DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 3129

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This document has been recorded as

Exploration Assistance

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Copies to USGS, USBM and 1 cy retained in Region V.

Routing Slip

To:	Code 400, Rm. 3538	Date	7/22/53.
To:	Open Conn	Date	7-31-53
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CONTROLLED DOCUMENT

July 30, 1953

3129-
Tung

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $11,850.11
Docket No. DMEA 3129 - Tungsten
Bald Mountain Mining Company
Hellings Tungsten property
Lawrence County, South Dakota

The denial of the subject application by this Division is based on the following information:

(1) The applicant proposed to explore two fault zones by the following program: A 200-foot crosscut adit followed by 100 feet of drifting on each of the two fault zones. Five 20-foot raises were also requested.

(2) Only one small occurrence of tungsten mineralization has been found on the subject property. Wolframite and scheelite are present in the muck from the small 10-foot test pit just north of the #1 fault. The test pit is located above the fault plane. A small trench 50 feet north of the test pit probably was excavated along mineralization. The mineralization does not appear to be necessarily related to the fault.

(3) The exploration program proposed by the applicant would not explore the fault zones in the area where the only known occurrence of tungsten mineralization is located.

(4) The examining field team recommends denial of the subject application for exploration assistance because there is very little chance that a significant discovery may be made.

(5) The Field Team recommends denial.

(6) The Commodity Divisions of the Geological Survey and Bureau of Mines concur with the denial.

W. S. Ma[illegible]
W. S. Martin, Acting Chief
Iron and Ferro-Alloys Division

FARutledgw:foc
cc: Docket
Code 400
Adm. Read.
File

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

MEMORANDUM July 27, 1953

TO: W. S. Martin, IMEA

FROM: D. M. Lemmon, USGS

SUBJECT: Exploration application $11,850 IMEA 3129
Bald Mountain Mining Co. Tungsten
(Hellings Tungsten property)
Lawrence County, S. D.

This property was examined May 20, 1953 by E. O. Binyon (Bureau of Mines) and J. A. Redden (Geological Survey). Their report, dated July 13, 1953, recommends denial of the application for exploration.

I concur in the recommendation that the application be denied.

Dwight M. Lemmon

cc: Mr. Martin (3)

400

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

Defense Minerals Administration
RECEIVED
JUL 27 1953

dmea July 20, 1953

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Bald Mountain Mining Co. application and Field Team Report

Here are the original and two copies of an application, together with the original and three copies of the Field Team Report, on the application by the Bald Mountain Mining Co. for exploration of what is known as the Hellings Tungsten property, Lawrence County, S. Dak.

On the basis of the information available to the Field Team recommendation is that the application be denied.

One copy of the application has been retained by this office.

A. B. Needham
Executive Officer
Field Team, Region V

Attachments

cc: C. E. Dutton
J. A. Redden
E. O. Binyon

Reviewed by
DMEA OPERATING COMMITTEE
7-27-53
(date)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 23 1953

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION V

Bald Mountain Mining Company

Trojan, S. Dak.

DMEA-3129

E. O. Binyon, Mining Engineer
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

July 13, 1953

Reviewed by
DMEA OPERATING COMMITTEE
7-27-53
(date)

Defense Minerals Administration
RECEIVED
JUL 23 1953

DEFENSE MINERALS EXPLORATION ADMINISTRATION
Report of Field Examination

by

E. O. Sinyon, Mining Engineer
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

Docket No.:

Applicant: Bald Mountain Mining Co., Trojan, S. Dak.

Commodity: Tungsten

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The property, held under a lease agreement between the applicant and Mrs. Delia M. Hellings, Deadwood, S. Dak., comprises 16 unpatented lode mining claims, known as the Abbie, Abbie No. 1 through 7 and George and George No. 1 through 7. All claims are a matter of record with the Register of Deeds for Lawrence County at Deadwood, S. Dak.

The claims, located near the head of Burno Gulch, approximately 4.5 miles west of Maitland and 10 miles northwest of Deadwood and Lead, are in sections 2 and 11, T. 5 N., R. 2 E., B.H.B.M., Lawrence County, S. Dak.

Access to the property from Deadwood, the nearest rail point and supply center, or from the small town of Maitland, is by improved gravel and unimproved dirt roads. Owing to heavy snowfall and run-off during the winter and early summer, the roads become practically impassable and the property would be inaccessible during this period.

The property was examined on May 20 in company with P. A. Miller, Geologist for the applicant. Approximately 2 hours were spent on the examination.

Following a discussion pertaining to the applicant and the method of exploration with Mr. Miller, he stated he wished to discuss the matter further with the principle of the company and then submit additional copies of the application if the company decided to proceed with the application. The additional forms were received June 14, 1953.

Based on the geology, as described in the report, and other available information, it is concluded that the probability of making a substantial discovery is insufficient to warrant exploration as outlined and it is recommended that the application be denied.

NAME, LOCATION, AND DESCRIPTION OF THE PROPERTY

Locally the property is known as the Hellings Tungsten and was owned by Mrs. Delia M. Hellings of Deadwood, S. Dak., now deceased. It comprises a contiguous group of 16 unpatented lode claims recorded as the Abbie, Abbie No. 1 through 7, the George and George No. 1 through 7.

The claims are in sec's 2 and 11, T. 5 N., R. 2 E., B.H.B.M., Lawrence County, S. Dak., and are located along the west side of Burno Gulch and extend from the head of the gulch northward approximately one and one half mile.

The property is about 4½ miles by road west of Maitland and between 10 and 12 miles northwest of Deadwood. Deadwood is the nearest rail point and largest supply center. Housing facilities are available at Deadwood and possibly at the small community of Maitland. From Deadwood, Spearfish, or Maitland, the property is accessible over improved gravel and unimproved dirt for the greater part of the year. However, the 4 to 5 miles of unimproved dirt roads become practically impassable during the winter and early spring, owing to heavy snowfall and spring run-off, and without an excessive amount of maintenance the property would be inaccessible for three to four months of the year.

Mine workings consist of a side hill cut which has been ball dozed off for approximately 200 feet in length and varying from 20 to 60 feet in width. Near the center of the cut there is an open pit approximately 20 feet in length, 6 feet in width and 15 feet in depth at the face. Approximately 200 feet south of the surface working an adit bearing south and about 100 feet in length has been driven. Other workings consist mainly of shallow cuts and pits which have been done for assessment work.

The only known occurance of tungsten minerals on the property is in the open cut. None of the contacts between porphyry and limestone showed mineralization and at no other place along the shear zones was wolframite or scheelite noted.

At present little or no tungsten mineralization can be seen in either the face or sides of the cut.

PROPERTY RIGHTS

The applicant holds the property under a lease agreement signed by Mrs. Delia M. Hellings, Deadwood, S. Dak. Since signing the agreement Mrs. Hellings has died and the property is now being probated. However, the applicant states that by agreement with the

lawful heirs the lease will continue in force.

A copy of the lease is included with the application.

PAST PRODUCTION

No production record is available and it was not learned whether or not any shipments were made from the property. Old notes mention that approximately 20 tons of ore of unknown grade was in the bin.

The same information source mentions four samples taken from the pit and dump which are listed below.

		Percent WO_3
1.	Sample across 5 feet of fracture zone exposed in pit.	None
2.	Grab sample about 6 ft. wide from bottom of same pit and in northeastern.	5.48
3.	Grab sample repeated in same location as sample 2.	4.90
4.	5 pounds quartered from 50 pound sample of several hundred pounds of ore piled on dump.	20.87

The bottom of the pit is not now accessible and little or no mineralization can be seen in the upper part.

GEOLOGY

The geology of the area to be explored is essentially as indicated on the geologic map accompanying the report. The exposures of the Deadwood formation appear to be isolated fault blocks. The Deadwood formation outcrops are limited in their southeasterly extension to approximately the colored area on the map; porphyry crops out along the edge of Burno Creek. The outcrops of Deadwood formation may represent a small down faulted graben. Probably the #2 fault on the map parallels the northwest contact of the northern outcrop of the Deadwood formation rather than as projected on the map. No field evidence was noted for the #3 fault other than it represents a contact between the porphyry and Deadwood formation.

The #1 fault is fairly well exposed in the large open cut. No mineralization was found in place along the fault. Wolframite and associated scheelite ore were present in muck from the small, 10 foot deep test pit described by the Applicant's geologic report. The test pit and mineralized area is located above the fault plane. The mineralization is probably localized by the fault. The small subtrench

50 feet north of the test pit is an old working which probably was excavated along mineralization. It does not necessarily appear to be related to fault #1.

According to Mr. Miller they have not been able to detect any mineralization by mineral light anywhere on the claims other than that at the test pit. The drift along the southernmost outcrop of Deadwood formation failed to disclose any ore. He admitted that his company had not examined all exposures. It is probable, however, that previous lessees of the property, including the Homestake Company, have conducted rather extensive surface searches for additional scheelite. Since outcrop exposures are fairly abundant, it is suggestive that mineralization is largely restricted to the test pit.

It is recommended that the application be denied on the basis of insufficient geologic probability of making a substantial discovery. This is based largely on the very limited showing of ore. It is believed that if more abundant mineralization was present, more mineralized outcrops would be present. The Geological Survey's field team member is not personally familiar with tungsten deposits and requests that the reviewer of the recommendation take this factor in consideration.

If it is decided that exploration is warranted, it is believed that approximately 1,000 feet of BX drill core could adequately explore the mineralization along fault #1 and the Deadwood-porphyry contacts and would determine the feasibility of developing the property.

The applicant's geologist stated that the Bald Mountain Mining Company had had very poor results with diamond drilling and that he was not certain if the company's directors would agree to a drilling exploration.

PROPOSED EXPLORATION

In the applicant's proposal exploration is to be by cross-cutting, drifting and raising along faults as shown in the accompanying maps.

The adit would cross cut fault No. 2 and a drift would be driven to the north along this fault, the adit would be extended to intersect fault No. 1 (on which the only mineralization has been found) and then to drift southwest along the shear zone. A total of 400 feet of adit (both cross cut and drift) and 100 feet of raise is proposed. The estimates overall unit cost is $23.70 per ft.

The applicant is in a position to furnish sufficient labor, supplies and equipment to carry on the project.

Water supply is available from Burno Creek for an exploration project or for mining operations.

In a discussion with the applicant, it was pointed out that based on the exposed mineralization in the main open cut, the general geology, the lack of other mineralized exposures on the property, the property did not warrant exploration to the extent proposed in the

application. It was suggested that if any exploration was warranted, core drilling would be a more economical and feasible method as a preliminary step. Mr. Miller was somewhat in agreement but stated that the company had been unsuccessful with core drilling (BX size holes) in the shear of fraction zones in their gold mine and that he would have to discuss the matter with the management.

Apparently the company has decided against core drilling as a means of exploration and wishes to explore the property as outlined in the application.

Should others of the DMEA decide that some exploration is warranted, it is the field teams opinion only a limited amount of work at most should be done. This should be confined to the mineralized fault zone, fault No. 1, and would consist of 4 Bx size core drill holes with an aggregate total footage not to exceed 500 feet. This would permit exploration of the zone to a depth of 75 feet down dip.

If by additional geologic work by the company it is shown that there is sufficient indication of mineralization along the fault No. 2 zone to warrant exploration, then this fault could be explored by approximately the same amount of core drilling as for fault No. 1.

However, since the best exposure of mineralization on the property along fault No. 1 is so limited in extent that exploration can not be recommended, it is considered even less likely that exploration along fault No. 2 would disclose ore of a minable quanity or grade.

As stated, the field team is of the opinion that the property does not warrant any exploration because there is little probability of making a discovery of sufficient ore for an economic mining operation.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 22 1953

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. DMEA-3129
Metal or Mineral
Date Received 7/22/53
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address. Bald Mountain Mining Co. Trojan, S.D. Incorporated in State of So. Dak.
President: Mr. O.D. Collis, Clinton, Iowa
Secretary & Treasurer: Mr. Herd Riedesel, Clinton, Iowa
Operating Manager: Mr. R. J. Stoehr, Trojan, So. Dak.

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract
Listed in separate sheet as explanation of article 3-A

(*b*) State any mine name by which the property is known. Hellings Tungsten property.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
Lessee

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. Copy of lease agreement is enclosed with this form.

(*e*) If you own the land, describe any liens or encumbrances on it

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. This information is enclosed with this form en labeled as explanation of Article 3F.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

16—66551-1

Explanation of articles 4 (a) to 4 (c) are included in the enclosed geologic report.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Wolframite and scheelite

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. Included in geologic report & shown on geologic maps.

(*c*). The work will start within 30 days and be completed within 7 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. Explained on attached sheet

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes

(*b*) How do you propose to furnish your share of the costs?

☐ Money ☒ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated June 10, 1953, ~~195~~

Bald Mountain Mining Co
(Applicant)

By R. J. Steele Manager

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

Bald Mountain Mining Co.
Trojan, South Dakota

ARTICLE 3

DESCRIPTION OF PROPERTY

3 (a)

The land which is to be explored consists of sixteen unpatented mineral claims comprising a total of approximately 121 acres. It is located, posted and recorded under the following names:

Abbie Lode	George Lode
Abbie #1 Lode	George #1 Lode
Abbie #2 Lode	George #2 Lode
Abbie #3 Lode	George #3 Lode
Abbie #4 Lode	George #4 Lode
Abbie #5 Lode	George #5 Lode
Abbie #6 Lode	George #6 Lode
Abbie #7 Lode	George #7 Lode

The above named claims are all that are to be included, and will benefit from the proposed exploration program. This land is bounded on the north by unpatented mineral claims, on the south by mineral surveys 1377, 1746 and 1806, on the east by unclaimed land and on the west by mineral survey 1376.

3 (b)

The land consists of 16 unpatented claims, the locations of which are recorded in the Lawrence County courthouse at Deadwood, South Dakota. The book and page numbers for each recorded location notice are as follows:

CLAIM NAME	BOOK	PAGE
Abbie Lode	311	381
Abbie #1 Lode	311	382
Abbie #2 Lode	311	383
Abbie #3 Lode	311	384
Abbie #4 Lode	311	385
Abbie #5 Lode	311	386
Abbie #6 Lode	311	387
Abbie #7 Lode	311	388
George Lode	311	389
George #1 Lode	311	390
George #2 Lode	311	391
George #3 Lode	311	392
George #4 Lode	311	393
George #5 Lode	311	394
George #6 Lode	311	395
George #7 Lode	311	396

UNIT 5 (d)

OPERATING EXPERIENCE
and
BACKGROUND OF THE APPLICANT
and
SUPERVISORS OF OPERATIONS

5 (d)

The Bald Mountain Mining Co., a corporation, has been engaged in the mining of gold-silver ores in the Bald Mountain Mining District of Lawrence County, South Dakota, since the year 1934. During this time, the company has operated continuously except for the period during World War II when gold mines were closed by government order. The gold-silver ores mined by the company are and have been relatively low grade, yet the company has operated continuously and profitably and has established a record of favorable low cost production.

Those persons who will supervise the exploration program, if approved, have served the Bald Mountain Mining Co. in responsible positions during the past. Due to the similarity in the occurrence of the ore-bodies in the two districts and the mining methods employed, the appointed supervisors and engineers have a thorough knowledge of the problems at hand and should, therefore, be well able to supervise the proposed exploration program.

Bald Mountain Mining Co.
Trojan, South Dakota

RECEIVED
JUL 23 1953

COST ESTIMATE OF PROPOSED
EXPLORATION PROJECT

The exploration project as proposed in the geologic report and illustrated on the enclosed maps will require the following expenditure to complete the maximum amount of proposed work. The itemized costs will be arranged according to the outline set forth under article 6 of form DF-103, application for aid in an exploration project.

6 (a) Independent Contracts

Contracts will be let for the driving of drift and raise at the following rates of pay:

1. Slusher Drift - $9.00/foot.
2. Hand mucked Drift - $10.00/foot, when tram is over 200 feet the payment will increase to $10.50/foot of advance.
3. Hand mucked raise - $10.00/foot.

Under the above rates of payment, contractors are required to purchase their own powder, fuse and primers for blasting; drill, blast, and muck and tram to the waste or ore dumps the rock broken; install rail and pipe needed for mining and tramming. The company will furnish all mine equipment and supplies, except those above mentioned, and will repair and maintain any and all equipment used on the job contracted.

The contractors will be subject to supervision by any of the company supervisors assigned to the specified program.

Costs of Independent Contracts

100 feet of slusher drift @ $9.00/foot	=	$ 900.00
200 feet of handmucked drift @ $10.00/foot	=	2,000.00
100 feet of hand mucked drift @ $10.50/foot	=	1,050.00
100 feet of handmucked raise @ $10.00/foot	=	1,000.00
Total Cost	=	$4,950.00

Contractors will purchase powder, fuse and primers at the following prices:

Powder - $10.00/50 lb. Box
Fuse - $15.25/1000 feet
Primers - $20.00/1000 primers

The above work is all that is to be let out for independent contract.

6 (b) Labor, Supervision and Consultants

Labor

1 Bulldozer Operator	160 hours	@ $1.28/hour =	$204.80
1 Carpenter.....	24 hours	@ $1.24/hour =	29.76
2 Laborers.....	64 hours	@ $1.04/hour =	66.56
1 Truck Driver.....	24 hours	@ $1.13/hour =	27.12
		Total	$328.24

Supervision

Mine.....	15 days	@ $325/month =	$162.50
Construction.....	10 days	@ $11.15/day =	111.50
Geological.....	1 month	@ $350/month =	350.00
Engineering.....	1 month	@ $350/month =	350.00
		Total	$974.00

6 (c) Operating Materials and Supplies

2 -	Used ore cars	@ $25.00/car =	$ 50.00
500'-	12# mine rail	@ $0.28/foot..... =	140.00
475'-	2" air pipe	@ $0.39/foot..... =	185.25
550'-	3/4" water pipe	@ $0.15/foot..... =	82.50
150 -	Track ties	@ $.15/tie..... =	22.50
3 -	12# rail switches	@ $15.00 each... =	45.00
100'-	3/4" water hose	@ $0.26/foot..... =	86.00
100'-	1½" air hose	@ $1.40/foot..... =	140.00
500 lbs. -	Drill steel	@ $0.25/lb. ..... =	125.00
14 -	Tungsten carbide bits	@ $15.00/bit =	210.00
100'-	Timber (stulls)	@ $0.05/foot..... =	5.00
200'-	Timber	@ $0.11/foot..... =	22.00
4 -	Shovels	@ $2.88/shovel..... =	11.52
2 -	Picks	@ $2.42/pick..... =	4.84
2 -	14" pipe wrenches	@ $3.77/wrench.. =	7.54
2340 gal -	Gasoline for compressor	@ $.30/gal =	702.00
280 gal -	Deisel for bulldozer	@ $0.175/gal. =	50.12
164 gal -	Gasoline for pickup and truck @ $0.30/gal. =		49.20
	Miscellaneous spikes, nails, bolts, etc. =		15.00
		Total... =	$1,953.47

6 (d) Operating Equipment

The following equipment is owned by the operator and will be furnished on the following use-allowance basis. (1/60 of the total value/month)

ESTIMATED VALUE	KINDS OF EQUIPMENT	PERIOD OF TIME	CALCULATED MONTHLY USE ALLOWANCE	TOTAL COST/MO.
$7,500	TD-18 Bulldozer	3 months	@125.00/mo	$375.00
750.	Pickup Truck	3 months	12.50/mo	37.50
2,500.	Portable Compressor	7 months	41.67/mo	291.69
1,000.	2 Rock Drills	7 months	16.67/mo	116.69
600.	Slusher and Cable	7 months	10.00/mo	70.00
230.	Small Water Pump	7 months	3.83/mo	26.81
10,000.	Ore Truck (L-190 Int.)	0.20 months	166.70/mo	33.33
			Total	$951.02

6 (e) **Rehabilitation and Repairs**

Road repair will be undertaken. Costs of operating supplies, equipment, labor and supervision needed for this work are included in units 6 (b), 6 (c) and 6 (d) above.

6 (f) **New Buildings, Improvements, Installations**

The following improvements are to be established:

1 Waste Dump and construction of 350 feet of new road.
Materials needed:

200' feet of 2" plank @ $0.07/foot	=	$14.00
200' feet of 10" timber @ $0.15/foot	=	30.00
Track spikes, nails, bolts, etc.	=	5.00
Total		$49.00

Additional operating supplies, equipment, labor and supervision for this work are included in units 6 (b), 6 (c) and 6 (d) above.

6 (g) **Miscellaneous**

In the following maintenance and repair costs, labor has been included and, therefore, is not included in unit 6 (b) above.

TD-18 Bulldozer maintenance and repair	- 160 hours @ $3.00/hour	=	$ 480.00
Pickup " " "	- 75 days @ $1.10/day	=	82.50
Compressor " " "	- 182 days @ $2.46/day	=	447.72
Rock Drills (2) " " "	- 182 days @ $1.78/day	=	323.96
Slusher " " "	- 182 days @ $1.00/day	=	182.00
Small water pump " " "	- 182 days @ $ .26/day	=	47.32
10-Ton Truck (L-190 International) "	- 5 days @ $4.83/day	=	24.15
Analytical work - Sample Analyses.....		=	120.00
Accounting and bookwork - 1 man 20 days @ $9.52/day.....		=	190.40
Accounting and bookwork - 1 man 20 days @ $7.50/day.....		=	150.00
Payroll taxes - Social Security and State Unemployment @ 2% of $1,302.24...		=	26.04
Total.....			$2,080.09

6 (h) **Contingencies**

Contingencies should be allowed for maintenance of roads in case of heavy rains or early spring and fall snows. Also, allowances should be made for damage and loss of time from fire, theft, or any other unavoidable causes of unnecessary expense. 5% has been estimated as a favorable allowance.

5% of $11,285.12 = $ 564.29

Grand Total of Costs = $11,850.11

Government participation	=	$ 9,587.58
Operator participation	=	2,262.53
Total	=	$11,850.11

Total cost/foot of drift and raise = $\frac{\$11,250.00}{500 \text{ ft.}}$ = $23.70/foot.

COPY

UNIT COST [illegible] FROM

ENCLOSED ESTIMATED TOTAL COSTS

a. Independent Contracts (Labor)

$4,950/500 feet = $9.90/foot of drift and raise.

b. Labor, Supervision and Consultants
Labor
$328.24/500 feet = $0.66/foot of drift and raise.

Supervision
$974.00/500 feet = $1.95/foot of drift and raise.

c. Operating Materials and Supplies

$1,953.47/500 feet = $3.91/foot of drift and raise.

d. Operating Equipment (Use Allowance)
$951.02/500 feet = $1.90/foot of drift and raise.

e. Rehabilitation and Repairs

None

f. New Buildings, Improvements and Installations
Waste Dump
$49.00/500 feet = $0.10/foot of drift and raise.

g. Miscellaneous

$2,000.00/500 feet = $4.10/foot of drift and raise.

h. Contingencies
5% of Total Cost = $504.29
$504.29/500 feet = $1.13/foot of drift and raise.

Total Cost/foot = $23.71/foot of drift and raise.

Bald Mountain Mining Co.
Trojan, South Dakota

EXPLANATION OF ARTICLE 7 (b)

The operator proposes to furnish his share of the costs by offering the following equipment for use at the designated rental amount.

TD-18 Bulldozer	100 hours	@ $9.00/hour	=	$ 905.60
Compressor	180 days	@ $7.92/day	=	$1,441.41
2 - Rock Drills	182 days	@ $2.42/day	=	440.65
Slusher and Wire Rope	182 days	@ $1.39/day	=	252.00
		Total	=	$3,039.66

In rental of the above units, no labor will be supplied by the operator for actual operation of the equipment. The only unit affected by this would be the TD-18 bulldozer which requires an operator. The listed rental prices include all repair, maintenance, fuel, depreciation, and other necessary expenditures, these costs will be assumed by the operator.

COPY

THIS AGREEMENT OF LEASE, made and entered into this 24th day of October, 1952, by and between Delia M. Hellings, party of the first part, and the Bald Mountain Mining Company, party of the second part, WITNESSETH:

That the said party of the first part, for and in consideration of Ten Dollars ($10.00) and other valuable considerations, covenants and agreements hereinafter expressed to be paid, kept and performed by the said party of the second part, has leased, let and demised, and do lease, let and demise unto the said party of the second part, the following described premises, to-wit: The unpatented lode claims described as the Abbie, Abbie No. 1, Abbie No. 2, Abbie No. 3, Abbie No. 4, Abbie No. 5, Abbie No. 6, Abbie No. 7, George, George No. 1, George No. 2, George No. 3, George No. 4, George No. 5, George No. 6, George No. 7 on location certificates recorded in Book 311 pages 381 through and including 396 on file in the county court house in Lawrence County, South Dakota. These claims are located in Sections 11 and 14 Twp. 5 N. Rge. 2 E., B.H.M. Lawrence County, South Dakota.

To Have and to Hold for the purpose of mining, with power to assign or sublet the whole or any part of the said premises, for the term of three years from the date hereof or until said party of the second part notifies party of the first part in writing of its intention to abandon or terminate this Agreement of Lease.

Said party of the second part, for and in consideration of the premises aforesaid, has covenanted, contracted and agreed, and by these premises does covenant, contract and agree with the said party of the first part, her heirs, executors, administrators, successors or assigns, to commence work on said premises within nine months from the date of this agreement and to work the same with reasonable diligence, in a thorough and workman like manner, to keep accurate records and accounts, and to render monthly statements to said party of the first part, her

agent or attorney, showing the amount of ore taken from said premises and the yield of the same, and the cost of hauling and milling the same, and to pay as a royalty to said party of the first part, her agent or attorney, as follows, to-wit: 10% OF THE NET MILL OR SMELTER RETURNS on all ore taken off the aforesaid described property.

The net mill or smelter returns shall be determined by the value received from the sale of the ore after deducting therefrom the cost of processing and haulage charges from the mine to the mill or smelter.

The originals, or certified duplicates of the mill or smelter statements for all ores shipped hereunder, shall be forwarded each month to the first party, with remittance for the royalty due thereon.

Party of the first part shall be entitled to enter into and inspect the workings of the second party made under the terms and conditions of this lease, to take samples, to inspect smelter and mill returns, and to take all steps or proceedings proper for the safe-guarding of the interest of the first party hereunder.

In consideration of the terms and covenants herein contained, the first party hereby gives and grants unto the second party, its heirs or assigns, the option to purchase the property hereby leased, at any time prior to the expiration or termination by forfeiture, or otherwise, of this lease for the sum of Five thousand dollars ($5,000.00) cash less royalty payments previously paid to the first part under the terms of this agreement upon the payment of which the second party shall thereafter be entitled to the possession and enjoyment of said property as a purchaser and owner thereof, instead of as a lessee hereunder.

Said party of the second part furthermore agrees that the said party of the first part, her agent or attorney, shall have the right at any and all times to enter upon and descend into any

and all parts of said premises, and that the said parties of the second part will render to her all the assistance in its power in so doing.

Said party of the second part furthermore agrees that in case he fails to commence work on the said premises aforesaid, or to work the same continuously and with reasonable diligence and in a workmanlike manner, or render statements or to pay said rental as aforesaid, or in any respect to keep and fulfill any and all agreements herein expressed, or implied, then and in that case it shall be lawful for the said party of the first part, her agent or attorney, to declare this lease void after 30 days written notice of termination, and without process of law to enter upon, and take possession of said premises, and also at the expiration of the lease by limitation, said party of the second part agrees to surrender, yield and deliver to said party of the first part, her heirs, executors, administrators, successors and assigns, quiet and peaceable possession of said premises in good condition.

Should the mining operations of second party hereunder be delayed or suspended by any unavoidable cause, or by a strike or war making it advisable for the second party to cease operations, the length of time for which it is so delayed shall be added to the terms of this lease.

Party of the first part further agrees to settle all questions arising over ownership of aforesaid described property. First party also agrees to settle all questions arising in regard to any previous leases on said above described property.

Witness	First Party
Witness	Bald Mountain Mining Co. Second party

MF-202

LANDLORD'S SUBORDINATION AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned is the owner in fee simple of that certain parcel of ground in the county of Lawrence, State of South Dakota, described in a certain Exploration Project Contract dated February, 1953, between Bald Mountain Mining Co., the Lessee of said property, and the United States of America;

NOW, THEREFORE, the undersigned, as Lessor of said property under lease dated October 24, 1952, does by these presents subordinate all of his right, title, and interest under the provisions of said lease to the right, title, and interest of the United States of America under the provisions of said Exploration Project Contract, and agrees that the lien and claim of the United States of America under the provisions of said contract shall be prior to the undersigned's rights to rentals or royalties under the terms of said lease; and

The undersigned further agrees that if said leasehold interest should be surrendered or if said lease should terminate at any time prior to the expiration of the rights of the United States of America under said Exploration Project Contract, the undersigned shall assume and does hereby assume all of the obligations of the Lessee under said Exploration Project Contract to make repayment to the United States of America according to the terms of said contract; and

The undersigned agrees to commit no act, nor assert any claim under judicial process or otherwise that may contravene or conflict with the prior lien and claim of the United States of America under the provisions of said Exploration Project Contract.

This undertaking and covenant shall be binding upon the heirs, successors, and assigns of the undersigned.

Dated this 3 day of February, 1953

Mrs Nelia M. Hellings

U. S. GOVERNMENT PRINTING OFFICE 16—64582-1

REPORT OF INVESTIGATION

AND

RECOMMENDATIONS

FOR FUTURE EXPLORATION OF

THE HELLING PROPERTY

COPY

By

P. A. Miller

BALD MOUNTAIN MINING CO.

Trojan, South Dakota

3 January 1953

Bald Mountain Mining Co.
Trojan, South Dakota

GEOLOGICAL REPORT

HELLING TUNGSTEN PROPERTY

INTRODUCTION

The Helling property is located in the northern Black Hills near the Carbonate mining district in Lawrence County, South Dakota. It is accessible by graveled and mountain road from Lead and Deadwood approximately 10 miles southeast, and by paved highway and mountain road from Spearfish, 12 miles to the north. During the winter and spring months, however, the mountain roads leading to the area become impassible. With repair and maintenance, these roads could be traveled except during periods when very severe snowfalls and heavy spring thaws were experienced. The nearest railroad shipping and supply point would be at Deadwood, and the nearest residence point at Maitland, South Dakota, a small settlement approximately 4.5 miles to the east. Housing facilities are also available at Deadwood, Lead and Spearfish. The property consists of 16 unpatented claims comprising an area of approximately 121 acres. A small amount of water for mining is available from Burno Creek which passes through the property, and electrical power for mining could possibly be supplied by the Homestake Mining Company which has a high voltage power line passing within 500' of the present workings. The area is heavily wooded with Ponderosa Pine thereby making timber for mining readily available. Labor for a limited exploration project could by supplied by the Bald Mountain Mining Co.

Examination of the property was carried out to determine

the nature of the ore deposits and the feasibility of further exploration of the area. Mapping was done in a rather limited time by transit and stadia methods, elevations shown on the enclosed maps and sections are not true but were established from an arbitrary point of assigned value to show relative differences in elevation.

The writer is indebted to Mr. D. H. Mullen of the U. S. Bureau of Mines for his cooperation in furnishing information regarding previous investigations of the property in question.

SUMMARY AND CONCLUSIONS

Only two rock types are exposed on the Helling property, the oldest being sediments of the Cambrian Deadwood formation, the youngest are Tertiary rhyolite and quartz monzonite porphyries. It is in this Tertiary igneous material that the known ore deposit occurs. The orebodies are localized along fault zones which are variable in size and magnitude of displacement. In the past some exploration was carried out along fault planes separating quartz monzonite and Deadwood formation, and apparently no ore was found. The ore consists of highly silicified and stained igneous material in which the ore minerals wolframite and scheelite have been introduced through a replacement action. The ore minerals occur mainly as lenticular "nodules" in the mineralized material which may vary in size from a fraction of an inch to several inches in diameter. No ore is now exposed in place in any of the workings, however, material blasted from the test pit and open cut shows scattered fragments of ore.

Analyses of material sampled during this investigation

varied from 0.04% WO_3 to 2.5% WO_3 with seven analyses averaging 0.64% WO_3. Prior to the time of the last ore shipment made from the property, an investigation was conducted by engineers of the U. S. Bureau of Mines. Analyses of ore in place and ore sorted and stockpiled made by the Bureau of Mines engineers showed a WO_3 content varying from 5% to 10%. As stated before, this ore has apparently been shipped, and since that time no additional mining has been done. The report by the Bureau of Mines was favorable and indicated that exploration should be carried out by a private concern with the aid of federal funds.

There is every indication that the property shows sufficient possibility to warrant a limited exploration program which would definitely establish whether or not mineable orebodies are present in this area.

RECOMMENDATIONS

It has been concluded by the staff of the Bald Mountain Mining Co. that some form of exploration program should be planned and put into effect to determine if ore is present in sufficient quantities to support a profitable operation. Such a program should be definitely limited in its scope, and of course should be designed to give the most information at the least possible cost.

A program has been worked out on the basis of available information, and the proposed work is shown on the enclosed geologic map. Crosscutting seems to be the most feasible way of exploring in such an area. Diamond Drilling was considered; however, where ore is "spotty" or discontinuous drilling often

fails to achieve the desired results. It is conceivable that diamond drilling could later be employed for the purpose of location of fault zones. The proposed exploration work would consist of driving 200 feet of crosscut to the downward extension of #2 fault, the crosscut to be driven at a level approximately 100 feet below the open-cut workings. As shown in Plate A, there are three possible fault zone intersections in the immediate area, these should be at least partially tested as they are favorable locations of ore deposition. #1 fault should be tested by at least 100 feet of drift, as it is along this zone that the only known ore deposits occur on the surface. #2 fault should be followed to its possible intersection with #1 fault and then tested with at least a 20 foot raise. Four other 20 foot raises should be employed to test the possible ore zones at points approximately coinciding with those indicated on plate A.

Variations in the strike of the faults or lack of assumed extensions may alter the planned exploration considerably; however, #1 fault is sufficiently pronounced and traceable so that its presence is definitely established. The crosscut should proceed to the point shown and #1 fault should be tested as indicated. If ore is found, but faults #1 and #2 are not encountered, diamond drilling can then be employed to explore for other fault zones that can later be tested by crosscutting. The maximum amount that would be undertaken under a preliminary exploration program would be as follows:

1. Construction of a short road, as seen on plate A, to a point below the site of the portal. Also minor repair of the Burno Gulch road where needed.
2. Construction of a waste dump.

3. Driving of 400 feet of drift as shown on plate A.

4. Driving of five-20 foot raises as shown on plate A.

GEOLOGY

The oldest rocks exposed in the area are the upper members of the Cambrian - Deadwood formation which consist of alternate shales, shaly and sandy dolomites and capping all, the Scolithus sandstone. This Deadwood formation exhibits a brown to reddish brown color and forms, upon decomposition, a sandy brown topsoil. Sills and irregular masses of Tertiary quartz monzonite and rhyolite porphyries have been intruded at the top of the Cambrian Deadwood formation thereby separating it from the Ordovician Whitewood limestones above. It is in these porphyries that the known orebodies occur.

The Paleozoic rocks dip northward; however, faulting and igneous intrusions have caused many inconsistencies and variations in dip and strike. The Tertiary porphyries, are quite resistant to weathering and consequently form the high ridges and divides to the east and west of the property. Macrosopically the porphyries show slight diversities in texture and color, but in general they are gray to white in color and contain numerous phenocrysts of feldspar set in a fine grained siliceous matrix. Outcrops and slides of this material are numerous. No microscopic work was done on any of the above mentioned material.

ORE DEPOSITS

The orebodies occur as replacement lenses along fault zones in the Tertiary quartz monzonite and rhyolite porphyries.

The ore minerals are wolframite and scheelite. Where mineralization has taken place the country rock has been highly silicified and quite often stained by introduced manganese and iron oxides. Original rock texture in most cases has been entirely obliterated. The wolframite and scheelite occur as lenticular replacement masses throughout the mineralized porphyry. These masses vary in size from a fraction of an inch to several inches in diameter. No ore is now visible in place in any of the workings, however, fragments of ore can be sorted from the dump material blasted and mucked from the test pit shown on the enclosed maps.

It is quite apparent that mineralization has been localized along fault zones which are quite numberous in the area. These faults vary in magnitude from small fractures of slight displacement to large fault zones of apparently large displacements. Mineralization, it seems, occurs only along the larger fault zones in the igneous material. Small shear zones are numerous but show no evidence of ore. All faulting is of the normal type but shows no distinct trend or pattern.

Indications are that the ore is "spotty" in its distribution and consequently mining will have to be somewhat selective, a factor which points to the probability of a small operation producing a limited tonnage of moderately good grade ore. It must be stated, however, that since no ore in place is now visible, complete details as to the size and shape of the orebodies are lacking.

ECONOMIC CONSIDERATION

Reports, records of ore shipments and assays regarding

previous operations are unavailable. Apparently, not a great deal of mining has been done on the property, however, the present owner has stated that shipments of ore have been made in past years by former operators, but since no records are available the quality and quantity of material shipped is unknown.

The most recent investigation of the property was conducted by engineers of the U. S. Bureau of Mines when strategic mineral surveys were being made during World War II. The report of this investigation is on file at the U. S. Bureau of Mines office, Rapid City, South Dakota. The report recommended that exploration be carried out by a private concern with the aid of federal funds. Analyses included in the Bureau of Mines report ranged from 5% to 10% WO_3. These analyses were supposedly obtained before the last ore shipment and consisted of material previously mined, sorted and stockpiled and ore in place that was of sufficient grade to be mined. Since the time of this shipment, apparently no further actual mining has been done. Prospecting has been done with a bulldozer, however, and these cuts can be seen on the accompanying maps and sections. This prospecting was rather poorly planned and proved to be a rather ineffective method of testing this rugged terrain. Analyses of dump material from the test pit and open-cut made during this investigation were as follows: 0.05% WO_3, 0.62% WO_3, 0.30% WO_3, 0.80% WO_3, 0.20% WO_3, 0.04% WO_3 and 2.5% WO_3.

It has been found in the past that in mining similiar gold - silver deposits that better ore exists at intersections of the fracture and fault zones. This is a factor which should be considered in planning future exploration work in this area.

Respectfully submitted,
P. A. Miller, Chief Geologist

400 FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

AUG 3 1953

Rutledge
Martin
Mechlin
Crutchfield
Hudson
Rutledge
Jackson

Mr. R. J. Stoehr, Manager
Bald Mountain Mining Company
Trojan, South Dakota

Re: Docket No. DMEA 3129 - Tungsten
Bald Mountain Mining Company
Hellings Tungsten property
Lawrence County, South Dakota

Dear Mr. Stoehr:

Your application for aid for an exploration project and other data available to us in Washington concerning the Hellings Tungsten property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting the occurrence of tungsten mineralization at the above-referenced property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application is denied.

We wish to thank you for your interest in the Defense Minerals Program and for bringing this property to our attention.

Sincerely yours,

C. O. Mittendorf (for)
Administrator

MDL 8-3-53

FARutledge:foc
7-30-53
cc: Docket
Code 400
FT. Reg. 5
Adm. Reading File
D. M. Lemmon, USGS
R. W. Geehan, USBM

Operating Committee

FILE COPY
SURNAME: SB

400

Rutledge
Martin
Kelcher

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

July 30, 1953

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $11,850.11
Docket No. DMEA 3129 - Tungsten
Bald Mountain Mining Company
Hellings Tungsten property
Lawrence County, South Dakota

The denial of the subject application by this Division is based on the following information:

(1) The applicant proposed to explore two fault zones by the following program: A 200-foot crosscut adit followed by 100 feet of drifting on each of the two fault zones. Five 20-foot raises were also requested.

(2) Only one small occurrence of tungsten mineralization has been found on the subject property. Wolframite and scheelite are present in the muck from the small 10-foot test pit just north of the #1 fault. The test pit is located above the fault plane. A small trench 50 feet north of the test pit probably was excavated along mineralization. The mineralization does not appear to be necessarily related to the fault.

(3) The exploration program proposed by the applicant would not explore the fault zones in the area where the only known occurrence of tungsten mineralization is located.

(4) The examining field team recommends denial of the subject application for exploration assistance because there is very little chance that a significant discovery may be made.

(5) The Field Team recommends denial.

(6) The Commodity Divisions of the Geological Survey and Bureau of Mines concur with the denial.

FARutledgw:foc
cc: Docket
Code 400
Adm. Read.
File

W. S. Martin

8-3-53

W. S. Martin, Acting Chief
Iron and Ferro-Alloys Division

July 30, 1953

Mr. H. H. Liebhafsky in the State Department telephoned that he had received through Mr. Waugh, Assistant Secretary for Economic Affairs, an inquiry from Senator Langer of North Dakota wanting to know about tungsten in South Dakota.

Mr. Liebhafsky was told about the attached case. He intends to recommend that if the Senator's inquiry refers to a DMEA project, it be made direct to us and not through the State Department.

W. S. Martin

Please file in Docket after case clears Op. Comm.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

400

July 30, 1953

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W. S. Martin, Acting Chief
Iron and Ferro-Alloys Division

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUL 28 1953

MEMORANDUM July 27, 1953

TO: W. S. Martin, DMEA

FROM: D. M. Lemmon, USGS

SUBJECT: Exploration application $11,850 DMEA 3129
Bald Mountain Mining Co. Tungsten
(Hellings Tungsten property)
Lawrence County, S. D.

This property was examined May 20, 1953 by E. O. Binyon (Bureau of Mines) and J. A. Redden (Geological Survey). Their report, dated July 13, 1953, recommends denial of the application for exploration.

I concur in the recommendation that the application be denied.

Dwight M. Lemmon

Dwight M. Lemmon

cc: Mr. Martin (3)

Copy retained 400

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

MEMORANDUM July 27, 1953

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

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July 27, 1953

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Dwight M. Lemmon

cc: Mr. Martin (3)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

July 22, 1953

Memorandum

To: Executive Officer, DMEA Field Team, Region V

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region V

DMEA # 3129, Bald Mountain Mining Company.

ROBERT E. ADAMS

Robert E. Adams
Chief, Operation's Control
and Statistics Division

July 22, 1953

Mr. R.J. Stoehr, Manager
Bald Mountain Mining Company
Trojan, South Dakota

Subject:
Re: DMEA-3129
Exploration Assistance
Hellings Tungsten Property

My dear Mr. Stoehr:

The receipt of your application dated June 10, 1953, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3129 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-3129 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

Defense Minerals Administration
RECEIVED
JUL 22 1953

July 20, 1953

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Bald Mountain Mining Co. application and Field Team Report

Here are the original and two copies of an application, together with the original and three copies of the Field Team Report, on the application by the Bald Mountain Mining Co. for exploration of what is known as the Hellings Tungsten property, Lawrence County, S. Dak.

On the basis of the information available to the Field Team recommendation is that the application be denied.

One copy of the application has been retained by this office.

A. B. Needham
Executive Officer
Field Team, Region V

Attachments

7/23/53 - The F.T. report has gone to the Op. Comm. per Phillips

Reviewed by
DMEA OPERATING COMMITTEE
7-27-53
(date)

Copy retained 400

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 23 1953

7/31/53

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION V

Bald Mountain Mining Company

Trojan, S. Dak.

DMEA-3129

E. O. Binyon, Mining Engineer
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

Closed OC
7-27-53

July 13, 1953

Reviewed by
DMEA OPERATING COMMITTEE

7-27-53
(date)

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DEFENSE MINERALS EXPLORATION ADMINISTRATION
Report of Field Examination

by

E. O. Binyon, Mining Engineer
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

Docket No.:

Applicant: Bald Mountain Mining Co., Trojan, S. Dak.

Commodity: Tungsten

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The property, held under a lease agreement between the applicant and Mrs. Delie M. Hellings, Deadwood, S. Dak., comprises 16 unpatented lode mining claims, known as the Abbie, Abbie No. 1 through 7 and George and George No. 1 through 7. All claims are a matter of record with the Register of Deeds for Lawrence County at Deadwood, S. Dak.

The claims, located near the head of Burno Gulch, approximately 4.5 miles west of Maitland and 10 miles northwest of Deadwood and Lead, are in sections 2 and 11, T. 5 N., R. 2 E., B.H.B.M., Lawrence County, S. Dak.

Access to the property from Deadwood, the nearest rail point and supply center, or from the small town of Maitland, is by improved gravel and unimproved dirt roads. Owing to heavy snowfall and run-off during the winter and early summer, the roads become practically impassable and the property would be inaccessible during this period.

The property was examined on May 20 in company with P. A. Miller, Geologist for the applicant. Approximately 2 hours were spent on the examination.

Following a discussion pertaining to the applicant and the method of exploration with Mr. Miller, he stated he wished to discuss the matter further with the principle of the company and then submit additional copies of the application if the company decided to proceed with the application. The additional forms were received June 14, 1953.

Based on the geology, as described in the report, and other available information, it is concluded that the probability of making a substantial discovery is insufficient to warrant exploration as outlined and it is recommended that the application be denied.

NAME, LOCATION, AND DESCRIPTION OF THE PROPERTY

Locally the property is known as the Hellings Tungsten and was owned by Mrs. Delia M. Hellings of Deadwood, S. Dak., now deceased. It comprises a contiguous group of 16 unpatented lode claims recorded as the Abbie, Abbie No. 1 through 7, the George and George No. 1 through 7.

The claims are in sec's 2 and 11, T. 5 N., R. 2 E., B.H.B.M., Lawrence County, S. Dak., and are located along the west side of Burno Gulch and extend from the head of the gulch northward approximately one and one half mile.

The property is about 4½ miles by road west of Maitland and between 10 and 12 miles northwest of Deadwood. Deadwood is the nearest rail point and largest supply center. Housing facilities are available at Deadwood and possibly at the small community of Maitland. From Deadwood, Spearfish, or Maitland, the property is accessible over improved gravel and unimproved dirt for the greater part of the year. However, the 4 to 5 miles of unimproved dirt roads become practically impassable during the winter and early spring, owing to heavy snowfall and spring run-off, and without an excessive amount of maintenance the property would be inaccessible for three to four months of the year.

Mine workings consist of a side hill cut which has been bull dozed off for approximately 200 feet in length and varying from 20 to 60 feet in width. Near the center of the cut there is an open pit approximately 20 feet in length, 6 feet in width and 15 feet in depth at the face. Approximately 200 feet south of the surface working an adit bearing south and about 100 feet in length has been driven. Other workings consist mainly of shallow cuts and pits which have been done for assessment work.

The only known occurance of tungsten minerals on the property is in the open cut. None of the contacts between porphyry and limestone showed mineralization and at no other place along the shear zones was wolframite or scheelite noted.

At present little or no tungsten mineralization can be seen in either the face or sides of the cut.

PROPERTY RIGHTS

The applicant holds the property under a lease agreement signed by Mrs. Delie M. Hellings, Deadwood, S. Dak. Since signing the agreement Mrs. Hellings has died and the property is now being probated. However, the applicant states that by agreement with the

lawful heirs the lease will continue in force.

A copy of the lease is included with the application.

PAST PRODUCTION

No production record is available and it was not learned whether or not any shipments were made from the property. Old notes mention that approximately 20 tons of ore of unknown grade was in the bin.

The same information source mentions four samples taken from the pit and dump which are listed below.

		Percent WO_3
1.	Sample across 5 feet of fracture zone exposed in pit.	None
2.	Grab sample about 6 ft. wide from bottom of same pit and in northeastern.	5.48
3.	Grab sample repeated in same location as sample 2.	4.90
4.	5 pounds quartered from 50 pound sample of several hundred pounds of ore piled on dump.	20.87

The bottom of the pit is not now accessible and little or no mineralization can be seen in the upper part.

GEOLOGY

The geology of the area to be explored is essentially as indicated on the geologic map accompanying the report. The exposures of the Deadwood formation appear to be isolated fault blocks. The Deadwood formation outcrops are limited in their southeasterly extension to approximately the colored area on the maps; porphyry crops out along the edge of Burno Creek. The outcrops of Deadwood formation may represent a small down faulted graben. Probably the #2 fault on the map parallels the northwest contact of the northern outcrop of the Deadwood formation rather than as projected on the map. No field evidence was noted for the #3 fualt other than it represents a contact between the porphyry and Deadwood formation.

The #1 fault is fairly well exposed in the large open cut. No mineralization was found in place along the fault. Wolframite and associated scheelite ore were present in muck from the small, 10 foot deep test pit described by the Applicant's geologic report. The test pit and mineralized area is located above the fault plane. The mineralization is probably localized by the fault. The small subtrench

50 feet north of the test pit is an old working which probably was excavated along mineralization. It does not necessarily appear to be related to fault #1.

According to Mr. Miller they have not been able to detect any mineralization by mineral light anywhere on the claims other than that at the test pit. The drift along the southermost outcrop of Deadwood formation failed to disclose any ore. He admitted that his company had not examined all exposures. It is probable, however, that previous lessees of the property, including the Homestake Company, have conducted rather extensive surface searches for additional scheelite. Since outcrop exposures are fairly abundant, it is suggestive that mineralization is largely restricted to the test pit.

It is recommended that the application be denied on the basis of insufficient geologic probability of making a substantial discovery. This is based largely on the very limited showing of ore. It is believed that if more abundant mineralization was present, more mineralized outcrops would be present. The Geological Survey's field team member is not personally familar with tungsten deposits and requests that the reviewer of the recommendation take this factor in consideration.

If it is decided that exploration is warranted, it is believed that approximately 1,000 feet of BX drill core could adequately explore the mineralization along fault #1 and the Deadwood-porphyry contacts and would determine the feasibility of developing the property.

The applicant's geologist stated that the Bald Mountain Mining Company had had very poor results with diamond drilling and that he was not certain if the company's directors would agree to a drilling exploration.

PROPOSED EXPLORATION

In the applicant's proposal exploration is to be by cross-cutting, drifting and raising along faults as shown in the accompanying maps.

The adit would cross cut fault No. 2 and a drift would be driven to the north along this fault, the adit would be extended to intersect fault No. 1 (on which the only mineralization has been found) and then to drift southwest along the shear zone. A total of 400 feet of adit (both cross cut and drift) and 100 feet of raise is proposed. The estimates overall unit cost is $23.70 per ft.

The applicant is in a position to furnish sufficient labor, supplies and equipment to carry on the project.

Water supply is available from Burno Creek for an exploration project or for mining operations.

In a discussion with the applicant, it was pointed out that based on the exposed mineralization in the main open cut, the general geology, the lack of other mineralized exposures on the property, the property did not warrant exploration to the extent proposed in the

application. It was suggested that if any exploration was warranted, core drilling would be a more economical and feasible method as a preliminary step. Mr. Miller was somewhat in agreement but stated that the company had been unsuccessful with core drilling (BX size holes) in the shear of fraction zones in their gold mine and that he would have to discuss the matter with the management.

Apparently the company has decided against core drilling as a means of exploration and wishes to explore the property as outlined in the application.

Should others of the DMEA decide that some exploration is warranted, it is the field teams opinion only a limited amount of work at most should be done. This should be confined to the mineralized fault zone, fault No. 1, and would consist of 4 Bx size core drill holes with an aggregate total footage not to exceed 500 feet. This would permit exploration of the zone to a depth of 75 feet down dip.

If by additional geologic work by the company it is shown that there is sufficient indication of mineralization along the fault No. 2 zone to warrant exploration, then this fault could be explored by approximately the same amount of core drilling as for fault No. 1.

However, since the best exposure of mineralization on the property along fault No. 1 is so limited in extent that exploration can not be recommended, it is considered even less likely that exploration along fault No. 2 would disclose ore of a minable quanity or grade.

As stated, the field team is of the opinion that the property does not warrant any exploration because there is little probability of making a discovery of sufficient ore for an economic mining operation.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. DMEA-3129
Metal or Mineral
Date Received 7/22/53
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Bald Mountain Mining Co. Trojan, S.D. Incorporated in State of So. Dak.
President: Mr. O.D. Collis, Clinton, Iowa
Secretary & Treasurer: Mr. Ward Riedesel, Clinton, Iowa
Operating Manager: Mr. R. J. Stoehr, Trojan, So. Dak.

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract
Listed in separate sheet as explanation of article 3-A

(*b*) State any mine name by which the property is known. Hellings Tungsten property.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
Lessee

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. Copy of lease agreement is enclosed with this form.

(*e*) If you own the land, describe any liens or encumbrances on it

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. This information is enclosed with this form an labeled as explanation of Article 3F.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

16—66551-1

Explanation of articles 4 (a) to 4 (c) are included in the enclosed geologic report.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Wolframite and scheelite

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. Included in geologic report & shown on geologic maps.

(*c*) The work will start within 30 days and be completed within 7 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. Explained on attached sheet

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes

(*b*) How do you propose to furnish your share of the costs?

☐ Money ☒ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated June 10, 1953

Bold Mountain Mining Co
(Applicant)

By R. J. Stocks Manager.

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

PARAGRAPH 3

DESCRIPTION OF PROPERTY

3 (a)

The land which is to be explored consists of sixteen unpatented mineral claims comprising a total of approximately 121 acres. It is located, posted and recorded under the following names:

Abbie Lode	George Lode
Abbie #1 Lode	George #1 Lode
Abbie #2 Lode	George #2 Lode
Abbie #3 Lode	George #3 Lode
Abbie #4 Lode	George #4 Lode
Abbie #5 Lode	George #5 Lode
Abbie #6 Lode	George #6 Lode
Abbie #7 Lode	George #7 Lode

The above named claims are all that are to be included, and will benefit from the proposed exploration program. This land is bounded on the north by unpatented mineral claims, on the south by mineral surveys 1377, 1746 and 1406, on the east by unclaimed land and on the west by mineral survey 1376.

3 (f)

The land consists of 16 unpatented claims, the locations of which are recorded in the Lawrence County courthouse at Deadwood, South Dakota. The book and page numbers for each recorded location notice are as follows:

CLAIM NAME	BOOK	PAGE
Abbie Lode	311	381
Abbie #1 Lode	311	382
Abbie #2 Lode	311	383
Abbie #3 Lode	311	384
Abbie #4 Lode	311	385
Abbie #5 Lode	311	386
Abbie #6 Lode	311	387
Abbie #7 Lode	311	388
George Lode	311	389
George #1 Lode	311	390
George #2 Lode	311	391
George #3 Lode	311	392
George #4 Lode	311	393
George #5 Lode	311	394
George #6 Lode	311	395
George #7 Lode	311	396

UNIT 5 (d)

OPERATING PLACE
and
BACKGROUND OF THE EXPLORATION
and
SUPERVISION OF DIAMONDS

5 (d)

The Bald Mountain Mining Co., a corporation, has been engaged in the mining of gold-silver ores in the Bald Mountain Mining District of Lawrence County, South Dakota, since the year 1934. During this time, the company has operated continuously except for the period during World War II when gold mines were closed by government order. The gold-silver ores mined by the company are and have been relatively low grade, yet the company has operated continuously and profitably and has established a record of favorable low cost production.

Those persons who will supervise the exploration program, if approved, have served the Bald Mountain Mining Co. in responsible positions during the past. Due to the similarity in the occurrence of the ore-bodies in the two districts and the mining methods employed, the appointed supervisors and engineers have a thorough knowledge of the problems at hand and should, therefore, be well able to supervise the proposed exploration program.

Bald Mountain Mining Co.
Tilton, South Dakota

COST ESTIMATE ON PROPOSED
EXPLORATION PROJECT

The exploration project as proposed in the geologic report and illustrated on the enclosed maps will require the following expenditure to complete the maximum amount of proposed work. The itemized costs will be arranged according to the outline set forth under article 6 of form MT-103, application for aid in an exploration project.

6 (a) Independent Contracts

Contracts will be let for the driving of drift and raise at the following rates of pay:

1. Slusher Drift - $9.00/foot.
2. Hand mucked Drift - $10.00/foot, when tram is over 200 feet the payment will increase to $10.50/foot of advance.
3. Hand mucked Raise - $10.00/foot.

Under the above rates of payment, contractors are required to purchase their own powder, fuse and primers for blasting; drill, blast, and muck and tram to the waste or ore dumps the rock broken; install rail and pipe needed for mining and tramming. The company will furnish all mine equipment and supplies, except those above mentioned, and will repair and maintain any and all equipment used on the job contracted.

The contractors will be subject to supervision by any of the company supervisors assigned to the specified program.

Costs of Independent Contracts

100 feet of slusher drift	$9.00/foot	=	$ 900.00
200 feet of hand mucked drift	$10.00/foot	=	2,000.00
100 feet of hand mucked drift	$10.50/foot	=	1,050.00
100 feet of handmucked raise	$10.00/foot	=	1,000.00
	Total Cost	=	$4,950.00

Contractors will purchase powder, fuse and primers at the following prices:

Powder - $10.00/50 lb. box
Fuse - $13.25/1000 feet
Primers - $20.00/1000 primers

The above work is all that is to be let out for independent contract.

6 (b) Labor, Supervision and Consultants

Labor

1 Bulldozer Operator	160 hours	$1.28/hour =	$204.80
1 Carpenter	24 hours	$1.24/hour =	29.76
2 Laborers	64 hours	$1.04/hour =	66.56
1 Truck Driver	24 hours	$1.13/hour =	27.12
		Total	$328.24

Supervision

Mine	15 days	$325/month =	$162.50
Construction	10 days	$11.15/day =	111.50
Geological	1 month	$350/month =	350.00
Engineering	1 month	$350/month =	350.00
		Total	$974.00

6 (c) Operating Materials and Supplies

2 -	Used one ton ore cars	$25.00/car =	$ 50.00
500'-	12# mine rail	$0.28/foot =	140.00
475'-	2" air pipe	$0.39/foot =	185.25
550'-	3/4" water pipe	$0.15/foot =	82.50
150'-	Track ties	$0.15/tie =	22.50
3 -	12# rail switches	$15.00 each =	45.00
100'-	3/4" water hose	$0.66/foot =	66.00
100'-	1½" air hose	$1.40/foot =	140.00
500 lbs. -	Drill steel	$0.25/lb. =	125.00
14 -	Tungsten carbide bits	$15.00/bit =	210.00
100'-	Timber (stulls)	$0.05/foot =	5.00
200'-	Timber	$0.11/foot =	22.00
4 -	Shovels	$2.88/shovel =	11.52
2 -	Picks	$2.42/pick =	4.84
2 -	18" pipe wrenches	$3.77/wrench =	7.54
2340 gal -	Gasoline for compressor	$.30/gal =	702.00
280 gal -	Diesel for bulldozer	$0.179/gal. =	50.12
164 gal -	Gasoline for pickup and truck	$0.30/gal. =	49.20
	Miscellaneous spikes, nails, bolts,	etc. =	15.00
		Total =	$1,953.47

6 (d) Operating Equipment

The following equipment is owned by the operator and will be furnished on the following use-allowance basis. (1/60 of the total value/month)

ESTIMATED VALUE	EQUIPMENT	PERIOD OF TIME	ESTIMATED COST/MONTH	TOTAL COST/MO.
$7,500	TD-18 Bulldozer	3 months	$125.00/mo	$375.00
750.	Pickup Truck	3 months	12.50/mo	37.50
2,500.	Portable Compressor	7 months	41.67/mo	291.69
1,000.	2 Rock Drills	7 months	16.67/mo	116.69
600.	Slusher and Cable	7 months	10.00/mo	70.00
230.	Small Sump Pump	7 months	3.83/mo	26.81
10,000.	One Truck (D-190 Int.)	0.20 months	166.70/mo	33.33
			Total	$951.02

6 (e) Rehabilitation and Repairs

Road repair will be undertaken. Costs of operating supplies, equipment, labor and supervision needed for this work are included in units 6 (b), 6 (c) and 6 (d) above.

6 (f) New Buildings, Improvements, Installations

The following improvements are to be established:

1 Waste Dump and construction of 350 feet of new road.
Materials needed:

200' feet of 2" plank	@ 0.07/foot	=	$14.00
200' feet of 10" timber	@ 0.15/foot	=	30.00
Nails, spikes, nails, bolts, etc.		=	5.00
	Total		$49.00

Additional operating supplies, equipment, labor and supervision for this work are included in units 6 (b), 6 (c) and 6 (d) above.

6 (g) Miscellaneous

In the following maintenance and repair costs, labor has been included and, therefore, is not included in unit 6 (b) above.

D-18 Bulldozer maintenance and repair	- 160 hours @ 3.00/hour	=	$480.00
Pickup " " "	- 75 days @ 1.10/day	=	82.50
Compressor " " "	- 182 days @ 2.46/day	=	447.72
Rock drills (2) " " "	- 182 days @ 1.76/day	=	320.96
Shusher " " "	- 182 days @ 1.00/day	=	182.00
Small water pump " " "	- 182 days @ .26/day	=	47.32
10-Ton Truck (1-150 International) "	- 5 days @ 4.83/day	=	24.15
Analytical work - Sample analyses		=	120.00
Accountant and bookkeeper - 1 man 20 days @ 9.52/day		=	190.40
Accounting and bookwork - 1 man 20 days @ 7.80/day		=	156.00
Payroll taxes - Social Security and State Unemployment	2% of $1,302.24	=	26.04
	Total		$2,080.09

6 (h) Contingencies

Contingencies should be allowed for maintenance of roads in case of heavy rains or early spring and fall snows. Also, allowances should be made for damage and loss of time from fire, theft, or any other unavoidable causes of unnecessary expense. 5% has been estimated as a favorable allowance.

5% of $11,215.22 = $ 564.29

Grand Total of Costs = $11,850.11

Government participation	=	$8,887.58
Operator participation	=	2,962.53
Total	=	$11,850.11

Total cost/foot of drift and raise = $\frac{11,[illegible]0.00}{50[illegible] ft.}$ = [illegible].70/foot.

UNIT COST DERIVED FROM

ENCLOSED ESTIMATED TOTAL COSTS

a. Independent Contracts (Labor)

$4,950/500 feet = $9.90/foot of drift and raise.

b. Labor, Supervision and Consultants

Labor

$328.24/500 feet = $0.66/foot of drift and raise.

Supervision

$2974.00/500 feet = $1.95/foot of drift and raise.

c. Operating Materials and Supplies

$1,953.47/500 feet = $3.91/foot of drift and raise.

d. Operating Equipment (Use Allowance)

$211.02/500 feet = $1.00/foot of drift and raise.

e. Rehabilitation and Repairs

None

f. New Buildings, Improvements and Installations

Sump

$49.00/500 feet = $0.10/foot of drift and raise.

g. Miscellaneous

$2,080.29/500 feet = $4.16/foot of drift and raise.

h. Contingencies

5% of Total Cost = $564.29

$564.29/500 feet = $1.13/foot of drift and raise.

Total Cost/foot = $23.71/foot of drift and raise.

EXPLANATION OF ARTICLE 7-(b)

The operator proposes to furnish his share of the costs by offering the following equipment for use at the designated rental amount.

TD-18 Bulldozer	160 hours	[illegible]5.66/hour	=	[illegible] 905.60
Compressor	182 days	[illegible]7.92/day	=	1,441.44
2 - Rock Drills	182 days	[illegible]2.42/day	=	440.65
Slusher and Wire Rope	182 days	1.39/day	=	252.00
		Total	=	[illegible],039.66

In rental of the above units, no labor will be supplied by the operator for actual operation of the equipment. The only unit effected by this would be the TD-18 bulldozer which requires an operator. The listed rental prices include all repair, maintenance, fuel, depreciation and any other necessary expenditures, these costs will be assumed by the operator.

THIS AGREEMENT MADE, made and entered into this 24th day of October, 1952, by and between Delia M. Hellings, party of the first part, and the Bald Mountain Mining Company, party of the second part, WITNESSETH:

That the said party of the first part, for and in consideration of Ten Dollars ($10.00) and other valuable considerations, covenants and agreements hereinafter expressed to be paid, kept and performed by the said party of the second part, has leased, let and demised, and do lease, let and demise unto the said party of the second part, the following described premises, to-wit: The unpatented lode claims described as the Abbie, Abbie No. 1, Abbie No. 2, Abbie No. 3, Abbie No. 4, Abbie No. 5, Abbie No. 6, Abbie No. 7, George, George No. 1, George No. 2, George No. 3, George No. 4, George No. 5, George No. 6, George No. 7 on location certificates recorded in Book 311 pages 381 through and including 396 on file in the county court house in Lawrence County, South Dakota. These claims are located in Sections 11 and 14 Twp. 5 N. Rge. 2 E., B.H.M. Lawrence County, South Dakota.

To Have and to Hold for the purpose of mining, with power to assign or sublet the whole or any part of the said premises, for the term of three years from the date hereof or until said party of the second part notifies party of the first part in writing of its intention to abandon or terminate this Agreement of Lease.

Said party of the second part, for and in consideration of the premises aforesaid, has covenanted, contracted and agreed, and by these premises does covenant, contract and agree with the said party of the first part, her heirs, executors, administrators, successors or assigns, to commence work on said premises within nine months from the date of this agreement and to work the same with reasonable diligence, in a thorough and workman like manner, to keep accurate records and accounts, and to render monthly statements to said party of the first part, her

agent or attorney, showing the amount of ore taken from said premises and the yield of the same, and the cost of hauling and milling the same, and to pay as a royalty to said party of the first part, her agent or attorney, as follows, to-wit: 10% OF THE NET MILL OR SMELTER RETURNS on all ore taken off the aforesaid described property.

The net mill or smelter returns shall be determined by the value received from the sale of the ore after deducting therefrom the cost of processing and haulage charges from the mine to the mill or smelter.

The originals, or certified duplicates of the mill or smelter statements for all ores shipped hereunder, shall be forwarded each month to the first party, with remittance for the royalty due thereon.

Party of the first part shall be entitled to enter into and inspect the workings of the second party made under the terms and conditions of this lease, to take samples, to inspect smelter and mill returns, and to take all steps or proceedings proper for the safe-guarding of the interest of the first party hereunder.

In consideration of the terms and covenants herein contained, the first party hereby gives and grants unto the second party, its heirs or assigns, the option to purchase the property hereby leased, at any time prior to the expiration or termination by forfeiture, or otherwise, of this lease for the sum of Five thousand dollars ($5,000.00) cash less royalty payments previously paid to the first part under the terms of this agreement upon the payment of which the second party shall thereafter be entitled to the possession and enjoyment of said property as a purchaser and owner thereof, instead of as a lessee hereunder.

Said party of the second part furthermore agrees that the said party of the first part, her agent or attorney, shall have the right at any and all times to enter upon and descend into any

and all parts of said premises, and that the said parties of the second part will render to her all the assistance in its power in so doing.

Said party of the second part furthermore agrees that in case he fails to commence work on the said premises aforesaid, or to work the same continuously and with reasonable diligence and in a workmanlike manner, or render statements or to pay said rental as aforesaid, or in any respect to keep and fulfill any and all agreements herein expressed, or implied, then and in that case it shall be lawful for the said party of the first part, her agent or attorney, to declare this lease void after 30 days written notice of termination, and without process of law to enter upon, and take possession of said premises, and also at the expiration of the lease by limitation, said party of the second part agrees to surrender, yield and deliver to said party of the first part, her heirs, executors, administrators, successors and assigns, quiet and peaceable possession of said premises in good condition.

Should the mining operations of second party hereunder be delayed or suspended by any unavoidable cause, or by a strike or war making it advisable for the second party to cease operations, the length of time for which it is so delayed shall be added to the terms of this lease.

Party of the first part further agrees to settle all questions arising over ownership of aforesaid described property. First party also agrees to settle all questions arising in regard to any previous leases on said above described property.

Witness	First Party
Witness	Bald Mountain Mining Co. Second party

MF-202

LANDLORD'S SUBORDINATION AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned is the owner in fee simple of that certain parcel of ground in the county of Lawrence, State of South Dakota, described in a certain Exploration Project Contract dated February, 1953, between Bald Mountain Mining Co., the Lessee of said property, and the United States of America;

NOW, THEREFORE, the undersigned, as Lessor of said property under lease dated October 24, 1952, does by these presents subordinate all of his right, title, and interest under the provisions of said lease to the right, title, and interest of the United States of America under the provisions of said Exploration Project Contract, and agrees that the lien and claim of the United States of America under the provisions of said contract shall be prior to the undersigned's rights to rentals or royalties under the terms of said lease; and

The undersigned further agrees that if said leasehold interest should be surrendered or if said lease should terminate at any time prior to the expiration of the rights of the United States of America under said Exploration Project Contract, the undersigned shall assume and does hereby assume all of the obligations of the Lessee under said Exploration Project Contract to make repayment to the United States of America according to the terms of said contract; and

The undersigned agrees to commit no act, nor assert any claim under judicial process or otherwise that may contravene or conflict with the prior lien and claim of the United States of America under the provisions of said Exploration Project Contract.

This undertaking and covenant shall be binding upon the heirs, successors, and assigns of the undersigned.

Dated this 3 day of February, 1953

Mrs. Nellie M. Hellings

U. S. GOVERNMENT PRINTING OFFICE 16—64582-1

REPORT OF INVESTIGATION

AND

RECOMMENDATIONS

FOR FUTURE EXPLORATION OF

THE HELLING PROPERTY

By

P. A. Miller

BALD MOUNTAIN MINING CO.

Trojan, South Dakota

3 January 1953

COPY

GEOLOGICAL REPORT

HELLING TUNGSTEN PROPERTY

INTRODUCTION

The Helling property is located in the northern Black Hills near the Carbonate mining district in Lawrence County, South Dakota. It is accessible by graveled and mountain road from Lead and Deadwood approximately 10 miles southeast, and by paved highway and mountain road from Spearfish, 12 miles to the north. During the winter and spring months, however, the mountain roads leading to the area become impassible. With repair and maintenance, these roads could be traveled except during periods when very severe snowfalls and heavy spring thaws were experienced. The nearest railroad shipping and supply point would be at Deadwood, and the nearest residence point at Maitland, South Dakota, a small settlement approximately 4.5 miles to the east. Housing facilities are also available at Deadwood, Lead and Spearfish. The property consists of 16 ungatented claims comprising an area of approximately 121 acres. A small amount of water for mining is available from Burno Creek which passes through the property, and electrical power for mining could possibly be supplied by the Homestake Mining Company which has a high voltage power line passing within 500' of the present workings. The area is heavily wooded with Ponderosa Pine thereby making timber for mining readily available. Labor for a limited exploration project could by supplied by the Bald Mountain Mining Co.

Examination of the property was carried out to determine

the nature of the ore deposits and the feasibility of further exploration of the area. Mapping was done in a rather limited time by transit and stadia methods, elevations shown on the enclosed maps and sections are not true but were established from an arbitrary point of assigned value to show relative differences in elevation.

The writer is indebted to Mr. D. H. Mullen of the U. S. Bureau of Mines for his cooperation in furnishing information regarding previous investigations of the property in question.

SUMMARY AND CONCLUSIONS

Only two rock types are exposed on the Helling property, the oldest being sediments of the Cambrian Deadwood formation, the youngest are Tertiary rhyolite and quartz monzonite porphyries. It is in this Tertiary igneous material that the known ore deposit occurs. The orebodies are localized along fault zones which are variable in size and magnitude of displacement. In the past some exploration was carried out along fault planes separating quartz monzonite and Deadwood formation, and apparently no ore was found. The ore consists of highly silicified and stained igneous material in which the ore minerals wolframite and scheelite have been introduced through a replacement action. The ore minerals occur mainly as lenticular "nodules" in the mineralized material which may vary in size from a fraction of an inch to several inches in diameter. No ore is now exposed in place in any of the workings, however, material blasted from the test pit and open cut shows scattered fragments of ore.

Analyses of material sampled during this investigation

varied from 0.04% WO_3 to 2.5% WO_3 with seven analyses averaging 0.64% WO_3. Prior to the time of the last ore shipment made from the property, an investigation was conducted by engineers of the U. S. Bureau of Mines. Analyses of ore in place and ore sorted and stockpiled made by the Bureau of Mines engineers showed a WO_3 content varying from 5% to 10%. As stated before, this ore has apparently been shipped, and since that time no additional mining has been done. The report by the Bureau of Mines was favorable and indicated that exploration should be carried out by a private concern with the aid of federal funds.

There is every indication that the property shows sufficient possibility to warrant a limited exploration program which would definitely establish whether or not mineable ore-bodies are present in this area.

COPY

RECOMMENDATIONS

It has been concluded by the staff of the Bald Mountain Mining Co. that some form of exploration program should be planned and put into effect to determine if ore is present in sufficient quantities to support a profitable operation. Such a program should be definitely limited in its scope, and of course should be designed to give the most information at the least possible cost.

A program has been worked out on the basis of available information, and the proposed work is shown on the enclosed geologic map. Crosscutting seems to be the most feasible way of exploring in such an area. Diamond Drilling was considered; however, where ore is "spotty" or discontinuous drilling often

fails to achieve the desired results. It is conceivable that diamond drilling could later be employed for the purpose of location of fault zones. The proposed exploration work would consist of driving 200 feet of crosscut to the downward extension of #2 fault, the crosscut to be driven at a level approximately 100 feet below the open-cut workings. As shown in Plate A, there are three possible fault zone intersections in the immediate area, these should be at least partially tested as they are favorable locations of ore deposition. #1 fault should be tested by at least 100 feet of drift, as it is along this zone that the only known ore deposits occur on the surface. #2 fault should be followed to its possible intersection with #1 fault and then tested with at least a 20 foot raise. Four other 20 foot raises should be employed to test the possible ore zones at points approximately coinciding with those indicated on plate A.

Variations in the strike of the faults or lack of assumed extensions may alter the planned exploration considerably; however, #1 fault is sufficiently pronounced and traceable so that its presence is definitely established. The crosscut should proceed to the point shown and #1 fault should be tested as indicated. If ore is found, but faults #1 and #2 are not encountered, diamond drilling can then be employed to explore for other fault zones that can later be tested by crosscutting. The maximum amount that would be undertaken under a preliminary exploration program would be as follows:

1. Construction of a short road, as seen on plate A, to a point below the site of the portal. Also minor repair of the Burno Gulch road where needed.
2. Construction of a waste dump.

3. Driving of 400 feet of drift as shown on plate A.

4. Driving of five-20 foot raises as shown on plate A.

GEOLOGY

The oldest rocks exposed in the area are the upper members of the Cambrian - Deadwood formation which consist of alternate shales, shaly and sandy dolomites and capping all, the Scolithus sandstone. This Deadwood formation exhibits a brown to reddish brown color and forms, upon decomposition, a sandy brown topsoil. Sills and irregular masses of Tertiary quartz monzonite and rhyolite porphyries have been intruded at the top of the Cambrian Deadwood formation thereby separating it from the Ordovician Whitewood limestones above. It is in these porphyries that the known orebodies occur.

The Paleozoic rocks dip northward; however, faulting and igneous intrusions have caused many inconsistencies and variations in dip and strike. The Tertiary porphyries, are quite resistant to weathering and consequently form the high ridges and divides to the east and west of the property. Macrosopically the porphyries show slight diversities in texture and color, but in general they are gray to white in color and contain numerous phenocrysts of feldspar set in a fine grained siliceous matrix. Outcrops and slides of this material are numerous. No microscopic work was done on any of the above mentioned material.

ORE DEPOSITS

The orebodies occur as replacement lenses along fault zones in the Tertiary quartz monzonite and rhyolite porphyries.

The ore minerals are wolframite and scheelite. Where mineralization has taken place the country rock has been highly silicified and quite often stained by introduced manganese and iron oxides. Original rock texture in most cases has been entirely obliterated. The wolframite and scheelite occur as lenticular replacement masses throughout the mineralized porphyry. These masses vary in size from a fraction of an inch to several inches in diameter. No ore is now visible in place in any of the workings, however, fragments of ore can be sorted from the dump material blasted and mucked from the test pit shown on the enclosed maps.

It is quite apparent that mineralization has been localized along fault zones which are quite numberous in the area. These faults vary in magnitude from small fractures of slight displacement to large fault zones of apparently large displacements. Mineralization, it seems, occurs only along the larger fault zones in the igneous material. Small shear zones are numerous but show no evidence of ore. All faulting is of the normal type but shows no distinct trend or pattern.

Indications are that the ore is "spotty" in its distribution and consequently mining will have to be somewhat selective, a factor which points to the probability of a small operation producing a limited tonnage of moderately good grade ore. It must be stated, however, that since no ore in place is now visible, complete details as to the size and shape of the orebodies are lacking.

ECONOMIC CONSIDERATION

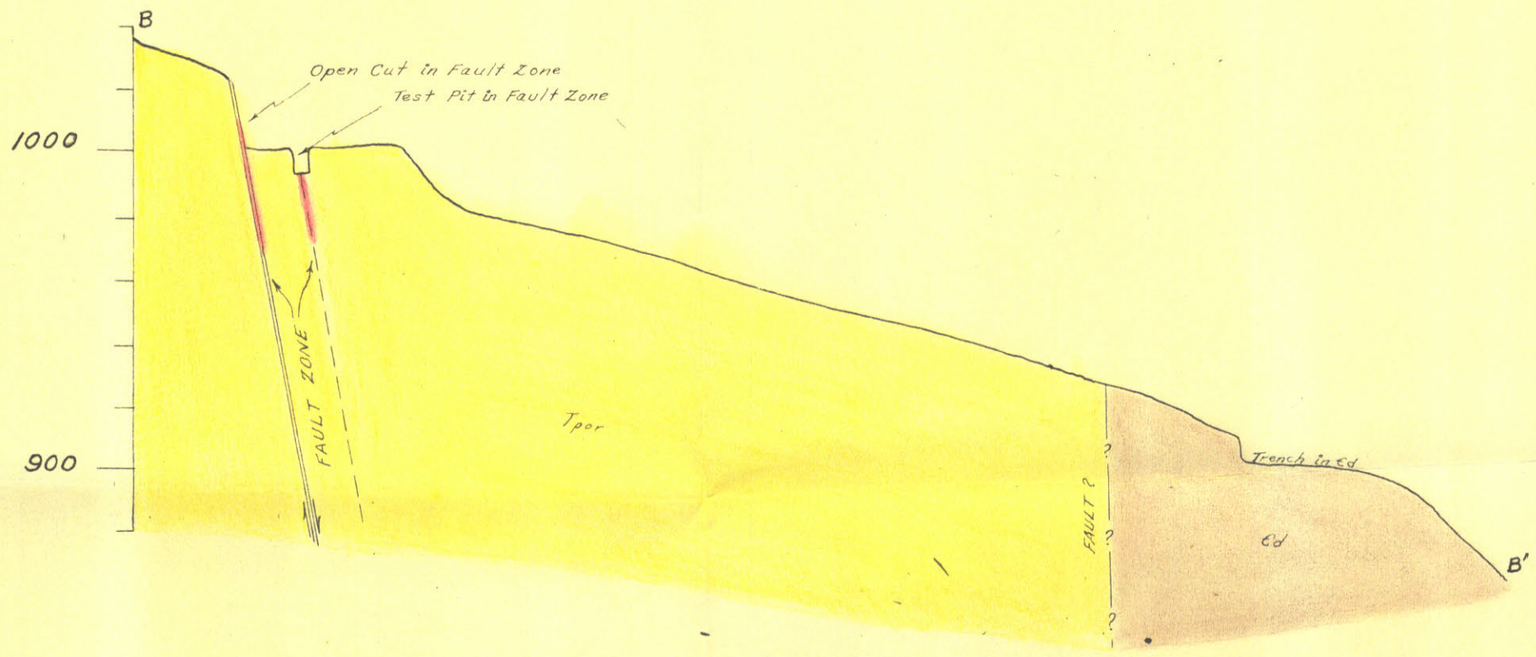
Reports, records of ore shipments and assays regarding

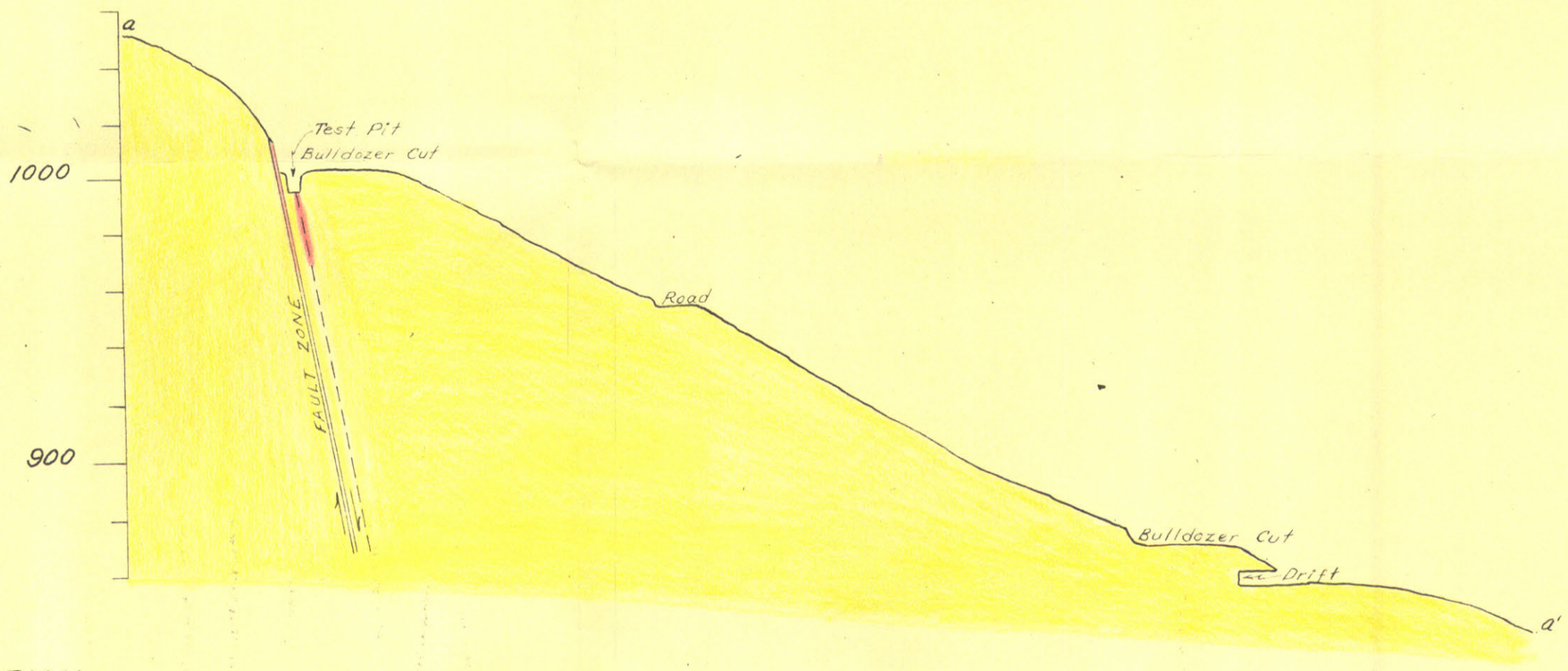
previous operations are unavailable. Apparently, not a great deal of mining has been done on the property, however, the present owner has stated that shipments of ore have been made in past years by former operators, but since no records are available the quality and quantity of material shipped is unknown.

The most recent investigation of the property was conducted by engineers of the U. S. Bureau of Mines when strategic mineral surveys were being made during World War II. The report of this investigation is on file at the U. S. Bureau of Mines office, Rapid City, South Dakota. The report recommended that exploration be carried out by a private concern with the aid of federal funds. Analyses included in the Bureau of Mines report ranged from 5% to 10% WO_3. These analyses were supposedly obtained before the last ore shipment and consisted of material previously mined, sorted and stockpiled and ore in place that was of sufficient grade to be mined. Since the time of this shipment, apparently no further actual mining has been done. Prospecting has been done with a bulldozer, however, and these cuts can be seen on the accompanying maps and sections. This prospecting was rather poorly planned and proved to be a rather ineffective method of testing this rugged terrain. Analyses of dump material from the test pit and open-cut made during this investigation were as follows: 0.05% WO_3, 0.62% WO_3, 0.30% WO_3, 0.80% WO_3, 0.20% WO_3, 0.04% WO_3 and 2.5% WO_3.

It has been found in the past that in mining similiar gold - silver deposits that better ore exists at intersections of the fracture and fault zones. This is a factor which should be considered in planning future exploration work in this area.

Respectfully submitted,
P. A. Miller, Chief Geologist





EXPLANATION

Tper — Tertiary Rhyolite & Quartz Monzonite

Єd — Cambrian Deadwood Formation

Apparent Mineralization

Note: Elevations shown are not true but were taken from an arbitrary point of assigned value.

HELLING PROPERTY
SECTIONS THROUGH WORKINGS

Bald Mountain Mining Co.
Trojan, So. Dak.
By P.A. Miller Scale 1" = 50'

November 1952

DMEA-3129

EXPLANATION

Tpor

Tertiary Rhyolite & Quartz Monzonite

Ꞓd

Cambrian Deadwood Formation

Fault

Pit or Trench

Adit

Appurent Mineralization

Test Pit

Note: Elevations shown are not true but were taken from an arbitrary point of assigned value.

PROPOSED WORK

Drift & Raise

PLATE-A

GEOLOGIC MAP OF THE HELLING WORKINGS

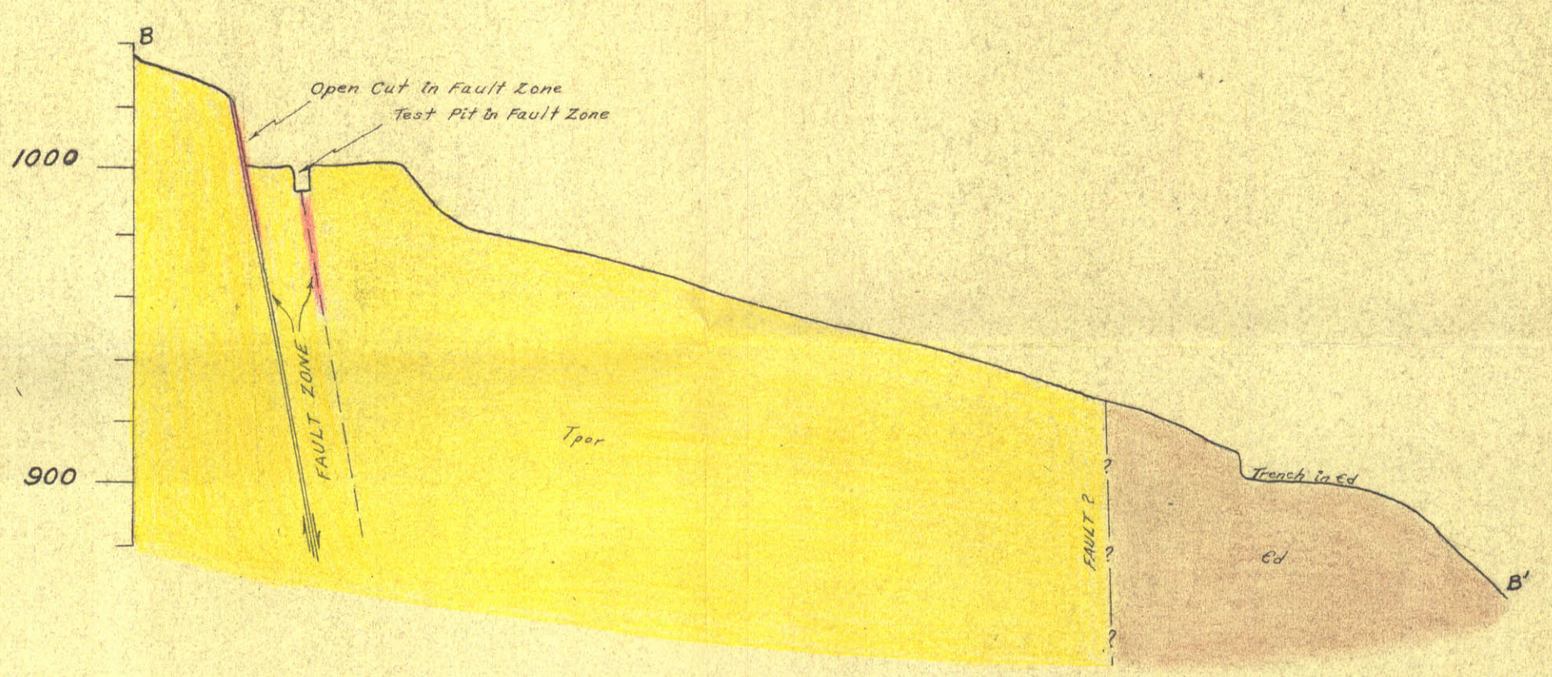
NEAR BURNO GULCH

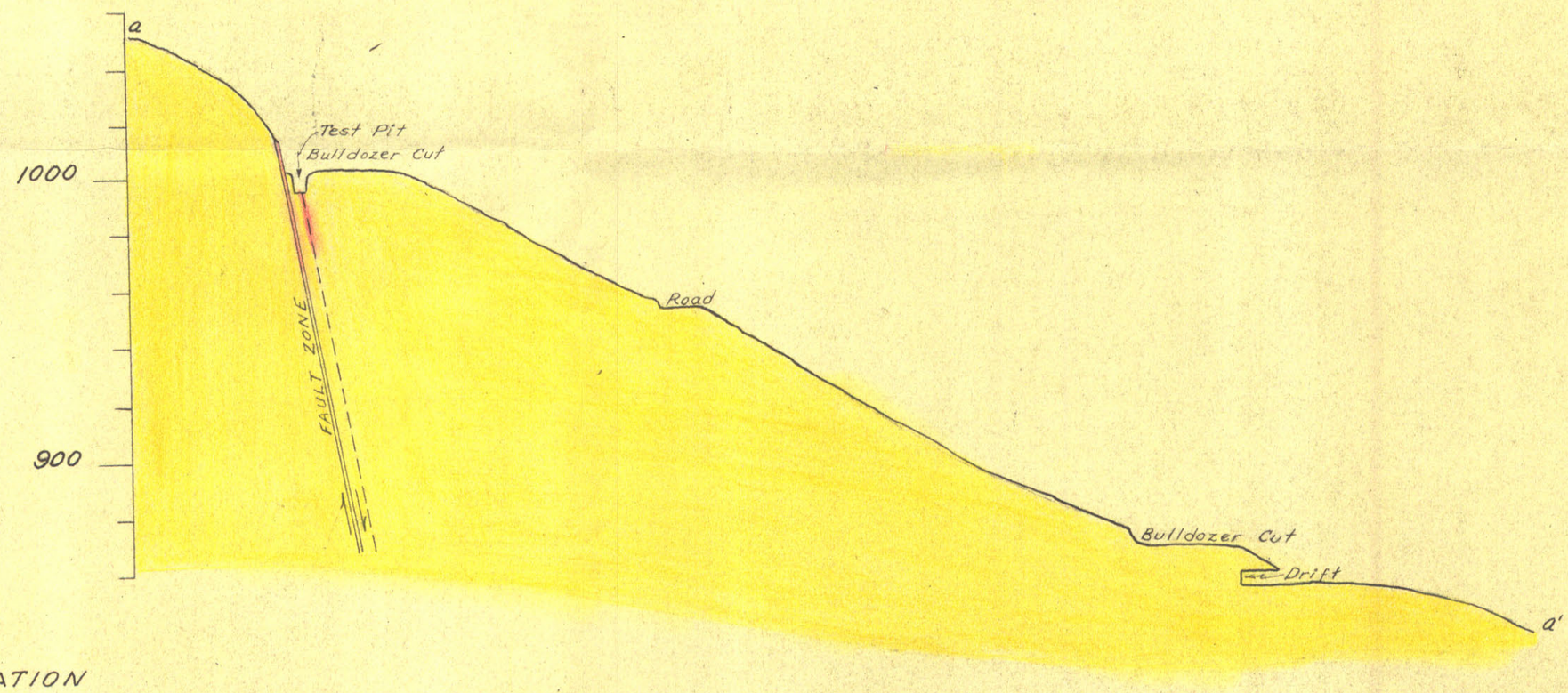
Bald Mountain Mining Co. Trojan, So. Dak.

By P.A. Miller. Scale 1"=50'

November 1952

DMEA-3129





EXPLANATION

Tpor — Tertiary Rhyolite & Quartz Monzonite

Ed — Cambrian Deadwood Formation

Apparent Mineralization

Note: Elevations shown are not true but were taken from an arbitrary point of assigned value.

HELLING PROPERTY
SECTIONS THROUGH WORKINGS

Bald Mountain Mining Co.
Trojan, So. Dak.
By P.A. Miller Scale 1" = 50'

November 1952

DMEA - 3129