

UNITED STATES GYPSUM CO.

IBLA 89-111

Decided October 31, 1991

Appeal from a decision of the Eastern States Office, Bureau of Land Management, rejecting gypsum prospecting permit application.

Affirmed.

1. Mineral Leasing Act: Gypsum Leases and Permits: Workability

In making a determination that lands were subject to leasing rather than prospecting under permit, BLM properly relied upon the opinions of its expert staff using available data to find the lands contained a workable deposit of gypsum.

APPEARANCES: John W. Falvey, Esq., Chicago, Illinois, for appellant; Stephen M. Brown, Esq., Office of the Solicitor, Washington, D.C., for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE ARNESS

United States Gypsum Company (USG) has appealed from a decision of the Eastern States Office, Bureau of Land Management (BLM), dated October 18, 1988, rejecting gypsum prospecting permit application ES 36438. BLM rejected the application because it found that the lands described therein contained a workable gypsum deposit.

In support of the decision, BLM cited 43 CFR 3562.1, which provides, pertinently: "A prospecting permit may be issued for any area of * * * acquired lands subject to hardrock mineral leasing where prospecting or exploratory work is necessary to determine the existence or workability of a particular hardrock mineral(s)." The lands sought by USG were acquired under the Weeks Law, ch. 186, 36 Stat. 961 (1911), 1/ and are subject to hardrock mineral leasing by the Secretary of the Interior pursuant to section 402 of Reorganization Plan No. 3 of 1946, 60 Stat. 1099. Application ES 36438 describes 588 acres of land in the Wayne-Hoosier National Forest adjacent to USG's existing gypsum mine in Shoals, Indiana.

1/ The Weeks Law is classified to sections 480, 500, 513 to 519, 521, 552, and 563 of title 16, United States Code.

Attached to the decision of October 18, 1988, was a memorandum from the Assistant District Manager, Rolla, Missouri, dated April 12, 1988. The memorandum explained that the Milwaukee District Office (MDO) had earlier recommended issuance of USG's application despite the fact that USG had drilled a single core hole on the subject lands in 1985 without a valid prospecting permit. USG had drilled on the property, apparently relying upon a "prospecting permit" it had received from the U.S. Forest Service (Forest Service). In issuing this permit, the Forest Service assumed that gypsum was a common variety mineral and, therefore, no longer locatable. ^{2/} By memorandum of January 21, 1987, MDO recommended issuance of a prospecting permit by BLM.

After MDO had explained the correct permit procedures to both USG and the Forest Service, USG again drilled core holes on the subject lands without obtaining a prospecting permit from BLM. On the second occasion, in October 1987, two core holes were drilled on the subject lands and a third hole was drilled on adjacent private land. These three core holes were drilled in 1987 after issuance of a second "prospecting permit" from the Forest Service. With the data obtained from this drilling, MDO's memorandum stated it was possible to determine that the Federal land contained a workable mineral deposit. As such, MDO requested that its earlier recommendation in favor of ES 36438 be revoked.

In a statement of reasons (SOR) filed on appeal, USG states that it "contemporaneously" filed an application for a prospecting permit with both BLM and the Forest Service, and was led to believe that a single decision would be forthcoming. After receipt of a prospecting permit from the Forest Service in 1987, USG tested the subject lands in reliance thereon. USG argues that because of this detrimental reliance and the passage of time, BLM is now estopped to deny prospecting permit application ES 36438. USG contends that mineral deposits on the subject lands are reasonably accessible only by subsurface mining from USG's adjacent property. Consequently, competitive leasing is not considered by USG to be a reasonable alternative and "there is no basis for refusing to recognize Applicant's right to a preference right lease" (SOR, Nov. 18, 1988, at 1). ^{3/}

^{2/} Gypsum is a locatable mineral. United States v. Bunkowski, 5 IBLA 102, 79 I.D. 43 (1972). As such, gypsum comes within the terms of section 402 of Reorganization Plan No. 3 of 1946, 60 Stat. 1099. 43 CFR 3500.0-3(b)(1) (1987). This section transferred to the Secretary of the Interior the functions of the Secretary of Agriculture relating to leasing or other disposal of minerals on lands acquired, inter alia, under the Act of Mar. 4, 1917, 16 U.S.C. § 520 (1988), embracing Weeks Law lands.

^{3/} In answer to USG's estoppel argument, counsel for BLM correctly points out that the elements of estoppel are not met in the instant case. Assuming, arguendo, that estoppel may run against the United States (see Heckler v. Community Health Services, 467 U.S. 51, 60 (1984)), one such element is that the party asserting estoppel must be ignorant of the true facts. United States v. Georgia-Pacific Co., 421 F.2d 92, 97 (9th Cir. 1970). The record indicates that before USG drilled three core holes in 1987, BLM informed USG by letter dated Aug. 12, 1986, that BLM's Eastern States Office

In a supplemental pleading filed August 2, 1989, USG argues that BLM incorrectly concluded, in reliance on three drill test results, that a workable gypsum reserve exists. The three tests referred to by USG consist of the single core hole drilled in 1985 and the two additional cores drilled in 1987, all of which are within the subject lands. Relying on the opinion of its engineering staff, USG contends that recognized and prudent business practice dictates that further prospecting be done. In support of this position, appellant has submitted the opinion of Donald D. Carr, an official of the Indiana Department of Natural Resources, who explains that his views are based on 26 years of experience with the Indiana Geological Survey and on his knowledge of mining in the area.

Carr states that he has reviewed the results of appellant's drilling program in 1984 and 1986 on the 588 acres at issue and concludes that "three holes, an average of one hole per 196 acres, are sufficient to show the probable existence of a gypsum deposit but are not sufficient to evaluate the deposit's workability" (Carr Letter, dated July 21, 1989, at 2). To support this conclusion, Carr explains that studies done in 1971 and 1972 on gypsum deposits at Shoals, Martin County, Indiana, indicated that predicting the areas of host sediment with greatest porosity and permeability, and presumably the greatest development of gypsum, is very difficult. This difficulty is caused by the fact that such deposits are subject to discontinuities associated with nonmarine deposition. In addition to primary aspects of sedimentation affecting gypsum's thickness and purity, Carr states, subsequent depositional and erosional events greatly affect the workability of the deposit at Shoals.

Core drilling is the only feasible method of exploring for gypsum in deeply buried rocks, Carr opines. His letter explains:

The Survey's studies of wildcat oil-well drill cuttings encouraged National Gypsum Company to investigate commercial development as early as 1948, but that company did not begin drilling exploration until 1951. Shortly thereafter, USG, Ruberoid Co., and Certain-Teed Products Co. joined in the search for gypsum. By the end of 1955, USG and National had manufacturing facilities under construction; later Ruberoid and Certain-Teed sold their interests to USG. At this time the deposit was defined by 128 drill cores covering approximately 6,400 acres, which is an average of 50 acres per hole.

fn. 3 (continued)

would process USG's prospecting permit application to approval. BLM further informed USG that no operations on the subject lands would be allowed until the application and an exploration plan had been approved. See Lucky II Mines, 102 IBLA 55, 63 (1988).

Because BLM was not estopped to deny issuance of prospecting permit ES 36438, USG cannot qualify for a preference right lease. Such a lease is only issued to a permittee who discovers a valuable deposit on permit lands during the life of the permit. 43 CFR 3562.1. No permit was ever issued to USG: whether a permit should be granted is the issue to be decided here.

As we know from subsequent developments in 1960 and 1965, specifically the flooding of the USG mine, this core spacing was inadequate to define the workability of the deposit.

Following the mine flooding in 1960, it was determined that core spacing on centers of 600 x 800 feet would be necessary to determine the workability of the deposit. Even with this added control, a second flooding occurred in 1965. After this latter flood, drill spacing was reduced to centers of 600 x 700 feet, a pattern that holds today as adequate for evaluation of workability in areas that are suspect of mining problems. As a result of this closely-spaced drilling, a large reserve was determined to be unmineable because of low-purity gypsum or potentially hazardous mining conditions. From 1960 to 1984, USG drilled 143 holes on 2,620 acres, an average of one hole per 18 acres. Since 1965, the company has not had any unexpected mining situations involving extraordinary expenses or hazards to employees. After instigating the new drilling program, the original reserves established in 1960 of 61,000,000 tons were reduced in 1980 by about 23 percent; nearly 14,000,000 tons of gypsum were deemed unworkable.

Id. at 2.

Restating his conclusions, Carr maintains that

three drill holes on the 588 acres may indicate the possibility of a commercial gypsum deposit, but this spacing is inadequate to determine the workability of the deposit. I recommend core spacing of at least one core per 20 acres. If evaluation of these cores leads to suspect mining conditions, then closer drill spacing would be required.

Id. at 3.

A BLM internal memorandum dated January 13, 1989, establishes that BLM's workability determination does not rest solely on the data from three core holes on the 588 acres at issue, as USG maintains. The memorandum made clear that BLM considered data from at least four additional cores on nearby private lands and also a statement by USG that "[d]rilling on forest land and adjacent private land indicates existence of an economically viable extension of U.S. Gypsum's currently mined deposit." From this data, BLM determined that "a valuable deposit had been discovered." Id. at 2.

In reaching this conclusion, BLM relied on "mineability" criteria supplied by USG, which call for a minimum mining height (thickness) of the gypsum "seam" and a minimum purity level expressed as a percent. The use of this standard has not been challenged by USG, and we accept the accuracy of this standard for the location here under review.

Applying these criteria to data from seven core holes drilled on the tract or close enough to be used for reserve work, BLM found that three cores clearly exceeded both criteria. Two others met or exceeded either the thickness or quality criterion and were within 10 percent of the failed criterion. Two holes of the seven recorded poor results (although neither was barren) and of these, one was clearly not economic. Averaging the thickness readings from all seven holes, BLM found that the deposit exceeded USG's criterion in this regard. Averaging the purity readings from all seven holes, BLM found the deposit to be slightly deficient in this regard.

BLM observed that USG used 500-foot spacing to establish proven reserves and that the spacing of the seven cores ranged from 1,200 to 2,900 feet. This latter spacing range, BLM judged, was reasonable in the exploration phase of drilling. Considering the geology and occurrence of Indiana gypsum deposits and the core hole data, BLM concluded that the 588-acre tract at issue possessed identified resources. ^{4/} In the event of a competitive lease sale, the measured and indicated components of a reserve base could be calculated, BLM found. Summarizing these findings, BLM concluded in its memorandum of January 13, 1989, that "after evaluating the core hole information supplied by USG and considering the comments made by USG, further prospecting is unnecessary to determine the existence of a valuable deposit." Rejection of ES 36438 was therefore appropriate, it was decided.

The record before us indicates that USG's present mining operation uses a modified room-and-pillar method to extract gypsum. The deposit ranges in depth from 300 to 650 feet. The greatest engineering problem of the mine is water influx. ^{5/} Such water causes gypsum dissolution, and cavities occur as a result (MDO Memorandum, dated Jan. 21, 1987). A BLM trip report, dated May 26, 1988, states that because of water, USG has classified 30 million tons as not mineable from the original reserves of 60 million tons. The trip report further recites that the replacement cost of USG's mine, built in 1955, is approximately \$55 million. USG owns the mineral rights for 2,800 acres and buys the mineral estate for \$325 per acre (\$0.02 per ton at 72-percent recovery). Twenty percent of mine production is used for Portland cement manufacture, and the value of this

^{4/} BLM's memorandum of Jan. 13, 1989, offers no definition of "identified resources," but Geological Survey Bulletin 1450-A (1976) provides the following: "Identified resources. -- Specific bodies of mineral-bearing material whose location, quality, and quantity are known from geologic evidence supported by engineering measurements with respect to the demonstrated category." The bulletin makes clear that identified resources may be economic to mine, in which case they are "reserves." "Principles of the Mineral Resource Classification System of the U.S. Bureau of Mines and U.S. Geological Survey" at pages A2-A3.

^{5/} BLM's trip report of May 26, 1988, states at page 2:

"This mine has been totally flooded twice from a water-filled cavity at the northeast extent of the mine. This water is a major concern of the

product is \$10 per ton. The remaining 80 percent of production is used for wallboard.

[1] BLM's decision of October 18, 1988, correctly identified the standard to be used in determining whether to grant or reject a prospecting permit application. That standard is workability, a term used by Departmental regulation 43 CFR 3562.1 and defined by prior Departmental decisions. American Gilsonite Co., 111 IBLA 1, 96 I.D. 408 (1989); Elizabeth B. Archer, 102 IBLA 308, 313 (1988); James C. Goodwin, 9 IBLA 139, 80 I.D. 7 (1973); Atlas Corp., 74 I.D. 76 (1967); Emil Usibelli, A-26277 (Oct. 2, 1951). While the definition of "workability" concerns the extent of known deposits, the test of workability is dependent upon intrinsic economic factors, which take into account whether the value of extraction of the mineral is greater than the cost of its extraction. American Gilsonite Co., 111 IBLA at 2, 96 I.D. at 409 (syllabus).

While many of the cases applying the workability concept have been coal cases, there is no reason "why the principles governing 'workability' set forth in these coal dispositions would not apply equally to other minerals subject to the [mineral leasing act]." Id. at 42, 96 I.D. at 429. Aside from coal cases, the concept also has been applied in cases involving gilsonite (American Gilsonite Co., supra), and phosphates (Elizabeth B. Archer, supra; Atlas Corp., supra). As we said in American Gilsonite, "we see no reason to depart from standards developed through cases involving other minerals where similar issues have been raised." Id. at 32, 96 I.D. at 424.

Although the term "workable" at first suggests a deposit where mining is technically feasible, economic considerations are also involved in the determination. Referring to the definition of workability, the Board stated in Clear Creek Inn Corp., 7 IBLA 200, 216, 79 I.D. 571, 579 (1972):

[T]he economics of the extraction process are critical to the determination of the workability of the coal. It is not enough to ascertain that coal is present and that mining it is "physically possible." If it is too thin, too poor or too deep to mine it cannot be considered workable. To be workable its value must at least appear to exceed the cost of its extraction.

See also Conservation Division Manual 671.5.2.B.

A further distinction concerning this concept was made by Atlas Corp., 74 I.D. at 84:

fn. 5 (continued)

Company, and has caused 30 million of their original 60 million tons of reserves to be classified as unmineable. The mine is however very dry, producing only 100 gallons per minute. Mine water contains a significant concentration of H₂S, which can be highly toxic. The water problems are mainly catastrophic, and the company has installed bulkheads to guard against future floods."

[I]t is not necessary, in order to sustain a finding that such deposits do exist in workable quantity, that a determination can be made with some degree of assurance that a mining operation will be an economic success. Rather, it is enough that the available data is sufficient to determine that the lands under consideration would require only limited prospecting to project a program for development but would not require prospecting for the purpose of determining the presence or workability of the deposit.

Finally, as Elizabeth B. Archer points out, a geologic inference, by itself, may provide sufficient foundation for finding a deposit is workable. 102 IBLA at 315.

While workability is generally well defined, as these cases demonstrate, the engineering standards for the differing minerals considered by the cases cited or for coal are not the same. In a memorandum dated June 6, 1986, BLM recognized this distinction, stating pertinently:

The Bureau has not adopted formal classification standards for gypsum. We note in USGS (U.S. Geological Survey) Circular 891, Coal Resource Classification System of the U.S. Geological Survey, that measured reserves are calculated for a quarter mile radius around a data point, and that indicated reserves are calculated for an additional one half mile beyond the data point. Our general feeling is that the geology of gypsum deposits is more constant/uniform compared to that of coal deposits. Therefore, we would not generally fault your use of the standards noted above in this situation.

See also American Gilsonite Co., 111 IBLA at 42 n.13, 96 I.D. at 429 n.13. USG has not disputed that this methodology is correct.

The ultimate test used by BLM to determine workability of the gypsum sought to be permitted was the standard provided by USG that established a minimum height and purity for a workable gypsum seam. These standards, a minimum mining height of 8 feet and 80 percent or better gypsum purity, were the final measurement used to determine workability. ^{6/} USG does not challenge the data or calculations used by BLM, but instead emphasizes that

^{6/} USG also furnished cost factors relevant to this equation, which were adopted by BLM. In a memorandum dated May 18, 1988, BLM explained that:

"[USG] calculated an estimated 7,938,000 tons of maximum in-place reserves under the *** lease application. Anticipated losses due to water, low purity, and Paleo-Karst sinkholes would bring the estimated reserves down to 6 to 7 million tons. The mining recovery rate is 72% giving a maximum recoverable reserves estimate of 5,715,000 tons and a minimum estimate of 4,320,000 tons.

"The price of gypsum mentioned during our discussions was \$10.00 per ton F.O.B., and a call to the U.S. Bureau of Mines verified that it was a reasonable figure for an underground mine."

dangers associated with flooding during operations and the effect of water encroachment on reserves cannot be fully understood without more drilling data than was available to BLM staff. This argument, however, which raises issues of safety and final profit, goes beyond questions concerning the workability of the deposit. The matters now raised by USG, while certainly relevant to development and profitable removal of an adequate mining plan of operations and continued development of the gypsum deposit, are directed to the question of ultimate profitability. But whether a deposit is workable does not necessarily depend on such a showing. Elizabeth B. Archer, supra; Clear Creek Inn Corp., supra; Atlas Corp., supra. This argument by USG is self-defeating: it assumes that more data might disprove BLM's result. It does not, however, refute the soundness of the data used or the accuracy of the conclusion made by BLM.

Similarly, the arguments advanced by the Carr letter concerning the ultimate quantity of reserves that might prove to have been adulterated by water encroachment do not tend to show that the deposit at issue is not workable. That there may be some diminution of the estimated quantity or quality of reserves by water percolating was also assumed by BLM's calculations. USG has not shown, moreover, that there is an identified problem with water in the tract under consideration. Even assuming that there may be up to 23-percent diminution of the total projected quantity of gypsum in the subject deposit owing to this hazard, as the Carr letter suggests, USG has not shown that BLM's determination concerning the workability of the deposit, if so reduced, is in error. Absent such a showing, the opinion of BLM's experts on this issue must be affirmed. American Gilsonite Co., 111 IBLA at 44, 96 I.D. at 431.

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

Franklin D. Arness
Administrative Judge

ADMINISTRATIVE JUDGE BURSKI CONCURRING:

As the lead opinion notes, the single issue involved in this appeal is whether U.S. Gypsum Company (USG) has established that the gypsum deposit known to exist within the area embraced by its hardrock prospecting permit application is not "workable" under 43 CFR 3562.1 and the Departmental adjudications which have fleshed out the meaning of that term. ^{1/} See, e.g., American Gilsonite Co., 111 IBLA 1, 96 I.D. 408 (1989); Elizabeth B. Archer, 102 IBLA 308 (1988); James C. Goodwin, 9 IBLA 139, 80 I.D. 7 (1973); Atlas Corp., 74 I.D. 76 (1967). In essence, appellant argues that further "prospecting" work is needed to determine if, in point of fact, the deposit is workable. Since, in my view, the additional activities which appellant describes are properly considered "developmental" rather than "prospecting," I concur in the denial of the instant appeal.

As the Department noted as long ago as its decision in Emil Usibelli, A-26277 (Oct. 2, 1951), the determination as to the workability of any mineral deposit is a function of the correlation of the deposit's character and value viewed in relationship to its accessibility, quantity, thickness, depth, and other conditions which affect the cost of extraction. Thus, where it is shown that the former is likely to exceed the latter, a deposit is "workable" within the meaning of the regulations. But, the Department has been careful to caution against any assumption that a finding that a deposit is "workable" implies "that a determination can be made with some degree of assurance that a mining operation will be an economic success." Atlas Corp., supra at 84. Indeed, since "workability" is limited to a determination that the value of the deposit is likely to exceed the intrinsic costs associated with its mining (see Elizabeth B. Archer, supra at 313-14), the fact that a deposit is deemed "workable" cannot imply ultimate profitability because extrinsic costs of development are simply not factored into the equation. That any mining venture might feel compelled to analyze such costs before commencing actual development cannot be gainsaid. But, the mere fact that such studies and analyses might be warranted before the onset of actual development of the deposit does not compel, much less nec-essarily support, the conclusion that a deposit cannot be deemed "workable" prior to the completion of these analyses.

^{1/} It is true, of course, that in its original statement of reasons, appellant focussed solely on whether or not the Department should be estopped from relying on information developed pursuant to a permit issued, albeit improperly, by the Forest Service, Department of Agriculture. This argument, as is obvious from the lead opinion, was essentially abandoned in appellant's supplemental filing in which, for the first time, it raised the question as to whether or not the workability of the gypsum deposit had been established. In any event, it is clear that, inasmuch as

Appellant's argument with respect to the instant gypsum deposit proceeds from recognition that the possibility of water intrusion is a matter of great concern. Appellant has provided the Board with the statement of Donald D. Carr who, after recounting difficulties which USG encountered because of flooding of the mine in 1960 and, again, in 1965, noted that, as a result of these events, USG reduced its core spacing from one core hole per 50 acres to its present one core hole per 18 acres. Carr argued, therefore, that absent similar spacing on the deposit in question, it would be impossible to determine its workability.

I do not doubt for a moment that, prior to commencing development of this deposit, USG would embark upon the detailed sampling discussed by Carr. But it seems to me that such detailed sampling is a prerequisite of the development of the gypsum deposit, not a necessary adjunct to its exploration. Indeed, it is clear that USG viewed it in the same light. Thus, when BLM originally informed USG that, as a result of the drilling of its second group of core holes on the subject property (together with four other holes located on private lands immediately adjacent thereto), the deposit was no longer subject to the issuance of a prospecting permit, USG filed an application for a fringe acreage lease under 43 CFR Subpart 3565. Since fringe acreage leases may only be issued for lands otherwise available for leasing, i.e., areas in which the deposit sought to be leased has been shown to be both existing and workable, USG's application for a fringe acreage lease was based on the implicit assertion that the drilling which had occurred was sufficient to establish both the existence and workability of the gypsum deposit. It was only upon the expression of competitive interest in the tract by National Gypsum Company, which interest would prevent issuance of a fringe acreage lease (see United States Gypsum Co. (On Reconsideration), 115 IBLA 297 (1990)), that USG apparently decided that there was insufficient evidence to establish the workability of the deposit. While appellant's change in position might be understandable, its past course of action must nevertheless be seen as fundamentally inconsistent with its present argument that the workability of the deposit is unestablished.

Moreover, the amount of exploration envisioned by USG goes well beyond that required to show a discovery under the mining laws. Thus, appellant has clearly established that a gypsum deposit exists within the limits of its permit application of sufficient quantity and quality as to justify a prudent man in the further expenditure of his labor and means with a reasonable prospect of success in developing a paying mine. See, e.g., United States v. Whittaker, 95 IBLA 271, 282 (1987), and cases cited. To be sure, such a prudent individual would doubtless cause further studies to be made before engaging in actual mining activities with respect to the instant

fn. 1 (continued)

appellant was expressly informed, prior to its second set of test holes, that no prospecting activities could be conducted on the subject tract until such time as BLM issued a prospecting permit, there is no basis, whatsoever, for the invocation of estoppel herein.

deposits. But, it has long been established that such developmental activities are not a prerequisite to a finding that a claim is valid. See, e.g., United States v. White, 118 IBLA 266, 319-21, 98 I.D. 129, 157-58 (1991).

Establishing a definition of "workability" which mandated such studies prior to a determination that the deposit was leasable would be, in effect, to require a higher degree of certainty of ultimate development in order to lease a deposit than would be needed to patent it. Such a result would be particularly ludicrous with respect to the instant appeal since gypsum is, after all, a mineral normally locatable under the mining laws (see United States v. Bunkowski, 5 IBLA 102, 79 I.D. 43 (1972)), and the very evidence which appellant argues is insufficient to establish that the deposit is subject to leasing might well be found sufficient to establish the validity of a claim located on the public domain. Such a result would be difficult to justify under any rational theory of resource management.

Accordingly, I fully concur with the lead opinion that the subject deposit is subject to leasing under 43 CFR Subpart 3564 and, thus, no longer subject to the issuance of prospecting permits under 43 CFR 3562.1.

James L. Burski
Administrative Judge

