease indefinitely after the term.

Characterization of the hard mineral lease in terms of traditional concepts has proved to be difficult. Certainly one of the most troublesome problems in mining leases today is the extent to which traditional property or contract principles should govern the rights of the lessor and the lessee or their transferees. If the mining lease is to be treated as creating a landlord-tenant relationship, certainly it is unlike the ordinary lease of a term for years. The latter was historically regarded as a conveyance of an estate in land rather than merely a contract providing for occupancy. As a conveyance, certain results seemed to flow according to property law which would not prevail if the lease were treated as a simple contract.²⁰ In the ordinary usufructuary lease, the tenant has no right to remove and dispose of minerals, and any compensation the landlord receives is likely to be in the form of rent payable for the privilege of occupancy. The mining lease, on the other hand, contemplates the removal of ore and the landowner's compensation is determined for the most part on the basis of the amount of ore actually produced. Only rarely is the tenant given the privilege of deferring mining operations by paying in lieu thereof a specified rental. To say that customary landlord-tenant rules govern this type of arrangement seems to be a highly mechanistic approach. Yet some courts do just that.²¹

Even when there is a disclaimer that usual landlord-tenant rules apply, the courts frequently pattern their decisions on traditional property concepts. Thus, legal rights of the landowner against a transferee of the tenant are sometimes made to turn on the technical property-law distinction between assignments and subleases.²² A reservation of an overriding royalty in such cases creates problems that are not easily solved on a landlord-tenant basis.²³ Again, remedies of the lessor for breach of the lease are sometimes said to be those applicable in the usual landlord-tenant situation. The great majority of courts apparently do not, however, attempt to apply exclusively the property rules relating to estates for years. Many decisions apply contracts principles of anticipatory breach,²⁴

It is generally held that in the absence of a restriction in the mining lease, the lessee may either assign or sublet. Leslie v. Sherman, 157 Kan. 157, 139 P.2d 133 (1943).

23. For example, in Bellows Falls Trust Co. v. American Mineral Prod. Co., 89 N.H. 551, 3 A.2d 98 (1938), a transfer by the lessees who were tenants in common was held to be an assignment so far as the lessor was concerned, but as between one of the original lessees who retained an override and the transferee, it was merely a sublease. The opinion is not clear as to why it was necessary in order to sustain the override to hold that a sublease existed.

24. Utex Exploration Co. v. Garwood. 246 F.2d 547 (10th Cir. 1957) (breach by lessor).

^{20.} Am. Law of Property § 3.11 (Casner ed. 1952).

^{21.} See State v. Royal Mineral Ass'n, 132 Minn. 232, 156 N.W. 128 (1916).

^{22.} In D.A.C. Uranium Co. v. Benton, 149 F. Supp. 667 (D. Colo. 1956), the court did not apply usual property principles to determine whether the original transaction created a technical landlord-tenant relationship or merely a license. It did, however, employ traditional property dogma in determining whether a transfer by the lessee constituted an assignment or a sublease.

substantial performance, and damages.²⁵ In final analysis, it is probably correct that neither property nor contracts rules should irresistibly govern the problems arising in mining leases. And, it would seem that the label "property" or "contract" helps very little to resolve them. Although it did not involve a mining lease as such, a Utah case²⁶ emphasizes the advantage of this approach. The court held that a license given to a miner to remove minerals becomes irrevocable where the landowner has actively encouraged the miner to expend substantial sums of money in reliance upon the continuance of the agreement. Wolfe, J., with characteristic felicity, observed in his concurring opinion:

The theory supporting the result is not important. Sometimes attempts to "scientificize" results are trammeling rather than elucidative. Whether we consider it as a license, unrevocable, without reimbursement for the actual expenditure of a material amount of labor or money, or as an . . . arrangement designated in law by some other name, would make no difference in the result. The ultimate thing is to lay down a rule which will do justice. . . .²⁷

Traditional concepts are thus not easily applied to resolve legal problems arising out of the mining lease. The nature of the lessee's obligation to develop the land should not depend upon whether we regard the mining lease as a contract or a conveyance. It is true, of course, that it is easier to find implied development covenants if we do not talk in terms of property law. Few covenants are implied in ordinary leases. The duty of the mining lessee to develop may stem from a provision in the mining lease itself or, in many states, it may be implied under certain circumstances. The express and implied covenants are separately described below. This will be followed by a discussion of the lessor's remedies for the breach of these development covenants.

I. THE EXPRESS COVENANT OF REASONABLE DEVELOPMENT

In most mining leases, the only return to the lessor is the royalty payable on the ore which is produced. A minimum royalty or rental payable in lieu of production is not common. It is to the lessor's advantage, therefore, if mining is commenced within a reasonable time and if production continues thereafter as rapidly as is consistent with good mining practices. If the lessee fails to develop the property, the lessor is deprived of the use of capital represented by royalties which might have accrued and also, if the lessee is given exclusive possession under the terms of the lease, of any return which might be derived from surface

^{25.} Milligan v. Haggerty, 296 Mich. 62, 295 N.W. 560 (1941), discussed in text at note 93 infra.

^{26.} Kennedy v. Combined Metals Reduction Co., 87 Utah 532, 544, 51 P.2d 1064, 1069 (1935).

^{27.} See also Utah Mercur Gold Min. Co. v. Herschel Gold Min. Co., 103 Utah 249, 256-57, 134 P.2d 1094, 1097 (1943).

uses of the land. Also if the royalty is payable on the market price paid for the ore, the lessor is damaged if the lessee fails to mine during the period when he can get the optimum price. Occasionally, leases provide that the lessor may cancel if prospecting or mining operations are not commenced by a fixed date.²⁸ Clauses of this type are likely to be used only where the land contains known mineral formations. Where the existence of ore is speculative, the lease may contain a clause requiring prospecting activities to be commenced within a designated period. But, more frequently, the lease simply provides in general language that the lessee shall be reasonably diligent in commencing mining operations and that he shall continuously operate the mine thereafter.²⁹ For convenience, this will be referred to as the covenant for reasonable development.

Courts readily give effect to these express covenants, and either permit cancellation of the lease or award damages for their breach. In some states, forfeiture may be denied if there is no express forfeiture clause in the lease.³⁰ The elements of a cause of action for breach of the development covenant are not entirely clear. Whether there has been substantial compliance with the covenant appears to be determined by an objective test of what a reasonably prudent miner would do under all the circumstances. Certainly he should not be required to conduct mining operations at a loss.³¹ Whether the lessee is also required to conduct further exploratory work which may be desirable to assure continuous future mining operations is uncertain. This would probably depend upon the nature of the mining involved. Exploration for new veins is often required in coal leases. In several decisions the obligation to explore is linked in a general way with the obligation of reasonable development. A few cases have involved separate express exploratory covenants.³²

The covenant of reasonable development also probably requires the lessee to

29. See e.g., the mining leases in Coleman v. Mountain Mesa Uranium Corp., 257 F.2d 382 (10th Cir. 1958); Millar v. Mauney, 150 Ark. 161, 234 S.W. 498 (1921); Bradley v. Fackler, 13 Wash. 2d 614, 126 P.2d 190 (1942).

30. Duff v. Duff, 205 Ky. 10, 265 S.W. 305 (1924); Continental Fuel Co. v. Haden, 182 Ky. 8, 206 S.W. 8 (1918); De Grasse v. Verona Mining Co., 185 Mich. 514, 152 N.W. 242 (1915). In Tungsten Prod. Co., Inc. v. Kimmel, 5 Wash. 2d 572, 105 P.2d 822 (1940), the lessee agreed to sell his lease and the buyer agreed to perform certain specific development work. The court held that in the absence of a clause forfeiting any amounts paid by the vendee on the purchase price, the lessee-vendor could rescind for failure to do the development work only if the purchase price paid is restored, less the damages to the vendor.

31. See notes 67, 68 and 69 infra and text.

32. In Daily Mines v. Control Mines, Inc., 59 Ariz. 138, 124 P.2d 324 (1942), the lessee covenanted to perform "one hundred shifts of development and mining work and labor" each month. The term "development work" here meant exploratory operations. The lessor contended that the clause required the lessee to perform 100 shifts of exploratory work alone each month. The court held this was an unreasonable interpretation of the clause. Rather, it was said to mean merely that a "reasonable amount of

^{28.} Winn v. Collins, 207 Ark. 946, 183 S.W.2d 593 (1944); Aden v. Dalton, 341 Mo. 454, 107 S.W.2d 1070 (1937); Anderson v. Meuer, 50 Cal. App. 2d 841, 123 P.2d 903 (1942).

make an effort to market the minerals,³³ and here again, the standard required is likely to be that of the reasonably prudent operator.

Leases frequently spell out specific acts which must be performed in the way of development work. Thus, in Harper v. Lichtenberger.³⁴ the Nevada court allowed cancellation of a lease where the lessee failed to install power pumps to unwater the underground workings of the mine within sixty days after taking possession, as was required under the terms of the lease. Also breached was a covenant to furnish the lessor periodically with blue prints or maps indicating the development work being done on the premises.³⁵ Cancellation has been allowed where the lessee failed to observe requirements relating to the weighing of the ore by a disinterested party, a matter of importance to the lessor where the royalty is based upon tonnage.³⁶ In mining known veins, the lessee may be required to mine a minimum number of tons per month,³⁷ to perform a designated number of shifts of work per month⁸⁸ or a designated number of man hours of work per month,³⁹ to perform core drilling work,⁴⁰ or to sink an additional shaft and to construct cross-cuts or drifts.⁴¹ Certainly in all these cases the alleged breach of the covenant must be substantial before cancellation will be allowed, and the particular covenant must have been regarded as an essential obligation of the lessee.42

Where the lease provides that a minimum advance royalty or a rental may be paid by the lessee at his option as a substitute for mining, payment of the royalty or rental would seem to be a good defense to an action for damages or for cancellation for breach of a covenant to mine a specified amount of ore each month.⁴³

dead work must be maintained, consistent with the conditions obtaining in the mine, in an endeavor to find new ore." Id. at 147, 124 P.2d at 328.

Express exploratory covenants are likely to be more common in leases of unpatented mining claims where the presence of minerals may be uncertain. See, e.g., Skaug v. Gibbs, 39 Wash. 2d 269, 235 P.2d 154 (1951), where in passing on another problem this type of clause was referred to. There was an outcropping of gossan which is a residual deposit resulting from the chemical alteration of prime materials. Here the gossan consisted of sulphide of iron with arsenic which is frequently associated with the presence of ore deposits below the outcropping. The lease accordingly contained a clause requiring the lessee to explore for minerals.

33. Compare Darr v. Eldridge, 66 N.M. 260, 346 P.2d 1041 (1959).

34. 59 Nev. 495, 98 P.2d 1069 (1940).

35. Failure to file required progress reports showing the amount of development work being done was one of several bases for cancelling the lease in Shrewsbury v. Reynolds-Morse Corp., 105 Colo. 30, 94 P.2d 686 (1939).

36. Campbell v. Homer Ore Co., 309 Mich. 693, 16 N.W.2d 125 (1944).

37. Van Doren v. Thurber, 57 Cal. App. 2d 506, 134 P.2d 829 (1943).

38. Daily Mines Co. v. Control Mines, Inc., 59 Ariz. 138, 124 P.2d 324 (1942); Fahrenbrink v. Moore, 50 Ariz. 393, 72 P.2d 684 (1937).

39. Tungsten Prod., Inc. v. Kimmel, 5 Wash. 2d 572, 105 P.2d 822 (1940).

40. Garbutt v. Blanding Mines Co., 141 F.2d 679 (10th Cir. 1944).

41. Skaug v. Gibbs, 39 Wash. 2d 269, 235 P.2d 154 (1951).

42. Gold Mining & Water Co. v. Swinerton, 23 Cal. 2d 19, 142 P.2d 22 (1943).

43. Van Doren v. Thurber, 57 Cal. App. 2d 506, 134 P.2d 829 (1943). See also Arkola Bauxite Co. v. Horn, 184 Ark. 1044, 44 S.W.2d 352 (1931) where cancellation was allowed where only part of the delay rental was paid.

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II. THE IMPLIED DEVELOPMENT COVENANT

Courts have recognized a number of implied obligations of both parties to a mining lease. Thus, there is an implied covenant by the lessor to deliver possession⁴⁴ and that the lessee shall have quiet enjoyment of the leased land.⁴⁵ In Pennsylvania, haulage covenants are implied in coal leases for the benefit of the lessee.⁴⁶ An implied obligation on the lessee not to conduct his mining operations in a careless, negligent or unminerlike manner to the damage of the lessor's reversionary interest is recognized by some courts.⁴⁷ Of special importance is the implied covenant that the lessee will use reasonable diligence in commencing mining and in continuing operations thereafter for the mutual benefit of the parties.

A typical case which will give rise to an implied development covenant is one in which (1) there is an absence in the lease of any requirement that mining operations be commenced within a stipulated time and continue thereafter; (2) there is no requirement that a minimum quantity of ore be removed periodically; and (3) the sole or principal return to the lessor is a royalty based upon the amount of ore produced.⁴⁸ Despite the fact that the lease itself purports to place no affirmative duty on the lessee to mine any ore at all, it is perhaps only common sense to require the lessee to develop with reasonable diligence or to give up the lease. The Arizona court put it this way: "It is obvious that no sane man would execute such a lease unless he believed the lessee would at least make a reasonable effort to develop the premises. . . ."⁴⁹

The courts are not in agreement on the basis for this implied covenant. While a few courts have recognized it reluctantly, most have willingly applied it in a proper case. The Supreme Court of Maine intimated that perhaps the principle is more appropriate in those states in which mining is a more substantial industry than it is in Maine.⁵⁰ Certainly the coal-mining states have recognized the

49. Taylor v. Kingman Feldspar Co., 41 Ariz. 376, , 18 P.2d 649, 651 (1933).

50. United Feldspar & Minerals Corp. v. Bumpus, 142 Me. 230, 49 A. 2d 473 (1946).

^{44.} See Dougherty v. Thomas, 313 Pa. 287, 169 Atl. 219 (1933).

^{45.} Kupoff v. Stepovich, 184 F.2d 705 (9th Cir. 1950) cert. denied, 340 U.S. 943 (1951); see Lost Key Mines, Inc. v. Hamilton, 109 Cal. App. 2d 569, 241 P.2d 273 (1952).

^{46.} See 3 Am. Law of Mining § 16.28 (1960) for a discussion of this and other implied mining rights and privileges in coal leases.

^{47.} See Alabama Vermiculite Corp. v. Patterson, 130 F. Supp. 867; (W.D.S.C. 1955); Slate Creek Mining Co. v. Sundt, 8 Alaska 347 (1932); Robinson v. Bailey, 278 Ky. 57, 128 S.W.2d 179 (1939). Similar express covenants will be found in the leases involved in Rains Coal Corp. v. Southern Coal Co., 202 Ark. 1077, 155 S.W.2d 348 (1941); Reed v. Consolidated Feldspar Corp., 71 S.D. 189, 23 N.W.2d 154 (1946).

^{48.} Taylor v. Kingman Feldspar Co., 41 Ariz. 376, 18 P.2d 649 (1933) (feldspar); Rocky Mountain Fuel Co. v. Clayton Coal Co., 110 Colo. 334, 134 P.2d 1062 (1943) (coal); Cawood v. Hall Land & Mining Co., 293 Ky. 23, 168 S.W.2d 366 (1943) (coal); George v. Jones, 168 Neb. 149, 95 N.W.2d 609 (1959) (gravel); Owens v. Waggoner, 115 Ind. App. 43, 55 N.E.2d 335 (1944) (coal); see Morley v. Berg, 218 Ark. 195, 235 S.W.2d 873 (1951). The same principle was applied in a lease of land containing mineral water wells in Darr v. Eldridge, 66 N.M. 260, 346 P.2d 1041 (1959).

strong public interest in encouraging maximum mineral development. The Texas court, however, felt constrained to proceed cautiously in implying obligations of this sort in hard mineral leases. It indicated that since it is not a proper judicial function to rewrite the contract for the parties, the development covenant should be implied only where the terms of the lease itself irresistibly lead to the conclusion that the parties really intended prompt development.⁵¹ The Nebraska court, on the other hand, found that to permit the lessee to hold the lease for a relatively long period of time without working the mine would be "unreasonable and unjust" to the lessor. It stated, "The law does not tolerate such practical absurdity, nor will it permit the possibility of such injustice."⁵² Perhaps speculation as to the basis of the covenant is unnecessary, but it would seem that the approach of the Nebraska court is more realistic.

In analyzing the scope of the implied development covenant, it should be noted at the outset that lump sum or bonus payments, minimum royalty or minimum tonnage production clauses, delay rental provisions or other express provisions in the lease may negative the existence of an implied covenant. A bonus payment exacted at the time the lease is executed should not necessarily negative the existence of an implied covenant. Thus, in Taylor v. Kingman Feldspar Co.53 the initial payment of \$3,800 could also be credited on future royalties, and the court felt that this payment did not indicate an intention to exclude a duty to develop the mine. It was not decided whether the lessee could recover this amount if for one reason or another he should subsequently be excused from development. It would seem that the bonus payment merely represents the consideration for executing the lease in the first instance and should not be understood as a representation by the lessor that there will be no obstacles to development. In a rare case where the lessor expressly agrees to accept a lump sum in lieu of all future royalties, the lessor should clearly be treated as having waived whatever right he might otherwise have to insist upon actual development.⁵⁴

Minimum royalty payments are often required, and where there is a provision that these may be credited on future royalties accruing on actual production, they also should not necessarily be taken as excluding an implied development covenant. If they cannot be credited on future royalties, they become more in the nature of delay rentals, which are intended as compensation to the lessor for the privilege of delaying mining operations. In coal leases, a minimum "royalty" provision is frequently called a "dead" or "sleeping" rent. Where the lease provides that such a payment shall be made by the lessee during periods when mining is not being conducted, the parties do not appear to contemplate continuous working of the mine, and the lessor will not be heard to complain of the lack of devel-

^{51.} Freeport Sulphur Co. v. American Sulphur Royalty Co., 117 Tex. 439, 6 S.W.2d 1039 (1928).

^{52.} George v. Jones, 168 Neb. 149, , 95 N.W.2d 609, 617 (1959).

^{53. 41} Ariz. 376, 18 P.2d 649 (1933).

^{54.} Frierson v. International Agricultural Corp., 24 Tenn. App. 616, 148 S.W.2d, 27 (1940).

opment work.⁵⁵ In this situation, the minimum royalty is really a delay rental. Its main purpose is to encourage diligent development by exacting a heavy penalty for failing to mine.⁵⁶ It should be regarded as a substitute for production. A nominal delay rental should have no effect upon an implied development covenant.⁵⁷ Moreover, mining leases patterned after the oil and gas lease do not permit the lessee to keep the lease alive by paying a delay rental after the expiration of the primary term.⁵⁸ In an Arkansas case,⁵⁹ the lessor was permitted to cancel a mining lease which required the lessee to mine 3,000 tons of bauxite each year "or in lieu thereof, to pay lessor the sum of \$1,500 per year, which sum shall operate as a rental and cover the privilege of continuing this lease in force and effect from year to year. . . ." Nine months after the lease, the lessee ceased operations after having paid only part of the rental. The lessor was, of course, permitted to cancel the lease for non-payment of the delay rental rather than for failing to develop the mine. The court correctly regarded the delay rental clause either as a special limitation or as providing the lessor with an option to terminate. There were no special circumstances which might have excused the lessee from paying the delay rental.

An implied covenant may also be inconsistent with express covenants in a lease requiring designated amounts of ore to be mined during specified periods of time. Thus, in Carter v. Certain-Teed Products Corp., 60 the lease required the lessee to extract not less than sixty per cent of the gypsum rock requirements necessary for the lessee's gypsum plant located in another city. The lessor contended that the lessee was obligated to mine so that the former would receive regularly monthly income instead of sporadic payments in larger sums. Under the terms of the lease, the court did not feel that any particular month or any particular year should be treated as a unit of time so as to require during that period that the quarry produce sixty per cent of the plant's requirements. Moreover, there was no basis for an implied covenant to operate the quarry at maximum production since the lease expressly required only that the quarry be operated so as to provide sixty per cent of the plant's requirements.⁶¹ The agreement of the parties as to what will constitute reasonable development should be observed. Certainly, however, some analysis should be made as to whether the minimum tonnage requirement approximates reasonable compensation for the lessor.

56. See Anderson v. United Coal and Coke Co., 67 Wyo. 536, 227 P.2d 700 (1951).

57. Killebrew v. Murray, 151 Ky. 345, 151 S.W. 662 (1912). 58. Smith v. Holmes, 181 Kan. 438, 312 P.2d 228 (1957).

59. Arkola Bauxite Co. v. Horn, 184 Ark, 1044, 44 S.W.2d 352 (1931).

60. 200 F.2d 754 (8th Cir. 1953).

^{55.} Weatherly v. American Agricultural Chem. Co., 16 Tenn. App. 613, 65 S.W.2d 592 (1933).

^{61.} In Freeport Sulphur Co. v. American Sulphur Royalty Co., 117 Tex. 439, 6 S.W.2d 1039 (1928), the court concluded that an implied covenant for full development was negatived by an express covenant requiring the lessee to erect only a one-unit plant for processing sulphur.

An interesting question arose in Adkins v. Adams⁶² over the effect of development covenants relating to coal on the customary implied oil and gas covenants. The lease was intended primarily for the production of coal. At the time of its execution, the land was not known to be valuable for oil and gas, but the lessee deemed it advisable, however, to secure oil and gas rights in order to protect his coal-mining operations. The lessee went into possession, produced coal and paid the required royalties. The lessor contended that since no test wells for oil and gas had been drilled, the lessee had abandoned its oil and gas rights. The court felt that the lease was indivisible-that it could not be separated into an oil and gas lease, a coal lease, and an "other-minerals" lease. If the oil and gas lease had been separate, there would have been a breach of the implied covenant to drill a test well. The express provisions of the lease giving the lessee the right to explore for and obtain minerals as he saw fit excluded any independent implied covenant relating to oil and gas. It is interesting to note that the lower court⁶³ felt that although the lease was of indefinite duration, the parties must have intended that it should terminate when the coal was exhausted. It suggested that at that time the implied covenant to drill a test well for oil would come into play, and the lessee would have a reasonable time after exhausting the coal resources to comply with this covenant. The lower court also indicated that perhaps there would also have been a duty to protect the land from drainage even during the coal-mining operations.

The Michigan court has indicated that the implied development covenants are excluded from hard mineral leases by statute.⁶⁴ The statute, as presently worded, makes an exception only in the case of the oil and gas lease. In a case involving a clay lease, the Michigan court readily found that there was actually an express covenant of reasonable development in the clause which read that the lessee will "dig said clay continuously . . . until said clay is fully removed."⁶⁵

Assuming that an implied development covenant is not excluded by express clauses of the type discussed above, what are the elements of a breach of the covenant? The general language in the cases makes it difficult to isolate these elements. The standard of conduct required of the lessee is that of a reasonably prudent operator under all the circumstances. The lessee is entitled to abandon mining operations if ore is either never found⁶⁶ or if exhausted.⁶⁷ Moreover, it

67. 3 Am. Law of Mining § 16.81 (1960).

^{62. 152} F.2d 489 (7th Cir. 1945).

^{63. 54} F. Supp. 944 (E.D. Ill. 1944).

^{64.} See De Grasse v. Verona Mining Co., 185 Mich. 514, , 152 N.W. 242, 248 (1915); 3 Mich. Comp. Laws § 565.5 (1948).

^{65.} Milligan v. Haggerty, 296 Mich. 62, , 295 N.W. 560, 561, (1941).

^{66.} Hiller v. Walter Ray & Co., 59 Fla. 285, 52 So. 623 (1910) (the lessee must make reasonably diligent efforts to discover ore; when none is found, the lease terminates); Anderson v. Cliff Gold Mining Co., 47 Wyo. 349, 38 P.2d 334 (1934) (lessee entitled to partial termination of contract affecting that part of leased area where ore was not found).

would seem that mining operations are required to be continued under the implied covenant only so long as ore can be profitably mined.⁶⁸ Frequently there is an express clause to that effect in the lease. What constitutes "profitable mining" has not been defined in the cases.⁶⁹ Whether the term "profitable" has the same meaning in this context that it has in connection with the "so long as" or "thereafter" clause remains undecided. Under the latter clause, the lease will continue in effect after the primary term if the lessee is making a profit over and above operating expenses. Thus, in Treasure County v. Mountain States Clay Prod.,⁷⁰ the Montana court held that the thereafter clause was a special limitation, relying upon the oil and gas cases. The lease required the production and marketing of bentonite after the primary term in "commercial quantities" in order to keep the lease alive. This was held to mean a profit over and above operating expenses, and the latter term may include any annual delay rental which is being paid. Under the implied covenant, the lessee may also be entitled to insist upon a fair return on his investment or to a credit for purchasing additional mining equipment before he has breached the covenant. The courts have not, however, discussed this possibility.

In one case, the lessee offered in explanation for its failure to continue mining that one of its biggest customers had gone into bankruptcy and that the market price for the ore had drastically declined because of the depression. The court felt that the lessee is not required to extract ore at a loss merely so that the lessor may have royalties.⁷¹ In another decision, under an express clause giving the lessee the right to terminate where he could not work the mine at a profit, the court suggested that if the supply of ore was still plentiful, the lack of a market due to a depression did not excuse performance.⁷² This seems unnecessarily strict, although decisions in the Eastern coal states seem to approach this result.⁷³ What constitutes a profitable operation is probably to be tested by some objective stand-

70. 132 Mont. 12, 313 P.2d 1028 (1957).

71. Taylor v. Kingman Feldspar Co., 41 Ariz. 376, 18 P.2d 649 (1933). See also Zilar v. Abrams, 160 Okla. 207, 16 P.2d 872 (1932).

73. 3 Am. Law of Mining § 16.52 (1960).

^{68.} See Reed v. Consolidated Feldspar Corp., 71 S.D. 189, 23 N.W.2d 154 (1946); Weatherly v. American Agricultural Chem. Co., 16 Tenn. App. 613, 65 S.W.2d 592 (1933). Cf. Babcock Coal & Coke Co. v. Brackens Creek Coal Land Co., 128 W.Va. 676, 37 S.E.2d 519 (1956); Hall v. Eversole's Adm'r, 251 Ky. 296, 64 S.W.2d 891 (1933).

^{69.} Winco Block Coal Co. v. Evans, 256 Ky. 487, 76 S.W.2d 241 (1934) (lease terminable when all "workable and merchantable" coal is taken from the premises; held that this clause applies where coal has become so deficient both in quality and vendible quality as to make it unmarketable at a profit); Geier v. Eagle-Cherokee Coal Mining Co., 181 Kan. 567, 313 P.2d 731 (1957) (strip coal mining operations had effect of destroying future agricultural use. For that reason, it was held that an express clause authorizing termination when mining was no longer profitable did not necessarily conflict with a minimum royalty guarantee for the full period of the lease); Guidici v. Minerals Engineering Co., 348 P.2d 354 (Mont. 1960).

^{72.} Stonega Coke & Coal Co. v. Price, 106 F.2d 411 (4th Cir. 1939), cert. denied, 308 U.S. 618 (1939).

ard rather than simply by a good-faith determination by the lessee that in his opinion mining would not be profitable.⁷⁴

Whether the lessee is mining with due diligence is ordinarily a question of fact.⁷⁵ Where a suit for cancellation is brought against an assignee of the lessee, a prima facie case may be made out by showing a seventy-five per cent drop in production after the lessee took over.76 In another case, it was demonstrated that the original lessee produced more gravel in a single month than his successors produced in seven months of operation.⁷⁷ It is often stated that even though the lease is for a fixed period and thereafter "until all the coal is mined," the fixed period is not necessarily intended as the measure of diligence required of the lessee. Evidence is admissible to show, for example, that with due diligence 350,000 tons of coal contained in pillars and stumps could have been mined within six years.⁷⁸ In one case, it was shown that the land contained about 60,000 tons of coal which could be mined in six months. The lessee had done nothing for the first five years of the lease except purchase a few blue prints and "look around." It was held that the lessee was not entitled to six months within which to remove the coal in view of the fact that he had not demonstrated good faith in the past.79

III. Remedies for Breach of the Development Covenants

Early cases were inclined to allow cancellation of the lease for failure to develop the land on the theory that the lease had been abandoned.⁸⁰ More recent decisions often put forfeiture squarely on the basis of a breach of the express or implied development covenant, and the lease may be cancelled even though mining operations have not completely ceased. The better view would seem to be that forfeiture is allowed even in the absence of a general forfeiture clause in

75. Winn v. Collins, 207 Ark. 946, 183 S.W.2d 593 (1944); Bush v. Rogers, 42 Cal. App.2d 477, 109 P.2d 379 (1941); Raymond v. Staples, 66 P.2d 153 (Cal. App. 1937).

76. Taylor v. Kingman Feldspar Co., 41 Ariz. 376, 18 P.2d 649 (1933).

77. George v. Jones, 168 Neb. 149, 95 N.W.2d 609 (1959).

78. Cawood v. Hall Land & Mining Co., 293 Ky. 23, 168 S.W.2d 366 (1943).

79. Owens v. Waggoner, 115 Ind. App. 43, 55 N.E.2d 335 (1944).

80. Mansfield Gas Co. v. Alexander, 97 Ark. 167, 133 S.W. 837 (1911); Mansfield v. Parkhill, 114 Ark. 419, 169 S.W. 957 (1914).

^{74.} In Winn v. Collins, 207 Ark. 946, 183 S.W.2d 593 (1944), the court stated that the objective of the lease is the mutual profit which may accrue to both parties, and neither is made the arbiter of the extent to which or the diligence with which operations shall proceed. Both are bound by the standard of reasonableness. In Reed v. Consolidated Feldspar Corp., 71 S.D. 189, 23 N.W.2d 154 (1946), operations were clearly unprofitable and the court did not, therefore, find it necessary to determine whether the lessee's determination of that fact was conclusive or whether an objective test should apply. A concurring opinion felt that all that the lessee had to show was that his decision to abandon mining operations was in good faith and supported by substantial evidence. Id. at , 23 N.W.2d at 158. The majority opinion seemed to be inclined toward the view that the facts must be such as would be sufficient to induce the same opinion in the minds of reasonable persons. Id. at , 23 N.W.2d at 156-57.

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the lease.⁸¹ The lessor may, of course, waive a breach of the covenants, but inaction alone will not be sufficient. It must be coupled with circumstances strong enough to constitute a basis for estoppel.⁸² Relief has been denied in a few cases where mining operations ceased because the lessor had instituted suit to cancel the lease or where the lessor had in some other way interfered with the lessee's mining.⁸³ The burden is on the lessor to show facts constituting a breach of the covenants, and the traditional reluctance to enforce forfeitures frequently tips the balance in favor of the lessee.⁸⁴ The mining lease may require the lessor to notify the lessee of an alleged breach of the development covenants and to give the lessee an opportunity to make up the default. The notice must comply with the requirements of the lease.⁸⁵

As would be expected, a mandatory injunction requiring the lessee to perform the covenants in the lease will not ordinarily be granted. The Oregon court⁸⁶ felt that this was a proper remedy in a lease involving dredge mining for gold where, in violation of the terms of the lease, the lessee failed to restore the premises to the original condition after mining operations ended. In dredge mining the topsoil is shoved to the side where it will be out of reach of the dredge when it enters the area. When the dredging machinery has recovered the gold from the gravel below, the gravel is dumped into mounds or hummocks. After the gold has been recovered, the gravel is then returned to its original position by bulldozers, and the top soil is spread across the surface so that the land is again suitable for agricultural purposes. The court properly granted a mandatory injunction requiring the lessee to comply with the terms of the lease within a specified period or, in the alternative, to pay stipulated damages.

There is every reason for allowing cancellation where the lessee has failed to develop the mine within a reasonable time or has abandoned the lease. The lessee should either develop or give up the lease. An award of damages is more onerous to the lessee, and there are perhaps some cases in which only cancellation should

83. Winn v. Collins, 207 Ark. 946, 183 S.W.2d 593 (1944); United Feldspar & Minerals Corp. v. Bumpus, 142 Me. 230, 49 A.2d 473 (1946).

84. Foster v. Crabtree, 221 Ark. 952, 256 S.W.2d 722 (1953); Bush v. Rogers, 42 Cal. App. 2d 77, 109 P.2d 379 (1941); Raymond v. Staples, 66 P.2d 153 (Cal. App. 1937).

85. Anderson v. Meuer, 50 Cal. App.2d 841, 123 P.2d 903 (1942); Shrewsbury v. Reynolds-Morse Corp., 105 Colo. 30, 94 P.2d 686 (1939); Bradley v. Fackler, 13 Wash. 2d 614, 126 P.2d 190 (1942). Where the lease provided that the lessor might terminate upon the lessee's insolvency, the lessor was excused from giving notice where the lessee had gone into bankruptcy. Rains Coal Corp. v. Southern Coal Co., Inc., 202 Ark. 1077, 155 S.W.2d 348 (1941). For a case in which the forfeiture notice did not comply with the terms of the lease, see Van Doren v. Thurber, 57 Cal. App. 2d 506, 134 P.2d 829 (1943).

86. McDonough v. Southern Oregon Mining Co., 177 Ore. 136, 159 P.2d 829 (1945).

^{81.} Smith v. Housley, 188 Ark. 1083, 69 S.W.2d 865 (1934); see Darr v. Eldridge, 66 N.M. 260, 346 P.2d 1041 (1959).

^{82.} Smith v. Housley, 188 Ark. 1083, 69 S.W.2d 865 (1934); Loveland Brick & Tile Clay Prod. Co. v. Wild, 110 Colo. 193, 132 P.2d 968 (1942); Dougherty v. Thomas, 313 Pa. 287, 169 Atl. 219 (1933); cf. Van Doren v. Thurber, 57 Cal. App. 2d 506, 134 P.2d 829 (1943).

be allowed. The courts seem not to have mentioned this possibility, however.87

There is no doubt that the lessor may elect to sue for minimum royalties or delay rentals which have accrued and which are unpaid at the time of the suit.⁸⁸ In addition to recovering these royalties or rentals, he may also be entitled to cancellation.⁸⁹ Where the lessee has breached the express or implied development covenant, the usual philosophy of damages applicable in breach of contract cases should govern. The lessor should, as nearly as practicable, be placed in the position he would have been in if the contract had been performed. Does this, however, mean that he should be entitled to all future royalties or merely to the interest on the royalties he would have received if development had proceeded with reasonable diligence? Whatever the measure of his recovery, a preliminary —and perhaps doubtful—determination must be made of the amount of ore remaining in the ground. Further, whether the lease is for a definite period or an indefinite one, some determination must be made as to how long it would take a reasonably diligent operator to remove the ore, for even where the term is fixed, it is not the measure of diligence under the implied development covenant.

The cases seem to be in agreement that the lessee is entitled to something more than interest on future royalties.⁹⁰ As the Kentucky court puts it: "The lessor did not contract for an indefinite investment of his royalties at interest but for the royalties themselves. The recovery, therefore, should be for the royalties not merely interest thereon."⁹¹

There is considerable appeal in the interest rule since what the lessor has really lost is the use of the capital represented by future royalties. Considerable uncertainty would exist in the application of the rule, however.⁹² On the other hand, the royalty rule tacitly assumes that the lessor's interest in spending the whole royalty as he pleases deserves protection.

Assuming the adoption of the royalty rule, the courts are in sharp disagreement on the measure of damages in an award of future royalties. This stems from the fact that whether the lease is cancelled or has terminated by its own terms, the lessor still has the ore in the ground. It seems quite clear that to avoid overcompensating the lessor, the value of the unmined ore should be deducted from the total future royalty. The Michigan court⁹³ reached this conclusion in a fifteenyear clay lease. The lessee agreed to pay a royalty of 50¢ per thousand on all bricks manufactured from the excavated clay. Mining ceased after seven years, and was resumed again after an interval of seven years. After the lease expired,

^{87.} See Milligan v. Haggerty, 296 Mich. 62, 295 N.W. 560 (1941) discussed in text at note 93 infra.

^{88.} Arkola Bauxite Co. v. Horn, 184 Ark. 1044, 44 S.W.2d 352 (1931), note 59 supra.

^{89.} Mills v. Searchlight Mercantile Co., 73 Nev. 140, 311 P.2d 412 (1957).

^{90.} Garbutt v. Blanding Mines Co., 141 F.2d 679 (10th Cir. 1944).

^{91.} Cawood v. Hall Land & Mining Co., 293 Ky. 23, , 168 S.W.2d 366, 370 (1943).

^{92.} See Meyers, Two Drilling Covenants Implied in Oil and Gas Leases, 38 Minn. L. Rev. 127, 149-50 (1954).

^{93.} Milligan v. Haggerty, 296 Mich. 62, 295 N.W. 560 (1941).

the lessor sued for the rental which might have been paid if the lessee had continuously removed the clay during the term. The court felt that under the express development clause, the value of the unmined clay should be deducted from the total royalty recoverable.⁹⁴ This seems to be proper, although the dissenting opinion makes the strong observation that in this particular case, the lessor had in fact raised no objection to the seven-year suspension of operations, and should, therefore, be regarded as having waived his right to damages during that period.

The California court has reached the contrary conclusion, and awarded the lessor the full amount of the future royalty without deduction for the value of the unmined ore.⁹⁵ The court, over a vigorous dissent favoring the Michigan view, felt constrained to follow some of the oil and gas cases on this point.⁹⁶

The lessor may also recover damages for breach of a covenant to deliver the premises in the same condition at the end of the term⁹⁷ or the covenant to conduct mining operations in a workmanlike manner. In a South Dakota case,⁹⁸ dealing with a covenant of the latter type, it appeared that the lessee was mining feldspar from an open-cut mine. Through negligence on the part of the lessee, the walls of the mine slid into the pit and a vast quantity of muck and rock was deposited on the floor of the mine. The court held that the proper measure of damages is the reasonable cost of moving the muck and rock unless that is greater than the diminution in value of the leased premises, in which case the proper measure would be the difference in the market value before and after the injury. The concurring opinion disagreed with the interpretation of the clause in the lease, and suggested that since the land could be used only for mining, and since the minerals had been exhausted, the lessor in fact was not damaged at all.⁹⁹

In another case, the surface of the land was not owned by the lessor of the minerals. The lessee was held liable for the use of the surface, but the court felt that the measure of his recovery was not the most profitable use to which the land could be put, *viz.*, mining. Rather, since the surface owner did not own the minerals, the true measure was the value he himself could obtain on the market. Here that was found to be for grazing purposes.¹⁰⁰

There has been an occasional attempt to use liquidated damages clauses for violation of the development covenants. Where no specific amount is stated in

97. De Mund v. Oro Grande Consol. Mines, 56 Ariz. 458, 108 P.2d 770 (1941).

98. Reed v. Consolidated Feldspar Corp., 71 S.D. 189, 23 N.W.2d 154 (1946).

99. Id. (concurring opinion).

100. Russell v. Texas Co., 238 F.2d 636 (9th Cir. 1956).

^{94.} Accord, Whiteside v. Rocky Mountain Fuel Co., 101 F.2d 765 (10th Cir. 1938), cert. denied, 307 U.S. 640 (1939).

^{95.} Gold Mining & Water Co. v. Swinerton, 23 Cal.2d 19, 142 P.2d 22 (1943). Stoddard v. Illinois Improv. & Ballast Co., 275 Ill. 199, 113 N.E. 913 (1916); Fort Worth Sand & Gravel Co. v. Peters, 103 S.W.2d 407 (Tex. Civ. App. 1937). See also Freeport Sulphur Co. v. American Sulphur Royalty Co., 117 Tex. 439, 6 S.W.2d 1039 (1928).

^{96.} See Meyers, Two Drilling Covenants Implied in Oil and Gas Leases, 38 Minn. L. Rev. 127 (1954).

the liquidated damages clause, there may be no way to determine whether it actually constitutes a penalty if it is to be effective upon the breach of any covenant in the lease.¹⁰¹ It would seem that when a liquidated damages clause is to become effective at any time upon the lessee's default rather than at the end of the term, if the clause is applicable for a breach of any covenant in the lease, the

clause would necessarily be a penalty.¹⁰²

CONCLUSION

An obligation on the lessee to develop the mine with reasonable diligence according to the standard of the reasonably prudent operator should be implied where the lease provides no clear substitute for development. This is a necessary protection to the lessor and can be justified on the ground of fairness, if on none other. The lessor's relief is properly either cancellation or damages, and in the latter case, the value of unmined ore should clearly be deducted. On the other hand, the lessee should be excused from development where he cannot profitably mine. There is little case law on this point, but it is probable that the courts will take into consideration, in determining what constitutes profitable operation, the cost of capital expenditures which may be necessary to further development, as well as current operating expenses. To a great extent, many of the problems could be avoided by more effective drafting. It may be difficult to draft adequately specific provision on what constitutes minimum development. In the interests of the lessee, this can be done only by studying the particular type of mining involved. Allowance may have to be made for periods when mining cannot be carried on because of climatic or other reasons. Certainly the parties should give thoughtful consideration to the possibility of a substantial delay rental. Until the form of the mining lease becomes more crystallized, however, these problems of development are bound to raise difficult questions. And, while the current oil and gas lease is by no means a model of good drafting, it is superior in defining the rights of the parties to the often informal mining lease. Its provisions relating to a fixed primary term, the inclusion of an anniversary date for commencing mining operations, and a delay rental provision effective in lieu of production should be given thoughtful consideration in drafting the mining lease.

^{101.} Whiteside v. Rocky Mountain Fuel Co., supra note 94.

^{102.} Id. (concurring opinion).