

UNITED STATES  
v.  
HOWARD S. MCKENZIE

IBLA 70-94 (Supp. II)

Decided March 28, 1977

Recommended decision of Administrative Law Judge R. M. Steiner holding (1) that Landsend No. 2 and Landsend No. 3 lode mining claims be declared null and void, and (2) that Mineral Patent Application New Mexico No. 145 be rejected.

Recommended decision affirmed, and incorporated in part.

1. Administrative Procedure: Burden of Proof--Evidence: Burden of Proof--Mining Claims: Discovery--Rules of Practice: Evidence

A lode mining claim for barite is properly declared null and void in the absence of a showing of a discovery on the claim of a deposit of barite which would warrant a prudent man in further expending his labor and means in the reasonable expectation of developing a valuable mine. Evidence of mineralization which may justify further exploration is not sufficient to establish that a discovery of a valuable mineral deposit has been made.

2. Administrative Procedure: Burden of Proof--Evidence: Burden of Proof--Mining Claims: Contests--Rules of Practice: Evidence

Once the Government has established in a mining claim contest a prima facie case that the claims are not valid for lack of discovery, the burden shifts to the contestee to prove the discovery of a valuable mineral deposit by a preponderance of the evidence.

APPEARANCES: Howard S. McKenzie, pro se; Demetrie L. Augustinos, Office of the General Counsel, U.S. Department of Agriculture, Albuquerque, New Mexico, for the United States (at the hearing).

OPINION BY ADMINISTRATIVE JUDGE THOMPSON

Howard S. McKenzie filed Mineral Patent Application New Mexico No. 145 for his Landsend No. 2 and Landsend No. 3 lode mining claims on July 13, 1966, amended October 4, 1966. Although appellant's amended application listed deposits of lead, silver and barite, the subsequent proceedings show that the validity of the claims turns on the existence of a valuable deposit of barite. 1/ The claims are located in the Cibola National Forest.

At the request of the United States Forest Service, a contest was brought against the claims on March 7, 1968, charging lack of a "valid mineral discovery." Following a hearing in the matter, the Hearing Examiner (now Administrative Law Judge) declared the claims null and void and rejected the patent application. This Board affirmed that decision in United States v. McKenzie, 4 IBLA 97 (1971), holding that on the basis of the record before it, the "appellant has failed to meet his burden of showing with a preponderance of the evidence that the prudent man test can be satisfied." Id. at 112. The Board based this conclusion on the failure of appellant to show sufficient quality in the barite on the claims to satisfy market needs, a lack of evidence establishing the quantity of barite on the claim, and the absence of substantial expenses from appellant's cost estimate. The Board did not, however, put its decision into effect immediately but allowed appellant an opportunity to submit an offer of proof in support of his motion for a new hearing in which he alleged that previously unavailable evidence showed a discovery on his claims. That motion was subsequently granted.

After the second hearing, Administrative Law Judge R. M. Steiner issued a recommended decision again declaring appellant's mining claims invalid. In United States v. McKenzie, 20 IBLA 38 (1975), this Board set aside that decision, finding there was some misunderstanding and confusion concerning the offer of proof and whether it had been introduced into evidence at the hearing. The Board ordered a third hearing in order to give appellant every opportunity to make his case. In remanding the case, the Board commented that "the present evidentiary record would not justify modification of the Board's [earlier] decision." Id. at 40.

-----  
1/ Appellant has produced no barite from the claims but proposes a mining operation to market barite for use as drilling mud for oil wells. The use and specifications for such barite were described in United States v. McKenzie, 4 IBLA 97, 103 (1971).

Because of previous rulings that contestant had made a prima facie case of lack of discovery, the Board emphasized that the contestee would have the burden of showing by a preponderance of the evidence that a prudent man would be justified in the further expenditure of his labor and means with a reasonable prospect of success in developing a paying mine. To meet this test, appellant would have to show a likelihood that the minerals on the claims can be mined, removed and disposed of at a profit. The Board also listed, at 45, certain factors for which appellant would be required to show probative evidence:

- (a) expected costs of the extraction, beneficiation, and other essential costs of the operation necessary to mine and sell the mineral, including capital and labor costs;
- (b) quantity of mineable mineral on the claims;
- (c) average grade or quality of mineral on the claim; and
- (d) price at which the mineral will be sold, and expected returns.

The above evidence should focus on current estimates of costs and prices. We caution appellant to devote his energies to the presentation of evidence. Further criticism, without evidence, will avail him nothing.

[1] In the recommended decision before us now, Judge Steiner found that appellant failed to introduce "sufficient reliable probative evidence" which would justify changing the Board's 1971 decision. He also determined that although appellant's evidence may indicate further exploration may be warranted on the mining claims, it fails to show by a preponderance of the evidence that minerals have been found within the limits of the claims in sufficient quantity and quality that a prudent man would be justified in the further expenditure of his labor and means with a reasonable prospect of success in developing a paying mine. We agree with the findings and conclusions of Judge Steiner. We incorporate as Appendix A of this decision that portion of the recommended decision, beginning at page 8, which discusses and analyzes the evidence. Rather than repeat Judge Steiner's analysis, we will address our discussion only to appellant's arguments submitted on this appeal.

[2] In objecting to Judge Steiner's recommended decision, appellant argues that his evidence and testimony contradict and refute the Government's case in four respects: (1) the barite exists over a wider area than the Forest Service mining engineer

testified to; (2) it is impossible for the barite to occur in "isolated pods" as the mining engineer testified; (3) the mining operation would be profitable; and (4) the mining engineer's method of sampling is inferior to the method used by the mining engineer employed by appellant. Finally, appellant argues that he has satisfied the four elements constituting his burden of proof which are quoted above from the Board's 1975 decision.

The purpose of the second and third hearings on appellant's mining claims was to afford appellant the opportunity to present additional evidence showing the discovery of a valuable mineral deposit. The Government, having already established that the claims were not valid on the basis of the evidence introduced at the first hearing, could have either introduced no new evidence or, as it did here, introduce additional evidence rebutting appellant's case. In his objections to the recommended decision, appellant concentrates on arguments to rebut the Government's evidence. However, he has failed to show by probative evidence, apart from his own general statements, that the Government's rebuttal testimony directed to his evidence is erroneous, or that there is a sufficient quantity of barite at a quality which could meet the prudent man test of discovery discussed in the prior decisions in this case.

Appellant's first point is that the barite exists over a wider area than Forest Service mining engineer Donald J. Alexander testified. The mining engineer testified that he took various samples from the claims and circled on attachment S-1 to Exhibit 76-1, a plat of the workings on the claims, the area of influence of each sample (1976 Tr. 65-66). Appellant states that Mr. Alexander testified barite exists only in these circles. This is not true. Mr. Alexander admitted that some barite exists outside the areas sampled (e.g., 1976 Tr. 87, 136-37). However, he also stated that such additional barite would not materially change his conclusions as to the validity of appellant's claims (1976 Tr. 103, 136-37).

Appellant's second objection is based on his statement that barite is "deposited by hot, percolating solutions" and cannot occur in isolated pods as Mr. Alexander testified. He describes the deposits of barite as "bedded," rather than occurring in isolated pods (1976 Tr. 52). Appellant has submitted no geological evidence in support of this statement.

In his third objection, appellant extrapolates profit estimates based upon estimated percentage increases in revenues and costs and upon a quantity of barite-bearing ore existing to a depth of 50 feet. Rather than introducing revised operating and equipment costs, appellant merely estimates an overall cost increase of 50 percent. He does establish that the price of barite has increased from the \$ 23 per short ton at the time of

the 1968 hearing to \$ 71 to \$ 78 per short ton shown on pages 60-61 of the April 1976 issue of Engineering and Mining Journal for "Barytes \* \* \* dry ground drilling mud grade [with specifications]." (Ex. 76-C.)

However, the central dispute in the contest is not appellant's estimated costs but the quantity and quality of barite present on the claims. In his reply brief to Judge Steiner's decision, appellant estimates his income based on a deposit of barite amounting to 182,140 short tons. He arrives at this figure by taking the original estimate of his consulting geologist, Harry S. Birdseye, which was 36,428 short tons of recoverable barite at an average thickness of 10 feet, and multiplying it by five because he alleges that the 1972 geological evaluation report of Mr. Birdseye describes the barite deposit extending to a depth of 50 feet. In fact, the 1972 report, which is contestee's Exhibit 103, states that although a single drill hole was successfully completed to a depth of 50 feet and showed the presence of barite, no quantitative determination could be made.

Appellant also refers to the annual income figures, revised to reflect current market prices, from Exhibit 116 which are based on the recovery of 33.75 short tons of barite concentrate per working day. Regardless at what rate barite is recovered, a question remains regarding the size of the deposit. As stated above, Mr. Birdseye's original estimate for appellant was 36,428 short tons of barite (1968 Tr. 110-11). At the 1968 hearing, the government mineral examiner, Harve I. Ashby, testified that based on his examination of the claims and relevant data, the deposit of barite was 26,000 short tons (1968 Tr. 265). The 1972 geological report prepared by Mr. Birdseye for appellant (Ex. 103) gives a revised estimated deposit of 51,569 short tons. At the 1973 hearing, government mineral examiner Donald J. Alexander testified that he estimated the deposit contained 973.11 tons of barite (1973 Tr. 101). Mr. Alexander later revised this estimate to 1088.84 tons (1976 Tr. 102).

Mr. Alexander explained that his comparatively low estimate was arrived at because he limited his calculations to a 10-foot radius around each sample (1973 Tr. 101-02). He stated that in his opinion the 10-foot radius was the absolute maximum area of influence for each sample (1973 Tr. 105). At the most recent hearing, Mr. Alexander stated that Mr. Ashby's estimate was based on a far greater depth and area of influence than his own estimate and that he did not believe Mr. Ashby was justified in so extrapolating (1976 Tr. 102). He also stated he finds no basis for the estimates made by Mr. Birdseye (1976 Tr. 106).

Appellant has relied solely on the geological report prepared by Mr. Birdseye. Unfortunately, Mr. Birdseye died prior to the 1973 hearing and was never questioned on his most recent findings. In

appellant's own testimony, he disputed the findings of Mr. Alexander regarding the quantity of barite present at the various workings on the claims as well as the estimate of Mr. Alexander as to the size of the deposit. After reviewing the entire record, we must agree with Judge Steiner that appellant has failed to show by a preponderance of the evidence that a sufficient quantity of barite exists on the mining claims to satisfy the prudent man test.

Appellant's final specific objection concerned the method of obtaining samples used by Mr. Alexander. Mr. Alexander removed his samples by chipping away rock while Mr. Birdseye cut channels in the rock face. Judge Steiner, in his analysis of the evidence adopted as Appendix A, discusses the samples taken by appellant and the various witnesses. He finds that the assay reports on the samples are representative only of the limited exposure from which the particular sample was taken, regardless of the sampling method utilized. He concludes that the assays of the various samples do not support a finding that tons of quality barite lie beneath appellant's mining claims. Appellant does not refute this conclusion.

It is evident from the above discussion and from Judge Steiner's analysis that although some barite is present on appellant's mining claims, appellant has been unable to show adequately the existence of a deposit containing sufficient quantity and quality to support a mining operation. This conclusion requires a determination that the opinions of appellant and the opinion and estimates contained in appellant's evidence do not overcome the opinions and estimates of the expert government witnesses. But this is the essence of a fact-finding hearing in mining claim contests. Once the Government has established at least a prima facie case that the claims are not valid for lack of discovery, the burden shifts to the contestee to prove the discovery of a valuable mineral deposit by a preponderance of the evidence. United States v. Zweifel, 508 F.2d 1150, 1157 (10th Cir.), cert. denied, 423 U.S. 829 (1975); United States v. Taylor, 25 IBLA 21, 24 (1976). Appellant has failed to do so. He was given ample opportunity to support with probative evidence his opinions concerning the value of the deposit. At the third hearing, he only offered an assay report on one sample in addition to the 1972 report by Mr. Birdseye. He has been unable to refute the Government's case.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the recommended decision of Administrative Law Judge Steiner holding (1) that Landsend No. 2 and Landsend No. 3 mining claims be declared

null and void, and (2) that Mineral Patent Application New Mexico No. 145 be rejected, is affirmed, and incorporated in part.

Joan B. Thompson

---

Administrative Judge

We concur:

---

Anne Poindexter Lewis  
Administrative Judge

---

Frederick Fishman  
Administrative Judge

## APPENDIX

The third hearing ordered by the Board was held on May 11, 1976. Demetrie L. Augustinos, Esq., Office of the General Counsel, U.S. Department of Agriculture, appeared on behalf of the Contestant. The Contestee appeared for the second time without counsel.

Evidence previously tendered to the Board was identified by the Contestee. Exhibit 76-I submitted to the Board on December 30, 1971, consists of a five page statement prepared by Counsel for the Contestee to which there are attached four numbered exhibits. Exhibit No. 1 is an Ore Test Report prepared by the Denver Equipment Division of the Joy Manufacturing Company, dated July 23, 1970, consisting of a five page narrative report of laboratory gravity concentration tests performed on barite ore, plus two data sheets and a recommended flow sheet. The gross weight of the sample was 300 pounds. It consisted of coarse ore up to six inches maximum dimension. The sample was crushed to one-half inch, mixed and split, one half placed in storage. One half of the sample was further reduced to all minus 3/8-inch in stages with a roll crusher, mixed, and again split, one half placed in storage. A four pound head sample was cut from the working sample. Page 2 of the report states that the head sample contained 72.98 percent barium sulphate. The report concludes that high grade barite concentrates meeting a specific gravity of 4.25 can be obtained from the submitted sample by gravity concentration methods. The first data sheet is a screen analysis. The second data sheet shows as much as an 80.6% recovery of barium sulphate through the combination of different products at different stages of the milling process.

Exhibit No. 2 is a cost estimate received from Denver Equipment, prepared by R. W. Taylor. It identified a number of mill items priced at \$ 66,822.00. In addition thereto are a tank and a pump priced at \$ 7,723.00.

Exhibits No. 3 and No. 4 are letters from IMC Drilling Mud Inc., dated respectively October 13, 1969, and October 31, 1969 advising the Contestee that his barite product "passed the necessary tests" and meets API Specifications, and requesting "pricing data."

The Contestee testified that he took the sample referred to in the Ore Test Report (Ex. No. 1). The pit from which the sample was taken was later drilled and blasted and "is not existent." (Tr. 76-15). He described the sample as "an average run sample taken from the dump by the coning method." (Tr. 76-15). He described the taking of that type of sample as follows:

"You take a large portion of a large part of all the material that's been taken out of the hole or -- it would be the dump. When you dig a hole, you've got a pile that's spoil somewhere.

\* \* \*

You pile that up in the nearest cone-shaped pile as you can as you're excavating it. Then, you mix this as thoroughly as you can.

\* \* \*

You mix up the bitter with the sweet. Then, you take a certain portion of this cone-shaped pile -- we'll say twenty-five percent or one quarter of it, like you was cutting a piece of pie -- like you were cutting a piece of pie out of a cone-shaped pie that the cone was inverted, the small end up." (Tr. 76-16)

He stated that the material comprising the cone was not selected but was the run of what came out of the hole and included country rock. (Tr. 76-17) The cone is a representative sample of the waste and the values from the top to the bottom of the pit.

Exhibit No. 76-I was received in evidence over the Contestant's objection that it was hearsay, and not competent evidence because it was prepared some six or seven years earlier.

Exhibit No. 76-II, the "Additional Tender of Evidence" submitted to the Board on May 5, 1972 consists of a three page narrative statement prepared by counsel for the Contestee attached to which are exhibits numbered 101 through 116.

Exhibit No. 101 is an assay report, dated April 25, 1972, of seven samples taken by the Contestee's geologist, Henry S. Birdseye. The report shows that the samples contained barite in percentages ranging from 30.3% to 84.6%.

Exhibit No. 102 was summarized in the first recommended decision issued on January 8, 1974. That summarization is incorporated herein by reference.

Exhibit No. 103 is an interim geological evaluation of the subject mining claims prepared by geologist Henry S. Birdseye on April 25, 1972. He evaluated the tonnage and grade of barite reserves based upon substantial vertical channel sampling of pits and trenches throughout the deposit. His original ore reserve calculation of 36,428 short tons of barite was based upon a deposit of an average thickness of ten feet. The report states, in part:

"In April, 1972, Mr. McKenzie further investigated the Landsend deposit in an effort to develop ore reserves to a greater depth, thus increasing proven tonnage. A reverse-circulation "Con-Cor" drilling rig was employed, to

air-drill sample holes. Although conducted at high cost, the drilling results were not satisfactory, due to (1) lost circulation in the fractured barite-bearing beds, (2) abrasiveness of chert stringers, and (3) most important, pulverizing of the soft barite crystals by fragments of limestone and chert at the bit-formation interface. A total of three holes was drilled to depths of 50, 49 and 6 feet, respectively, at sites shown on the accompanying plat. A drill collar was lost in Hole #2, blocking it from a depth of 20 to 49 feet. Hole #3 was discontinued at a depth of 6 feet due to poor sample recovery. While all samples from the drill holes show the presence of barite, a quantitative determination is prohibited by the pulverizing described above, resulting in loss of high-barite fines."

"At the writer's request, drilling was discontinued, and Holes 1 and 2 were loaded and blasted with prilled ammonium nitrate, then cleaned out to a depth of 20 feet with a backhoe. Caving of the fractured barite ore zone prevented cleaning out to a greater depth. Vertical channel samples were cut by the writer in the intervals tabulated below, and the samples sent off for assay. Because the sampling was conducted over a weekend, pulverizing and splitting facilities were not available, and it was necessary to split the samples visually, resulting in some subsequent discrepancies in barite content of individual samples, while the overall weighted average grade was quite consistent. The grades calculated by the N.M. Bureau of Mines were generally lower than those determined by chemical assay by the Albuquerque Assay Laboratory, due to the assumption of gangue specific gravity at 2.70, which is probably high. The result (sic) are as follows:

Sample Number	Interval	N.M.B.M. Spec. Grav.	N.M.B.M. % BaSo-calc.	Alb. Assay %BaSo-chem.
1-A	1-2'	3.21	32%	30.3%

1-B	2-6'	3.38	43	84.6	
1-C	6-11'	4.24	96	68.2	
1-D	11-15'	3.33	39	58.0	
1-E	15-20'	3.35	41	59.0	
Weighted Average:		3.56	53.9%	63.3%	
2-A	0-8'	3.38	43.0%	66.6%)	Avg. 60.9%
2-B	8-16"	3.70	63.0	50.5 )	
Weighted Average:		3.56	53.0%	58.5%	

Additional barite reserves calculated in April 1972 were 15,141 short tons based upon a deposit of an average thickness of eight feet. "Additional indicated ore" was calculated at 14,617 short tons.

The report further states:

The additional barite reserves developed during the recent work are calculated as follows:

	<u>Additional</u>	
Measured Area:	<u>Measured Ore</u>	<u>Indicated Ore</u>
26,727 ft<2>	25,802 ft<2>	
Average thickness:	8.0 feet	8.0 feet
Volume cubic feet:	213,816 ft<3>	206,416 ft<3>
8.6 ft<3>/sh. ton	8.6 ft<3>/sh. ton	Weight-Vol. factor:
tons ore Times avg. grade (60.9%)	15,141 ST barite	4,862 tons ore 24,002 ST barite

Plus previous Measured  
 Barite 36,428  
 Current Barite Reserves 51,569 Short Tons 14,617 Short Tons

There is little reasonable doubt that current reserves can be further increased by deeper development within the known shallow deposit. It is geologically probable that the lateral extent of the Landsend deposit can also be extended.

Determinations of chemical grade and specific gravity conducted to date clearly establish that the Landsend barite deposit will produce barite more than suitable for the drilling mud industry.

Exhibit No. 104 is a statement of overhead and administrative costs estimated by the Contestee. The statement includes payroll taxes, workmen's compensation, telephone, legal and accounting expenses, insurance, severance and sales taxes, and travel and promotion totalling \$ 21,190.00.

Exhibit 105 is a Statement of Annual Operating Expenses including estimated mining and milling costs totalling \$ 94,903.00.

Exhibit 106 is a Statement of Equipment Expense and Interest, taking the costs from Exhibits 107 through 115, totalling \$ 346,044.98 and interest costs of \$ 64,652.00 on \$ 400,000.00 to be borrowed to finance the entire mining operation.

Exhibit 107 is a price quote prepared by Turner's Drillers Supply, Inc. for two drills, pipe, and other material.

Exhibit No. 108 is a price quote for a John Deere loader.

Exhibit No. 109 is a price quote for a John Deere motor-grader.

Exhibit No. 110 is a Ford Truck Customer Order Analysis.

Exhibit No. 111 is a price quote for an automatic gross bagging machine.

Exhibit No. 112 is a price quote for two storage bins.

Exhibit No. 113 is a seven page milling equipment quote prepared by the Denver Equipment Division of Joy Manufacturing Company.

Exhibit No. 114 is a proposal-contract for a steel building.

Exhibit No. 115 is a proposal and contract for the construction of approximately six miles of road for \$ 87,600.00. The proposal states however, that, "This is a proposal based on visual observation of the proposed road site. The price is subject to change after the road has been staked."

Exhibit No. 116 is a Statement of Estimated Income and Expense providing as follows:

Income

75 tons raw material mined per day  
60% x 75 tons = 45 tons of barite  
75% recovery in milling x 45 tons =  
33.75 tons of concentrate per day  
33.75 tons x \$ 37 per ton - \$ 1248.75 per day  
300 working days x \$ 1248.75                      \$ 374,625

Expense

Amount borrowed + interest thereon to pay  
for equipment and working capital =

\$ 464,652 Paid back in 3 years	
Per annum = \$ 154,884	\$ 154,884
Overhead & Administrative Costs	21,190
Operating Expenses	94,903
Total Expense	\$ 270,977

Annual Gross Profit Before Income Taxes           \$ 103,648  
 (Annual depletion of measured reserves  
 45 tons per day times 300 days =  
 13,500 tons per year x 3 years =  
 40,500 tons leaving 11,069 tons remaining)

Exhibit No. 76-II with its sixteen attachments was received in evidence without objection by the Contestant.

Exhibit No. 103 was admitted as Exhibit No. 1 at the 1973 hearing. It includes all of the results shown on Exhibits No. 101 and No. 102. Material from these three exhibits was quoted extensively in the first recommended decision.

Exhibit No. 104 itemizes the identical estimated overhead and administrative costs set forth in Exhibit No. 68-S. (Exhibit No. 104 shows a total of \$ 21,190, while Exhibit No. 68-S shows a total of \$ 17,300,00).

The estimated annual operating expenses set forth in Exhibit No. 105 are also set forth in Exhibit No. 68-Q. Both include estimated expenses for drilling, blasting, mining, hauling, and milling. Exhibit No. 105 shows a total of \$ 94,903 and Exhibit No. 68-Q shows a total of \$ 147,800.

Exhibit No. 106, a compilation of costs taken from Exhibits No. 107 through No. 115, itemizes equipment costs similar to those set forth in Exhibit No. 68-R.

Exhibit No. 116 is a Statement of Estimated Income and Expense, estimated by the Contestee, similar to his Statement of Estimated Income and Expense identified as Exhibit 68-Q. Exhibit No. 116 shows income of \$ 374,625., expense, \$ 270,977., and an annual gross profit of \$ 103,648. Exhibit 68-Q shows income of \$ 345,000., expense, \$ 147,800., and annual profit at \$ 197,200.

The Birdseye Report was the most probative evidence of the nature, extent, and estimated tonnage of the subject barite deposit submitted by the Contestee. The first recommended decision set forth a very comprehensive review of the Birdseye Report on pages 2, 3 and 4 thereof and concluded on page 7 that the additional exploratory work performed subsequent to the initial hearing did not support the tonnage estimates submitted by the Contestee, and that the tonnage of barite exposed was not sufficient to justify its extraction. The remaining exhibits comprising Exhibit No. 76-II are, for the most part, revised estimates of estimates submitted at the 1968 hearing.

The Contestee testified that the deposit is exposed to a depth of 26 feet at the site of drill hole No. 2 on the landsend No. 3 claim. The hole was drilled to a depth of 50 feet. " \* \* \* we were still getting barite recovery even though it wasn't satisfactory to Mr. Birdseye. The formation extends to 50 feet in depth at present exploration." The drilling was done in April 1972 and he had not drilled any holes since that time, " \* \* \* because drilling is unsatisfactory in that formation." (Tr. 76-24). A second drill hole on the No. 3 claim was 49 feet deep and a third drill hole was discontinued at a depth of six feet due to poor sample recovery.

The price of barite in 1976 was \$ 71. to \$ 78. per ton. It was his opinion that 1976 expenses would be 50% greater than those shown in his estimates as of 1972. He stated that he could borrow \$ 464,000. at the United Bank of Denver. He had submitted data on his proposed mining operation to the bank which would not make the loan, " \* \* \* Not with the cloud over the title of the property." (Tr. 76-30). It was his opinion that, as of 1976, the minimal amount of funds required to commence a mining operation was \$ 600,000., to \$ 650,000. (Tr. 76-32). He described further drilling on the claims as impractical.

As to the expected costs of the extraction, beneficiation and other essential costs of the operation necessary to mine and sell the material, including capital and labor costs, he stated, " \* \* \* the only way possible to estimate this at this time is to increase those costs by 50%." (Tr. 76-42)

He stated that the grade of material was as set forth in Exhibit 101, 102, and 103, all part of Exhibit No. II. He identified Exhibit 76-A, dated May 7, 1976 as evidence of the grade of the material exposed on the claims. The exhibit describes the sample assayed as crushed rock bearing 61.5% barium sulphate. He stated that he sampled two pits on the number two claim and nine pits on the number three claim during the last part of April, 1976. He described the sampling as follows:

"Well, what was performed here is, I did this work without the aid of drilling or blasting. I dug the holes with a backhoe and piled the material up beside the hole and then mixed it with the backhoe in the original pile as it come out of the pit. And, then, I carried this to a flat area that would be in the junction of the road over here that might be better -- well, it would be right out in front of Pit No. 6 on -- and a little bit to the south of Pit

No. 6 on Landsend No. 3. And this backhoe bucket from each one of these dumps, that means eleven (11) piles, I took -- after mixing it -- I took one (1) bucketful and piled it in a cone shaped pile out in this flat area, mixed it again with the aid of the backhoe bucket and the front-end loader on the backhoe, piled it in a cone-shaped pile with the end loader and the backhoe, then with the backhoe, I took about -- approximately, what I could figure -- a quarter from one side of this pile which represented a composite of the eleven (11) excavations. What came out of the eleven (11) excavations was piled in this pile, and equal amount from each one of them. I took this one quarter out of this big pile which amounted to many tons and piled it to the side in another cone-shaped pile. Then I pushed the original pile further away and I quartered the second pile after mixing again, and I set this over to the side, and I continued this operation until I had it down to where I filled a five-gallon bucket full of this material and left about -- what would be about three-quarters of this pile left. So I took what I consider -- what I conclude to be a mine run sample over this area for this assay, Exhibit 76-A. This, I feel, shows that the barite exists beyond these circles that -- on Exhibit E that were of the last hearing as well as as showing the average expected mine run grade of ore to be extracted from this area. The attached plat is -- shows the area within my outermost explorations increasing the area within these outermost explorations to approximately eighteen (18) acres." (Tr. 76-44,45)

Hole No. 1, seven feet deep, displacing fifty or sixty tons and hole No. 2, approximately seven or eight feet deep, he did not note the depths, were on the No. 2 claim. Hole No. 3 was about three feet deep, displacing between three and five tons of material. Hole number 4, about

8 feet deep, displaced about ten tons of material. Hole number 5 was about the same size and depth as hole No. 4. Hole No. 6 was 2 1/2 to 3 feet deep, displacing about 1 1/2 to 2 tons. He stated that the material in Hole No. 6 was "almost pure barite." (Tr. 76-47). About 30 tons of material of high barite content was removed from hole No. 7. Hole No. 8 was 3 or 4 feet deep displacing about 20 tons of material of high barite content. No. 9 is a shallow excavation, very high in barite content, displacing approximately eight tons of material. Hole No. 10, at the edge of drill hole No. 2 was about twelve feet deep displacing 100 tons. Hole No. 11 was eight feet deep, but narrow. He stated:

"\* \* \* pertaining to quantity, we've -- it's been established in Exhibit 103 that I testified to earlier that the ore body extended to a depth of forty-nine (49) and fifty (50) feet as a result of the previous drilling. And the second part of Exhibit 76-D shows that the deposit has been opened and exposed increasing the area within the limits of the outermost explorations to approximately eighteen (18) acres. This is increasing both the vertical and the horizontal dimensions of the deposit." (Tr. 76-48)

He stated that the estimated income and expense set forth in Exhibit No. 116 could be made current by increasing the income by 110%, and by increasing expense by 50%, which would result in a much greater net income than that shown on the Exhibit, \$ 103,648. (Tr. 76-49,50)

He agreed with the government witnesses that this is a bedded deposit. The host rock would have to be removed with the barite. "\* \* \* by shooting this, \* \* \* I find that I get fragmentation enough that a lot of the separation can be made at the mine merely by screening because of the fact that the barite is so soft and has such a definite cleavage that it fractures and breaks up so much more readily than the host rock \* \* \*". (Tr. 76-52,53). He stated that, as shown on Exhibit No. 76-A, 61.5% of the material exposed on the claim is barite and 39.5% is host rock or top soil. (Tr. 76-53).

On cross-examination, he stated that barite is in each of the piles remaining at the site of eleven excavations on the claims. The sample taken to the assayer for the preparation of Exhibit No. 76-A was in a two pound coffee can. The sample was taken from a cone-shaped pile composed of about 10 or 11 yards of representative material.

Donald J. Alexander, a mining engineer, stated that he had testified at the 1973 hearing. He had prepared a supplemental mineral report, Exhibit No. 76-1, consisting of a three page narrative statement and four attachments, a plat, two pages of photographs and a certificate of analysis of four samples dated December 8, 1975. He examined the claim on October 29, 1975, accompanied by the mining claimant and others. The mining claimant did not indicate any particular place for sampling but advised the witness to take his samples anywhere. The only change he observed in mining improvements since his previous examination was that drill hole No. 2 on the No. 3 claim had been blasted.

He took four samples. Sample No. 2790 was chipped vertically over two feet of barite occurring from seven to nine feet from the surface in the southwest side of hole No. 2 at the site of drill hole No. 2.

Sample No. 2791 was taken over a four-foot exposure of barite and limestone, two to six feet from the surface, on the No. 2 claim. The sample contained visible barite. The exposure was overlain by two feet of soil and loose rocks and underlain by limestone and loose rocks bearing "very little" barite.

Sample No. 2792 was also taken from improvement No. 2 of the No. 2 claim. The sample, showing very little barite, was taken vertically from two to four feet from the surface.

Sample No. 2793 was taken at the site of drill hole No. 2 on the No. 3 claim, chipped vertically over 3 1/2 feet of some barite and some limestone from five to eight and one-half feet from the surface. The hole was 24 feet in diameter. He described the exposure, on the south side of hole No. 2, as a pod, and stated that the deposit sampled was not exposed on the north side of the pit.

The certificate of analysis attached to Exhibit No. 76-1 shows the following assay values:

Sample No. 2790	51.40% BaSO <sub>4</sub>
" 2791	85.85" "
" 2792	22.77" "
" 2793	18.15" "

His report, Exhibit No. 76-1, dated December 10, 1975, states that the Contestee advised him that no additional work had been done on the claims from August 1973 through October 1975. The No. 2 drill hole on the No. 3 claim had been blasted and no rock in place could be seen from nine feet below the surface to the bottom.

Improvement No. 3 on the No. 2 claim shows no barite in the sides and only a coating, about 1/2-inch thick over a 3 by 4 foot width in the bottom on the limestone on the southwest end. Improvement No. 4 on the No.

2 claim shows a 1/2-inch coating of barite on the limestone on a very small area, 2 feet by 2 feet, in the bottom of the improvement. He took no samples from either of those improvements.

He examined the claims again on May 7, 1976, observing that thirteen new pits or trenches had been dug. The pits are shown on a plat attached to Exhibit No. 76-1. Two pits were on the No. 2 claim. Pit No. 1 is a backhoe pit, 10 feet wide, six feet deep, and about 4 feet deep into the bank. It exposed no barite. He took no sample but he had sampled this site previously, sample No. 225. Pit No. 2 is also a backhoe pit 12 feet long, 6 feet deep and about three feet wide, showing some barite over 12 inches in limestone at 2 to 3 feet from the surface. The north side of the trench showed no barite, and he took no sample.

Pit No. 3, on the boundary line on the two claims, was 10 feet by 8 feet by 3 to 4 feet deep. A stringer of barite, 6 inches wide and traceable for about five feet was exposed at the surface on the southwest side of the pit. Only clay was exposed on the other side of the pit. He described the stringer of barite as high-grade, but it occurred as a very small pod. He took no sample.

The remaining pits were on the No. 3 claim. Pit A is 15 feet long, 8 feet wide, and 4 feet deep showing no barite, only clay and loose rock.

Pit No. 4 was 6 feet into the bank, 4 feet wide, and about eight feet deep, exposing a streak of barite 6 inches wide and clay and loose rocks. He took no sample because there was very little high grade barite. It was his opinion that the 6-inch streak of barite could not be selectively mined.

Pit No. 5, on the opposite side of improvement No. 8 from pit No. 4, was about 6 feet wide and 3 feet below the floor of improvement No. 8. He found no barite in pit No. 5.

Pit No. 6 is a very small backhoe pit on the west end of improvement No. 7. He found some barite over the top 18 inches at the surface and nothing but limestone underneath. The pit was 4 feet in diameter and about 3 feet deep.

Pit No. 7 was in improvement No. 6 which had been sampled by Mr. Birdseye. A small pod of barite, about 12 inches in width was exposed about 3 feet from the surface. Clay and limestone were exposed beneath the barite pod.

Pit No. 8 was 8 feet in diameter and approximately three feet deep, exposing a stringer 4 feet wide and 12 inches deep in the northeast end of the pit. On the southwest wide of the pit, he found clay.

He described the stringer as a pod and estimated that it comprised three or four tons if it went back three or four feet. He did not know how far the stringer extended into the bank.

Pit No. 9 is a new backhoe pit 6 feet in diameter and 3 feet deep. Barite is exposed every place in the hole. He took no sample. It was his opinion that the barite exposed in this pit might extend to the pod exposed in Pit No. 8.

Pit No. 10 is a backhoe pit in the northeast side of drill hole No. 1. It is 10 feet in diameter and approximately 12 feet deep. There was nothing but clay on the sides of the hole, so he took no sample.

Hole No. 11 is a backhoe pit, 5 feet wide, 6 feet into the bank, and six feet deep exposing only limestone, no barite whatever.

Based upon his observations on the ground, on the assay reports of 8 samples which he had taken, 3 taken by Mr. Birdseye, one taken by Pardee, and one taken by Ashby, and on an estimated area of influence for each particular sample, he had concluded that 1,985 tons of 45.52% barium sulphate could be recovered from the claims. His computations are set forth on an attachment to Exhibit No. 76-1. If the material was upgraded to a saleable 83% barium sulphate, the total tonnage would be 1,088.84.

He stated that there was not sufficient barite mineralization on the claims to warrant further exploration. It was his opinion that there were not sufficient workings on the claims to conclude that eighteen acres thereof contain large deposits of barite. It was also his opinion that the only sample taken by the Contestee since the previous hearing, consisting of ten to fifteen pounds of material placed in a coffee can, was not representative because it was not crushed, sized, or properly mixed. He stated that a lot of the assays reflected low values, averaging approximately 45% barium sulphate.

It was his opinion that the Contestee could not make a profit because there is very little proven tonnage of barite and that he did not see any continuation of the small pods of barite, other than in these workings, over any area. The tonnage is very limited and in a limited area.

On cross examination, he stated that a pod was a lense, not a continuous blanket, varying in size from nothing to several feet across, about 4 to 5 feet the largest anywhere. He stated that the pod exposed in working No. 7 was 3 to 4 feet wide and about 6 inches deep. Pit No. 3 "did show barite throughout it with a six inch stringer of barite five feet long." (Tr. 76-135). The exposure, in a pit 10 by 8 by 4 feet deep, was on the southwest side and only clay was exposed on the

northeast and north sides of the pit. He examined the spoil of pit No. 2 and saw no more barite in that than he saw in the trench. Barite was visible in the material that had been excavated from pits No. 3 and No. 4. He found absolutely no barite in pit No. 5. There was some barite in pit No. 6 and in pit No. 8, and small pods of barite were exposed in pits No. 7 and No. 9.

On June 13, 1973, he had sampled clay exposed on the No. 2 claim (sample No. 225) which was similar to the clay exposed in pit No. 10 and "all over this claim." He stated that the "correct" way to take samples is not from the material already excavated from the pits but from the material "in place."

He stated that the barite can be separated by gravity from the other minerals. Only a few 2-inch veinlets of fluorspar are scattered throughout the workings.

Thomas Cleough, after having been duly qualified as a civil engineer, testified that he had prepared an estimate of the cost of constructing two alternate routes for a road leading from the claims to the proposed millsite. (Exhibit No. 76-4). One alternate, Road A, would cost \$ 183,742.00, and Road B, somewhat longer, would cost \$ 271,483.000. The annual maintenance costs would be \$ 1,040.00 and \$ 1,445.00, respectively.

Thereupon, the Contestee testified that he had found barite exposed in each of the eleven new pits excavated in 1975. The barite was granular to massive or crystalline and in bedding planes that were up to 2 feet in thickness to 4 feet in thickness. (Tr. 76-184). Solid barite over 4 feet, close to 6 feet in thickness was exposed in Pit No. 7. Very high grade barite with minor amounts of altered limestone occurs in pit No. 8 and pit No. 9. He stated that the material in pit No. 2, described by Alexander as clay, is almost pure granular barite. "The surface waters have taken clay down through it and it has a grayish appearance, but when you take a handful of it and wash it, it is white granular barite with very little of any other material in it." (Tr. 76-187). Barite is visible in pit 8A. There was a considerable amount of barite in pits No. 1 and No. 2. It was his opinion that the barite content of material excavated from pit No. 3 exceeded 60%.

He had selected a specimen from a point ten feet east of pit No. 10, Exhibit No. 76-E. It had the appearance of clay, but contained granular barite, a very high grade sample. He demonstrated the separation of barite from the other materials comprising the specimen at the hearing. A portion of the specimen was removed, weighed, washed, and weighed again. The sample weighed 41.64 grams. After the clay was removed, the residue weighed 35.57 grams. The residue contained 11.27 grams of barite and 9.65 grams of gangue. The remaining fines were placed in a jar containing

tetrabromoethane and shaken to simulate a process known as middling. He stated that the fines contained 3 times as much barite as waste materials.

It was his opinion that the specimen contained in excess of 60% barite. He stated that Mr. Birdseye did not sample material similar to the specimen. The clay at pit No. 10 is even higher grade than the specimen. He had observed the taking of sample No. 2791. It was his opinion that, "there isn't any possible way that the sample could have run as high as eighty-five (85%) per cent. This is running almost up to pure barite." (Tr. 76-237).

He stated that, in 1972, a haulage road would have cost approximately \$ 160,000.00. Present day costs would be 30% to 50% more. He stated that the evidence submitted by the Forest Service misrepresents what actually exists on the property. (Tr. 76-253).

Mr. Alexander viewed the weighing, washing, and middling procedures demonstrated by the Contestee. It was his opinion that the sample contained 40%, or little more, barite, but not 60%. He stated that specimen was not representative of the clay that he observed on the claims. The clay that he saw in improvement No. 10 was straight clay. It just had very few or very little granules of barite in it. He did not see much of the type of material comprising the specimen exposed on that claim.

Mineral Survey No. 2259, submitted by the Contestee with the subject patent application, was filed in 1966. The survey was made in October, 1965. The survey plat depicts three large pits on the No. 2 claim and seven pits on the No. 3 claim. Those same pits are depicted on Exhibit No. 76-D. Most of the backhoe pits excavated subsequently are at the site of the original pits. The three drill holes and pits No. 9 and No. 3 are set apart from the original pits. A comparison of the two exhibits indicates that most of the exposures were completed before 1965.

The Contestee stated in his patent application (Page 6) that ore extracted as a result of exploration work had a value of \$ 24,500. Pursuant to a Power of Attorney, counsel for the Contestee submitted a sworn amendment to the patent application dated December 30, 1966. The amendment states that 2,806 tons of barite valued at \$ 28,062 had been removed. Also listed as having been removed are approximately 1563 ounces of silver valued at \$ 2,016., and 16,000 pounds of lead valued at \$ 8,320.00. The evidence submitted at the hearings does not make any positive reference to recoverable silver or lead values.

The Board's decision of April 17, 1975 held that the evidentiary record before it would not justify modification of the decision of November 19, 1971 declaring the claims invalid. That evidentiary record included the Birdseye report of April 25, 1972 (Exhibit No. 103) received in evidence at the 1973 hearing as Exhibit No. 1.

Very little new evidence on three of the four factors designated to be proven by the Board was prepared or submitted by the Contestee. As to the expected costs of the extraction, beneficiation, and other essential costs of the operations necessary to mine and sell the minerals, including capital and labor costs, the Contestee relied principally on revisions of his cost estimates originally submitted at the 1968 hearing. His opinion that those overall costs had risen approximately 50% since the preparation of the revised estimates included in Exhibits No. 76-I and No. 76-II is not supported by updated item by item cost estimates. The Board had suggested that the "evidence should focus on current estimates of costs and prices." (20 IBLA 45).

One essential cost of operation, that of the haulage road, has risen to more than \$ 200,000.00.

The Contestant did not offer any evidence to refute the Contestee's estimates of operational costs, apparently relying on its position that sufficient barium deposits to support a mining operation of the magnitude proposed by the Contestee had not been found.

As to the quantity of mineable mineral on the claims and the average grade or quality thereof, the Contestee relies on the Birdseye report and one eleven pound sample taken during additional exploratory work performed prior to the third hearing. That "mine run" or composite sample taken from pits on both claims, containing 61.5% barium sulphate, was purportedly representative of the material exposed in the backhoe pits including overburden and country rock.

On the other hand, sampling by the Contestant's expert witnesses was generally limited to those portions of the exposures bearing visible barite, excluding overburden and barren country rock. Yet the Contestant's samples contained less barium sulphate than the Contestee's composite sample.

Mr. Birdseye testified regarding the sampling of barite deposits as follows:

"The purpose of this sample was to emphasize my feeling that horizontal samples in an essentially embedded deposit like this can be very deceptive; and while it would be quite possible to take a barium sample by taking it horizontal in the limestone beds themselves, it is possible to get a very high grade barite sample by taking it horizontally in one of the lens of barite; and that is exactly what we did here. In the bottom of Pit Number 3 there was a good

exposure of barite in place which we sampled with considerable effort for a distance of about four and a half feet. The result of that sample I have shown on the exhibit to be about 65 percent barite." (Tr. 68-80)

He also stated that some of his samples were comparable to those taken by Mr. Ashby:

"Q. (By Mr. DeVesty) Do I understand what you are saying is that the vertical samples that you took compare to the vertical samples that Mr. Ashby took -- they are very similar?

A. That is correct.

Q. But where he took a horizontal and you took a vertical they are very dissimilar?

A. That is correct." (Tr. 68-97)

Thus, the Contestee's method of sampling differed from that of both his own expert witness and the Government's expert witnesses. I am not convinced that the higher assay values shown in the Contestee's last composite sample are representative of the exposed barite, overburden and country rock from which the sample was purportedly taken. Greater weight is accorded to the assay results of the samples taken by the mining engineers from barite exposures in place. The exposures bear disparate percentages of barite and the samples are representative of only those limited exposures from which they were removed.

The testimony of the Contestant's witness respecting the very limited zone of influence of the barite bearing exposures has not been refuted. The Contestant has shown, by preponderance of the evidence, that the barite occurs in isolated pods and in narrow, discontinuous, irregular fractures. Alexander's estimate that approximately 2000 tons of ore bearing 45.52% barium sulphate is presently exposed on the claims has not been refuted. There is simply no convincing evidence in the record which supports the Contestee's contention that thousands of tons of barite bearing material more than eight feet in depth occur on the claims. The more recent exploration reveals that the exposed pods and lenses are more limited than previously estimated.

The Contestee clearly demonstrated that barite could be washed from clay exposed on the claims, Exhibit No. 76E. However, he did describe the exhibit as "a very high grade sample," and Alexander's testimony that very little similar clay occurs on the claims has

not been refuted. None of the mining engineers, including Mr. Birdseye, sampled such clay material. There is insufficient evidence in the record to support a conclusion that clay similar to that comprising the exhibit has been exposed in significant quantities on either of the claims.

According to the Contestee's own evidence, an expenditure exceeding \$ 600,000.00 is required to commence mining and milling operations. He proposes to mine 75 tons of raw material per day. At this rate of production, the Contestant's most recent tonnage estimate of exposed mineable barite bearing ore, 1,985 tons, would be exhausted within 27 working days. The net price which could be received for the final mill product would be only a fraction of the fixed costs. The remainder of the fixed costs could be recovered only by further exploration leading to the exposure of thousands of tons of more mineable ore than has been exposed heretofore. Since this is a shallow deposit, conducive to relatively inexpensive exploration, prudence would appear to dictate that further exploration be conducted before the fixed costs of mining and milling operations are incurred. In short, the claims are still in the exploratory stage. Expenditures for mining and milling on the scale proposed by the Contestee are not warranted by the limited, discontinuous deposits presently exposed.

The Contestee has failed to introduce sufficient reliable probative evidence which would justify modification of the findings or conclusions set forth in the Board's decision of November 19, 1971. Nor has he proven compliance with the mining laws by a preponderance of the evidence as required by the Board's decision of April 17, 1975.

It is concluded that minerals have not been found within the limits of the claims in such quantity as to justify a person of ordinary prudence in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine.

It is recommended that, (1) The Landsend No. 2 and Landsend No. 3 lode mining claims be declared null and void, and (2) Mineral Patent Application New Mexico No. 145 be rejected.

The parties may file briefs herein within thirty days of receipt of a copy of this recommended decision.

---

R. M. Steiner  
Administrative Law Judge

Distribution:

Howard S. McKenzie, 407 Amherst S.E., Albuquerque, New Mexico 87106 (Cert.)  
Demetrie L. Augustinos, Attorney, Office of the General Counsel, U.S. Dept. of Agriculture, 4017  
Federal Building, 517 Gold Avenue, S.W., Albuquerque, New Mexico 87101 (Cert.)

