Rubin Hoffmann

No. 1

AMENDMENT OF CONTRACT: No. Idm-E416

Contract Docket No. DMEA 2548, dated October 3, 1952, between the United States of America and a partnership consisting of Albert Robitsch and William Brewster is hereby amended as follows, effective as of the date of said contract:

> Referring to "EXHIBIT 'A'" attached to Exploration Project Contract Form MF-200(A), caption "Description of the Work", first paragraph, add the following:
>
> > In the event the aggregate footage of the nine holes does not expend the total of the authorized 1000 feet, the unexpended balance may be expended by drilling an additional hole at a location acceptable to the DMEA representative.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated MAR 6 1953

UNITED STATES OF AMERICA

By W. H. King
Executive Officer, DMEA
Field Team, Region IV

Albert Robitsch
Albert Robitsch, Partner

Wm E. Brewster
William Brewster, Partner

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2548

COMMODITY Tungsten

IDM-E 416

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DOCKET COPY

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

IT IS AGREED this 3rd day of October, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] A partnership consisting of Albert Sobitsch and William Brewster

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Colorado, County of Ouray, described as follows:[3]
Dunmore Lode Mining Claim U. S. Mineral Survey No. 20608
Yankee Lad Lode Mining Claim U. S. Mineral Survey No. 2131

the Operator represents and undertakes:[4]

(*a*) [redacted]

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within Sixty (60) days from the date of this contract shall commence work on a project of exploration for[5] Tungsten

in or upon the described land; and shall bring the project to completion within a period of six (6) months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay seventy-five (75) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $7,237.50, which is 75 percent of $9,650.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* A certified drill log must accompany each Monthly Progress Report. Reimbursement will be made only for diamond drill holes completed to the satisfaction of the DMA representative. Drill cores must be properly stored in acceptable core boxes. Cores must be split and one-half retained for the use of the DMA.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

William Bissenden (Operator)

By Albert Robitsch

By W. R. King
Executive Officer, DMA
Field Team, Region IV

I, , certify that I am the secretary of the corporation named as Operator herein; that , who signed this contract on behalf of the Operator, was then of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of _____, County of _____, described as follows: 1/

_____

_____

_____

_____

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ _____

_____

_____

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 7,237.50, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 15 day of Sept., 1952.

Marguerite L. MacLennan [Seal]

Roderick J. MacLennan [Seal]
by Marguerite L. MacLennan - Mother

Kenneth G. MacLennan [Seal]
by Marguerite L. MacLennan, Guardian

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

Exhibit A

Description of the Work

Wing holes shall be diamond core drilled a total distance of 1,000 feet, fanned vertically and horizontally as shown in Figure 3 to systematically explore the ore chimney. The core shall be no smaller than AX. Sludge samples must be collected at 5-feet intervals.

Figure 3 and 4 attached hereto show the location of the work and are made a part of Exhibit A.

Estimated Costs of the Project

1000 feet of diamond core drilling, including all costs of drilling, sampling, and storage of samples and cores at $9.65 per foot -	$9650.00	
Total cost of Project		$9650.00
Government's participation at 75%		$7237.50

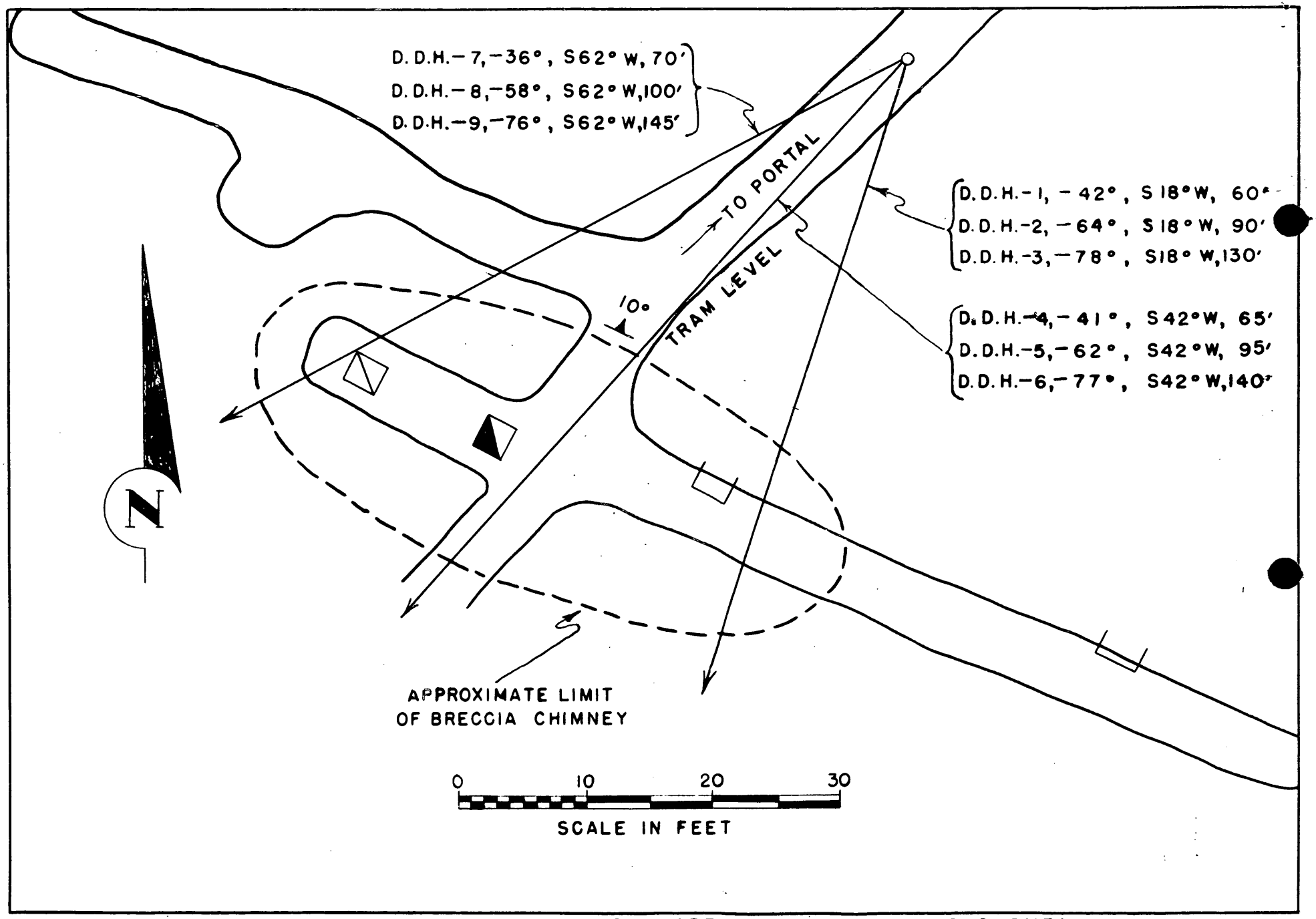
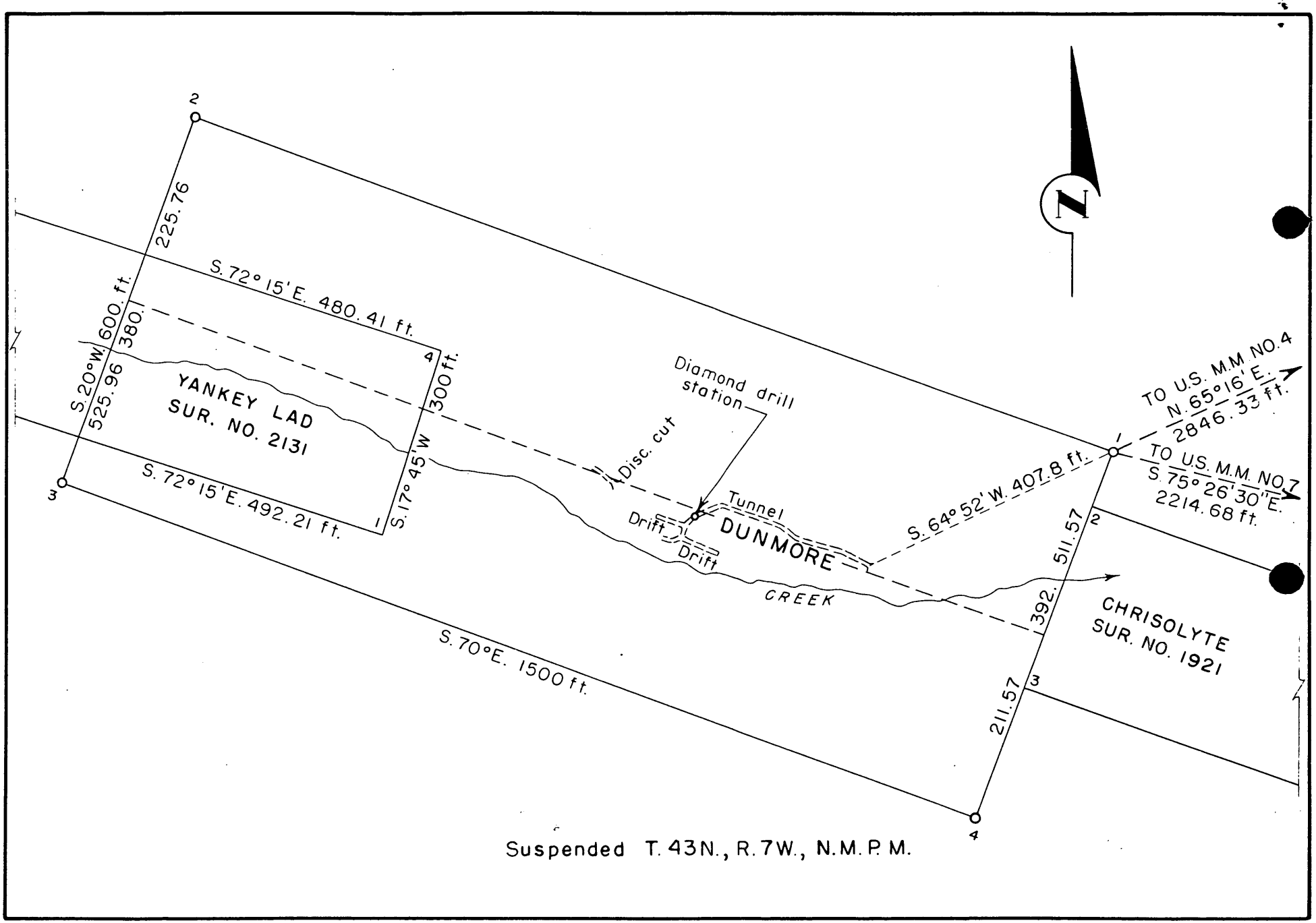


FIGURE 3., PROPOSED DIAMOND DRILLING, DUNMORE MINE, OURAY CO., COLO. DMEA-2548



Suspended T. 43N., R. 7W., N.M.P.M.

FIGURE 4 .- DUNMORE MINE, ROBITSCH AND BREWSTER, OURAY COUNTY, COLORADO. D.M.E.A. 2548

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SURNAME

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Rutledge
Chapman
Mulder
Miller
Chandler

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

SEP 3 1953

Messrs. Robitsch and Brewster
P. O. Box 483
Boulder, Colorado

Re: Docket No. DMEA 2548 - Tungsten
Dunmore and Yankee Lad claims
Ouray County, Colorado
Contract No. I[illegible]16

Gentlemen:

This is with reference to the subject exploration project contract between Robitsch and Brewster, partners, and the Government.

The final audit of the contract expenditures and the final reports of the Operator and the Field Team have been received and accepted by this Administration. The total amount of $9,650.00 approved under the contract was expended, 75 percent of which, or $7,237.50, represented the Government's share. There were no unused supplies, material, or equipment to be disposed of for the joint account of the Operator and the Government. The exploration work was completed in a satisfactory manner.

Because the results of the exploration were unfavorable, it is not our intention to make a certification of discovery or development which would create a lien against the subject property. We are, therefore, closing our books and records with respect to this project. Your attention is called, however, to Article 5(d) of the Contract which requires the Operator to "keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract."

Your interest in the Exploration Program of the Defense Minerals Exploration Administration and your willingness to participate therein are appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:foc
8-26-53
cc: Docket
Code 400
Oper. Comm.
Adm. Reading File
FT. Reg. IV
Mr. Geehan, USBM
Mary Miller, USGS.

F.G.B.
9-3-53

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SURNAME:

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

Rutledge
Chapman
Nielsen
Miller

SEP 3 1953

Memorandum

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Memorandum of Non-Discovery
Docket No. DMEA 2548 - Tungsten
Robitsch and Brewster
Dunmore and Yankee Lad claims
Ouray County, Colorado
Contract No. Idm-8436

This Division hereby concludes that the work done upon the subject property, as described under the contract, has resulted in no discovery or development from which commercial production may be made.

A description of the property, the work done, and the results obtained follow:

1. The exploration project was conducted on the Dunmore claim located in T. 43 N., R. 7 W., N.M.P.M., about 3 miles south of Ouray, Colorado.

2. The mineral sought was huebnerite which occurs in an elliptical breccia pipe.

3. The applicants proposed raising to the surface from the tunnel level on a known ore shoot. Because this work would be development and not exploration, the program was revised to one that would explore for downward extensions of the ore shoot by diamond drilling from the tunnel level.

4. Exploration started December 12, 1952, and was completed February 21, 1953. Ten holes aggregating 1,000 feet of drilling were completed. The results were nil. Since the holes were closely spaced both

R.C.G.
9-3-53

horizontally and vertically, it must be concluded that the disseminated hubnerite and the lenticular ore bodies of ore do not extend below the tunnel level, at least to the level of the lower holes, 135 feet below the tunnel level.

5. Total costs incurred were 1,000 feet of drilling @ $9.65 per foot - $9,650.00.

SIGNED

F. A. Rutledge, Acting Chief
Iron and Ferro-Alloys Division

FARutledge:foc
8-26-53
cc: Docket
Code 400
Adm. Reading File

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

SEP 3 1953

Memorandum

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Memorandum of Non-Discovery
Docket No. DMEA 2548 - Tungsten
Robitsch and Brewster
Dunmore and Yankee Lad claims
Ouray County, Colorado
Contract No. Idm-E416

This Division hereby concludes that the work done upon the subject property, as described under the contract, has resulted in no discovery or development from which commercial production may be made.

A description of the property, the work done, and the results obtained follow:

1. The exploration project was conducted on the Dunmore claim located in T. 43 N., R. 7 W., N.M.P.M., about 3 miles south of Ouray, Colorado.

2. The mineral sought was hubnerite which occurs in an elliptical breccia pipe.

3. The applicants proposed raising to the surface from the tunnel level on a known ore shoot. Because this work would be development and not exploration, the program was revised to one that would explore for downward extensions of the ore shoot by diamond drilling from the tunnel level.

4. Exploration started December 12, 1952, and was completed February 21, 1953. Ten holes aggregating 1,000 feet of drilling were completed. The results were nil. Since the holes were closely spaced both

horizontally and vertically, it must be concluded that the disseminated hubnerite and the lenticular ore bodies of ore do not extend below the tunnel level, at least to the level of the lower holes, 135 feet below the tunnel level.

5. Total costs incurred were 1,000 feet of drilling @ $9.65 per foot - $9,650.00.

F. A. Rutledge

F. A. Rutledge, Acting Chief
Iron and Ferro-Alloys Division

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FILE COPY
SURNAME:

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

AUG 31 1953

Mr. W. H. King, Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 2548 - Tungsten
Robitsch and Brewster
Dunmore and Yankee Lad claims
Ouray County, Colorado
Contract No. Idm-E-416

Dear Mr. King:

This will acknowledge receipt of your letter of August 17, 1953, noting that the requested Field Team final reports had been forwarded to Washington by letter of April 16, 1953.

In rechecking, we now find that the referenced reports were received in Washington but inadvertently were misrouted and not referred to the Iron and Ferro-Alloys Division.

Sincerely yours,

Ernest Wm. Ellis
(S)
ACTING Chairman, Operating Committee

APPROVED:

M. H. Kline (S)
Member, Bureau of Mines

D. M. Barrabee
(S)
Member, Geological Survey

Copy to: DOCKET
Adm. Read. File
Code 400
Operating Committee

FARutledge/ls
8/26/53

R.C.J. 8-31-53

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

224 New Customhouse
Denver 2, Colorado

August 17, 1953

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA-2548 (Tungsten), Contract Idm-E416, Albert Robitsch and William Brewster

Reference is made to the letter dated August 11, 1953, signed by the Acting Chairman of the Operating Committee, regarding final reports on Contract Idm-E416.

The original and one copy of the operator's final report, the original and three copies of the final geologic report, and the original and three copies of the final engineering report were sent by this office to the Secretary of the Operating Committee on April 16, 1953. A copy of our transmittal letter is enclosed.

Both copies found filed in official docket & never referred to Code 400 for review.

W. H. King
W. H. King

Enclosure

Data of O.C.'s former not indicated on original reports.

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

C O P Y

224 New Customhouse
Denver 2, Colorado

April 16, 1953

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region IV

Subject: Docket DMEA 2548, Contract Idm-E416 (Tungsten), Albert Robitsch and William Brewster

Enclosed are the following reports which constitute the final reports on work performed under the subject contract.

1. Original and one copy of operator's final report.

2. Original and three copies of the final geologic report by the Geological Survey.

3. Original and three copies of the final engineering report by the Bureau of Mines.

Work under the contract consisted of 1000 feet of underground drilling which was completed in a satisfactory manner. The work did not result in a discovery, therefore no certification will be required.

/s/ W. H. King
W. H. King

/s/ A. H. Koschmann
A. H. Koschmann

never received in 400.

JWT:jp
cc Contract
Chron
WMTraver
AHKoschmann
Mining Div.
JWTownsend

MDS

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SURNAME:

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Rutledge
Martin
Selfridge

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

AUG 1 1 1953

Mr. W. H. King, Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA 2548 - Tungsten
Rebitach and Brewster
Dunmore and Yankee Lad claims
Ouray County, Colorado
Contract No. Idm-E416

Dear Mr. King:

Exploration under the referenced contract was completed in February 1953. The final audit and the Operator's final report were received in March but the Field Team's final report has not yet been received.

It will be appreciated if you will advise when we may expect a final report by the Field Team on the subject project.

Sincerely yours,
W. S. Martin
ESY
ADMING Chairman, Operating Committee

APPROVED:

J. H. Hedges ESY
Member, Bureau of Mines

A. R. Kinkel, Jr. ESY
Member, Geological Survey

FARutledge:foc
8-10-53

cc: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. Reg. IV
R. W. Geehan, USBM
D. M. Lemmon, USGS

R.C.S. 8-11-53

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

224 New Customhouse
Denver 2, Colorado

April 16, 1953

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region IV

Subject: Docket DMEA 2548, Contract Idm-E416 (Tungsten), Albert Robitsch and William Brewster

Enclosed are the following reports which constitute the final reports on work performed under the subject contract.

1. Original and one copy of operator's final report.

2. Original and three copies of the final geologic report by the Geological Survey.

3. Original and three copies of the final engineering report by the Bureau of Mines.

Work under the contract consisted of 1000 feet of underground drilling which was completed in a satisfactory manner. The work did not result in a discovery, therefore no certification will be required.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Field Team's final reports to Operating Committee 4/20/53.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
March 2, 1953

Mining Division
Date Rec'd.
MAR 3 - 1953
BUREAU OF MINES
Denver, Colorado

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 2548, Contract Idm-E416 (Tungsten), Robitsch and Brewster (Dunmore mine), Ouray County, Colorado

Please find enclosed the original and four copies of the operators' final report, with attached sketch showing the completed diamond drilling, on the subject exploration project contract.

W. M. Traver

W. M. Traver

enclosures

d'amh

cc: WHKing
E416
DMEA Chron.

DIST. ENGR. KMT
EXAMINATION
DIST. CLERK
PERSONNEL
FILES E416

Mineral Resources Branch

Date Rec'd
MAR 2 1953

BUREAU OF MINES
Denver, Colorado

Final Report
DMEA 2548
Contract No. E416

Dunmore Mine
Ouray County, Colorado

Diamond drilling under contract E 416 commenced at the Dunmore mine on January 12 , 1953, and was completed by Boyles Brothers Drilling Company on February 20, 1953. Ten holes were drilled to explore a tungsten bearing chimney within the Dunmore vein. Following is a summary of the holes drilled:

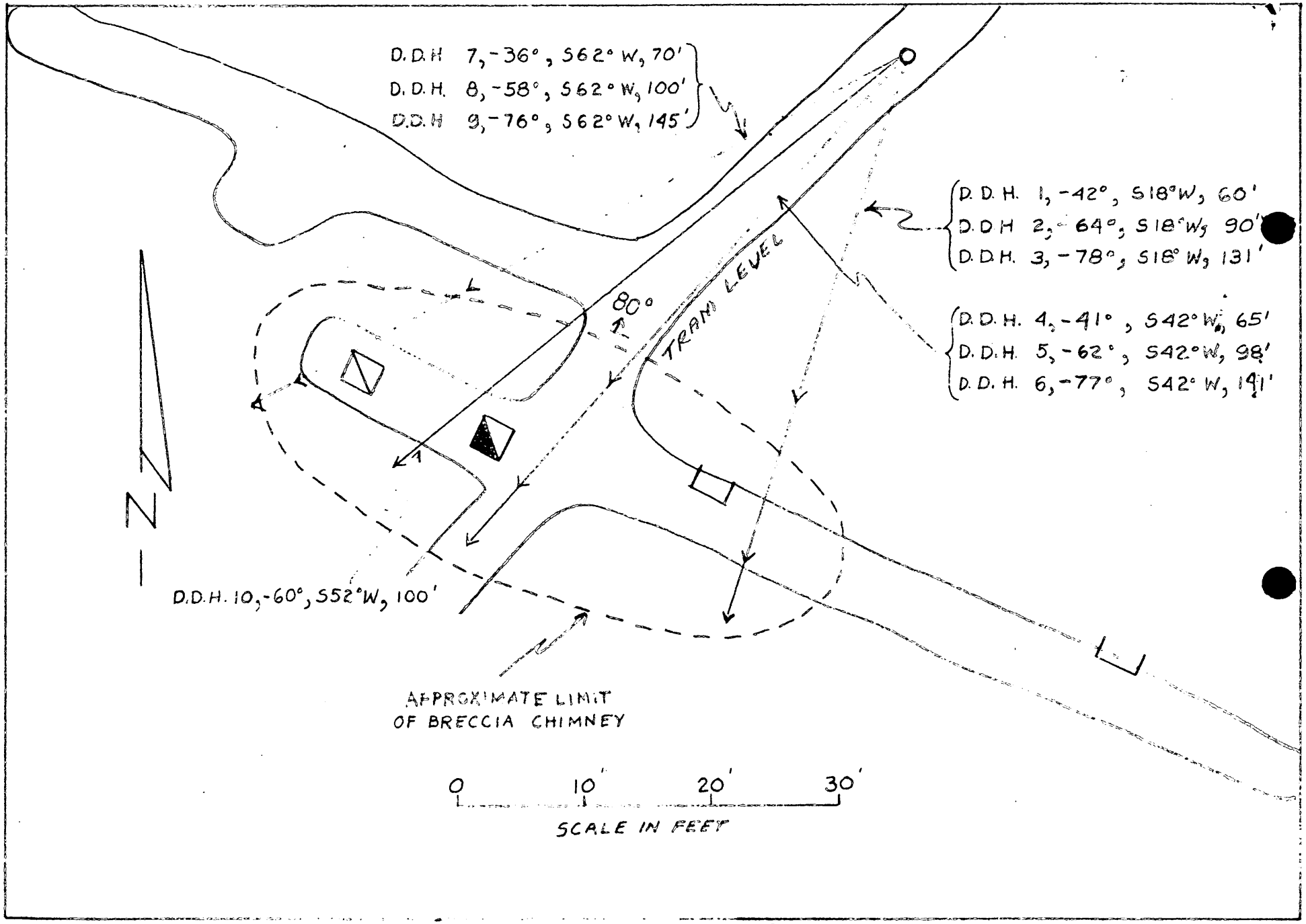
Hole No.	Depth	Formation drilled
1	60	Quartz
2	90	"
3	131	"
4	65	"
5	98	"
6	141	"
7	70	"
8	100	"
9	145	"
10	100	"
Total	1000 feet	

The attached map shows the location of the holes with respect to the chimney.

Diamond drilling under subcontract to Boyles Brothers was satisfactory and core recovery was good. No tungsten of commercial value was found in the core. Sludge samples were collected as required by the contract and all core was boxed in wooden containers. The core and sludges were turned over to the Bureau of Mines for additional inspection.

Under the terms of the contract a total of 1000 feet of drilling was completed at the contract rate of $9.65 per foot. The overall cost was set at $9,650.00 of which the Government will contribute $7,237.50 or 75% of the total. Drillers invoices have been submitted.

Wm. E. Brewster
Wm. E. Brewster
For
Robitsch and Brewster



COMPLETED DIAMOND DRILLING, DUNMORE MINE, OURAY CO., COLO. DMEA - 2548

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

224 New Customhouse
Denver 2, Colorado

April 16, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 20 1953

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region IV

Subject: Docket DMEA 2548, Contract Idm-E416 (Tungsten), Albert Robitsch and William Brewster

Enclosed are the following reports which constitute the final reports on work performed under the subject contract.

1. Original and one copy of operator's final report.

2. Original and three copies of the final geologic report by the Geological Survey.

3. Original and three copies of the final engineering report by the Bureau of Mines.

Work under the contract consisted of 1000 feet of underground drilling which was completed in a satisfactory manner. The work did not result in a discovery, therefore no certification will be required.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Operator's final report detached and distributed - 4/20/53-bl

Approved by
DMEA OPERATING COMMITTEE
4-24-53

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

200 New Customhouse
Denver 2, Colorado

4/15/53

April 15, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2548, Dunmore Mine, Ouray County, Colorado.

Attached are 8 copies of the final geologic report by E. N. Harshman covering Contract Idm-E416, DMEA Docket 2548, Dunmore Mine, Ouray County, Colorado.

Ten holes were drilled to explore the downward extension of the low-grade hubnerite-bearing breccia found in a "pipe" which is exposed in the tunnel and at the surface. The exploration failed to discover additional tungsten ore below the tunnel level and Harshman, therefore, recommends that certification of discovery not be made.

I concur in his recommendation.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

Reviewed by
DMEA OPERATING COMMITTEE
4-24-53
(Date)

DUNMORE MINE

OURAY COUNTY, COLORADO

DMEA DOCKET 2548

Final Geologic Report

By E. N. Harshman
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
4-24-53
(date)

DUNMORE MINE
OURAY COUNTY, COLORADO

INTRODUCTION

The Dunmore mine, Ouray County, Colorado, was examined on June 22, 1952, by R. R. McClellan, U. S. Bureau of Mines, and E. N. Harshman, U. S. Geological Survey. In their report they recommended a diamond drilling program, to explore for the possible downward extension of the low grade tungsten (hubnerite) ore body known to exist between the tunnel level and the outcrop.

In the original request for Government assistance, DMEA Docket 2548, W. E. Brewster and Albert Robitsch proposed to raise 100 feet to explore the hubnerite bearing chimney in the Dunmore lode. Since existing maps showed only 55 feet of unexplored ground between the stope back and the surface outcrop, and since low-grade ore of identical character was present in both the stope and the outcrop, the applicants' proposal was considered to be development rather than exploration. The application was amended to request exploration by diamond drilling below the tunnel level.

Contract Idm-E416, between W. E. Brewster, Albert Robitsch, and the Government was signed on October 3, 1952. It authorized an expenditure of $9,650 for rental of equipment and for drilling 1000 feet of diamond drill holes.

Exploration started January 12, 1952, and was completed February 21, 1953.

GEOLOGY

The Dunmore lode is exposed in the steep-walled canyon of Silver Creek, about 3 miles south of Ouray, Colorado. It is a fissure vein in Uncompahgre quartzite and has a uniform width of about 100 feet. Two pipes or breccia chimneys have been developed along the lode. One contains hematite, aikinite, and chalcopyrite; the other contains hubnerite and base-metal sulfides. The hubnerite-bearing breccia pipe is elliptical, 12 to 20 feet wide, and 50 to 60 feet long. It plunges about 80° northward. The breccia consists of coarse-grained, translucent, vuggy quartz that lines cavities and fills open spaces in an earlier brecciated quartz. Brecciation was produced by movement along a series of fractures which formed after silicification of the Dunmore lode. The fractured, silicified material was subsequently mineralized by solutions depositing quartz, hubnerite, pyrite, and minor amounts of hematite, galena, sphalerite, gold, and silver. Hubnerite occurs either as small disseminated crystals in the late quartz or as masses filling vuggs. It was the last ore mineral deposited in the breccia pipe.

Very minor amounts of hubnerite are found throughout the breccia pipe exposed above the tunnel level, but material of possible mining grade is found only in widely spaced lenticular bodies 1 to 20 feet in maximum dimension.

EXPLORATION

Ten holes were drilled to explore the downward extension of the low-grade hubnerite-bearing breccia pipe exposed in the tunnel. All holes were drilled from one station and were directed to explore the pipe at

depths of from 30 to 130 feet below the tunnel level (fig. 1). Drilling data follows:

Hole No.	Bearing	Inclination	Depth
1	S. 18° W.	-42°	60'
2	S. 18° W.	-64°	90'
3	S. 18° W.	-78°	131'
4	S. 42° W.	-41°	65'
5	S. 42° W.	-62°	98'
6	S. 42° W.	-77°	141'
7	S. 62° W.	-36°	70'
8	S. 62° W.	-58°	100'
9	S. 62° W.	-76°	145'
10	S. 52° W.	-60°	100'

Only a few hubnerite grains and crystals were found in the core secured from the 10 drill holes. Since the holes were closely spaced both horizontally and vertically (fig. 1), it must be concluded that the disseminated hubnerite and the lenticular bodies of ore do not extend much below the tunnel level. Although the intensity of brecciation and silicification at this depth is somewhat less than that noted above the tunnel level, the breccia pipe can be recognized in the deepest drill holes, about 135 feet below the tunnel level.

Geologic logs of the 10 diamond drill holes are shown at the end of this report.

ORE RESERVES

As a result of the apparent absence of significant amounts of hubnerite in the breccia pipe below the tunnel level, the ore reserves given in the examination report should be decreased by eliminating the inferred ore. Revised ore reserve estimates follow:

Type	Tons	% WO_3
Measured	75-100	0.80
Indicated	4500	0.80
Total	4600	0.80

CONCLUSIONS AND RECOMMENDATIONS

The exploration program at the Dunmore mine, Ouray County, Colorado, failed to discover additional tungsten (hubnerite) ore in the breccia pipe below the tunnel level. Accordingly, the ore reserve estimate is reduced to 4600 tons by eliminating 2200 tons of inferred ore previously believed to be present below the tunnel level.

The results of the program are believed to be conclusive and certification of discovery is not recommended.

DUNMORE MINE
OURAY COUNTY, COLORADO
DMEA DOCKET 2548

LOGS OF DRILL HOLES

DH No. 1
Drilled Jan.-Feb. 1953

Bearing S. 18° W.
Inclination -42°
Depth 60'

0'-31' Silicious vein material, white to gray, somewhat brecciated, pyritic.

31'-60' Silicified breccia, pyritic, gray to white, vuggy. Translucent quartz lines vuggs.

DH No. 2
Drilled Jan.-Feb. 1953

Bearing S. 18° W.
Inclination -64°
Depth 90'

0'-54' Silicious vein material, white to gray, brecciated and jointed, pyritic.

54'-90' Silicified breccia, pyritic, gray to white. Translucent quartz fills vuggs and cements breccia fragments.

DH No. 3
Drilled Jan.-Feb. 1953

Bearing S. 18° W.
Inclination -78°
Depth 131'

0'-33' Silicious vein material, white to gray, brecciated, pyritic.

33'-52' Quartzite, silicified and brecciated, pyritic. Numerous red, white, and clear quartz phenocrysts. Numerous vuggs.

52'-87' Silicious vein material, white to gray, brecciated, pyritic.

87'-113' Silicified breccia, gray, pyritic.

113'-131' Quartzite, brecciated, silicified, pyritic.

DH No. 4
Drilled Jan.-Feb. 1953

Bearing S. 42° W.
Inclination -41°
Depth 65'

0'-36' Silicious vein material, white to gray, somewhat brecciated, jointed, pyritic.

36'-65' Silicified breccia, pyritic, white to gray, vuggy, pyritic.

DH No. 5
Drilled Jan.-Feb. 1953

Bearing S. 42° W.
Inclination -62°
Depth 98'

0'-45' Silicious vein material, white to gray, pyritic, brecciated and jointed.

45'-98' Silicious breccia, cemented with translucent quartz. White to gray, pyritic, vuggy.

DH No. 6
Drilled Jan.-Feb. 1953

Bearing S. 42° W.
Inclination -77°
Depth 141'

0'-37' Silicious vein material, white to gray, pyritic.

37'-55' Quartzite, silicified and somewhat brecciated, vuggy, gray. Contains small quartz phenocrysts.

55'-86.5' Silicious vein material, gray to white, pyritic.

86.5'-94' Quartzite, silicified, gray to gray-green, vuggy, brecciated.

94'-107' Silicified breccia, gray-green.

107'-141' Quartzite, silicified, brecciated, light-gray.

DH No. 7
Drilled Jan.-Feb. 1953

Bearing S. 62° W.
Inclination -36°
Depth 70'

0'-49' Silicious vein material, gray to white, somewhat brecciated, pyritic.

49'-70' Silicified breccia, gray to white, pyritic, translucent quartz as cementing material.

DH No. 8
Drilled Jan.-Feb. 1953

Bearing S. 62° W.
Inclination -58°
Depth 100'

0'-16' Silicious vein material, white to gray pyritic, somewhat brecciated.

16'-48' Silicious vein material, white to gray pyritic, intensely brecciated.

48'-68' Silicified breccia, pyritic, light-gray.

68'-100' Silicified vein material, brecciated, pyritic, gray to white.

DH No. 9
Drilled Jan.-Feb. 1953

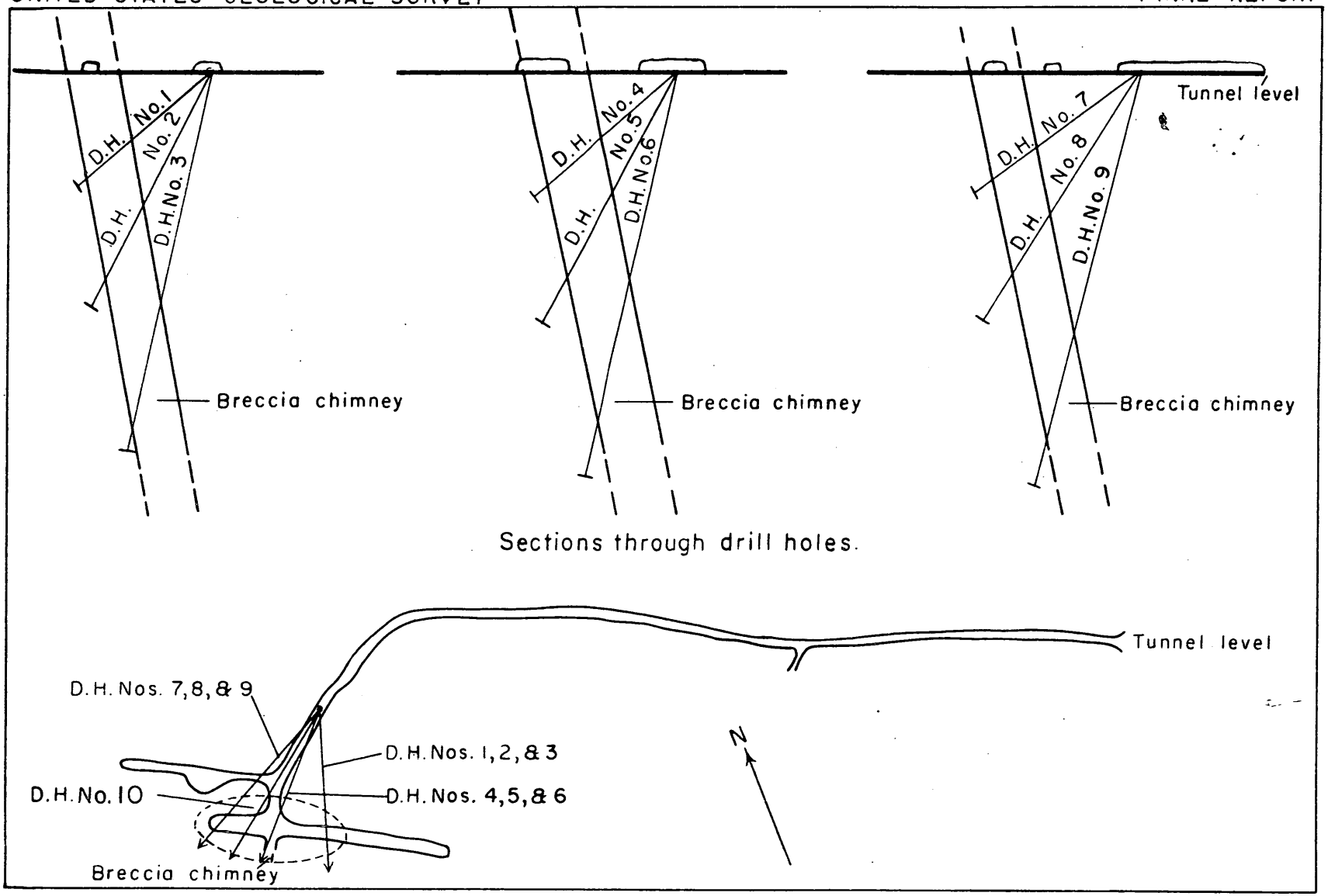
Bearing S. 62° W.
Inclination -76°
Depth 145'

0'-31'	Silicified vein material, slightly brecciated, pyritic, gray to white.
31'-56.5'	Quartzite, slightly silicified.
56.5'-59'	Quartzite, silicified, gray-green.
59'-115'	Quartzite, somewhat silicified, vuggy, gray-green.
115'-145'	Quartzite, alternate gray-green and red bands, only slightly silicified.

DH No. 10
Drilled Jan.-Feb. 1953

Bearing S. 52° W.
Inclination -60°
Depth 100'

0'-13'	Silicified vein material, pyritic, gray to white, somewhat silicified.
13'-14'	Quartzite, unaltered, red.
14'-77'	Silicious vein material, brecciated and vuggy; some translucent quartz.
77'-100'	Silicious vein material, white to gray, somewhat brecciated.



E.N. Harshman March 1953

FIGURE 1.—PLAN AND SECTIONS, DUNMORE MINE.

50 0 50 100 Feet

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Mining Division
Date Rec'd
MAR 13 1953
BUREAU OF MINES
Denver, Colorado

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
March 11, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 20 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch Mining Division, Region IV

Subject: DMEA 2548, Contract Idm-E416 (Tungsten), Albert Robitsch and William Brewster (Dunmore mine), Ouray County, Colorado

Please find enclosed the original and eight copies of Russell R. McLellan's final report on the subject project.

The total amount approved under the contract, or $9,650.00, was expended, and the Government's share was 75 percent, or $7,237.50. There was no unused material, supplies or equipment for disposal. Final audit will be routine.

Operations were carried on to completion of 1,000 feet of underground drilling in a satisfactory manner, with unfavorable results. A "Certification of Discovery", which would create a lien against the property, cannot be made. It is recommended the project be closed in the usual manner under such circumstances.

Floyd D. Everett
for
W. M. Traver

enclosures

WMT/cb

cc 8
E416
DMEA Chron.

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

FINAL ENGINEERING REPORT

DMEA 2548, Exploration Project Contract Idm-E416

Robitsch and Brewster

Dunmore Mine

Ouray County, Colorado

Tungsten

Russell R. McLellan, Mining Engineer
Bureau of Mines

March 11, 1953

DMEA 2548
Contract Idm-E416

DUNMORE MINE
OURAY COUNTY, COLORADO

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Final Engineering Report — Page

Introduction..... 1
Project proposals..... 1
Work accomplished..... 2
Project results..... 2
Project costs..... 3
Conclusions and recommendations..... 4

ILLUSTRATIONS

Figure — Follows Page

1. Location of diamond drill holes, Dunmore mine, Ouray County, Colorado..... 2

DMEA 2548
Contract Idm-E416

DUNMORE MINE
OURAY COUNTY, COLORADO

FINAL ENGINEERING REPORT

By

Russell R. McLellan

INTRODUCTION

William E. Brewster and Albert Robitsch, of Ouray, Colo., applied to the Defense Minerals Exploration Administration for assistance to explore for tungsten in the Dunmore mine, Ouray County, Colo. The applicants originally proposed to raise 100 feet on a known shoot of tungsten ore. During the preliminary investigation on June 19, 1952, the field examiners pointed out to the applicants that only 60 feet of back existed and that the tungsten shoot cropped out on the surface; a program of raising, therefore, could not be classified as exploration. The operators suggested a revised program of sinking or of diamond drilling to explore the deposit at depth. One thousand feet of diamond drilling, estimated to cost $9,650.00, was recommended. A short-form contract was signed on October 3, 1952, and the 1,000 feet of diamond drilling was completed on February 21, 1953. No discovery was made.

PROJECT PROPOSALS

The applicants revised the original proposal to raise from the haulage level of the Dunmore mine in favor of exploring for a continuation

of the mineralized zone at depth. Nine holes were proposed which were to be fanned vertically and horizontally in such a pattern that the nearly vertical tungsten-bearing breccia chimney could be explored quite thoroughly to a depth of approximately 140 feet (fig. 1). An estimated 1,000 feet of drilling was believed sufficient to complete the project.

WORK ACCOMPLISHED

Ten diamond drill holes were completed for a total footage of 1,000 feet. Nine holes were specified in contract Idm-E416 and one additional hole was allowed by an amendment to the contract. The drilling was accomplished by Boyles Brothers Drilling Company and was completed satisfactorily on February 21, 1953. The rock was hard, vuggy, and, in places, badly fractured. Sludge samples were collected as required and the core was boxed in wooden containers. The applicants submitted all core and sludges to the Bureau of Mines for detailed study. The core was logged in detail by a Geological Survey geologist. Sampling was considered unnecessary.

PROJECT RESULTS

The diamond drilling revealed no trace of tungsten below the main level. The complete absence of tungsten in the core is indicative that no commercial ore exists in the breccia chimney for a depth of at least 140 feet below the main level.

As a result of stoping above the level and diamond drilling below the level, it is apparent that the better grade tungsten ore is confined to an extremely limited area laterally and vertically.

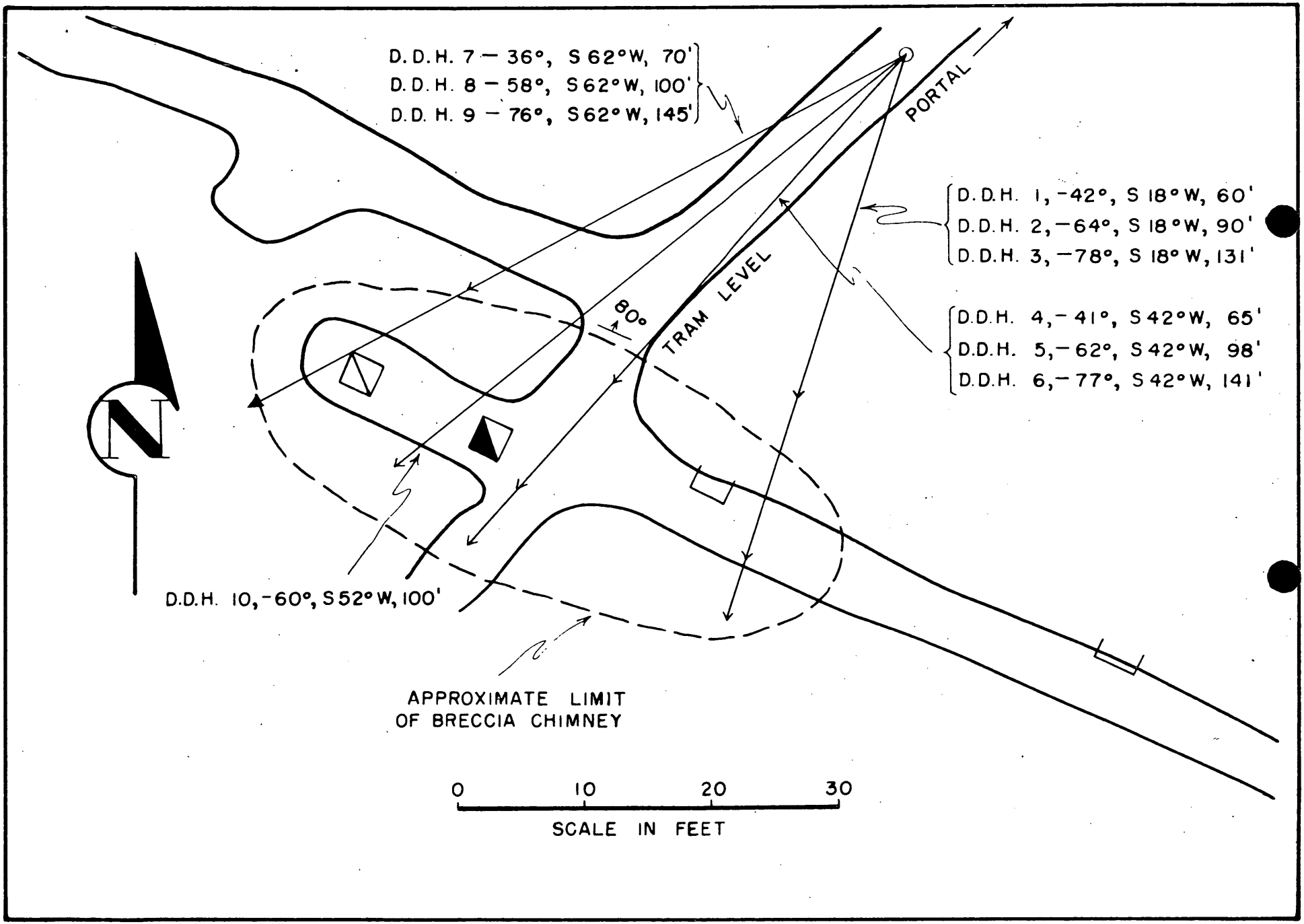

FIG. 1 LOCATION OF DIAMOND DRILL HOLES, DUNMORE MINE, OURAY COUNTY, COLO., DMEA 2548

Detailed geologic logs of the holes will be submitted with the final geologic report. The project was completed within the 6 months allowed by the contract.

PROJECT COSTS

The project was set up under a short-form contract which allowed the applicants to diamond drill no more than 1,000 feet of hole at an over-all cost of $9.65 per foot or at a total cost of $9,650.00. Following is a résumé of the holes drilled and the cost per hole.

Diamond drill hole number	Depth feet	Cost per foot	Total cost
1	60	$9.65	$ 579.00
2	90	9.65	868.50
3	131	9.65	1,264.15
4	65	9.65	627.25
5	98	9.65	945.70
6	141	9.65	1,360.65
7	70	9.65	675.50
8	100	9.65	965.00
9	145	9.65	1,399.25
10	100	9.65	965.00
Totals	1,000		$9,650.00

Government participation was $7,237.50, or 75 percent of the total expenditure.

CONCLUSIONS AND RECOMMENDATIONS

As no discovery was made and as the operator purchased no equipment and has no unused materials or supplies on hand that could be utilized for other work, it is recommended that the project be officially closed in the usual manner.

cb

Docket Copy

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

224 New Customhouse
Denver 2, Colorado

March 6, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Amendment No. 1 to Contract Idm-E416, Docket DMEA 2548, Robitsch and Brewster

Enclosed are the original and two copies of Amendment No. 1 to Contract Idm-E416. This amendment allows the operator to drill 10 holes instead of 9, inasmuch as the footage drilled in 9 holes did not total the authorized 1,000 feet of drilling. It was orally agreed between the engineer and the operator that it would be desirable to drill this additional hole.

W. H. King
W. H. King

Enclosures

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RECEIVED
APR - 9
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

FILE COPY
SURNAME:

800

Talbert
Chambers

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

MAR 20 1953

AIR MAIL

Mr. Donald T. Finch
DMEA Auditor
224 New Customhouse Building
Denver 2, Colorado

Re: DMEA-2548, Idm-5416
Rebitsch and Brewster

J. C. 3/20/53

Dear Mr. Finch:

Receipt is acknowledged of the Report of Review, covering the referenced project, transmitted by your letter of March 16, 1953.

Approval and distribution of this Report of Review is being held in suspense pending clarification of several points, that is:

(1) The period is indicated as being "for the months of October 1952 to February, 1953", whereas the December MF-104 (the only one we have received) states "The diamond drill began work on November 29. The drill contractor worked six days between the 29th of November and 12th of December. He is not working now." Did the Operator submit an MF-104 for the month of October?

(2) Payment for 1,000 ft. at $9.65 (the entire amount authorized by the contract) is certified as being valid and proper, whereas, by memoranda dated December 29, 1952 and January 5, 1953, signed by Mr. Truver and Mr. King, respectively, it is indicated that the first 70 feet of drilling (the entire amount of December MF-104) was not performed in accordance with the contract and was of no benefit to the exploration project. Is the 1,000 feet, for which the costs have been certified by you, exclusive of this first 70 feet? Or has the field team rescinded their memoranda?

Please furnish particulars on these points and also see that the Certifying Officer's files contain full justification for certifying the costs of the 1,000 feet of drilling.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

EDTalbert/wb
March 20, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers

400

FILE COPY
SURNAME:

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

Martin
Edwards
F.E. Johnson

BW

Mr. W. H. King, Executive Officer
DMEA Field Team, Region IV
224 New Customhouse
Denver 2, Colorado

JAN 19 1953

Re: Docket No. DMEA 2548, Tungsten
Robitsch and Brewster
Dunmore and Yankee Lad claims
Ouray County, Colorado
Contract No. Idm-E-416

Dear Mr. King:

This acknowledges receipt of your letter of January 13, 1953, regarding the last paragraph of our letter of December 5, 1952, to you, concerning the contract prepared in Region IV for the subject project.

We note that you do not believe that the Government is at all concerned in what compressors, if any, the Operator is using on this job. You mention that the contract is prepared on the short form and that you are authorized to reimburse the Operator for actual units of work performed regardless of what equipment is used to do the work.

J.C. 1-19-53

As a matter of fact, Defense Minerals Exploration Administration is deeply concerned not only with the supervision of all DMEA contracts but also with the preparation of such contracts. After the contract has once been executed in short form, you are of course authorized to reimburse the Operator for actual units of work performed regardless of what equipment is used for the work. At the same time, as DMEA Circular No. 21 makes clear, the short form should not be used unless the Operator will agree to estimated unit costs that are as low or lower than the actual costs are apt to be.

It is our belief that in many future instances carefully prepared short form contracts can be used to the advantage of our entire program. Therefore, we desire, especially in cases like the one discussed herein where the unit cost seems to us to be conspicuously high, to have sufficient information in our records to justify such unit costs. The foregoing should clarify our reasons for inquiring about the compressor.

With your letter of January 9, 1953, to the Administrator, DMEA, you transmitted a copy of Mr. R. R. McLellan's memorandum of January 8 covering the same project. That memorandum raises a number of other questions which can best be discussed after the project has been completed, but we are pleased to find that the next to last paragraph thereof explains in satisfactory form why the second compressor is required.

Sincerely yours,

George C. Selfridge (JB)

Chairman, Operating Committee

Approved:

J. H. Hedges (JB)

Member, Bureau of Mines

T. P. Thayer (JB)

Member, Geological Survey

WSMartin/ls
1/16/53

CC: DOCKET
FIELD TEAM, REG. IV
CODE 400
CODE 800
CODE 140
ADMN. READ. FILE
D. M. LEMMON, USGS
R. W. GEEHAN, USBM
OPERATING COMMITTEE

1/16/53

Mr. Martin -

Bill:

$9.65 per foot appeared high to us in view of costs for drilling on other projects. Isolation of project and small footage to be drilled may have some bearing.

Note King says contract is on short form so they may have a point with respect to our inquiry about the compressors. However, George Selfridge referred to the cost of $9.65 as an estimate. We should check into this to get the facts. King's memo was brought in by Jack East with about 30 others.

Frank E. Johnson

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

224 New Customhouse
Denver 2, Colorado

January 13, 1953

Memorandum

To: Chairman of the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Docket No. DMEA 2548, Contract No. Idm-E416, Robitsch and Brewster

Reference is made to a letter dated December 5, 1952 from the Chairman of the Operating Committee regarding Contract Idm-E416.

This letter quotes cost data from the final report and discusses a compressor that the applicants have recently purchased. The estimated cost of diamond drilling in the final report was given as $5.00 per foot. The operator has a contract for diamond drilling at the rate of $5.25 per foot, $2.25 per foot for reaming, and $7.50 per hour for waiting. It is impossible to determine how much reaming or cementing will have to be done beforehand. However, we believe that the cost of $9.65 per foot, which was stipulated in the short form contract, is fair to both the operator and to the Government. This cost is not high enough to cover all contingencies, but in our estimation, does not exceed what the actual costs of performing the work are apt to be.

The last paragraph of this letter states as follows:

> "Possibly the foregoing simply means that a second compressor is to be rented for the project in addition to the one already purchased. In that event, we would appreciate your advising us promptly what program of his own the Operator plans to follow that prevents use of the existing compressor for the DMEA project."

We do not believe that the Government is at all concerned in what compressors, if any, the operator is using on this job. The contract is prepared on the short form, and we are authorized to reimburse him for actual units of work performed regardless of what equipment is used to do the work.

JFS:es

cc: Contract
Chron.
East
Shaw
Tra ver, Koschmann (2)

W. H. King
W. H. King

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

C O P Y

December 5, 1952

Mr. W. H. King
Executive Officer, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 2548-Tungsten
Robitsch and Brewster
Dunmore and Yankee Lad Lode
Mining Claims
Ouray County, Colorado
Exploration Contract Idm-E416

Dear Mr. King:

This will acknowledge receipt on November 24, 1952 of copies of your memorandum of August 19, 1952, to the Field Team, Region IV, enclosing engineering report on the subject exploration property, by R. R. McLellan, Mining Engineer, U. S. Bureau of Mines.

In reviewing the above report, we note from data in the summary on page 9 that the total cost of diamond drilling at the project, estimated at $9.65 per foot, includes the following individual items:

	Dollars Per Foot
Contract diamond drilling	$5.00
Supervision	1.17
Labor	1.01
Operating material and supplies	1.07
Operating equipment, rented	1.20*
Operating equipment, depreciation	0.02
Miscellaneous	0.18

* This item corresponds to rental of a 315 c.f.m. compressor at $400.00 per month.

We also note, from page 7 of the same report, that the applicants have already purchased the compressor and that, consequently, its purchase price cannot be included in the cost of our program except on a depreciation basis. Using the specified replacement value of $2,400.00, the calculated monthly depreciation is $40.00.

The difference between the above charges for use of the compressor is $1.08 per foot. Saving this amount would reduce the total estimated drilling cost to $8.57 per foot and would decrease the total cost of the project by more than 11 percent.

Possibly the foregoing simply means that a second compressor is to be rented for the project in addition to the one already purchased. In that event, we would appreciate your advising us promptly what program of his own the Operator plans to follow that prevents use of the existing compressor for the DMEA project.

Sincerely yours,
/s/ G. C. Selfridge
Acting Chairman, Operating Committee

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

W34

224 New Customhouse
Denver 2, Colorado

January 13, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 15 1953

Memorandum

To: Chairman of the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Docket No. DMEA 2548, Contract No. Idm-E416, Robitsch and Brewster

Reference is made to a letter dated December 5, 1952 from the Chairman of the Operating Committee regarding Contract Idm-E416.

This letter quotes cost data from the final report and discusses a compressor that the applicants have recently purchased. The estimated cost of diamond drilling in the final report was given as $5.00 per foot. The operator has a contract for diamond drilling at the rate of $5.25 per foot, $2.25 per foot for reaming, and $7.50 per hour for waiting. It is impossible to determine how much reaming or cementing will have to be done beforehand. However, we believe that the cost of $9.65 per foot, which was stipulated in the short form contract, is fair to both the operator and to the Government. This cost is not high enough to cover all contingencies, but in our estimation, does not exceed what the actual costs of performing the work are apt to be.

The last paragraph of this letter states as follows:

> "Possibly the foregoing simply means that a second compressor is to be rented for the project in addition to the one already purchased. In that event, we would appreciate your advising us promptly what program of his own the Operator plans to follow that prevents use of the existing compressor for the DMEA project."

We do not believe that the Government is at all concerned in what compressors, if any, the operator is using on this job. The contract is prepared on the short form, and we are authorized to reimburse him for actual units of work performed regardless of what equipment is used to do the work.

W. H. King

W. H. King

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

REFERRED TO: DATE 1/15/53

1. Mr. Martin, Rm. 3538
2.
3.
4.

FOR:

- ---------- Action
- ---------- Approval
- ---------- Comment
- ---------- Conference
- ---------- Consideration
- ---------- Filing
- ---------- Instructions
- ---------- Investigation
- ---------- Initials
- ---------- Mailing
- ---------- Previous correspondence
- ---------- Recommendation
- ---------- Record of ----------
- ---------- Referring to ----------
- ---------- Reply for signature of ----------
- ---------- Rewriting
- ---------- Signature
- ---------- Suggestions
- ---------- Your information

REMARKS: Copy referred to Mr. Chambers and Mr. Hofflund.

Check (X) before the items needing attention.

GPO 16—63815-1

George C. Selfridge
(NS) *Initials of sender.*

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

224 New Customhouse
Denver 2, Colorado

January 9, 1953

Memorandum

To: J. H. East, Jr., Regional Director, Region IV

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2548, Contract Idm-E416, Robitsch and Brewster (Tungsten)

Enclosed is a copy of a letter dated January 2, 1953, from the Chairman of the Operating Committee to the Executive Officer, Field Team, Region IV, and a memorandum dated January 8, 1953, by Russell R. McLellan in reply to this letter.

The Chairman of the Operating Committee criticized Contract Idm-E416 and the conclusions of the engineer. His letter indicates that he does not understand the topography of the country or the nature of the ore body. Both of these items were covered in the engineering report. Frank Johnson stated that the Field Team persuaded the operator to accept a program of 1000 feet of diamond drilling. This is untrue. He also states that a sinking program would have been more appropriate. It would be ridiculous to sink a shaft in this rugged country. A tunnel would be more feasible for development of mining operations. The logical method to explore this orebody is by diamond drilling. Short drill holes such as those recommended would not deviate more than a few inches. The orebody is silicified and homogeneous, not brecciated and buggy as stated by Mr. Johnson.

Frank Johnson states that the contract should be drawn up on the short form contract. This contract was prepared on the short form contract and permitted diamond drilling at the rate of $9.65 per foot. ?

W. H. King

W. H. King

Enclosures

File 1/16/53

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

Mr. W. H. King
Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2548 (Tungsten)
Exploration Contract No. Idm-2416
Rehitech and Brewster

Dear Mr. King:

The subject contract negotiated and executed by the Field Team, Region IV, under delegation of authority has been reviewed by this office and we have set forth our comments below:

Although a Geologist and a Mining Engineer made the field examination on June 19, and their final report is dated July 29, 1952, the final Field Team report did not arrive in Washington until November 24, 1952.

A preliminary review of the contract indicated that the estimated cost included an excessive rental charge and to avoid any difficulty with the Auditors we wrote to Region IV on December 5 requesting clarification. It would have been to the advantage of both the Washington office and the field if the report had been received with the contract. Field Team reports should be forwarded to this office as promptly as possible after they are completed, whether or not a contract is to be executed under your delegated authority. It is important that this office be kept fully and currently informed so that it is not placed in an unfavorable position for carrying out its responsibilities.

In connection with the subject contract, the applicants proposed to raise at least 100 feet from the top of an old raise to be selected from a group of six, each extending about 15 feet above the tram level, and all connected at the top to form a stope. According to the Field Team's final report it was pointed out to the Operator that only about 55 (or 85) feet of ore existed between the back of the old stope and the surface, and that the raise, therefore, would not qualify as exploration. The Operator then suggested sinking the old 10 feet winze on the tram level another 65 feet and driving a total of about 70 feet of drifts and crosscuts on the 75 feet level to determine the ore limits. Instead, the Operator was persuaded by the Field Team to accept a program of 1,000 feet of diamond drilling.

Copy given to Letter 1-6-52

We believe it would have been more appropriate to have approved a sinking program. One consideration in choosing a drilling program was that the Operator was known to be incompetent and the drilling could be contracted. Control of operations could have been established by setting up the project in stages, each dependent upon the satisfactory completion of the prior stage, or more effectively by drawing up a "short form" contract. Another consideration was the belief that the drilling would prove the ore body "to a depth of 140 feet"; but if the dip of the orebody remains constant at 80°, diamond drill holes Nos. 3 and 9 would each cut the hanging wall of the orebody 81 feet below the tram level and will probably find footwall at 122 feet and 145 feet below, respectively, thus, proving the orebody only to a depth of approximately 108 feet. Furthermore, in many districts inclined holes tend to orient themselves so as to become normal to the dip of the controlling structures. Any such tendency would cause the inclination of the holes to flatten, and thus obtain even less depth than that computed above. Drilling a deposit that is known to be brecciated and vuggy may result in additional deviations.

The contract calls for 9 diamond drill holes from one setup, fanned out in groups of 3 in 3 planes dipping about 40°, 60° and 77°. In each plane, the holes will be not over 15 feet apart horizontally at the hanging wall and about 22 feet apart at the footwall. Holes spaced so closely would ordinarily be classed as development. It is, however, not only possible but may be probable that the drilling results will be inconclusive in spite of the close spacing, because of the extremely spotty nature of the barite occurrences at the Dunmore property.

Moreover, even if the drilling gives results which can properly be accepted as proving ore reserves, it is still true that whatever ore the project encounters will have to carry the cost of the project in addition to all other production costs. With more favorable marketing conditions and more efficient operation, it is possible that the property could be operated profitably.

The Operator expected to be able to sink 65 feet and drive 70 feet of drifts and crosscuts for a total of $12,050.00, corresponding to costs of about $137 per foot for sinking and $45 per foot for drifting. The winze is already 10 feet deep and 65 feet of sinking would, therefore, develop the ore to a depth of 75 feet, which, at 80 tons per foot, equals 6,000 tons of ore. A program including exploration winze and horizontal workings extending from foot to hanging wall and from easterly to westerly limits of the one ore body would amount to $2.00 per ton explored. Additional cost for development would be negligible because the exploration workings could be used for ore extraction. Furthermore, the ore extracted

in sinking and drifting could be treated as a bulk sample and would give more dependable results than can be expected from diamond drill core samples of an ore as spotty as that discussed above.

In view of the limited target and the marginal nature of the ore it would seem that underground exploration of a limited amount would have been the most expedient means for further exploring the subject property. Although you may not agree with our premises, we feel that you should have the benefit of our thinking on this matter.

Sincerely yours,

/s/ Frank E. Johnson

Chairman, Operating Committee

APPROVED:

/s/ J.H. Hedges

Member, Bureau of Mines

/s/ A.R. Kinkel, Jr.

Member, Geological Survey

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
January 8, 1953

Memorandum

To: Chief, Mineral Resources Branch, Mining Division, Region IV

From: Russell R. McLellan, Mining Engineer

Subject: DMEA 2548, Contract Idm-E416 (Tungsten), Robitsch and Brewster (Dunmore mine), Ouray County, Colorado - Frank E. Johnson's letter, January 2, 1953

With reference to Frank E. Johnson's letter of January 2, 1953, it is believed that most of his comments concerning the subject contract were expressed without sufficient knowledge of the area to be explored or of the conditions existing at the mine.

In paragraph 4, Johnson's wording indicates a lack of understanding as to why the applicants' proposal to raise was not qualified as exploration. The applicants admitted that no attempt had been made to measure the distance from the stope to the surface, nor did they attempt to locate an outcrop of the mineralized chimney. The examining engineer and geologist located the outcrop and determined that it was approximately 65 feet above the stopes. The tungsten mineralization had decreased to little more than a trace from the stopes to the surface. This fact alone was enough to discourage any additional work in the heavy ground above the existing stopes. In addition, a short raise driven to connect two known mineralized exposures can hardly be qualified as exploration.

In the same paragraph, Johnson flatly states that the field team pursuaded the operator to accept a program of 1,000 feet of diamond drilling. It should be stressed that the operator was not pursuaded in any sense of the word. Brewster and Robitsch wished to explore the deposit in the least amount of time and as economically as possible. They suggested renting a drill and proposed to drill the deposit themselves which was out of the question as neither man had ever operated a diamond drill.

In paragraph 5, Johnson states that the sinking program would have been more appropriate and could have been controlled by staging the program or by drawing up a short form contract. In this case, there was

little object in setting up a program which could be curtailed at any time by the Government due to inefficiency on the part of the operator or, in the case of a short form contract, could remain inactive due to a lack of funds as a result of inefficiency. In either case, there is little reason to believe that the project could have been completed except at an exorbitant cost. Since the deposit appeared to be somewhat limited and spotty, it was deemed advisable to agree upon a program which would provide samples over the largest area at the least cost. Compared to 1,000 feet of diamond drilling, 65 feet of sinking and 70 feet of drifting would explore only a fraction of the area and at a considerably higher cost. It was pointed out in the engineering report that the topography is ideally suited for driving a lower level into the chimney. With this fact in mind, there is little need for additional sinking if ore can be located at depth by drilling. Since the contract was prepared, the operators suffered the loss of a tram terminal by fire which destroyed their only means of transporting large quantities of ore to the highway. A new terminal could be constructed at the portal of a lower level if it is found to be justified by exploration.

Johnson completely misinterprets the purpose of the drilling when he states the following in paragraph 5 "Another considerat on was the belief that the drilling would prove the ore body to a depth of 140 feet'." He then shows that although the "ore body" will be penetrated to a depth of 145 feet, the "ore body" will be proved only to "a depth of approximately 108 feet." The engineering report makes no mention of an ore body below the tram level nor does it make any statement to the effect that an ore body would be proved to a depth of 140 feet. In this type of a deposit, nine holes would not be sufficient to definitely prove an ore body if it did exist. The purpose of the drilling is to determine whether or not the chimney contains tungsten mineralization to the maximum depth of the proposed drilling. The following quotation is from the recommendation section of the engineering report, "Nine holes fanned vertically and horizontally as shown on figure 3 should be sufficient to explore the chimney systematically to a depth of approximately 140 feet." No mention is made of an ore body, or of proving one, to a depth of 140 feet.

Johnson states that the drill holes may have a tendency to become "normal to the dip of the controlling structures" and thus flatten the inclination of the holes. He also mentions that the brecciation and vugs may cause additional deviation. It should be pointed out that in the comparatively short holes proposed for the Dunmore mine, any deviation sufficient to affect the value of the hole would be sufficient to bind the drill rods and prevent operation of the drill. The rock to be drilled is silicified into [illegible] mass containing very small vugs. There is no sharp contrast between the chimney and the wall rock and the contacts are gradational. There is little reason to believe that the longest hole proposed will deviate in excess of a few inches.

In paragraph 6, Johnson infers that the close spacing of the holes borders upon development rather than exploration, but he also infers that the drilling results may be inconclusive due to the spotty nature of the hubnerite occurrences. As mentioned before, considerably more than nine holes would have to be drilled to be classified as development. Drilling one or two holes into the chimney or drilling widely spaced holes would have about as much chance of encountering the isolated pods as would sinking 65 feet and drifting 70 feet.

It is true as stated by Johnson in paragraph 7 that any ore the project encounters will have to carry the cost of the project in addition to all other production costs, but he still does not consider the fact no ore may be encountered in the limited area that could be explored by sinking and drifting. If no ore was encountered, the results would be entirely inconclusive as most of the chimney on all sides would remain unexplored. If encouraging results were obtained either by sinking or by diamond drilling, the logical and most efficient method to mine the deposit would be to drive a short crosscut at a lower level to eliminate the necessity of additional sinking and subsequent hoisting of ore.

In paragraph 8, Johnson makes the following statement, "The winze is already 10 feet deep and 65 feet of sinking would, therefore, develop the ore to a depth of 75 feet, which, at 80 tons per foot, equals 6,000 tons of ore." If there was any possibility whatsoever of developing 6,000 tons of ore merely by sinking the winze, there would have been little reason for recommending any type of exploration program. He applies the same reasoning to the proposed 70 feet of drifting, and states, "Additional cost for development would be negligible because the exploration workings could be used for ore extraction." This is true only to the extent that any lenses of ore encountered by sinking and drifting could be removed by utilizing the exploration workings. Once these lenses were removed, the operators would be confronted with the problem of drifting in all directions to locate additional ore. This method of haphazard drifting undoubtedly proved costly and impractical to the previous operators, and little was learned of the true nature and extent of the mineralization except in the near vicinity of the tram level. It is imperative that the operators have some definite indication to drive for unless the chimney is completely disseminated with hubnerite below the tram level. Dissemination to this extent is highly improbable.

In the final paragraph, Johnson states that sinking and drifting would have been more favorable "in view of the limited target and the marginal nature of the ore." At present, we know that the deposit is limited and marginal above the tram level; however, we can only guess as to the possibilities below the level. As mentioned before, the object of the drilling program is to explore as much of the chimney as possible both laterally and vertically with a limited amount of money. This objective could not be attained satisfactorily by sinking and drifting to the amount of $12,000.00.

One additional item should be clarified in paragraph of Johnson's letter in which he mentions an excessive rental charge. This charge is assumed to be the $400.00 allowed for the monthly rental of a 315 c.f.m. compressor to operate the diamond drill. It should be pointed out that such equipment was not available locally and that $400.00 per month is not excessive for a portable compressor of that size, particularly when a rental-purchase agreement is not practical. A large compressor was necessary due to the fact that air had to be piped approximately 1,500 feet across a canyon at an elevation in excess of 9,000 feet.

In short, each item specified in Section 6 of DMEA Order - 1 was carefully considered during the examination and during the preparation of the engineering report. There was no question as to the advisability of recommending a drilling program for the mine in preference to any other method of exploration.

Russell R. McLellan
Mining Engineer

RRM/amh

cc: WHKing (2)
EA16

Docket

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 12 1953

224 New Customhouse
Denver 2, Colorado

January 9, 1953

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2548, Contract Idm-E416, Robitsch and Brewster (Tungsten)

Enclosed are two copies of a memorandum by Russell R. McLellan, Mining Engineer, in reply to a letter dated January 2, 1953 from the Chairman of the Operating Committee to the Executive Officer, Field Team, Region IV.

W. H. King
W. H. King

Enclosures

Hold up any reply till we find out more about the drilling
W. King
1/14/53

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
January 8, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 1 3 1953

RCL
1/13/53

Memorandum

To: Chief, Mineral Resources Branch, Mining Division, Region IV

From: Russell R. McLellan, Mining Engineer

Subject: DMEA 2548, Contract Idm-E416 (Tungsten), Robitsch and Brewster (Dunmore mine), Ouray County, Colorado - Frank E. Johnson's letter, January 2, 1953

With reference to Frank E. Johnson's letter of January 2, 1953, it is believed that most of his comments concerning the subject contract were expressed without sufficient knowledge of the area to be explored or of the conditions existing at the mine.

In paragraph 4, Johnson's wording indicates a lack of understanding as to why the applicants' proposal to raise was not qualified as exploration. The applicants admitted that no attempt had been made to measure the distance from the stope to the surface, nor did they attempt to locate an outcrop of the mineralized chimney. The examining engineer and geologist located the outcrop and determined that it was approximately 65 feet above the stopes. The tungsten mineralization had decreased to little more than a trace from the stopes to the surface. This fact alone was enough to discourage any additional work in the heavy ground above the existing stopes. In addition, a short raise driven to connect two known mineralized exposures can hardly be qualified as exploration.

In the same paragraph, Johnson flatly states that the field team pursuaded the operator to accept a program of 1,000 feet of diamond drilling. It should be stressed that the operator was not pursuaded in any sense of the word. Brewster and Robitsch wished to explore the deposit in the least amount of time and as economically as possible. They suggested renting a drill and proposed to drill the deposit themselves which was out of the question as neither man had ever operated a diamond drill.

In paragraph 5, Johnson states that the sinking program would have been more appropriate and could have been controlled by staging the program or by drawing up a short form contract. In this case, there was

little object in setting up a program which could be curtailed at any time by the Government due to inefficiency on the part of the operator or, in the case of a short form contract, could remain inactive due to a lack of funds as a result of inefficiency. In either case, there is little reason to believe that the project could have been completed except at an exorbitant cost. Since the deposit appeared to be somewhat limited and spotty, it was deemed advisable to agree upon a program which would provide samples over the largest area at the least cost. Compared to 1,000 feet of diamond drilling, 65 feet of sinking and 70 feet of drifting would explore only a fraction of the area and at a considerably higher cost. It was pointed out in the engineering report that the topography is ideally suited for driving a lower level into the chimney. With this fact in mind, there is little need for additional sinking if ore can be located at depth by drilling. Since the contract was prepared, the operators suffered the loss of a tram terminal by fire which destroyed their only means of transporting large quantities of ore to the highway. A new terminal could be constructed at the portal of a lower level if it is found to be justified by exploration.

Johnson completely misinterprets the purpose of the drilling when he states the following in paragraph 5, "Another consideration was the belief that the drilling would prove the ore body to a depth of 140 feet!..." He then shows that although the "ore body" will be penetrated to a depth of 145 feet, the "ore body" will be proved only to "a depth of approximately 108 feet." The engineering report makes no mention of an ore body below the tram level nor does it make any statement to the effect that an ore body would be proved to a depth of 140 feet. In this type of a deposit, nine holes would not be sufficient to definitely prove an ore body if it did exist. The purpose of the drilling is to determine whether or not the chimney contains tungsten mineralization to the maximum depth of the proposed drilling. The following quotation is from the recommendation section of the engineering report, "Nine holes fanned vertically and horizontally as shown on figure 3 should be sufficient to explore the chimney systematically to a depth of approximately 140 feet." No mention is made of an ore body, or of proving one, to a depth of 140 feet.

Johnson states that the drill holes may have a tendency to become "normal to the dip of the controlling structures" and thus flatten the inclination of the holes. He also mentions that the brecciation and vugs may cause additional deviation. It should be pointed out that in the comparatively short holes proposed for the Dunmore mine, any deviation sufficient to affect the value of the hole would be sufficient to bind the drill rods and prevent operation of the drill. The rock to be drilled is silicified into a homogeneous mass containing very small vugs. There is no sharp contrast between the chimney and the wall rock and the contacts are gradational. There is little reason to believe that the longest hole proposed will deviate in excess of a few inches.

In paragraph 6, Johnson infers that the close spacing of the holes borders upon development rather than exploration, but he also infers that the drilling results may be inconclusive due to the spotty nature of the hubnerite occurrences. As mentioned before, considerably more than nine holes would have to be drilled to be classified as development. Drilling one or two holes into the chimney or drilling widely spaced holes would have about as much chance of encountering the isolated pods as would sinking 65 feet and drifting 70 feet.

It is true as stated by Johnson in paragraph 7 that any ore the project encounters will have to carry the cost of the project in addition to all other production costs, but he still does not consider the fact no ore may be encountered in the limited area that could be explored by sinking and drifting. If no ore was encountered, the results would be entirely inconclusive as most of the chimney on all sides would remain unexplored. If encouraging results were obtained either by sinking or by diamond drilling, the logical and most efficient method to mine the deposit would be to drive a short crosscut at a lower level to eliminate the necessity of additional sinking and subsequent hoisting of ore.

In paragraph 8, Johnson makes the following statement, "The winze is already 10 feet deep and 65 feet of sinking would, therefore, develop the ore to a depth of 75 feet, which, at 80 tons per foot, equals 6,000 tons of ore." If there was any possibility whatsoever of developing 6,000 tons of ore merely by sinking the winze, there would have been little reason for recommending any type of exploration program. He applies the same reasoning to the proposed 70 feet of drifting, and states, "Additional cost for development would be negligible because the exploration workings could be used for ore extraction." This is true only to the extent that any lenses of ore encountered by sinking and drifting could be removed by utilizing the exploration workings. Once these lenses were removed, the operators would be confronted with the problem of drifting in all directions to locate additional ore. This method of haphazard drifting undoubtedly proved costly and impractical to the previous operators, and little was learned of the true nature and extent of the mineralization except in the near vicinity of the tram level. It is imperative that the operators have some definite indication to drive for unless the chimney is completely disseminated with hubnerite below the tram level. Dissemination to this extent is highly improbable.

In the final paragraph, Johnson states that sinking and drifting would have been more favorable "in view of the limited target and the marginal nature of the ore." At present, we know that the deposit is limited and marginal above the tram level; however, we can only guess as to the possibilities below the level. As mentioned before, the object of the drilling program is to explore as much of the chimney as possible both laterally and vertically with a limited amount of money. This objective could not be attained satisfactorily by sinking and drifting to the amount of $12,000.00.

One additional item should be clarified in paragraph 3 of Johnson's letter in which he mentions an excessive rental charge. This charge is assumed to be the $400.00 allowed for the monthly rental of a 315 c.f.m. compressor to operate the diamond drill. It should be pointed out that such equipment was not available locally and that $400.00 per month is not excessive for a portable compressor of that size, particularly when a rental-purchase agreement is not practical. A large compressor was necessary due to the fact that air had to be piped approximately 1,500 feet across a canyon at an elevation in excess of 9,000 feet.

In short, each item specified in Section 6 of DMEA Order - 1 was carefully considered during the examination and during the preparation of the engineering report. There was no question as to the advisability of recommending a drilling program for the mine in preference to any other method of exploration.

Russell R. McLellan

Russell R. McLellan
Mining Engineer

RRM/amh

cc: WHKing (2)
E416

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

224 New Customhouse
Denver 2, Colorado

January 9, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 1 1953

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Form MF-104 DMEA Docket 2548, Contract Idm-E416 (Tungsten), a partnership consisting of Albert Robitsch and William Brewster, Ouray County, Colorado

Enclosed are two copies of the Operator's Monthly Progress Report Form MF-104, and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data for the period of December, 1952, pertaining to DMEA Docket 2548, Contract Idm-E416, Albert Robitsch and William Brewster, Ouray County, Colorado.

W. H. King

W. H. King

Enclosures

FILE COPY
SURNAME:

Selfridge

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

JAN 2 1953

BL

Mr. W. H. King
Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2548 (Tungsten)
Exploration Contract No. Idm-8416
Rebitsch and Brewster

Dear Mr. King:

The subject contract negotiated and executed by the Field Team, Region IV, under delegation of authority has been reviewed by this office and we have set forth our comments below:

Although a Geologist and a Mining Engineer made the field examination on June 19, and their final report is dated July 29, 1952, the final Field Team report did not arrive in Washington until November 24, 1952.

A preliminary review of the contract indicated that the estimated cost included an excessive rental charge and to avoid any difficulty with the Auditors we wrote to Region IV on December 5 requesting clarification. It would have been to the advantage of both the Washington office and the field if the report had been received with the contract. Field Team reports should be forwarded to this office as promptly as possible after they are completed, whether or not a contract is to be executed under your delegated authority. It is important that this office be kept fully and currently informed so that it is not placed in an unfavorable position for carrying out its responsibilities.

In connection with the subject contract, the applicants proposed to raise at least 100 feet from the top of an old raise to be selected from a group of six, each extending about 15 feet above the tram level, and all connected at the top to form a stope. According to the Field Team's final report it was pointed out to the Operator that only about 55 (or 85) feet of ore existed between the back of the old stope and the surface, and that the raise, therefore, would not qualify as exploration. The Operator then suggested sinking the old 10 foot winze on the tram level another 65 feet and driving a total of about 70 feet of drifts and crosscuts on the 75 foot level to determine the ore limits. Instead, the Operator was pursuaded by the Field Team to accept a program of 1,000 feet of diamond drilling.

We believe it would have been more appropriate to have approved a sinking program. One consideration in choosing a drilling program was that the Operator was known to be incompetent and the drilling could be contracted. Control of operations could have been established by setting up the project in stages, each dependent upon the satisfactory completion of the prior stage, or more effectively by drawing up a "short form" contract. Another consideration was the belief that the drilling would prove the ore body "to a depth of 140 feet"; but if the dip of the orebody remains constant at 80°, diamond drill holes Nos. 3 and 9 would each cut the hanging wall of the orebody 81 feet below the tram level and will probably find footwall at 122 feet and 145 feet below, respectively, thus, proving the orebody only to a depth of approximately 108 feet. Furthermore, in many districts inclined holes tend to orient themselves so as to become normal to the dip of the controlling structures. Any such tendency would cause the inclination of the holes to flatten, and thus obtain even less depth than that computed above. Drilling a deposit that is known to be brecciated and vuggy may result in additional deviations.

The contract calls for 9 diamond drill holes from one setup, fanned out in groups of 3 in 3 planes dipping about 40°, 60° and 77°. In each plane, the holes will be not over 15 feet apart horizontally at the hanging wall and about 22 feet apart at the footwall. Holes spaced so closely would ordinarily be classed as development. It is, however, not only possible but may be probable that the drilling results will be inconclusive in spite of the close spacing, because of the extremely spotty nature of the hubnerite occurrences at the Dunmore property.

Moreover, even if the drilling gives results which can properly be accepted as proving ore reserves, it is still true that whatever ore the project encounters will have to carry the cost of the project in addition to all other production costs. With more favorable marketing conditions and more efficient operation, it is possible that the property could be operated profitably.

The Operator expected to be able to sink 65 feet and drive 70 feet of drifts and crosscuts for a total of $12,050.00, corresponding to costs of about $137 per foot for sinking and $45 per foot for drifting. The winze is already 10 feet deep and 65 feet of sinking would, therefore, develop the ore to a depth of 75 feet, which, at 80 tons per foot, equals 6,000 tons of ore. A program including exploration winze and horizontal workings extending from foot to hanging wall and from easterly to westerly limits of the one ore body would amount to $2.00 per ton explored. Additional cost for development would be negligible because the exploration workings could be used for ore extraction. Furthermore, the ore extracted

in sinking and drifting could be treated as a bulk sample and would give more dependable results than can be expected from diamond drill core samples of an ore as spotty as that discussed above.

In view of the limited target and the marginal nature of the ore it would seem that underground exploration of a limited amount would have been the most expedient means for further exploring the subject property. Although you may not agree with our premises, we feel that you should have the benefit of our thinking on this matter.

Sicerely yours,

Frank E. Johnson (JHB)

Chairman, Operating Committee

APPROVED:

J. H. Hedges (JHB)

Member, Bureau of Mines

A. R. Kinkel, Jr. (JHB)

Member, Geological Survey

J.H.
1-2-53

FEJohnson/bih
12/24/52
cc to: Docket
Admr. Reading File
Operating Committee
Region IV
Messrs. Hedges R-4604
Kinkel, Jr. GSA R-4234
Selfridge
FEJohnson

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Administrator, DMEA

DATE: December 16, 1952

FROM : Iron and Ferro-Alloy Division, DMEA

Agree!

SUBJECT: Docket No. DMEA 2548 - Tungsten
Review of contract
Robitsch and Brewster
Dunmore and Yankee Lad Lode Mining Claims
Ouray County, Colorado
Exploration Contract No. Idm-E416

The subject contract was negotiated and executed by the Field Team, Region IV, under delegation of authority. Robitsch and Brewster applied on May 20, 1952, for exploration assistance at the above property in the amount of approximately $12,000.00.

A geologist and a mining engineer made the field examination on June 19 and their final report is dated July 29, 1952. On August 19, the Field Team advised us that exploration assistance in the amount of $9,657.00 had been approved, that the contract would be prepared in the field, and that copies of the Field Team's report would be forwarded to us after the contract had been signed. A contract totaling $9,650.00, with Government participation of $7,237.50, was submitted to us for assignment of number on October 3 and returned to Region IV on October 9. The final report arrived here November 24.

Preliminary review of the contract indicated that the estimated cost included an excessive rental charge and to avoid any difficulty with the auditors, we wrote to Region IV on December 5 requesting clarification. We believe it would have been to the advantage both of the Washington office and the field if the report had come in with the contract and we recommend that such reports be submitted promptly when prepared.

The applicants proposed to raise at least 100 feet from the top of an old raise to be selected from a group of six, each extending about 15 feet above the tram level, and all connected at the top to form a stope. According to the final report, the Field Team pointed out to the Operator that there was only about 55 (or 85) feet of ore between the back of the old stope and the surface, and that the raise would, therefore, not qualify as exploration. The Operator then suggested sinking the old 10-foot winze on the tram level another 65 feet and driving a total of about 70 feet of drifts and crosscuts on the 75-foot level to determine the ore limits. Instead, the Operator was persuaded by the Field Team to accept a program of 1,000 feet of diamond drilling.

We believe that better judgement would have approved the sinking program. One consideration in choosing the drilling program was that the Operator was known to be incompetent and the drilling could be contracted. Such an Operator could, instead, be controlled by setting up the project in stages, each dependent on the satisfactory completion of the stage next before, or even better by drawing effectively a "short form" contract. Another consideration was the belief that the drilling would prove the ore body "to a depth of 140 feet", but, if the dip of the ore body remains constant at 80°, D.D. holes Nos. 3 and 9 will each cut the hanging wall of the ore body about 81 feet below the tram level and will probably find footwall at 122 feet and 134 feet below respectively, thus proving the ore body only to a depth of approximately 108 feet. Furthermore, in many districts inclined holes tend to orient themselves so as to become normal to the dip of the controlling structures. Any such tendency would cause the holes to flatten in inclination and thus attain even less depth than that computed above. Drilling a deposit that is known to be brecciated and vuggy may result in additional deviations.

The contract calls for 9 diamond drill holes from one set-up, and fanned out in groups of 3 in 3 planes dipping about 40°, 60° and 77°. In each plane, the holes will be not over 15 feet apart horizontally at the hanging wall and about 22 feet apart at the footwall. Holes spaced so closely would ordinarily be classed as development. It is, however, not only possible but may even be probable that the drilling results will be inconclusive in spite of the close spacing, because of the extremely spotty nature of the hubnerite occurrences at the Dunmore property.

Moreover, even if the drilling gives results which can properly be accepted as proving ore reserves, it is still true that whatever ore the project encounters will have to carry the cost of the project in addition to all other production costs.

Assuming 17 feet average width and 59 average length for the ore body, the horizontal cross sectional area is 1,000 square feet, and with a factor of 12.5 cubic feet per ton of ore in place, each foot of depth explored will prove 80 tons of ore. Using the Field Team's grade estimate of 0.8 percent WO_3, each ton will be worth 0.008 X 2,000 X $1.18 delivered at Nederland, Colorado, or $18.88. (If, as our recomputation indicates, the grade is not 0.80 but 0.78 then each ton will be worth 0.0078 X 2,000 X $1.12, or $17.47 delivered at Nederland. The actual grade may be even lower because 2 out of 10 samples used for the computation are "selected samples".)

If the Yukon mill of Silverton would pay according to the VCA schedule, the transportation charge would be approximately $3.00, leaving $15.88 to pay for all mining costs. The Field Team estimates the mining costs at $20.00, without specifying how much development is included. It would appear from the foregoing that, given a more favorable selling price and more efficient operation, it is not impossible that the property could be operated profitably.

To a depth of 100 feet, the above estimated 80 tons per foot will equal 8,000 tons, and the cost of the project drilling will amount to $1.20 per ton explored. To this cost must be added the cost of whatever development workings are needed to extract this same tonnage.

The Operator expected to be able to sink 65 feet and drive 70 feet of drifts and crosscuts for a total of $12,050.00, corresponding to costs of about $137 per foot for sinking and $45 per foot for drifting. The winze is already 10 feet deep and 65 feet of sinking would, therefore, develop the ore to a depth of 75 feet, which, at 80 tons per foot, equals 6,000 tons of ore. A program including exploration winze and horizontal workings extending from foot to hanging wall and from easterly to westerly limits of the one ore body would amount to $2.00 per ton explored. Additional cost for development would be negligible because the exploration workings could be used for ore extraction. Furthermore, the ore extracted in sinking and drifting could be treated as a bulk sample and would give more dependable results than can be expected from diamond drill core samples of an ore as spotty as that discussed above.

G. C. Selfridge.

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

FILE COPY 400
SURNAME:

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

Administrator, DMEA

December 16, 1952

Martin

Iron and Ferro-Alloy Division, DMEA

Docket No. DMEA 2548 - Tungsten
Review of contract
Rebitsch and Brewster
Duanore and Yankee Lad Lode Mining Claims
Ouray County, Colorado
Exploration Contract No. Idm-N416

The subject contract was negotiated and executed by the Field Team, Region IV, under delegation of authority. Rebitsch and Brewster applied on May 20, 1952, for exploration assistance at the above property in the amount of approximately $12,000.00.

A geologist and a mining engineer made the field examination on June 19 and their final report is dated July 29, 1952. On August 19, the Field Team advised us that exploration assistance in the amount of $9,657.00 had been approved, that the contract would be prepared in the field, and that copies of the Field Team's report would be forwarded to us after the contract had been signed. A contract totaling $9,650.00, with Government participation of $7,237.50, was submitted to us for assignment of number on October 3 and returned to Region IV on October 9. The final report arrived here November 24.

Preliminary review of the contract indicated that the estimated cost included an excessive rental charge and to avoid any difficulty with the auditors, we wrote to Region IV on December 5 requesting clarification. We believe it would have been to the advantage both of the Washington office and the field if the report had come in with the contract and we recommend that such reports be submitted promptly when prepared.

The applicants proposed to raise at least 100 feet from the top of an old raise to be selected from a group of six, each extending about 15 feet above the tram level, and all connected at the top to form a stope. According to the final report, the Field Team pointed out to the Operator that there was only about 55 (or 85) feet of ore between the back of the old stope and the surface, and that the raise would, therefore, not qualify as exploration. The Operator then suggested sinking the old 10-foot winze on the tram level another 65 feet and driving a total of about 70 feet of drifts and crosscuts on the 75-foot level to determine the ore limits. Instead, the Operator was persuaded by the Field Team to accept a program of 1,000 feet of diamond drilling.

We believe that better judgement would have approved the sinking program. One consideration in choosing the drilling program was that the Operator was known to be incompetent and the drilling could be contracted. Such an Operator could, instead, be controlled by setting up the project in stages, each dependant on the satisfactory completion of the stage next before, or even better by drawing effectively a "short form" contract. Another consideration was the belief that the drilling would prove the ore body "to a depth of 140 feet", but, if the dip of the ore body remains constant at 80°, D.D. holes Nos. 3 and 9 will each cut the hanging wall of the ore body about 81 feet below the tram level and will probably find footwall at 122 feet and 134 feet below respectively, thus proving the ore body only to a depth of approximately 108 feet. Furthermore, in many districts inclined holes tend to orient themselves so as to become normal to the dip of the controlling structures. Any such tendency would cause the holes to flatten in inclination and thus attain even less depth than that computed above. Drilling a deposit that is known to be brecciated and vuggy may result in additional deviations.

The contract calls for 9 diamond drill holes from one set-up, and fanned out in groups of 3 in 3 planes dipping about 40°, 60° and 77°. In each plane, the holes will be not over 15 feet apart horizontally at the hanging wall and about 22 feet apart at the footwall. Holes spaced so closely would ordinarily be classed as development. It is, however, not only possible but may even be probable that the drilling results will be inconclusive in spite of the close spacing, because of the extremely spotty nature of the hubnerite occurrences at the Dunmore property.

Moreover, even if the drilling gives results which can properly be accepted as proving ore reserves, it is still true that whatever ore the project encounters will have to carry the cost of the project in addition to all other production costs.

Assuming 17 feet average width and 59 average length for the ore body, the horizontal cross sectional area is 1,000 square feet, and with a factor of 12.5 cubic feet per ton of ore in place, each foot of depth explored will prove 80 tons of ore. Using the Field Team's grade estimate of 0.8 percent WO_3, each ton will be worth 0.008 X 2,000 X $1.18 delivered at Nederland, Colorado, or $18.88. (If, as our recomputation indicates, the grade is not 0.80 but 0.78 then each ton will be worth 0.0078 X 2,000 X $1.12, or $17.47 delivered at Nederland. The actual grade may be even lower because 2 out of 10 samples used for the computation are "selected samples".)

If the Yukon mill of Silverton would pay according to the VCA schedule, the transportation charge would be approximately $3.00, leaving $15.88 to pay for all mining costs. The Field Team estimates the mining costs at $20.00, without specifying how much development is included. It would appear from the foregoing that, given a more favorable selling price and more efficient operation, it is not impossible that the property could be operated profitably.

To a depth of 100 feet, the above estimated 80 tons per foot will equal 8,000 tons, and the cost of the project drilling will amount to $1.20 per ton explored. To this cost must be added the cost of whatever development workings are needed to extract this same tonnage.

The Operator expected to be able to sink 65 feet and drive 70 feet of drifts and crosscuts for a total of $12,050.00, corresponding to costs of about $137 per foot for sinking and $45 per foot for drifting. The winze is already 10 feet deep and 65 feet of sinking would, therefore, develop the ore to a depth of 75 feet, which, at 80 tons per foot, equals 6,000 tons of ore. A program including exploration winze and horizontal workings extending from foot to hanging wall and from easterly to westerly limits of the one ore body would amount to $2.00 per ton explored. Additional cost for development would be negligible because the exploration workings could be used for ore extraction. Furthermore, the ore extracted in sinking and drifting could be treated as a bulk sample and would give more dependable results than can be expected from diamond drill core samples of an ore as spotty as that discussed above.

George C. Selfridge

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

WSMartin'lm
12/16/52

cc: Admn. Reading File
Docket
G. C. Selfridge
W. S. Martin

FILE COPY 400
SURNAME:

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

Martin
Selfridge
H. Plumb

DEC 5 1952

Mr. W. H. King
Executive Officer, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 2548 - Tungsten
Robitsch and Brewster
Dunmore and Yankee Lad Lode
Mining Claims
Ouray County, Colorado
Exploration Contract I6s-M16

Dear Mr. King:

This will acknowledge receipt on November 24, 1952 of copies of your memorandum of August 19, 1952, to the Field Team, Region IV, enclosing engineering report on the subject exploration property, by R. R. McLellan, Mining Engineer, U. S. Bureau of Mines.

In reviewing the above report, we note from data in the summary on page 9 that the total cost of diamond drilling at the project, estimated at $9.65 per foot, includes the following individual items:

	Dollars Per Foot
Contract diamond drilling	$5.00
Supervision	1.17
Labor	1.01
Operating material and supplies	1.07
Operating equipment, rented	1.20*
Operating equipment, depreciation	0.02
Miscellaneous	0.18

* This item corresponds to rental of a 315 c.f.m. compressor at $400.00 per month.

We also note, from page 7 of the same report, that the applicants have already purchased the compressor and that, consequently, its purchase price cannot be included in the cost of our program except on a depreciation basis. Using the specified replacement value of $2,400.00, the calculated monthly depreciation is $40.00.

The difference between the above charges for use of the compressor is $1.08 per foot. Saving this amount would reduce the total estimated drilling cost to $8.57 per foot and would decrease the total cost of the project by more than 11 percent.

Possibly the foregoing simply means that a second compressor is to be rented for the project in addition to the one already purchased. In that event, we would appreciate your advising us promptly what program of his own the Operator plans to follow that prevents use of the existing compressor for the DMEA project.

Sincerely yours,

George C. Selfridge (WB)

ACTING Chairman, Operating Committee

J.H. 12-5-52

Approved:

W. H. Hedges (WB)

Member, Bureau of Mines

A. L. Ricket (WB)

Member, Geological Survey

WSMartin'lm
12/3/52

cc: Admn. Reading File
Docket
R. W. Geehan, USBM
D. M. Lemmon, USGS
Field Team Reg. IV
Operating Committee
G. C. Selfridge
W. S. Martin

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 24 1952

224 New Customhouse
Denver 2, Colorado

November 17, 1952

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2548 (Tungsten) Robitsch & Brewster, Ouray County, Colorado

Enclosed are four copies of the final report on the subject dockets.

The contract has been signed and is in effect.

W. H. King
W. H. King

for A. M. Koschmann
A. M. Koschmann

Enclosures

Mining Division
Region IV

August 19, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
Program
NOV 8 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2548 (Tungsten), Robitsch and Brewster, Dunmore Mine, Ouray County, Colorado

Enclosed are eight copies of the engineering report on DMEA 2548 by R. R. McLellan of the Bureau of Mines.

The examining engineer recommends a total of 1000 feet of diamond drilling in nine holes, at a cost of $9,657, Government participation $7,242.75.

We concur in this recommendation.

W. H. King

W. H. King

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Date Rec'd.
AUG 5 1952
BUREAU OF MINES
Denver, Colorado

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
August 4, 1952

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 2548 (Tungsten), Robitsch and Brewster (Dunmore mine), Uncompahgre Mining District, Ouray County, Colorado

Please find enclosed the original and eight copies of the "Summary, Conclusions, and Recommendations", by E. N. Harshman and R. R. McLellan, and of McLellan's engineering report on the above docket.

McLellan states in his report that the deposit, apparently a small chimney or pipe, could be explored by winzing and drifting below the present lower working level at a cost of about $12,000.00, or that it could be explored equally as satisfactorily by approximately 1,000 feet of diamond drilling in nine holes at a cost of $9,657.00. He concludes the latter method to be the better, mainly due to the fact that the applicant, who will have charge of project operations, does not have too good a reputation as a miner. Because of lack of market near at hand and a restricted Government tungsten purchase program, a substantial reserve of better than 2 percent WO_3 will have to be found to amortize the loan. However, the project has sufficient merit to justify the small loan involved and he recommends it.

I agree with his recommendations.

The brochure furnished with the Region IV Field Team's instruction to make an examination is also enclosed.

W. M. Traver, Jr.

W. M. Traver, Jr.

Enclosures

WMT/bam

cc: 5
DMEA 2548
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

August 14, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2548, Dunmore Mine, Ouray County, Colorado, Robitsch and Brewster

Enclosed are 8 copies of the geological report by E. N. Harshman covering DMEA Docket 2548

The applicant has requested a loan of $12,000 to drive 100 feet of raise in a mineralized pipe carrying hubnerite ore, in the Dunmore mine. The pipe is elliptical and is 12 to 20 feet wide and 50 to 60 feet long. Occurring with the hubnerite are minor quantities of galena, sphalerite, gold and silver. The average tungsten content in the pipe is small, but small particular masses of high grade ore that contain from 5-15% WO_3 occur within the mineralized pipe. Since the Dunmore lode is one of the major fissure veins in the area and small but high grade pockets of tungsten ore have been mined in the pipe-like deposit, limited exploration appears justified and is recommended by Harshman.

However, the raise proposed by the applicant is considered development, for only 55 feet of unexplored ground remains between the stope-back and the outcrop. Harshman, therefore, recommends that a diamond drilling program to explore the pipe at greater depth be substituted for the raise. The applicant has agreed to undertake a diamond drilling program.

I concur in the recommendations of Mr. Harshman.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 2548, Robitsch and Brewster

Dunsmore Mine

Uncompahgre Mining District

Ouray County, Colorado

Tungsten

E. N. Harshman, Geologist
U. S. Geological Survey

R. R. McLellan, Mining Engineer
Bureau of Mines

July 29, 1952

DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By E. H. Harshman
Geologist
U. S. Geological Survey

and

R. R. McLellan
Mining Engineer
Bureau of Mines

DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By E. N. Harshman and R. R. McLellan

William Brewster and Albert Robitsch, of Ouray, Colo., have applied to the Government for assistance to explore for tungsten in the Dunmore mine, Ouray County, Colo. The applicants proposed to spend approximately $12,000.00 to drive a raise on known ore. This proposal could not be recommended as exploration. The program was revised to consist to diamond drilling approximately 1,000 feet of holes below the tram level at an expenditure of $9,657.00. The Government's share of the cost will be $7,242.75, or 75 percent of the total.

Tungsten ore occurs in a pipe-like ore body found in a wide, strong fissure vein known as the Dunmore lode. The ore pipe, or chimney, was formed during the latest stage of mineralization and contains hubnerite, pyrite, hematite, and minor amounts of gold, silver, and base metal sulfides. The average grade of the ore is low, but small lenses of high-grade ore (5 percent to 15 percent WO_3) are found throughout the deposit.

There is considerable doubt that the shoot will be of economical value from the tram level to the surface. However, there are sufficient indications of tungsten ore to justify a limited program of diamond drilling at depth.

It is recommended that a diamond drilling project be approved. Nine holes not to exceed a total of 1,000 feet should be sufficient to explore the chimney at regular intervals to a depth of approximately 140 feet.

DUNMORE MINE

OURAY COUNTY, COLORADO

ROBITSCH AND BREWSTER

DMEA DOCKET 2548

Geologic Report

By E. N. Harshman
U. S. Geological Survey

DUNMORE MINE
OURAY COUNTY, COLORADO

INTRODUCTION

W. E. Brewster and Albert Robitsch, P. O. Box 232, Ouray, Colorado, applied for exploration assistance in prospecting for tungsten ore in the Dunmore mine. They have requested, DMEA Docket 2548, a loan of $12,000, this amount being their estimated cost of driving 100 feet of raise in the mineralized pipe of huebnerite ore found on the lower level of the mine.

The applicants have under lease 3 patented and 10 unpatented claims located in the Red Mountain and Uncompahgre Mining Districts, Ouray County, Colorado. The property is 3 miles (airline) south of Ouray, Colorado, and is developed by 2 tunnels, one at elevation 9090 and the other at elevation 9264 (fig. 2). An ore bin at the lower tunnel is connected to a storage bin by a 900 foot horizontal aerial tram spanning Red Mountain Creek. The storage bin is located on U. S. Highway No. 550, 4.7 miles south of Ouray, Colorado. From this point a good trail leads to the mine.

The property was examined on June 19, 1952, accompanied by R. R. McClellan of the U. S. Bureau of Mines.

The geology of the area has been described by several authors, including Whitman Cross, Ernest Howe, and F. L. Ransome (1905), W. S. Burbank (1940), and V. C. Kelley (1946).

GEOLOGY

Two formations, the Uncompahgre and the San Juan Tuff, are exposed in the Dunmore mine area. The Uncompahgre rocks, pre-Cambrian in age,

consist of folded quartzite and occasional beds of slate and mica-chlorite schist. According to Kelley (1946), this formation is about 7,000 feet thick. The San Juan Tuff of Miocene (?) age, unconformably overlies the Uncompahgre formation and consists of about 2400 feet of latitic to andesitic breccias and tuffs of volcanic and sedimentary origin. Andesitic dikes, both older and younger than the San Juan Tuffs, have been intruded along the Dunmore fissure. The older dikes are altered to a shale-like material.

Prior to the deposition of the San Juan tuffs and breccias the Uncompahgre rocks were folded into a broad westerly plunging anticline, the axis of which lies slightly north of the Dunmore lode. Subsequently, the area was faulted and according to Kelley (1946), a displacement of at least 4000 feet occurred on the fissure in which the Dunmore lode was later deposited. A second period of displacement occurred after the deposition of the San Juan tuffs and prior to, or perhaps concurrent with, mineralization of the Dunmore lode. This resulted in the upward extension of the fissure into the tuffs and an 80 foot displacement of the tuff beds. A third and post-ore period of movement brecciated and sheared the latest ore minerals deposited in the lode.

The Dunmore lode is exposed in the steep walled canyon of Silver Creek (fig. 2, Sec. AA'). In the area examined, the lode is in quartzites of the Uncompahgre formation. It has a rather uniform width of 100 feet. To the east, where the lode cuts breccias of the San Juan formation, Kelley (1946) reports that it narrows to a width of 5 to 10 feet. Between the upper and lower tunnels (fig. 2), the lode is divisible into 2 zones. The southern half is composed of fine-grained, white quartz containing minor amounts of pyrite, galena, sphalerite, hubnerite, and a trace of

gold and silver. A prominent fault, along which occurred most of the displacement, referred to in prior paragraphs, separates this zone from the quartzites to the south. The northern half consists of slightly mineralized and altered slates which have been dragged into the fault zone. Between the quartzites forming the north wall of the Dunmore lode and slates is a strong fissure vein 2 to 3 feet wide.

Two pipes or chimneys of breccia have been discovered in the Dunmore lode. The larger and more extensively developed one is located to the west of the upper tunnel (west of the area shown on fig. 2) and is mineralized by hematite, aikinite, and chalcopyrite. The pipe with which this examination is concerned is located between the upper and lower tunnels (fig. 2) and is mineralized by hubnerite, and base metal sulfides.

Hubnerite has been found in the southern half of the Dunmore lode at several places along its outcrop, but the most extensive mineralization discovered to date is in the breccia pipe between the upper and lower tunnel. The pipe is elliptical, 12 to 20 feet wide, and 50 to 60 feet long. It plunges about 80 degrees northward. Brecciation was produced by a series of fractures that formed after the silicification of the Dunmore lode. The open porous mass was subsequently mineralized by solutions depositing quartz, hubnerite, pyrite, and very minor quantities of hematite, galena, sphalerite, gold and silver. The hubnerite ore is characterized by coarse-grained, translucent, vuggy, quartz, lining cavities and filling open spaces in the earlier brecciated quartz. The hubnerite occurs either as small disseminated crystals in the late quartz or as local concentrations filling vuggs. It was the last ore mineral deposited.

Although minor amounts of hubnerite are found throughout the pipe-like ore shoot, higher grade concentrations occur in lenticular masses a few inches to several feet in width and 1 to 20 feet in the other 2 dimensions. The lenses are oriented with their greater dimensions parallel to the major axes of the pipe.

ORE RESERVES AND GRADE OF ORE

Ten samples were cut during this examination. Their description and the results of assays by the U. S. Bureau of Mines follow:

SAMPLE NO.	DESCRIPTION	% WO_3
D1	12.0' across surface outcrop	0.10
D2	3.0' selected sample N. wall of outcrop	0.65
D3	6.0' across back above manway (S. stope)	1.80
D4	0.8' selected sample N. wall above manway (S. stope)	15.60
D5	10.5' across back N. stope, N. of manway	0.55
D6	6.5' W. face of pillar, N. side of grizzly	0.01
D7	9.5' across back N. stope, N. of grizzly	0.55
D8	7.0' wall E. of grizzly	0.15
D9	8.0' across face above last chute, E. of manway	0.05
D10	3.0' across floor between manway and grizzly	4.90

Three samples taken in 1940 by J. E. Bell of the U. S. Bureau of Mines, resulted in the following determinations of WO_3 content:

SAMPLE NO.	DESCRIPTION	% WO_3
172	Cut grab from outcrop	2.14
173	Grab from ore pass	1.75
174	4 feet cut in stope	3.02

Assays of 8 samples taken by P. T. Allsman of the U. S. Bureau of Mines during an examination in 1942 show the average grade of the ore to be about 0.3 percent WO_3.

Ore reserves for the tungsten bearing pipe exposed on the lower level of the Dunmore mine are estimated as follows:

TYPE	TONS	% WO_3
Measured	75-100	0.80
Indicated	4500	0.80
Inferred	2200	0.80

CONCLUSIONS AND RECOMMENDATIONS

If the entire pipe-like deposit is considered, the tungsten ore exposed on the surface and in the lower tunnel of the Dunmore mine is very low grade, averaging about 0.8% across a width of 16 feet. In the mineralized pipe there are, however, small lenticular masses of higher grade ore that contain from 5-15% WO_3 across widths of from 8 inches to 3 feet. In the sub-level stope, three lenses of high grade ore were exposed, in each case their maximum dimension was less than 20 feet. There is little or no geologic evidence upon which to base an opinion that the average grade or width of the ore will change appreciably at greater depths. However, since the Dunmore lode is one of the major fissure veins in the area, and since small but high grade concentrations of hubnerite have been mined in the pipe-like deposit, limited exploration at greater depths appears justified.

The raise proposed by the applicants is considered development, for only 55 feet of unexplored ground lie between the stope-back and the outcrop. It is the examining team's opinion that a diamond drilling program, detailed on figure 3, should be substituted for the raise. This program would explore the chimney to a depth of about 140 feet below the lower adit level. It consists of 9 diamond-drill holes with a total combined length of about 1,000 feet. The U. S. Bureau of Mines estimates the total cost of the revised exploration program to be $9,657.00. The detailed estimate is in the engineering report.

It is recommended that DMEA Docket 2548 be approved for a loan of $9,657.00 (Government participation $7,242.75), but that the revised exploration program be substituted for the program proposed by the applicants.

REFERENCES

Cross, Whitman, Howe, Ernest, and Ransome, F. L., Silverton, Colo.: U. S. Geological Survey Folio No. 120, 1905.

Burbank, W. S., Structural control of ore deposition in the Uncompahgre district, Ouray County, Colo., with suggestions for prospecting: U. S. Geological Survey Bulletin 906(e), 1940.

Kelley, V. C., Geology, ore deposits, and mines of the Mineral Point, Poughkeepsie, and Upper Uncompahgre Districts, Ouray, San Juan, Hinsdale Counties, Colorado: Colorado Scientific Society Proceedings, Vol. 14, No. 7, 1946.

DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

Engineering Report

By R. R. McLellan
Mining Engineer
Bureau of Mines

DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

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* See figure following Geologic Report.

DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

ENGINEERING REPORT

By

R. R. McLellan

INTRODUCTION

William E. Brewster and Albert Robitsch, of Ouray, Colo., have applied for Government assistance to explore for tungsten in the Dunmore mine, Ouray County, Colo. The applicants propose to spend approximately $12,000.00 of which the Government's participation will amount to $9,000.00, or 75 percent of the total. The mine was examined on June 19, 1952, by E. N. Harshman, of the U. S. Geological Survey, and R. R. McLellan, of the Bureau of Mines, in company with William Brewster. It was concluded that the applicants' proposals to raise on exposed ore could not be classified as exploration. A revised program of sinking or preferably of diamond drilling is recommended for approval.

ACKNOWLEDGMENTS

Maps, geology, and general information were obtained from reports by V. C. Kelly, of the U. S. Geological Survey, and James E. Bell, of the Bureau of Mines. The applicants were available at the mine as guides.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Dunmore mine is on the west side of the Uncompahgre River near U. S. Highway 550, 4.7 road miles south of Ouray, Colo. (fig. 1). The lower workings, at an elevation of 9,090 feet, are accessible from the highway by a 900-foot aerial tram and by trail across Red Mountain Creek canyon. The workings are in a wide fault zone visible in the precipitous canyon wall. All supplies and equipment will have to be transported to the mine over the aerial tram. Small items of supply may be obtained at Ouray. Heavier mining equipment may be obtained at Montrose, or Grand Junction, Colo., distances of 36 and 63 miles, respectively. There is sufficient water at the mine for mining purposes. Living accommodations are available at Ouray. The location is favorable for a year-around operation.

HISTORY AND PRODUCTION

The first locations are reported to have been made in 1907 for gold and silver. The Statistics Branch, Economics Division, Region IV, Bureau of Mines, Denver, recorded a shipment made in 1917 of 8 tons of ore that contained 0.50 ounce gold and 194 ounces silver per ton, and 509 pounds of copper. In 1934, a group of local men installed the tram and reportedly mined several thousand tons of gold and silver ore. No attempt was made to recover the tungsten. During 1937, considerable development of tungsten and base metal ores was done under lease. No production figures are available for either period. Robitsch and Brewster leased the property in May 1952 and commenced to repair the tram and rehabilitate the underground workings.

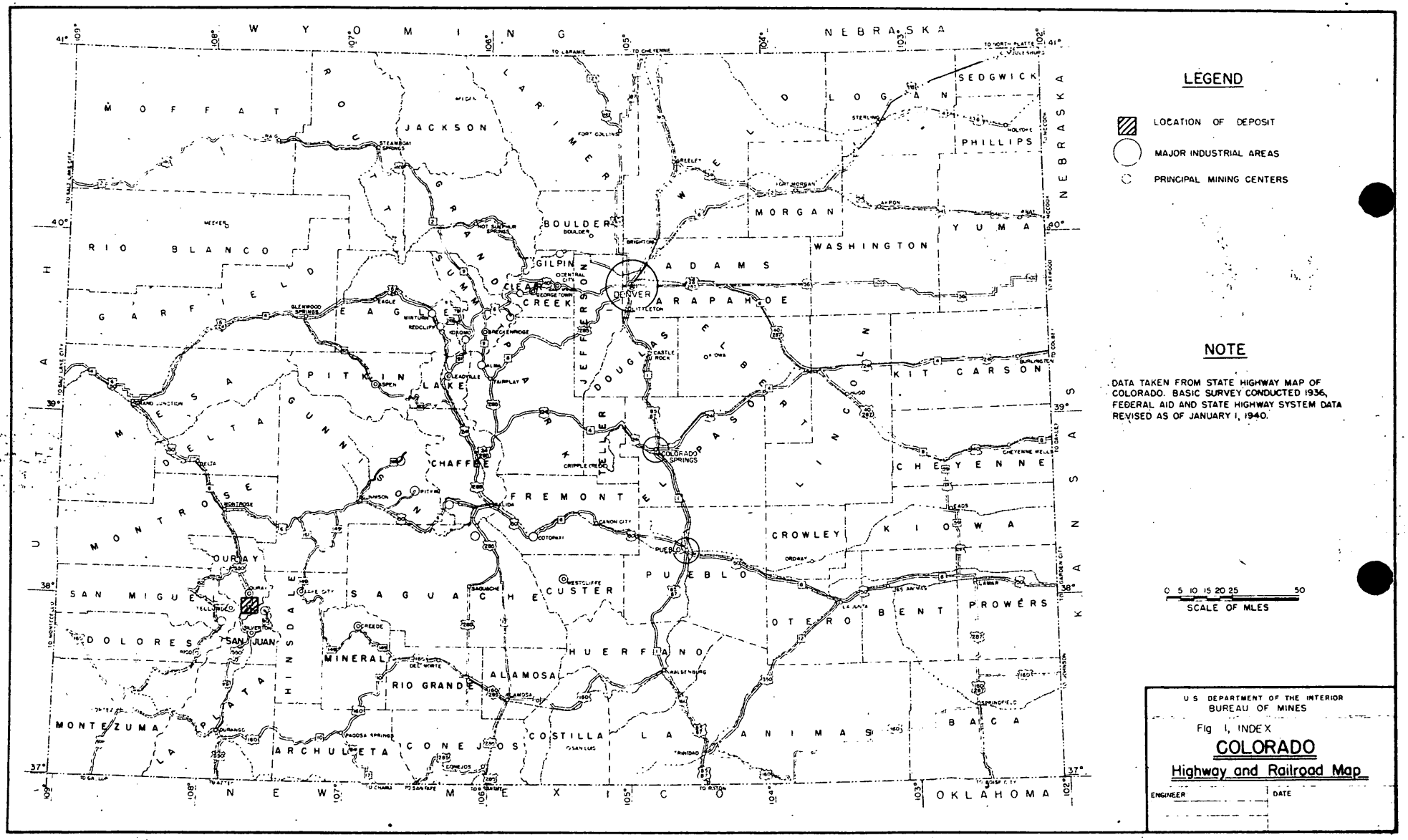

Figure 1. Location Map, Dunmore Mine, Ouray County, Colorado, BMEA 2548.

OWNERSHIP AND EXTENT

All claims considered in the application are owned by Marguerite L., Roderick F., and Kenneth G. MacLennan, of Ouray, Colo. They were leased in 1951 to Harold Williams and William Brewster for a period of 5 years. On May 3, 1952, Harold Williams sold his interest in the claims to Albert Rebitsch who, with Brewster, has requested Government aid. The following claims located in the Uncompahgre Mining District, Ouray County, Colo., are recorded in the lease:

Yankee Lad	Survey number 2131
Dunmore	Survey number 20608
Chrisolyte	Survey number 1921
California Lode	unpatented
Annie Lode	unpatented
Hercules Lode	unpatented
Columbine Lode	unpatented
MacGregor Lode	unpatented
Cliff Lode	unpatented
Rainbow Lode	unpatented
Reno Lode and Reno Lode No. 2	unpatented
Ohio Lode	unpatented

DESCRIPTION OF THE DEPOSIT

According to V. C. Kelly, of the U. S. Geological Survey, the shoot of hubnerite is located within a nearly vertical breccia chimney 8 to 20 feet wide and 40 to 50 feet long. Hubnerite mineralization probably extends from the the stopes of the lower workings to the outcrop approximately 85 feet above the level (fig. 2 with geologic report). High-grade pods of hubnerite were visible in stope pillars near the core of the chimney, and traces of hubnerite were visible in the outcrop. There is little evidence that the hubnerite is disseminated throughout the chimney. From the nature of the workings, the previous operators apparently were interested only in locating and mining the isolated pods of high-grade ore.

Kelly believes that the Dunmore fault zone may have been one of the most important solution channels in the upper Uncompahgre district, and, therefore, is worthy of greater exploration. Considering the scope of Kelly's work in the area, his opinion is regarded highly.

MINEABLE ORE RESERVES

Providing the chimney is continuous from the lower level stopes to the outcrop 85 feet above, the tungsten shoot may contain 75 to 100 tons of measured ore, 4,500 tons of indicated ore, and 2,200 tons of inferred ore—all of which on the basis of past and present sampling will average about 0.60 percent WO_3. No work has been done in the chimney beneath the lower level with the exception of a winze 10 feet deep that was completely filled with water at the time of examination. It is entirely reasonable to assume the tungsten mineralization will extend below the level.

The following samples were taken from the outcrop of the chimney and from the sublevel stopes:

Sample No.	Width	Location	Ounces per ton Au	Ounces per ton Ag	Percent Cu	Percent WO_3
D-1	12 feet	Across width of surface exposure	0.01	0.3	<0.05	0.10
D-2	3 feet	Selected sample, north wall of outcrop	0.005	0.3	<0.05	0.65
D-3	6 feet	Across back above manway	0.03	0.5	<0.05	1.80
D-4	8 inches	Selected sample, north wall above manway	0.02	1.3	<0.05	15.60
D-5	10.5 feet	Across back of north stope, north of manway	0.01	0.3	<0.05	0.55
D-6	6.5 feet	West face of pillar, north side of grizzly	0.03	0.3	<0.05	<0.01
D-7	9.5 feet	Across back of north stope, north of grizzly	0.03	0.2	<0.05	0.55
D-8	7.0 feet	Wall east of grizzly	0.01	0.5	<0.05	0.15
D-9	8.0 feet	Across face above last chute east	0.01	0.5	<0.05	0.05
D-10	3.0 feet	Across floor between manway and grizzly	0.01	0.7	<0.05	4.90

< less than

The above samples average 0.016 ounce gold and 0.38 ounce silver per ton, <0.05 percent copper, and 0.80 percent WO_3.

In 1943, Paul T. Allaman, Regional Director, Region V, Bureau of Mines, cut seven samples which averaged 0.3 percent WO_3. These samples were taken from the outcrop and the tram level stopes within the chimney. Apparently no samples were taken of the high-grade tungsten lenses.

PRESENT STATUS

Exploration and Development

Exploration and development to date consist of two levels, each of which comprises about 1,000 feet of drifting with some stoping. The two levels are connected by a raise presently inaccessible. No work has been done on either level since 1937.

Mining and Milling Equipment and Other Facilities

Mining equipment and other facilities on the property consisted of one double rope, single span aerial tramway 830 feet long with tram stations intact, one converted automobile engine to power the tram, one 16-cubic-foot mine car, track, pipe, one combined shop and compressor house, and one ore bin built in the highway tram station. The applicants had repaired the tram and were installing an air line from the highway to the lower tunnel.

PROJECT PROPOSALS, WITH COSTS

The applicant proposed to raise approximately 100 feet on the best showing of ore within the chimney at a cost of approximately $12,000.00. They were unaware that only 65 feet of back existed or that the ore shoot cropped out in the gulch above the stopes of the lower tunnel. It was called to their attention that, under such circumstances, raising probably would not be classified as exploration.

The applicants suggested that in place of raising they would favor approximately 65 feet of sinking and approximately 70 feet of short drifts and crosscuts starting from the bottom of the 10-foot winze in the lower level. The total expenditure would be approximately $12,050.00, distributed as follows, for a period of six months:

Labor

2 Miners, $1.65 per hour, 48-hour week, time and one half over 40 hours, $740.00 per month	$4,440.00	
1 Laborer, $1.50 per hour, 48-hour week, time and one half over 40 hours, $336.00 per month	2,016.00	$6,456.00

Supervision

1 Mine superintendent, $1.75 per hour, 48-hour week, time and one half over 40 hours, $392.00 per month	2,352.00

Operating Materials and Supplies

Timber	$ 400.00	
Explosives, $3.50 per foot sinking	228.00	
Explosives, $3.00 per foot drifting and crosscutting	210.00	
Gasoline	600.00	
Oil and grease	100.00	
Drill steel and bits	300.00	
Small tools	50.00	1,888.00

Operating Equipment

Purchase - The applicants have already purchased the air compressor and two gasoline engines listed on the application; therefore, the purchase price of these items cannot be included in the cost of this program except on a depreciation basis.

Rental - None

Depreciation - The applicant will furnish the following equipment:

Item	Replacement Value	Monthly Depreciation
1 Compressor	$2,400.00	$ 40.00
1 Tugger hoist	1,000.00	16.50
1 Gasoline engine to power tram	200.00	3.30
4 Mine cars, 16 cubic foot	640.00	10.60
1 Steper, Sullivan R91	800.00	13.30
1 Jackhammer, S-55	350.00	5.80
1 Drifter, D-79, with oiler and hoses	860.00	14.30
1 Sump pump, IR-35	300.00	5.00
1 Water tank	100.00	1.60
1 Column with arm and saddle	100.00	1.60
Total per month		$112.00
Total for 6 months		672.00

Initial Rehabilitation and Repairs

Completed and cannot be included in the cost of this program.

Miscellaneous

Sampling and analysis	$100.00	
Social Security	132.00	
Workmen's compensation and insurance	300.00	
Accounting at $25.00 per month	150.00	$ 682.00

Cost Summary

Sinking and Drifting

Labor	$ 6,456.00
Supervision	2,352.00
Operating material and supplies	1,888.00
Operating equipment, depreciation	672.00
Miscellaneous	682.00
	$12,050.00

It is probable that the deposit could be explored to better advantage by diamond drilling. Approximately nine holes for a total of 1,000 feet would thoroughly explore the chimney to a depth of about 140 feet (fig. 3). The cost would be considerably less than that of sinking and drifting, and the time probably would be cut in half, or to 3 months. The total expenditure would be approximately $9,657.00, distributed as follows:

Contracts

1,000 feet of diamond drilling at $5.00 per foot	$5,000.00

Supervision

1 Supervisor, full time, $1.75 per hour, 48 hours per week, time and one half over 40 hours, $392.00 per month	1,176.00

Labor

1 Helper, $1.50 per hour, 48-hour week, time and one half over 40 hours, $336.00 per month	1,008.00

Operating Materials and Supplies

Timber	$100.00	
Pipe, 2-inch, 1,500 feet, used, at $0.30 per foot	450.00	
Gasoline	300.00	
Oil and grease	50.00	
Core boxes	150.00	
Small tools	25.00	$1,075.00

Operating Equipment

Rented

1 Compressor, 315 c.f.m., $400.00 per month (Necessary to operate diamond drill)		1,200.00

Depreciation

	Monthly Depreciation	
1 Gasoline engine to power tram	$ 3.30	
1 Mine car	2.70	
Total per month	$ 6.00	
Total for 3 months		18.00

Miscellaneous

Social security, 3 months	$ 33.00	
Workman's compensation and insurance, 3 months	72.00	
Accounting at $25.00 per month, 3 months	75.00	180.00

Cost Summary

Diamond Drilling

1,000 feet of contract diamond drilling at $5.00 per foot		$5,000.00
Labor		1,008.00
Supervision		1,176.00
Operating materials and supplies		1,075.00
Operating equipment		
Rented	$1,200.00	
Depreciation	18.00	1,218.00
Miscellaneous		180.00
Total		$9,657.00

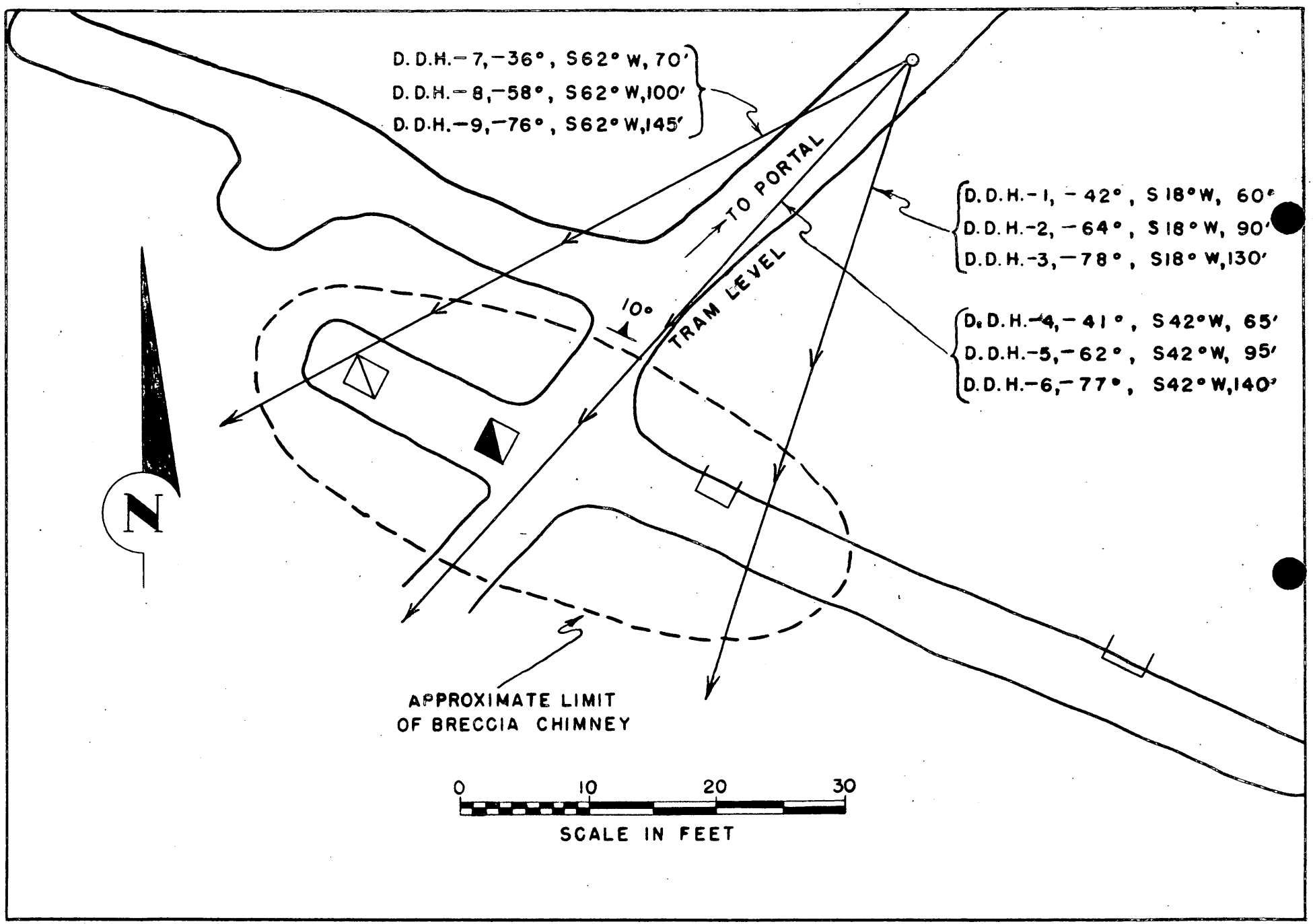

FIGURE 3., PROPOSED DIAMOND DRILLING, DUNMORE MINE, OURAY CO., COLO. DMEA-2548

CONCLUSIONS

There is sufficient tungsten mineralization in the breccia chimney to justify an exploration program below the tram level. The average grade of ore from the level to the outcrop probably does not contain more than 0.8 percent WO_3. Unless the grade and amount of tungsten mineralization increases at depth, there is little chance for a mining operation to succeed at this time. If mineralization increases with depth, the topography is such that another drift could be driven from 100 to 150 feet below the tram level to develop the deposit.

Ore from the Dunmore mine might be purchased by the following companies:

1. Yukon mill, Silverton, Colo., 21 miles
2. Silver Bell Mines Company, Ophir, Colo., 58 miles
3. Climax Molybdenum Company, Climax, Colo., 240 miles
4. Wolf Tongue mill, Nederland, Colo., 364 miles

At approximately $0.10 per ton mile, transportation charges per ton of ore would amount to about $3.00 to Silverton, $6.00 to Ophir, $24.00 to Climax, and $36.00 to Nederland.

Milling charges probably will average $5.00 per ton. Providing most of the chimney can be shipped without sorting, the mining costs probably will average $20.00 per ton. If the ore is mined selectively and hand sorted the cost per ton probably will average $30.00. Total mining, milling, and transportation charges will range from $30.00 to $70.00 per ton, depending upon the haulage distance and the mining method. In order to operate profitably and continuously, mill ore should contain a minimum of 2 to 3 percent WO_3.

Brewster has been a mine operator in Boulder County, Colo., for many years and has had a record of inefficient mining operations. With this in mind, it is believed that a contract diamond drilling program would serve to explore the deposit as a considerable saving of time and money to the operator as well as to the Government.

RECOMMENDATIONS

It is recommended that a contract diamond drilling project be approved for 1,000 feet of drilling at a cost of $9,657.00 of which the Government's share will be $7,242.75.

Nine holes fanned vertically and horizontally as shown on figure 3 should be sufficient to explore the chimney systematically to a depth of approximately 140 feet. All core should be boxed and the boxes marked properly with hole number and footage. The boxes should be available for Defense Minerals Exploration Administration representatives to log and sample. Permanent storage should be arranged for. Drillers should be required to collect sludge samples at intervals not exceeding 5 feet.

FILE COPY 400
SURNAME:

Selfridge
Chamberlin
Oakes

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

OCT 9 1952

Mr. W. E. King
Executive Officer, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 2548 - Tungsten
Dunmore and Yankee Lad Lode
Mining Claims
Rubitech and Brewster
Ouray County, Colorado
Exploration Contract Idm-#16

Dear Mr. King:

Returned herewith are the Operator's, Field Team's and Regional Finance Officer's copies of the exploration project contract, which has been given the number Idm-#16, pertaining to the subject docket.

It is taken for granted that the dip of the breccia chimney is 80 degrees and not 10 degrees as shown on the map.

Sincerely yours,

(signed) FRANK E. JOHNSON
(JB)

Chairman, Operating Committee

D.H.
10-9-52

Enclosures

GSelfridge'lm
10/7/52

Approved:

J. H. Hedges (JB)

Member, Bureau of Mines

T. P. Thayer (JB)

Member, Geological Survey

cc: Admn. Reading File
Docket
R. W. Geehan, USBM
D. M. Lemmon, USGS
Field Team Reg. IV
Operating Committee
G. C. Selfridge

BS

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

224 New Customhouse
Denver 2, Colorado

October 3, 1952

REGISTERED 87394

Memorandum

To: C.O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Contract Docket DMEA 2548, Robitsch and Brewster (Tungsten)

Enclosed are six copies of a contract between the Government and a partnership consisting of Albert Robitsch and William Brewster. All copies have been signed by the Executive Officer, Region IV, and by the applicant.

Please assign a contract number and return the required number of copies of the contract to this office.

W. H. King

W. H. King

Enclosures

RECEIVED
OCT 30 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

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

224 New Customhouse
Denver 2, Colorado

October 3, 1952

REGISTERED

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W. H. King
W. H. King

Enclosures

Mining Division
Region IV

August 19, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 24 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final report, DMEA Docket 2548 (Tungsten), Mobitsch and Brewster, Dunmore Mine, Ouray County, Colorado

Enclosed are eight copies of the engineering report on DMEA 2548 by R. R. McMellan of the Bureau of Mines.

The examining engineer recommends a total of 1000 feet of diamond drilling in nine holes, at a cost of $9,657, Government participation $7,242.75.

We concur in this recommendation.

W. H. King

W. H. King

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Date Rec'd.
AUG 5 - 1952
BUREAU OF MINES
Denver, Colorado

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
August 4, 1952

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 2548 (Tungsten), Robitsch and Brewster (Dunmore mine), Uncompahgre Mining District, Ouray County, Colorado

Please find enclosed the original and eight copies of the "Summary, Conclusions, and Recommendations", by E. N. Kershman and R. R. McLellan, and of McLellan's engineering report on the above deposit.

McLellan states in his report that the deposit, apparently a small chimney or pipe, could be explored by winzing and drifting below the present lower working level at a cost of about $12,000.00, or that it could be explored equally as satisfactorily by approximately 1,000 feet of diamond drilling in nine holes at a cost of $9,657.00. He concludes the latter method to be the better, mainly due to the fact that the applicant, who will have charge of project operations, does not have too good a reputation as a miner. Because of lack of market near at hand and a restricted Government tungsten purchase program, a substantial reserve of better than 2 percent WO_3 will have to be found to amortize the loan. However, the project has sufficient merit to justify the small loan involved and he recommends it.

I agree with his recommendations.

The brochure furnished with the Region IV Field Team's instruction to make an examination is also enclosed.

W. M. Traver, Jr.

W. M. Traver, Jr.

Enclosures

WMT/bam

cc: 5
DMEA 2548
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

August 14, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2548, Dunmore Mine, Ouray County, Colorado, Robitsch and Brewster

Enclosed are 8 copies of the geological report by E. N. Harshman covering DMEA Docket 2545

The applicant has requested a loan of $12,000 to drive 100 feet of raise in a mineralized pipe carrying hubnerite ore, in the Dunmore mine. The pipe is elliptical and is 12 to 20 feet wide and 50 to 60 feet long. Occurring with the hubnerite are minor quantities of galena, sphalerite, gold, and silver. The average tungsten content in the pipe is small, but small lenticular masses of high grade ore that contain from 5-15% WO_3 occur within the mineralized pipe. Since the Dunmore lode is one of the major fissure veins in the area and small but high grade pockets of tungsten ore have been mined in the pipe-like deposit, limited exploration appears justified and is recommended by Harshman.

However, the raise proposed by the applicant is considered development, for only 55 feet of unexplored ground remains between the stope-back and the outcrop. Harshman, therefore, recommends that a diamond drilling program to explore the pipe at greater depth be substituted for the raise. The applicant has agreed to undertake a diamond drilling program.

I concur in the recommendations of Mr. Harshman.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 254S, Rehbinsh and Brewster

Dunnegan Mine

Uncompahgre Mining District

Ouray County, Colorado

Tungsten

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July 29, 1952

DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

Summary, Conclusions, and Recommendations

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DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By E. N. Harshman and R. R. McLellan

William Brewster and Albert Robitsch, of Ouray, Colo., have applied to the Government for assistance to explore for tungsten in the Dunmore mine, Ouray County, Colo. The applicants proposed to spend approximately $12,000.00 to drive a raise on known ore. This proposal could not be recommended as exploration. The program was revised to consist to diamond drilling approximately 1,000 feet of holes below the tram level at an expenditure of $9,657.00. The Government's share of the cost will be $7,242.75, or 75 percent of the total.

Tungsten ore occurs in a pipe-like ore body found in a wide, strong fissure vein known as the Dunmore lode. The ore pipe, or chimney, was formed during the latest stage of mineralization and contains hubnerite, pyrite, hematite, and minor amounts of gold, silver, and base metal sulfides. The average grade of the ore is low, but small lenses of high-grade ore (5 percent to 15 percent WO_3) are found throughout the deposit.

There is considerable doubt that the shoot will be of economical value from the tram level to the surface. However, there are sufficient indications of tungsten ore to justify a limited program of diamond drilling at depth.

It is recommended that a diamond drilling project be approved. Nine holes not to exceed a total of 1,000 feet should be sufficient to explore the chimney at regular intervals to a depth of approximately 140 feet.

DUNMIRE MINE

OURAY COUNTY, COLORADO

ROBITSCH AND BREWSTER

DMEA DOCKET 2548

Geologic Report

By E. N. Harshman
U. S. Geological Survey

DUNMORE MINE
OURAY COUNTY, COLORADO

INTRODUCTION

W. E. Brewster and Albert Robitsch, P. O. Box 232, Ouray, Colorado, applied for exploration assistance in prospecting for tungsten ore in the Dunmore mine. They have requested, DMEA Docket 2548, a loan of $12,000, this amount being their estimated cost of driving 100 feet of raise in the mineralized pipe of hubnerite ore found on the lower level of the mine.

The applicants have under lease 3 patented and 10 unpatented claims located in the Red Mountain and Uncompahgre Mining Districts, Ouray County, Colorado. The property is 3 miles (airline) south of Ouray, Colorado, and is developed by 2 tunnels, one at elevation 9090 and the other at elevation 9264 (fig. 2). An ore bin at the lower tunnel is connected to a storage bin by a 900 foot horizontal aerial tram spanning Red Mountain Creek. The storage bin is located on U. S. Highway No. 550, 4.7 miles south of Ouray, Colorado. From this point a good trail leads to the mine.

The property was examined on June 19, 1952, accompanied by R. R. McClellan of the U. S. Bureau of Mines.

The geology of the area has been described by several authors, including Whitman Cross, Ernest Howe, and F. L. Ransome (1905), W. S. Burbank (1940), and V. C. Kelley (1946).

GEOLOGY

Two formations, the Uncompahgre and the San Juan Tuff, are exposed in the Dunmore mine area. The Uncompahgre rocks, pre-Cambrian in age,

consist of folded quartzite and occasional beds of slate and mica-chlorite schist. According to Kelley (1946), this formation is about 7,000 feet thick. The San Juan Tuff of Miocene (?) age, unconformably overlies the Uncompahgre formation and consists of about 2400 feet of latitic to andesitic breccias and tuffs of volcanic and sedimentary origin. Andesitic dikes, both older and younger than the San Juan Tuffs, have been intruded along the Dunmore fissure. The older dikes are altered to a shale-like material.

Prior to the deposition of the San Juan tuffs and breccias the Uncompahgre rocks were folded into a broad westerly plunging anticline, the axis of which lies slightly north of the Dunmore lode. Subsequently, the area was faulted and according to Kelley (1946), a displacement of at least 4000 feet occurred on the fissure in which the Dunmore lode was later deposited. A second period of displacement occurred after the deposition of the San Juan tuffs and prior to, or perhaps concurrent with, mineralization of the Dunmore lode. This resulted in the upward extension of the fissure into the tuffs and an 80 foot displacement of the tuff beds. A third and post-ore period of movement brecciated and sheared the latest ore minerals deposited in the lode.

The Dunmore lode is exposed in the steep walled canyon of Silver Creek (fig. 2, Sec. AA'). In the area examined, the lode is in quartzites of the Uncompahgre formation. It has a rather uniform width of 100 feet. To the east, where the lode cuts breccias of the San Juan formation, Kelley (1946) reports that it narrows to a width of 5 to 10 feet. Between the upper and lower tunnels (fig. 2), the lode is divisible into 2 zones. The southern half is composed of fine-grained, white quartz containing minor amounts of pyrite, galena, sphalerite, hubnerite, and a trace of

gold and silver. A prominant fault, along which occurred most of the displacement, referred to in prior paragraphs, separates this zone from the quartzites to the south. The northern half consists of slightly mineralized and altered slates which have been dragged into the fault zone. Between the quartzites forming the north wall of the Dunmore lode and slates is a strong fissure vein 2 to 3 feet wide.

Two pipes or chimneys of breccia have been discovered in the Dunmore lode. The larger and more extensively developed one is located to the west of the upper tunnel (west of the area shown on fig. 2) and is mineralized by hematite, aikinite, and chalcopyrite. The pipe with which this examination is concerned is located between the upper and lower tunnels (fig. 2) and is mineralized by hubnerite, and base metal sulfides.

Hubnerite has been found in the southern half of the Dunmore lode at several places along its outcrop, but the most extensive mineralization discovered to date is in the breccia pipe between the upper and lower tunnel. The pipe is elliptical, 12 to 20 feet wide, and 50 to 60 feet long. It plunges about 80 degrees northward. Brecciation was produced by a series of fractures that formed after the silicification of the Dunmore lode. The open porous mass was subsequently mineralized by solutions depositing quartz, hubnerite, pyrite, and very minor quantities of hematite, galena, sphalerite, gold and silver. The hubnerite ore is characterized by coarse-grained, translucent, vuggy, quartz, lining cavities and filling open spaces in the earlier brecciated quartz. The hubnerite occurs either as small disseminated crystals in the late quartz or as local concentrations filling vuggs. It was the last ore mineral deposited.

Although minor amounts of hubnerite are found throughout the pipe-like ore shoot, higher grade concentrations occur in lenticular masses a few inches to several feet in width and 1 to 20 feet in the other 2 dimensions. The lenses are oriented with their greater dimensions parallel to the major axes of the pipe.

ORE RESERVES AND GRADE OF ORE

Ten samples were cut during this examination. Their description and the results of assays by the U. S. Bureau of Mines follow:

SAMPLE NO.	DESCRIPTION	% WO_3
D1	12.0' across surface outcrop	0.10
D2	3.0' selected sample N. wall of outcrop	0.65
D3	6.0' across back above manway (S. stope)	1.80
D4	0.8' selected sample N. wall above manway (S. stope)	15.60
D5	10.5' across back N. stope, N. of manway	0.55
D6	6.5' W. face of pillar, N. side of grizzly	0.01
D7	9.5' across back N. stope, N. of grizzly	0.55
D8	7.0' wall E. of grizzly	0.15
D9	8.0' across face above last chute, E. of manway	0.05
D10	3.0' across floor between manway and grizzly	4.00

Three samples taken in 1940 by J. E. Bell of the U. S. Bureau of Mines, resulted in the following determinations of WO_3 content:

SAMPLE NO.	DESCRIPTION	% WO_3
172	Cut grab from outcrop	2.14
173	Grab from ore pass	1.75
174	4 foot cut in stope	3.02

Assays of 6 samples taken by P. T. Allsman of the U. S. Bureau of Mines during an examination in 1942 show the average grade of the ore to be about 0.3 percent WO_3.

Ore reserves for the tungsten bearing pipe exposed on the lower level of the Dunmore mine are estimated as follows:

TYPE	TONS	% WO_3
Measured	75-100	0.80
Indicated	4500	0.80
Inferred	2200	0.80

CONCLUSIONS AND RECOMMENDATIONS

If the entire pipe-like deposit is considered, the tungsten ore exposed on the surface and in the lower tunnel of the Dunmore mine is very low grade, averaging about 0.8% across a width of 16 feet. In the mineralized pipe there are, however, small lenticular masses of higher grade ore that contain from 5-15% WO_3 across widths of from 8 inches to 3 feet. In the sub-level stope, three lenses of high grade ore were exposed, in each case their maximum dimension was less than 20 feet. There is little or no geologic evidence upon which to base an opinion that the average grade or width of the ore will change appreciably at greater depths. However, since the Dunmore lode is one of the major fissure veins in the area, and since small but high grade concentrations of hubnerite have been mined in the pipe-like deposit, limited exploration at greater depths appears justified.

The raise proposed by the applicants is considered development, for only 55 feet of unexplored ground lie between the stope-back and the outcrop. It is the examining team's opinion that a diamond drilling program, detailed on figure 3, should be substituted for the raise. This program would explore the chimney to a depth of about 140 feet below the lower adit level. It consists of 9 diamond-drill holes with a total combined length of about 1,000 feet. The U. S. Bureau of Mines estimates the total cost of the revised exploration program to be $9,657.00. The detailed estimate is in the engineering report.

It is recommended that DMEA Docket 2548 be approved for a loan of $9,657.00 (Government participation $7,242.75), but that the revised exploration program be substituted for the program proposed by the applicants.

REFERENCES

Cross, Whitman, Howe, Ernest, and Ransome, F. L., Silverton, Colo.: U. S. Geological Survey Folio No. 120, 1905.

Burbank, W. S., Structural control of ore deposition in the Uncompahgre district, Ouray County, Colo., with suggestions for prospecting: U. S. Geological Survey Bulletin 906(a), 1940.

Kelley, V. C., Geology, ore deposits, and mines of the Mineral Point, Poughkeepsie, and Upper Uncompahgre Districts, Ouray, San Juan, Hinsdale Counties, Colorado: Colorado Scientific Society Proceedings, Vol. 14, No. 7, 1946.

DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

Engineering Report

By R. R. McLellan
Mining Engineer
Bureau of Mines

DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

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DMEA 2548

ROBITSCH AND BREWSTER
DUNMORE MINE
UNCOMPAHGRE MINING DISTRICT
OURAY COUNTY, COLORADO

ENGINEERING REPORT

By

R. R. McLellan

INTRODUCTION

William E. Brewster and Albert Robitsch, of Ouray, Colo., have applied for Government assistance to explore for tungsten in the Dunmore mine, Ouray County, Colo. The applicants propose to spend approximately $12,000.00 of which the Government's participation will amount to $9,000.00, or 75 percent of the total. The mine was examined on June 19, 1952, by E. N. Harshman, of the U. S. Geological Survey, and R. R. McLellan, of the Bureau of Mines, in company with William Brewster. It was concluded that the applicants' proposals to raise on exposed ore could not be classified as exploration. A revised program of sinking or preferably of diamond drilling is recommended for approval.

ACKNOWLEDGMENTS

Maps, geology, and general information were obtained from reports by V. C. Kelly, of the U. S. Geological Survey, and James E. Bell, of the Bureau of Mines. The applicants were available at the mine as guides.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Dunmore mine is on the west side of the Uncompahgre River near U. S. Highway 550, 4.7 road miles south of Ouray, Colo. (fig. 1). The lower workings, at an elevation of 9,090 feet, are accessible from the highway by a 900-foot aerial tram and by trail across Red Mountain Creek canyon. The workings are in a wide fault zone visible in the precipitous canyon wall. All supplies and equipment will have to be transported to the mine over the aerial tram. Small items of supply may be obtained at Ouray. Heavier mining equipment may be obtained at Montrose, or Grand Junction, Colo., distances of 36 and 63 miles, respectively. There is sufficient water at the mine for mining purposes. Living accommodations are available at Ouray. The location is favorable for a year-around operation.

HISTORY AND PRODUCTION

The first locations are reported to have been made in 1907 for gold and silver. The Statistics Branch, Economics Division, Region IV, Bureau of Mines, Denver, recorded a shipment made in 1917 of 8 tons of ore that contained 0.50 ounce gold and 194 ounces silver per ton, and 509 pounds of copper. In 1934, a group of local men installed the tram and reportedly mined several thousand tons of gold and silver ore. No attempt was made to recover the tungsten. During 1937, considerable development of tungsten and base metal ores was done under lease. No production figures are available for either period. Robitsch and Brewster leased the property in May 1952 and commenced to repair the tram and rehabilitate the underground workings.

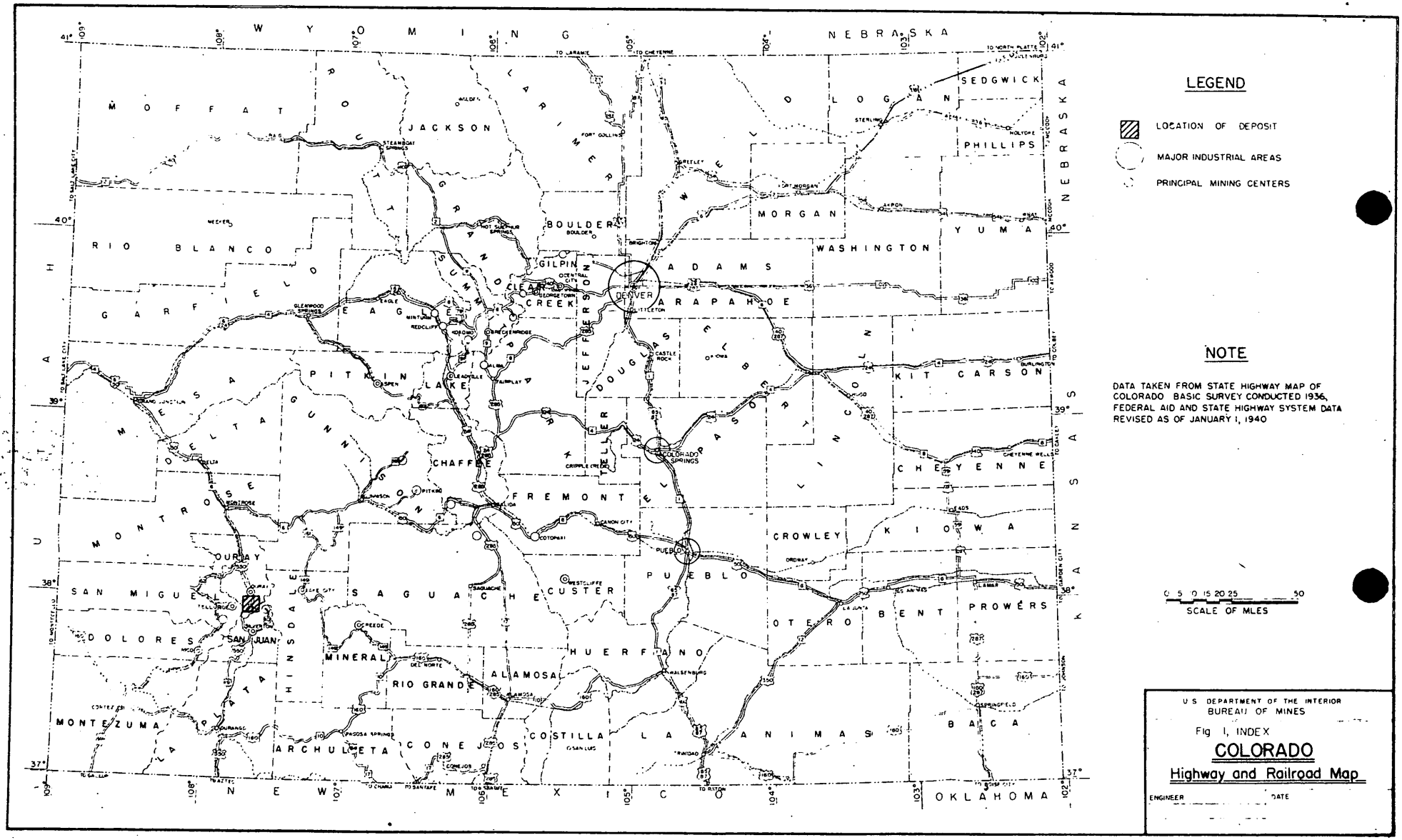


Figure 1. Location Map, Dunmore Mine, Ouray County, Colorado, IMEA 2548.

OWNERSHIP AND EXTENT

All claims considered in the application are owned by Marguerite L., Roderick F., and Kenneth G. MacLennan, of Ouray, Colo. They were leased in 1951 to Harold Williams and William Brewster for a period of 5 years. On May 3, 1952, Harold Williams sold his interest in the claims to Albert Robitsch who, with Brewster, has requested Government aid. The following claims located in the Uncompahgre Mining District, Ouray County, Colo., are recorded in the lease:

Yankee Lad	Survey number 2131
Dunmore	Survey number 20608
Chrisolyte	Survey number 1921
California Lode	unpatented
Annie Lode	unpatented
Hercules Lode	unpatented
Columbine Lode	unpatented
MacGregor Lode	unpatented
Cliff Lode	unpatented
Rainbow Lode	unpatented
Reno Lode and Reno Lode No. 2	unpatented
Ohio Lode	unpatented

DESCRIPTION OF THE DEPOSIT

According to V. C. Kelly, of the U. S. Geological Survey, the shoot of hubnerite is located within a nearly vertical breccia chimney 8 to 20 feet wide and 40 to 50 feet long. Hubnerite mineralization probably extends from the the stopes of the lower workings to the outcrop approximately 85 feet above the level (fig. 2 with geologic report). High-grade pods of hubnerite were visible in stope pillars near the core of the chimney, and traces of hubnerite were visible in the outcrop. There is little evidence that the hubnerite is disseminated throughout the chimney. From the nature of the workings, the previous operators apparently were interested only in locating and mining the isolated pods of high-grade ore.

Kelly believes that the Dunmore fault zone may have been one of the most important solution channels in the upper Uncompahgre district, and, therefore, is worthy of greater exploration. Considering the scope of Kelly's work in the area, his opinion is regarded highly.

MINEABLE ORE RESERVES

Providing the chimney is continuous from the lower level stopes to the outcrop 85 feet above, the tungsten shoot may contain 75 to 100 tons of measured ore, 4,500 tons of indicated ore, and 2,200 tons of inferred ore--all of which on the basis of past and present sampling will average about 0.80 percent WO_3. No work has been done in the chimney beneath the lower level with the exception of a winze 10 feet deep that was completely filled with water at the time of examination. It is entirely reasonable to assume the tungsten mineralization will extend below the level.

The following samples were taken from the outcrop of the chimney and from the sublevel stopes:

Sample No.	Width	Location	Ounces per ton Au	Ounces per ton Ag	Percent Cu	Percent WO_3	WO3 Ft %
D-1	12 feet	Across width of surface exposure	0.01	0.3	<0.05	0.10	1.20
D-2	3 feet	Selected sample, north wall of outcrop	0.005	0.3	<0.05	0.65	1.95
D-3	6 feet	Across back above manway	0.03	0.5	<0.05	1.80	10.80
D-4	8 inches	Selected sample, north wall above manway	0.02	1.3	<0.05	15.60	10.40
D-5	10.5 feet	Across back of north stope, north of manway	0.01	0.3	<0.05	0.55	11.00
D-6	6.5 feet	West face of pillar, north side of grizzly	0.03	0.3	<0.05	<0.01	0.065
D-7	9.5 feet	Across back of north stope, north of grizzly	0.03	0.2	<0.05	0.55	
D-8	7.0 feet	Wall east of grizzly	0.01	0.5	<0.05	0.15	1.05
D-9	8.0 feet	Across face above last chute east	0.01	0.5	<0.05	0.05	0.40
D-10	3.0 feet	Across floor between manway and grizzly	0.01	0.7	<0.05	4.90	14.70
	66.17						51.565
		< less than					0.78

The above samples average 0.016 ounce gold and 0.38 ounce silver per ton, <0.05 percent copper, and 0.80 percent WO_3. 0.78 % WO_3 weighted average

In 1943, Paul T. Allsman, Regional Director, Region V, Bureau of Mines, cut seven samples which averaged 0.3 percent WO_3. These samples were taken from the outcrop and the tram level stopes within the chimney. Apparently no samples were taken of the high-grade tungsten lenses.

PRESENT STATUS

Exploration and Development

Exploration and development to date consist of two levels, each of which comprises about 1,000 feet of drifting with some stoping. The two levels are connected by a raise presently inaccessible. No work has been done on either level since 1937.

Mining and Milling Equipment and Other Facilities

Mining equipment and other facilities on the property consisted of one double rope, single span aerial tramway 830 feet long with tram stations intact, one converted automobile engine to power the tram, one 16-cubic-foot mine car, track, pipe, one combined shop and compressor house, and one ore bin built in the highway tram station. The applicants had repaired the tram and were installing an air line from the highway to the lower tunnel.

PROJECT PROPOSALS, WITH COSTS

The applicant proposed to raise approximately 100 feet on the best showing of ore within the chimney at a cost of approximately $12,000.00. They were unaware that only 65 feet of back existed or that the ore shoot cropped out in the gulch above the stopes of the lower tunnel. It was called to their attention that, under such circumstances, raising probably would not be classified as exploration.

The applicants suggested that in place of raising they would favor approximately 65 feet of sinking and approximately 70 feet of short drifts and crosscuts starting from the bottom of the 10-foot winze in the lower level. The total expenditure would be approximately $12,050.00, distributed as follows, for a period of six months:

Labor

2 Miners, $1.65 per hour, 48-hour week, time and one half over 40 hours, $740.00 per month	$4,440.00	
1 Laborer, $1.50 per hour, 48-hour week, time and one half over 40 hours, $336.00 per month	2,016.00	$6,456.00

Supervision

1 Mine superintendent, $1.75 per hour, 48-hour week, time and one half over 40 hours, $392.00 per month	2,352.00

Operating Materials and Supplies

Timber	$ 400.00	
Explosives, $3.50 per foot sinking	228.00	
Explosives, $3.00 per foot drifting and crosscutting	210.00	
Gasoline	600.00	
Oil and grease	100.00	
Drill steel and bits	300.00	
Small tools	50.00	1,888.00

Operating Equipment

Purchase - The applicants have already purchased the air compressor and two gasoline engines listed on the application; therefore, the purchase price of these items cannot be included in the cost of this program except on a depreciation basis.

Rental - None

Depreciation - The applicant will furnish the following equipment:

Item	Replacement Value	Monthly Depreciation
1 Compressor	$2,400.00	$ 40.00
1 Tugger hoist	1,000.00	16.50
1 Gasoline engine to power tram	200.00	3.30
4 Mine cars, 16 cubic foot	640.00	10.60
1 Steper, Sullivan R91	800.00	13.30
1 Jackhammer, S-55	350.00	5.80
1 Drifter, D-79, with oiler and hoses	860.00	14.30
1 Sump pump, IR-35	300.00	5.00
1 Water tank	100.00	1.60
1 Column with arm and saddle	100.00	1.60
Total per month		$112.00

$\frac{640}{4} = 160$ $\frac{160}{60} = 2.67$

Total for 6 months 672.00

Initial Rehabilitation and Repairs

Completed and cannot be included in the cost of this program.

Miscellaneous

Sampling and analysis	$100.00	
Social Security	132.00	
Workmen's compensation and insurance	300.00	
Accounting at $25.00 per month	150.00	$ 682.00

Cost Summary

Sinking and Drifting

Labor	$ 6,456.00
Supervision	2,352.00
Operating material and supplies	1,888.00
Operating equipment, depreciation	672.00
Miscellaneous	682.00
	$12,050.00

It is probable that the deposit could be explored to better advantage by diamond drilling. Approximately nine holes for a total of 1,000 feet would thoroughly explore the chimney to a depth of about 140 feet (fig. 3). The cost would be considerably less than that of sinking and drifting, and the time probably would be cut in half, or to 3 months. The total expenditure would be approximately $9,657.00, distributed as follows:

Contracts

1,000 feet of diamond drilling at $5.00 per foot	$5,000.00

Supervision

1 Supervisor, full time, $1.75 per hour, 48 hours per week, time and one half over 40 hours, $392.00 per month	1,176.00

Labor

1 Helper, $1.50 per hour, 48-hour week, time and one half over 40 hours, $336.00 per month	1,008.00

Operating Materials and Supplies

Timber	$100.00	
Pipe, 2-inch, 1,500 feet, used, at $0.30 per foot	450.00	
Gasoline	300.00	
Oil and grease	50.00	
Core boxes	150.00	
Small tools	25.00	$1,075.00

Operating Equipment

Rented

1 Compressor, 315 c.f.m., $400.00 per month (Necessary to operate diamond drill)		1,200.00

Depreciation

	Monthly Depreciation	
1 Gasoline engine to power tram	$ 3.30	
1 Mine car	2.70	
Total per month	$ 6.00	
Total for 3 months		18.00

Miscellaneous

Social security, 3 months	$ 33.00	
Workman's compensation and insurance, 3 months	72.00	
Accounting at $25.00 per month, 3 months	75.00	180.00

Cost Summary

Diamond Drilling

1,000 feet of contract diamond drilling at $5.00 per foot		$5,000.00
Labor		1,008.00
Supervision		1,176.00
Operating materials and supplies		1,075.00
Operating equipment		
Rented	$1,200.00	
Depreciation	18.00	1,218.00
Miscellaneous		180.00
Total		$9,657.00

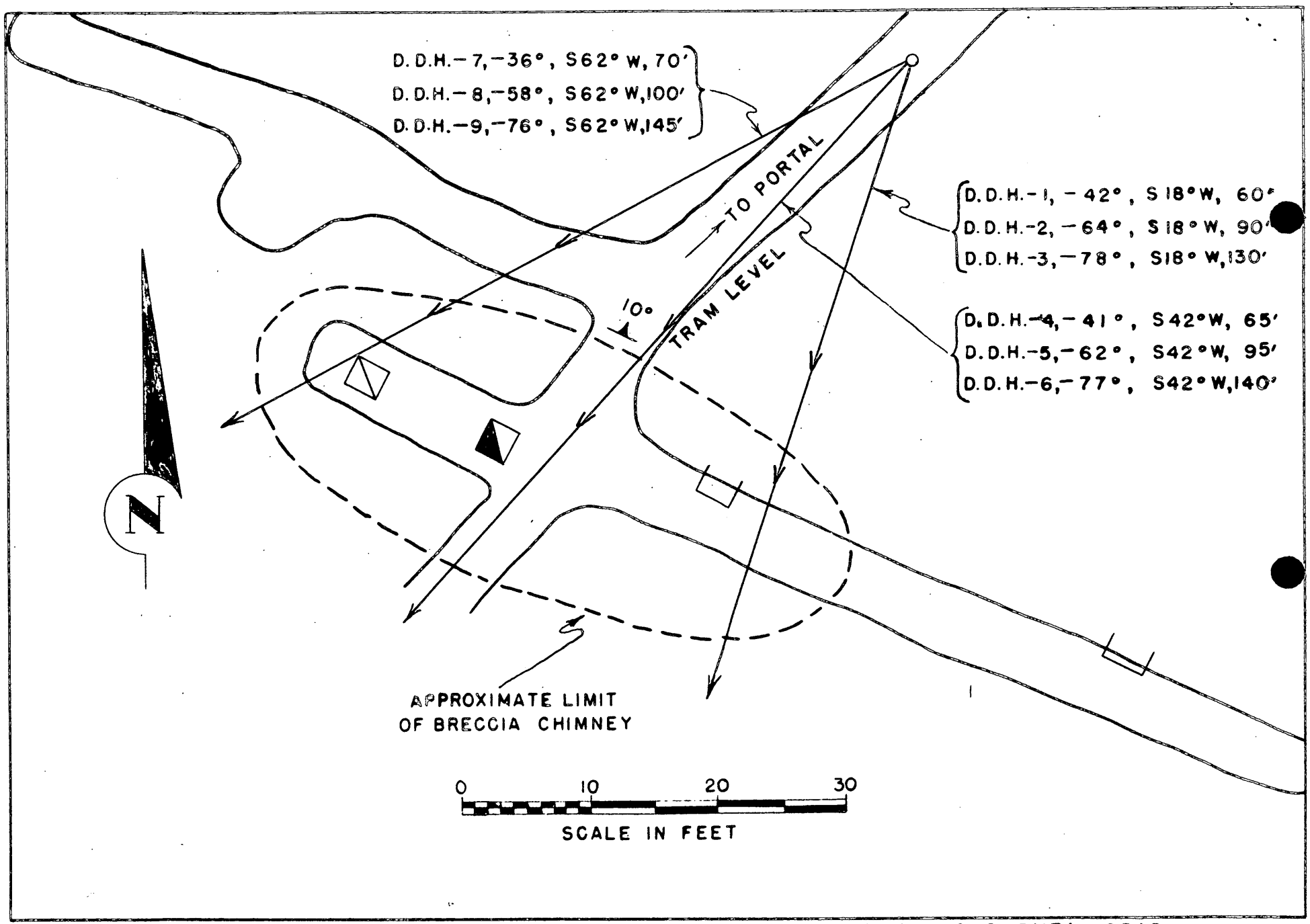


FIGURE 3., PROPOSED DIAMOND DRILLING, DUNMORE MINE, OURAY CO., COLO. DMEA-2548

CONCLUSIONS

There is sufficient tungsten mineralization in the breccia chimney to justify an exploration program below the tram level. The average grade of ore from the level to the outcrop probably does not contain more than 0.8 percent WO_3. Unless the grade and amount of tungsten mineralization increases at depth, there is little chance for a mining operation to succeed at this time. If mineralization increases with depth, the topography is such that another drift could be driven from 100 to 150 feet below the tram level to develop the deposit.

Ore from the Dunmore mine might be purchased by the following companies:

1. Yukon mill, Silverton, Colo., 21 miles
2. Silver Bell Mines Company, Ophir, Colo., 58 miles
3. Climax Molybdenum Company, Climax, Colo., 240 miles ?
4. Wolf Tongue mill, Nederland, Colo., 364 miles VCA Tool

Boulder Tungsten Co.

At approximately $0.10 per ton mile, transportation charges per ton of ore would amount to about $3.00 to Silverton, $6.00 to Ophir, $24.00 to Climax, and $36.00 to Nederland.

Milling charges probably will average $5.00 per ton. Providing most of the chimney can be shipped without sorting, the mining costs probably will average $20.00 per ton. If the ore is mined selectively and hand sorted the cost per ton probably will average $30.00. Total mining, milling, and transportation charges will range from $30.00 to $70.00 per ton, depending upon the haulage distance and the mining method. In order to operate profitably and continuously, mill ore should contain a minimum of 2 to 3 percent WO_3.

Brewster has been a mine operator in Boulder County, Colo., for many years and has had a record of inefficient mining operations. With this in mind, it is believed that a contract diamond drilling program would serve to explore the deposit as a considerable saving of time and money to the operator as well as to the Government.

RECOMMENDATIONS

It is recommended that a contract diamond drilling project be approved for 1,000 feet of drilling at a cost of $9,657.00 of which the Government's share will be $7,242.75.

Nine holes fanned vertically and horizontally as shown on figure 3 should be sufficient to explore the chimney systematically to a depth of approximately 140 feet. All core should be boxed and the boxes marked properly with hole number and footage. The boxes should be available for Defense Minerals Exploration Administration representatives to log and sample. Permanent storage should be arranged for. Drillers should be required to collect sludge samples at intervals not exceeding 5 feet.

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

224 New Customhouse
Denver 2, Colorado

August 19, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration
Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2548 (Tungsten), Robitsch and Brewster, Dunmore Mine, Ouray County, Colorado

Exploration assistance in the amount of $9,657.00 has been approved and the contract will be prepared by this office.

Four copies of the report will be forwarded you when the contract is signed.

The original and one copy of Form 3b is attached.

for John F. Shea
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DENVER
AUG 25 1952

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

224 New Customhouse
Denver 2, Colorado

August 19, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration
Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2543 (Tungsten), Rebitsch and Brewster, Dunmore Mine, Ouray County, Colorado

Exploration assistance in the amount of $9,657.00 has been approved and the contract will be prepared by this office.

Four copies of the report will be forwarded you when the contract is signed.

The original and one copy of Form 3b is attached.

for W. H. King

A. H. Koschmann

Enclosures

cc: W. Traver w/copy final report
AHKoschmann w/copy final report
Mining Div. w/copy final report
DMEA Final Report

Defense Minerals Exploration Administration
AUG 25 1952

DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 2548

Name of Applicant Robitsch and Brewster

Change:	From		To		
	III 1	☐	III 1	☒	8-19-52
	III 2	☐	III 2	☐	
	III 3	☒	III 3	☐	
	III 4	☐	III 4	☐	
	III 5	☐	III 5	☐	

Add:

II 7 $ 12,000

II 8 $ 9,657

II 8a %

Remarks:

Initials of person preparing sheet HMC

Date sheet prepared 8-19-52

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 25 1952

17367

DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 2548

Name of Applicant Robitsch and Brewster

Change:	From		To		
	III 1	☐	III 1	☒	8-19-52
	III 2	☐	III 2	☐	
	III 3	☒	III 3	☐	
	III 4	☐	III 4	☐	
	III 5	☐	III 5	☐	

Add:

II 7 $ 12,000

II 8 $ 9,657

II 8a % _____

Remarks:

Initials of person preparing sheet HMC

Date sheet prepared 8-19-52

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 25 1952

17367

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2548
Metal or Mineral
Date Received 5-26-52
Amount $
Participation (Government %)

ROBITSCH & BREWSTER
P.O. BOX 252
OURAY, COLORADO

Name and address of applicant

Date May 1952

If you have already filed MF-100, give date filed ....., type of assistance requested development loan,

DMA Docket Number (if available) .....

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

MAY 26 1952

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Robitaille & Brewster (Name of company) By Wm. E. Brewster (Signature of authorized official)

May 20 1952 (Date) Mgr. (Title)

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—64067-2

ROBITSCH & BREWSTER
P.O.BOX 252
OURAY, COLO.

1 (A) This mine is known as the Dunsmore Groupe,it was formerly mined for copper-Silver etc.but has been idle many years.It has Two deep tunnels,when driving the lower one of these tunnel they passed up a junction that showed good Tungsten.In the Thirties they operated this mine again and took out Two shipments of this tungsten.This Tungsten showing is about 300 feet from the portal of the lower tunnel,the Tungsten shows at several seperate points and appears to be on the crossvein rather than the Dunsmore vein.There is about 400 feet of back at the point where the Tungsten shows (overhead)

(B) We have a Five year lease on the property at 10% royalty,the lease dates from September 1951.

(C) THE YANKEE LAD LODE,Survey No.2131,Red Mountain Mining Dist.Ouray County, Colo. Recorded in book 119,pages 495-496.

The Dunsmore Lode mining claim,Survey No.20608,Uncompahgre mining Dist.Ouray County, Colo.Recorded in book 107,page 61.

An undevided half interest in the Chrisolyte Lode mining claim,Survey No.1921, Uncompahgre mining Dist.Ouray County, Colorado.

The above claims lie end to end on the same vein along which the tunnel runs. There is also Ten unpatented claims that joins this groupe and is included in this lease.
NOTE 1- The airial tram is located on the Chrisolyte claim. The tunnel begins on the Dunsmore claim and extends through it and into the Yankee Lad claim.

2 There are no liens against properties that I know about.

2 (A) Tungsten

(B) There is no Geologic maps or statements.The ore is showing at this junction at several places where the Two shipments were taken out during the Thirties.

ROBITSCH & BREWSTER
P.O.BOX 232
OURAY, COLORADO

5 (A) The proposed work consists of getting machinery across the canyon from the highway side,which has to be taken across on the airal tram,this includes an air compressor,power for driving same,power to operate the tram and all tools and equipment necessary for operation.

The actual work on the project consists of running a raise upward at least 100 feet to determine if the ore that is now showing in the tunnel continues upward and how far upward.

The old work consisted of six raises,each of which was driven up about 15 feet and then connected with each other,thus forming a large room,we plan on selecting the best appearing one of these raises and driving it at least 100 feet upward to determine the values upward.The remaining raises to be checked at various heights to determine their values etc.

The total cost of this project is estimated to be $12,000.00.

(B) It will take Thirty days to start the project,install machinery etc. and will require Six actual working months with a four man crew to complete the project.

ROBITSCH & BREWSTER
P.O.BOX 232
Ouray, Colorado

5 Facilities that go with the lease consists of mine track(20 Lb.rails) IN PLACE.

2 inch air line,qualities doubtful.

compressor house and shop combined,needs repairs, a tram house on mine side of canyou,housing driving machinery for tram,needs some repairs to cog wheel.

tram house and ore bin combined on highway side of canyon,slight repairs needed.

five airial cables across canyon,about 700 feet long each.

estimated cost of repairing above facilities $600.00. These repairs consists of repairing the roof and walls of the compressor house,repairing or replacing one of the driving gears on the tram and boxing up the ore bin and roofing same with tar-paper roofing.

ROBITSCH & BREWSTER
P.O.Box 252
Ouray, Colorado

6 No new buildings or facilities are needed at this time for this project

ROBITSCH & BREWSTER
P.O.Box 252
Ouray, Colorado

7 (A) An air compressor rented- (NONE)

(B) An air compressor (used) $500.00, priced at above figure.
Buda motor to power above,priced at $225.00 (gas driven)
Motor to power airial tram $200.00,as priced " "

(C) 1 mine car.1 stopper drill.1 jackhammer drill.1 drifter drill.

1 sump pump.1 water tank.100 feet air hose.100 feet water hose.

1 oiler. 1 air column.1 arm and saddle.1 forge. 1 anvil.1 storage

battery.wrenches,picks,shovels and fittings.Six months rent $500.00

plus upkeep repairs. (the above furnished by W.E.Brewster.

ROBITSCH & BREWSTER
P.O.Box 252
Ouray, Colorado

8 One driller, salary to be $1.75 hr.

one mucker, salary to be 1.75 hr.

one trammer, salary to be 1.75 hr.

one supervisor and tram operator, salary to be $1.75 hr.

estimated cost for six months work, $3,400.00

The above includes the work of the two partners in the project.

ROBITSCH & BREWSTER
P.O.BOX 232
OURAY, COLORADO

9	Estimated-	mine timbers	$300.00	
	"	POWDER	500.00	
	"	fuse	75.00	
	"	caps	25.00	
	"	compensation insurance	240 .00	
	"	assaying	100.00	
	"	accounting	200.00	
	"	gasoline	600.00	
	"	oils-greases	100.00	$2,140.00

ROBITSCH & BREWSTER
P.O.BOX 232
OURAY, COLORADO

10 (A) $5,000.00

(B) Yes

11 None that I know of.

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA FOR USE UNDER THE DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2548

Date received 5-26-52

ROBITSCH & BREWSTER
P.O.BOX 232
OURAY, COLORADO

Name and address of applicant

Date MAY 20 1952

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
MAY 26 1952

4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☒ Lessee.
   - ☐ Contractor.
5. Number of years in production THE TUNGSTEN IS NEW PROJECT

   If not in production or operation, estimated date when production will begin JULY 1 1952
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
Wm.E. BREWSTER MGR.	PARTNERSHIP	NEW	PROJECT				
ALBERT ROBITSCH	"	"	"				
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production: NEW PROJECT

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

ROBITSCH & BREWSTER
P.O.BOX 282
OURAY,COLORADO

1 (A) TUNGSTEN
(B) NONE

2 (A) NO SHAFTS
(B) 200 FT.
(C) 3,000 FT.
(D) NONE

3 (A) 4 MILES SOUTH FROM OURAY, COLO.
(B) RED MOUNTAIN AND UNCOMPAHGRE MINING DISTRICTS
(C)
(D) OURAY COUNTY, COLORADO

4 (A) NOT IN OPERATION
(B) LESSEE

5 WAS IN OPERATION IN EARLY NINETEEN HUNDREDS FOR COPPER,SILVER,LEAD & GOLD PRODUCTION OF TUNGSTEN COULD START IN THIRTY DAYS FROM BEGINNING

6 ONE PARTNER HAS HAD ELEVEN YEARS EXPERIENCE MINING.WAS MINING TUNGSTEN DURING WORLD WAR TWO,AND GOLD-SILVER-LEAD ETC.BEFORE AND AFTER.

7 (A) THE DETAILS ARE UNKNOWN TO APPLICANT,HOWEVER IT IS KNOWN THAT HIGHGRADE ORE USED TO BE PACKED FROM THIS MINE BY PACK MULES,THAT COPPER WAS ONE OUTSTANDING PRODUCT,THE UPPER TUNNEL WHICH IS HIGH UP ON THE MOUNTAIN SIDE HAS 1000 FT.OR MORE TUNNEL AND HAS A STOPE ABOUT 50 FT.ACROSS,HT. UNKNOWN.IT IS REFERED TO AS A GLORY-HOLE .THE LOWER TUNNEL IS POSSIBLY 3000 FT.DEEP AND HAS A STOPE DIRECTLY UNDER THE ONE ABOVE AND CONNECTS WITH THE UPPER TUNNEL.THE TUNGSTEN THAT SHOWS AT A CROSS VEIN ABOUT 500 FT.FROM PORTAL OF LOWER TUNNEL HAS PASSED UP BY THE OLD MINERS.

(B) THERE IS NO ADJOINING PROPERTIES WORKING NOW THAT I KNOW OF.THE IDARADA MINE IS FURTHER UP ON RED MOUNTAIN AND IS WORKING YEAR AROUND,THE CAMP BIRD MINE IS DIRECTLY ACROSS THE MOUNTAIN FROM THIS MINE,POSSIBLY THREE MILES THROUGH MOUNTAIN.

(C) THERE ARE NO REPORTS,EXAMINATIONS ETC.ON THIS TUNGSTEN ORE THAT I KNOW OF THE TUNGSTEN SHOWS ALONG THE CROSS -VEIN AND THIS PROJECT IS TO DETERMINE THE HEIGHT THAT IT GOES AND IF THE VALUE CONTINUES AS GOOD AS WHAT IS IN SIGHT. TWO ASSAYS TAKEN FROM THE ORE THAT IS SHOWING,ONE ASSAYED 17.46 % THE OTHER 15.%

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved) ESTIMATED	UNKNOWN	10 to 17%	$1,000.00	$800.00	$200.00
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Robitscher & Brewster (Name of company)

By Wm E. Brewster (Signature of authorized official)

May 15 1952 (Date)

Mgr (Title)

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—63792-1

This Agreement of Lease, Made and entered into this tenth day of September A. D. 1951, by and between MARGUERITE L. MAC LENNAN, RODERICK F. MAC LENNAN, and KENNETH G. MAC LENNAN

parties of the first part, and HAROLD WILLIAMS and WILLIAM BREWESTER

parties of the second part, **Witnesseth,** That the said parties of the first part, for and in consideration of the rents, covenants and agreements hereinafter expressed to be paid, kept and performed by the said parties of the said second part, have leased, let and demised, and by these presents do lease, let and demise unto the said parties of the second part, the following described premises, to-wit: All

The Yankee Lad Mining Claim, U.S. Survey No. 2131, situated in Red Mountain Mining District, Ouray County, Colorado, recorded in Book 119, Pages 495-496 of the official records of Ouray County.

The Dunmore Lode Mining Claim, U.S. Survey No. 20608, situated in the Uncompahgre Mining District, Ouray County, State of Colorado, certificate of which Patent is recorded in Book 107, Page 61 of the official records of Ouray County.

An undivided one-half interest in and to the Chrisolyte Lode Mining Claim, U.S. Mineral Survey No. 1921, situate in the Uncompahgre Mining District, County of Ouray, State of Colorado.

*California Lode	Recorded	in	Book	83,	Page 567	(* These claims,
*Annie Lode	"	"	"	83,	" 205	Calif. Lode to and
*Hercules Lode	"	"	"	79,	" 340	including Ohio Lode
*Columbine Lode	"	"	"	93,	" 121	are known as the
*MacGregor Lode	"	"	"	93,	" 70	Dunmore Group.)
*Cliff Lode	"	"	"	93,	" 574	
*Rainbow Lode	"	"	"	93,	" 573	
*Reno Lode & Reno Lode No. 2	"	"	"	93,	" 120	& 121 respectively
*Ohio Lode	"	"	"	93,	" 573	

To Have and to Hold, For the purpose of mining, with no power to assign or sub-let the whole or any part of said premises

for the term of FIVE YEARS (that is, from Sept. 10, 1951, to Sept. 10, 1956)

from the date hereof. Said parties of the second part, for and in consideration of the premises aforesaid, have covenanted, contracted and agreed, and by these presents do covenant, contract and agree with said parties of the first part their heirs, executors, administrators, successors or assigns, to commence work on said premises not later than Sept. 25, 1951 and to work the same continuously and with reasonable diligence, in thorough and workmanlike manner; performing thereon at least Forty (40) shifts of work, of two (2) men each, during every calendar month of the life of said lease; keeping the same securely timbered in all parts during the term of this lease; to keep accurate accounts, and to render quarter yearly statements, accompanied by vouchers, to the said parties of the first part, their agent or attorney, showing the amount of all ore taken from said premises, and the yield of the same, and the cost of hauling and milling the same, and to pay to said parties of the first part, their agent or attorney, as rental for said premises, as follows, to-wit:

To pay royalty of ten per cent. (10%) on net proceeds, meaning gross returns less cost of transportation from mine to point of sale, smelting and milling charges, sample charges and assaying costs.

It is further understood and agreed that parties of the second part are to make all shipments of ores or concentrates from the above described mining claims in the names of the lessors and the lessees; such shipments to be made directly to the purchaser and the lessor's share of royalty shall be paid by the purchaser direct to parties of the first part and second parties shall advise all purchasers of ore from said claims as to the 10% royalty on net proceeds as first parties' rental so that such purchasers shall be able to remit directly to first parties the amount due first parties from such shipments. Second parties also agree to stow no waste underground and to properly care for all mine dumps, to allow the lessors to enter upon said premises at any and all times during the term of this lease.

To keep true and accurate records and accounts of the dispositon of all ore received from said claims with the amounts received for all shipments of said ore and records of all assays; to make no assignment of any part or portion of this lease, and further agree not to sublet any part or portion of the claims herein leased without the written consent of the lessors, to pay promptly for all materials, supplies, and labor in connection with the operation of said mining claim and to protect and indemnify the lessors herein for and against all claims, demands and liability for injury or death on said premises while this lease is in force, and to post on said premises, and keep posted, in conspicuous places, notices to the effect that the premises are being operated under lease and that the lessors shall not be liable for any claims of labor, material, or supplies.

To pay or cause to be paid, all taxes and tax assessments levied on said premises or as a result of said mining operations and on any improvements.

That second parties will provide workmen's compensation when, and if, other parties are employed by them in the operation of said mining claims, and to protect the lessors from claims for injuries, death, or otherwise, to any of the employees in and on said premises, and second parties shall, at all times, during the term of this lease accept all liability for contributions and payroll taxes under the Federal Security Act, and State Unemployment Compensation laws, and hold first parties harmless and not liable therefor.

IT IS FURTHER UNDERSTOOD AND AGREED That in case parties of the second part shall fail or refuse to at all times during the term of this lease, fully comply with all the terms and conditions hereof, said lease may be cancelled by first parties upon the giving to second parties written notice of such failure and refusal to act by them in accordance with the terms and conditions of this lease.

And in consideration of such demise, the said Lessees do covenant and agree with said Lessors as follows, to-wit:

To enter upon said MINE or premises, and work the same MINE FASHION, in manner necessary to good and economical mining, so as to take out the greatest amount of ore possible, with due regard to the development and preservation of the same as a workable mine and to the special covenants hereinafter reserved;

To work and mine said premises as aforesaid steadily and continuously from the date of ~~this Lease; and that any failure to work~~ said premises with at least two persons employed underground, for the total number of forty ~~days~~ shifts, may be considered a violation of this covenant;

To well and sufficiently timber said Mine at all points where proper, in accordance with good mining; and to replace and repair all old timbering wherever it may become necessary;

To allow said Lessors and their agents, from time to time, to enter upon and into all parts of said Mine for purposes of inspection;

To not assign this Lease or any interest thereunder, and to not sublet the said premises or any part thereof, without the written assent of said Lessor, and to not allow any person not in privity with the parties hereto to take or hold possession of said premises, or any part thereof, under any pretense whatever;

To occupy and hold all cross or parallel Lodes, spurs, or mineral deposits of any kind which may be discovered by the said Lessee or any person under them in any manner;

To keep at all times the Drifts, Shafts, Tunnels and other workings thoroughly drained and clear of loose rock and rubbish, unless prevented by extraordinary mining casualty;

To deliver to said Lessors the said premises, with the appurtenances and all improvements, in good order and condition, with all Drifts, Shafts, Tunnels and other passages thoroughly clear of loose rock and rubbish, and drained, and the Mine ready for immediate continued working (accidents not arising from negligence alone excusing), without demand or further notice, on said 10th day of September A.D. 1956, at noon, or at any time previous, upon demand for forfeiture.

And finally, that upon the violation of any covenant or covenants hereinbefore reserved the term of this lease shall, at the option of said Lessors expire, and the same and said premises, with the appurtenances, shall become forfeited to said Lessors, and said Lessors or their Agent may thereupon, after demand of possession in writing, enter upon said premises and dispossess of all persons occupying the same, with or without process of law; or at the option of said Lessors the said Tenants and all persons found in occupation may be proceeded against as guilty of unlawful detainer.

And the said Lessors expressly reserve to themselves the property and right of property in all minerals to be extracted from said premises during the term of this Lease.

Each and every clause and covenant of this Agreement of Lease shall extend to the heirs, executors, administrators and lawful assigns of all parties hereto.

Said part.....of the second part furthermore agree.....that the said part.....of the first part, ...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 part.....of the second part will render to.....all the assistance in.....power in so doing.

Said part.....of the second part furthermore agree.....that in case.....he.....fail.....to commence work on said premises as aforesaid, or to work the same continuously and with reasonable diligence and in workmanlike manner, or to keep the same securely timbered, or render said 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 part.....of the first part,.....agent or attorney, to declare this lease void and of no effect thereafter, and without process of law to enter upon and take possession of said premises; and in such case.....

and also at the expiration of this lease by limitation, said part.....of the second part agree.....to surrender, yield and deliver to said part.....of the first part,.....heirs, administrators, executors, successors and assigns, quiet and peaceable possession of said premises in good condition.

.....Seal.

Wm E Brewster Seal.

Harold O. Williams Seal.

Marguerite L. MacLennan Seal.

Roderick J. MacLennan Seal.

by Marguerite L. MacLennan (Mother)

Kenneth G. MacLennan Seal.

by Marguerite L. MacLennan (Mother)

OURAY, COLORADO
P.O.BOX 232
MAY 3 1952

TO WHOM IT MAY CONCERN:

THIS IS TO CERTIFY THAT I HAVE THIS DAY SOLD MY INTEREST IN THE FOLLOWING DESCRIBED LEASE TO ALBERT ROBINSON. SAID LEASE WAS DATED SEPT.10th. 1951 AND ENDS SEPT.10 1953.AND WAS SIGNED BY

MARGUERITE L. MAC LENNAN, RODERICK F. MAC LENNAN AND KENNETH G. MAC LENNAN, PARTIES OF THE FIRST PART AND HAROLD WILLIAMS AND WILLIAM BREWSTER,PARTIES OF THE SECOND PART. AND WAS ON THE MINING CLAIMS LISTED BELOW:

THE YANKEE LAD MINING CLAIM,SURVEY NO.2131,SITUATED IN RED MOUNTAIN MINING DISTRICT,OURAY COUNTY, COLORADO.
THE DUNSMORE LODE MINING CLAIM,SURVEY NO.~~20000~~ 20608,SITUATED IN THE UNCOMPAHGRE MINING DISTRICT, OURAY COUNTY, COLORADO.
AND AN UNDEVIDED HALF INTEREST IN THE CHRISOLYTE LODE MINING CLAIM,SURVEY NO.1021,SITUATED IN THE UNCOMPAHGRE MINING DISTRICT,OURAY COUNTY, COLORADO.

AND THE DUNSMORE GROUPE OF UNPATENTED MINING CLAIMS.AS FOLLOWS:

CALIFIRNIA LODE,	RECORDED	IN	BOOK	93,	PAGE	567
ANNIE LODE,	"	"	"	93,	"	205
HERCULES LODE ,	"	"	"	79,	"	540
COLUMBINE LODE ,	"	"	"	93,	"	121
MACGREGOR LODE ,	"	"	"	93,	"	70
CLIFF LODE ,	"	"	"	93,	"	574
RAINBOW LODE ,	"	"	"	93,	"	573
RENO LODE ,	"	"	"	93,	"	120
RENO NO.2,LODE ,	"	"	"	93,	"	121
OHIO LODE,	"	"	"	93,	"	573

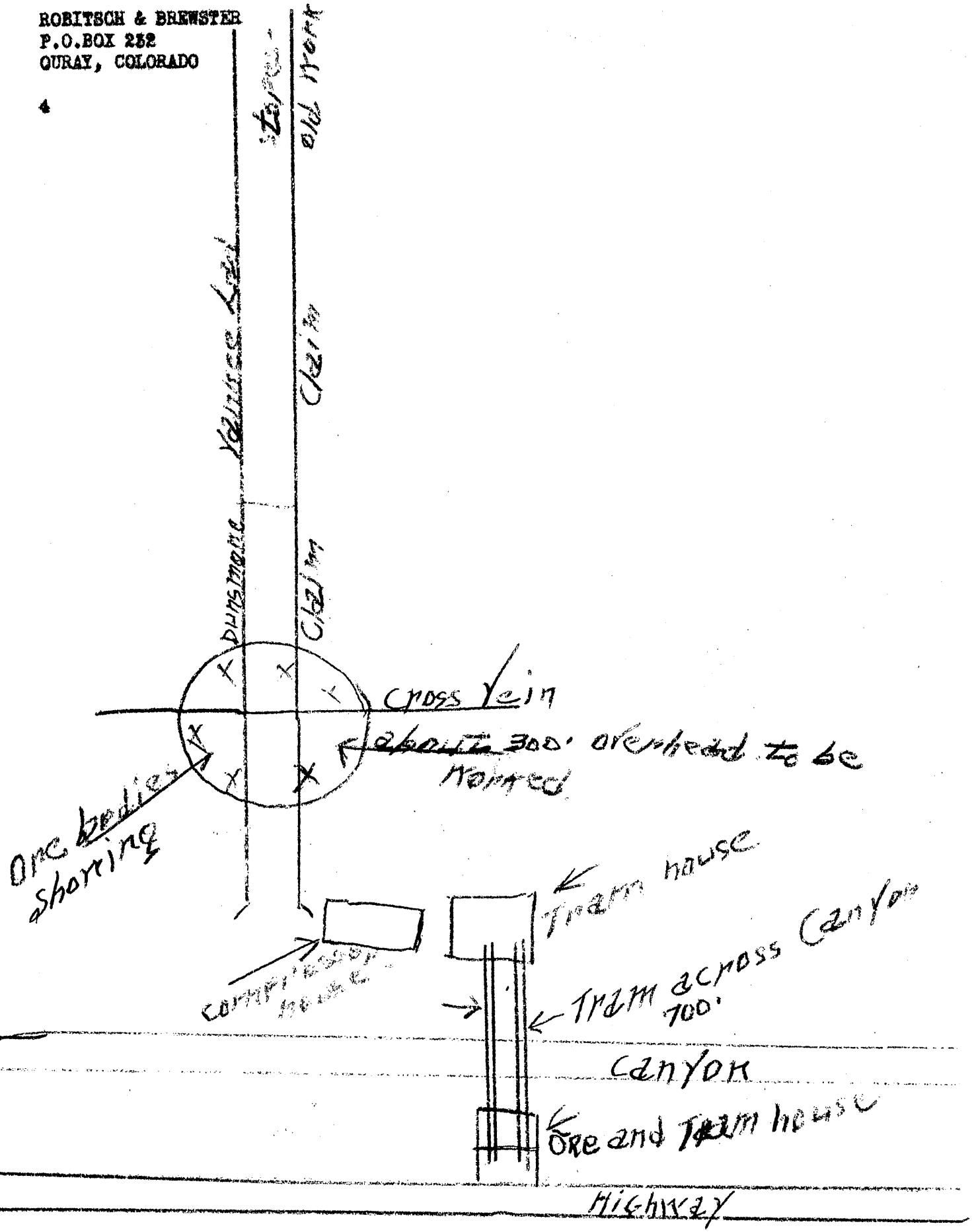
I HEREBY WAIVE ALL INTEREST AND RIGHTS TO ABOVE LEASE AS DESCRIBED.

SIGNED Harold O. Williams

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

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300
(PMGC)

Contract Service Section
General Accounting Office
Washington 25, D. C.

ROBITSCH & BREWSTER
P.O.BOX 252
OURAY, COLORADO