DMEA 3546

DOCKET INDEX

ACTION DOCUMENTS

1	APPLICATION	DATE RECEIVED	10/25/54
2	CONTRACT	DATE	6/6/55
3	TERMINATION AGREEMENT	DATE	4-9-56
4	CERTIFICATION	DATE	
5	AUDIT REPORT	DATE	
6	AMENDMENTS - NUMBERS 1	DATE	12-15-55

Docket Copy

RECEIVED
APR 23 1956

Indutz 4/3/56

TERMINATION AGREEMENT

It is agreed this 9th day of April, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Mosch and Mosch, hereinafter called the "Operator," parties to that certain Exploration Project Contract Idm-E810, Docket No. DMEA-3546, dated June 6, 1955, hereinafter called the "Contract," that:

1. Effective February 29, 1956, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the fixed unit costs of work performed prior to said effective date.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account.

4. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this termination agreement.

IN WITNESS WHEREOF, these parties have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By C O Mitkendorf
Administrator, Defense Minerals Exploration Administration

Hans Mosch
Hans Mosch, partner

Alvin Mosch
Alvin Mosch, partner

Rubin Sampson 2/7/56

EXPLORATION PROJECT CONTRACT
HANS MOSCH AND ALVIN MOSCH, PARTNERS
DOCKET NO. DMEA 3546
CONTRACT NO. IDM-2610

AMENDMENT NO. 1

It is agreed this 15th day of December, 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Hans Mosch and Alvin Mosch, partners, hereinafter called the "Operator," parties to that certain Exploration Project Contract No. IDM-2610, Docket No. DMEA 3546, dated June 6, 1955, hereinafter called the "Contract," that:

1. The date of "January 1, 1956" established under "Article 3" as the date on or before which the work shall be completed is extended to March 6, 1956.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Executed in sextuplet the day and year first above written.

UNITED STATES OF AMERICA

By W. M. Hann

W. M. Trower
Executive Officer, DMEA
Field Team, Region III.

OPERATOR

By Hans Mosch
Hans Mosch, Partner

By Alvin Mosch
Alvin Mosch, Partner

DMEA
Date Rec'd.
1955
BUREAU OF MINES
Denver, Colorado

5275 Dover St.
Arvada Colo.

December 9, 1955

United States Dept. Of Interior
DMEA Administration

Re: Docket DMEA 3546 (tungsten)
Contract Idm-E8IO

Gentlemen:

Project work contracted to our partnership for purpose of exploring The Big Cameron vein consisted of sixty feet of sinking and one-hundred and fifty-two FEET of drifting from the new depth of the Big Cameron Shaft. The expiration date for the completion of this project is January 6, 1956.

Ten feet of sinking and eighty-one feet of drifting yet require doing for the completion of the Big Cameron project. Several factors have delayed the progress of our work. Heavy ground has necessitated the timbering of the entire Shaft and some bad portions of the drift. Unforeseen equipment failure difficulties have created some delay, and adverse weather conditions are tending to retard progress as the work continues on.

It is doubtful that our Partnership can finish the contract upon or before the completion date as stipulated by the Government. Our Partnership desies to complete this project, and therefore requests the Government to extend the completion date to March 6, 1956.

Hans Mosch
Hans Mosch(partner)

Alvin Mosch
Alvin Mosch(partner)

COPY

5275 Dover St.
Arvada Colo.

December 9, 1955

United States Dept. of Interior
DMEA Administratiom

Re: Docket DMEA 3546 (tungsten)
Contract Idm-E810

Gentlemen:

Project work contracted to our partnership for purpose of exploring The Big Cameron vein consisted of sixty feet of sinking and one-hundred and fifty-two feet of drifting from the new depth of the Big Cameron Shaft. The expiration date for the completion of this project is January 6, 1956.

Ten feet of sinking and eighty-one feet of drifting yet require doing for the completion of the Big Cameron project. Several factors have delayed the progress of our work. Heavy ground has necessitated the timbering of the entire Shaft and some bad portions of the drift. Unforeseen equipment failure difficulties have created some delay, and adverse weather conditions are tending to retard progress as the work continues on.

It is doubtful that our Partnership can finish the contract upon or before the completion date as stipulated by the Government. Our Partnership desires to complete this project, and therefore requests the Government to extend the completion date to March 6, 1956.

/s/ Hans Mosch
Hans Mosch (partner)

/s/ Alvin Mosch
Alvin Mosch (partner)

Dock Copy

RECEIVED
JUL - 5 1955

MF-200A
(Revised June 1954)

Docket No. DMEA-[illegible]

Commodity Tungsten

Contract No. Idm-E 810

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT[1]
(Short Form)

It is agreed this 6th day of June, 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Mark Roach and Alvin Roach, partners,

whose mailing address is Arvada, Colorado,

hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200A), the attached Exhibit "A," Annex I, and

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Colorado, County of Boulder, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] lessee of [5] all mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] lease, [7] — recorded in Book —, page —, official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: None

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.), are attached, as follows: Consent to Lien of the lessor

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un,"

16—70618-1

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 7, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 7(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of [illegible] The work to be performed is described in Exhibit "A." The Operator on or before July 15, 1955 shall commence the work, and on or before January 1, 1956 (unless the Operator's obligation to complete the work is terminated—see Article 8) shall complete the work.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—A fixed cost for each unit of work to be performed (per foot of drifting, per foot of drilling, per hour of operations, etc.) is hereby agreed upon, and is set forth in Exhibit "A" in connection with the estimated total cost of the project in the sum of $[illegible] The Government will contribute 75 percent of the fixed unit costs as work is performed, in a total sum not in excess of $6,210.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 6(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work

performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records or accounts.

ARTICLE 7. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 6) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 8. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 8 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 9. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 10. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 11. *Changes and added provisions.*—

Executed in sextuplicate the day and year first above written.

MOSCH AND MOSCH
(Operator) (partners)

By Johann Mosch
(partner)

By Alois Mosch
(partner)

THE UNITED STATES OF AMERICA

By O O Mittendorf
Administrator, Defense Minerals Exploration Administration

Chandler
Chapman
Martin
Holladay
Nelson
Rubin
"Appd. Sol. Off."
Selfridge
Johnson

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—70618-1

RECEIVED
JUL - 5 1955

EXPLORATION PROJECT CONTRACT
MOSCH AND MOSCH
DOCKET NO. DMEA-3546

ANNEX I

The land referred to in Article 2 of the Contract is described as follows:

Big Cameron, U. S. Survey No. 19559; Fraction, U. S. Survey No. 19972; and the Jack U. S. Survey No. 18346, all held by U. S. Patent. These claims are located in section 7, T. 1 S., R. 72 W., 6th P. M. Boulder County, Colorado.

The location of the land is shown on the map entitled "Figure 1 - Location Map, Big Cameron Mine . . ." attached hereto and made a part hereof.

RECEIVED
JUL - 5 1955

EXPLORATION PROJECT CONTRACT
MOSCH AND MOSCH
DOCKET NO. DMEA-3546

EXHIBIT "A"

Description of the Work

1. Extend the present 2 compartment shaft from the 54 foot level to the 114 foot level, a distance of 60 feet. The shaft shall be not less than 4 feet by 8 feet in the clear of timber.

2. On the 104 foot level, drift from the shaft 152 feet south-westerly along the Steel Plate vein. The drift shall be not less than 4 feet by 6½ feet in cross-section. All mineralized zones shall be sampled and assayed for WO_3.

The shaft and drift shall be timbered as necessary.

The work is outlined on a map entitled "Figure 3 - Plan and Section of Big Cameron Mine . . .," attached hereto and made a part hereof.

FIXED UNIT COSTS

Sink two compartment shaft 60 feet @ $68.00 per foot	$4,080.00	
Drift 152 feet @ $27.00 per foot	4,104.00	
Assay approximately 24 samples @ $4.00 each sample	96.00	
Estimated total cost of project		$8,280.00
Government participation @ 75%		$6,210.00

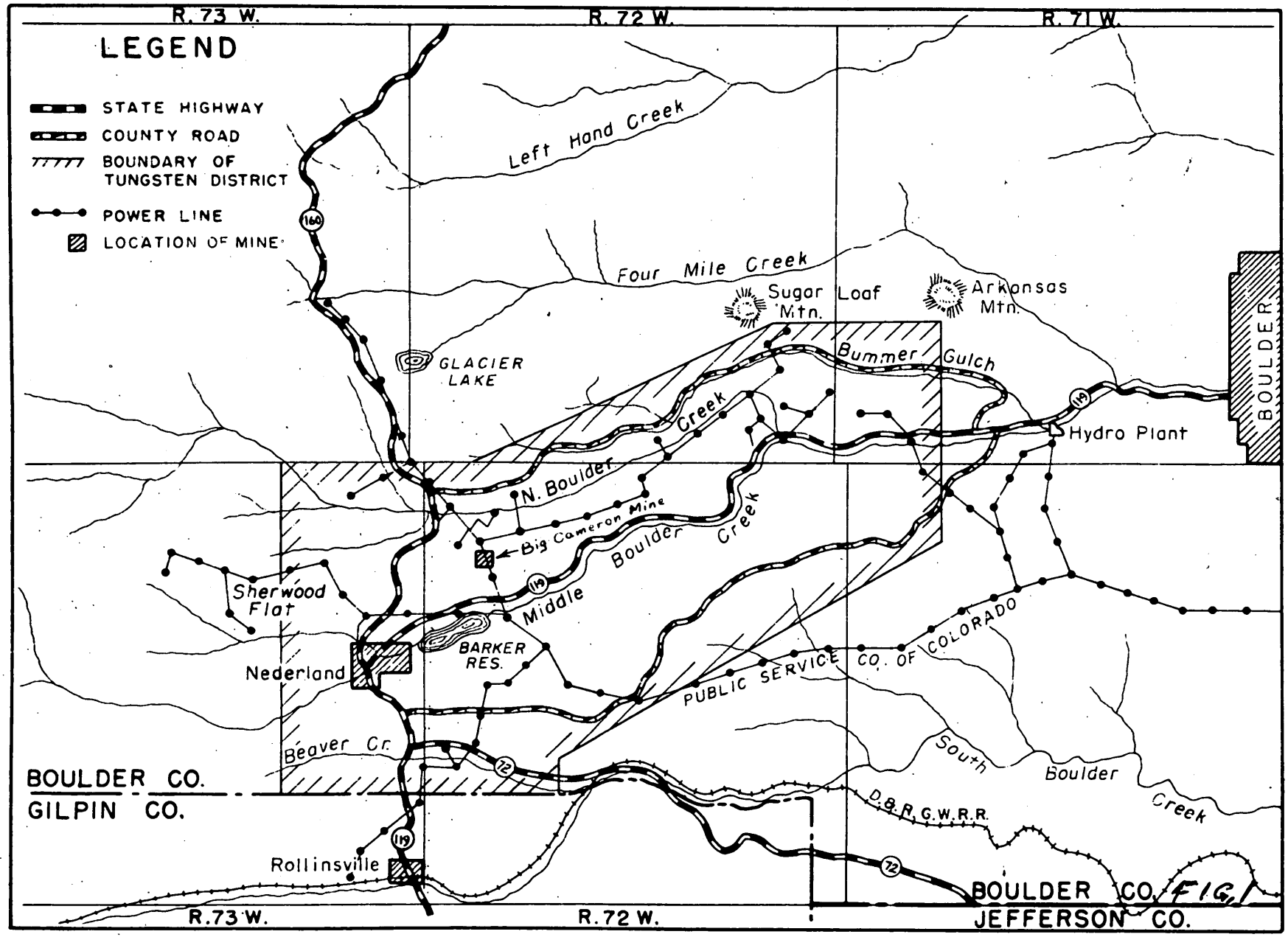


FIGURE 1 - LOCATION MAP, BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

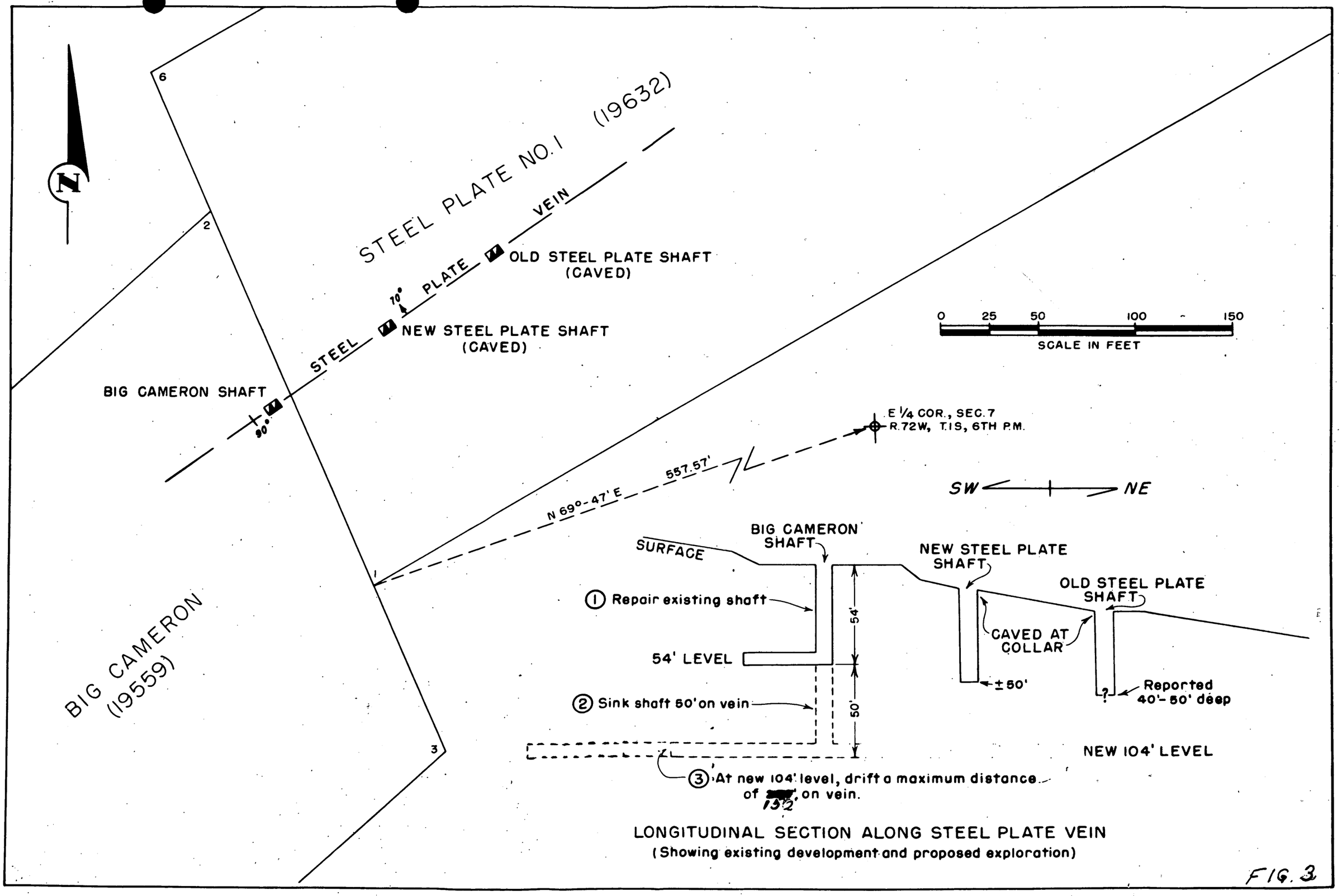


FIGURE 3- PLAN AND SECTION OF BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

RECEIVED
JUL - 5 1955

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Noah A Mach
Docket No. DMEA- 3946
Contract No. Idm-E 110
Contract Date June 6, 1955

CONSENT TO LIEN

RECEIVED
JUL - 8 1955

To the United States of America:

Referring to that certain land in the County of Boulder, State of Colorado, described as follows:1/

Big Canyon 1010 mining claim	U. S. Survey No. 19559
Spartan 1011 mining claim	U. S. Survey No. 19572
Jack 1012 mining claim	U. S. Survey No. 10346

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

Dated this 29 day of June, 195[illegible].

Alexander Pregel V. Pres. [Seal]
[illegible], [illegible].

_____ [Seal]

_____ [Seal]

I, Paul J. Newlon certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Alexander Pregel who signed this agreement was then Vice-President (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Paul J. Newlon
[Corporate Seal]

DOCKET
SURNAME
Holt
Martin
Chandler
Nelson
Lamb
Selbridge
Johnson

400

Metzer Mines, Inc.
Boulder, Colorado

Re: Docket No. DMRA 3546 - Tungsten
Mesch and Mesch
Big Cameron Mine
Boulder County, Colorado
Contract No. 14-[illegible]

Gentlemen:

Reference is made to a certain Owner's Consent to Lien executed by you on June 29, 1955, and to the above-referenced contract.

Enclosed for your information is a copy of a letter to the operator, advising the partnership that it is not our intention to create a lien against the property referred to in the Owner's Consent to Lien and the contract, or the production from said property, as a result of work done under the subject contract.

Sincerely yours,

Frank E. Johnson (esf)
ACTING Administrator

Enclosure

SPHolt/foc 7/31/56
cc to: Docket
Code 400
Code 800
Admr. Read. File
FT. REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

P.G.S.

DOCKET
SURNAME

400 Holt
Martin
Chambers
Nelson
Lamb-
Selfridge.

JUL - 3 1956

Messrs. Hans Hasch and
Alvin Hasch
5875 Dover Street
Arvada, Colorado

Re: Docket No. DMEA 1546 - Tungsten
Big Cameron Mine
Boulder County, Colorado
Contract No. 14n-2510

Gentlemen:

This is with reference to the subject exploration contract between Hans Hasch and Alvin Hasch, partners, and the Government.

It is not our intention to issue 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 the provisions of the contract which require the operator to keep and preserve certain records for the period indicated.

We regret that the exploration work performed did not result in a discovery or development. Your participation in the exploration program, however, is sincerely appreciated.

Sincerely yours,

Frank E. Johnson

ACTING Administrator

SPHolt:fec
7/31/56
cc to: Docket
Code 400
Code 800
Admr. Read. File
FT. REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

Hetzer Mines, Inc.

R.S.L.

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

November 8, 1956

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: General Summary of Contract and Results Obtained
Docket No. DMEA 3546 - Tungsten
Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado
Contract No. Idm-E810

Operator: Hans and Alvin Mosch, partners, 5275 Dover Street, Arvada, Colorado

Operator's Property Rights:
The Operator controls, by lease from the owner, Hetzer Mines, Inc., three patented lode mining claims, situated in sec. 7, T. 1 S., R. 72 W., 6th P. M., Boulder County, Colorado, as follows:

Claim Name	U. S. Survey No.
Big Cameron	19559
Fraction	19972
Jack	18346

Contract: Executed June 6, 1955; work to commence on or before July 15, 1955, and to be completed on or before January 1, 1956.

(a) Work authorized:

Sink two-compartment shaft, 60 feet @ $68.00/ft.	$4,080.00
Drift 152 feet @ $27.00/ft.	4,104.00
Assay 24 samples for WO_3 @ $4.00/each	96.00
Total estimated	$8,280.00
Government participation @ 75%	$6,210.00

(b) Amendment No. 1, executed December 15, 1955, extended the date of completion of the contract from January 1, 1956 to March 6, 1956.

(c) Work completed under the terms of the contract:

Drifting, 138 feet @ $27.00/ft.	$3,726.00
Shaft sinking, 60 feet @ $68.00/ft.	4,080.00
Assaying, 1 sample for WO_3 @ $4.00/each	4.00
Total approved cost of contract	$7,810.00
Government participation @ 75%	$5,857.50

(d) The contract was terminated by a Termination Agreement, executed April 9, 1956, effective as of February 29, 1956.

Audits:

A review in lieu of final audit was received April 23, 1956.

Reports:

The Operator's Final Report was received on April 5, 1956. The Final Report of the Field Team was received on September 17, 1956.

Comments and Recommendations:

The project was established to explore for tungsten in the Big Cameron mine in the Boulder Tungsten District, Boulder County, Colorado. Project work showed that although the Steel Plate vein continued southwesterly from the Big Cameron shaft, it was only weakly mineralized in the portion of the vein to the southwest of the shaft, both walls of the vein being schist, a rock type found to be generally unfavorable to deposition of tungsten minerals in the Boulder district. The only sample taken by the Operator, cut at about the 80-foot level of the Big Cameron shaft, assayed 1.74 percent WO_3. This ore was very limited in extent and was stoped for only a few feet east of the shaft within the Big Cameron claim. One lot of ore from this source (1.096 tons, average assay 5.79 percent WO_3), was shipped, the net value of which was $212.08, on which a royalty of $10.60 was paid to the Government. Very little mineralization, and no ore other than that noted above, were discovered by project work. In concurrence with the recommendation of the Field Team, this Division recommends that no certification of development be issued, and that the contract be closed by a letter of non-discovery, or "closing letter", to the Operator.

W S Martin

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

DOCKET

SURNAME

Holt

Martin

NOV 8, 1956

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: General Summary of Contract and Results Obtained
Docket No. DMEA 3546 - Tungsten
Munch and Munch
Big Cameron Mine
Boulder County, Colorado
Contract No. Xdn-8820

Operator: Hans and Alvin Munch, partners, 5275 Dover Street, Arvada, Colorado

Operator's Property Rights:
The Operator controls, by lease from the owner, Meteor Mines, Inc., three patented lode mining claims, situated in sec. 7, T. 1 S., R. 72 W., 6th P. M., Boulder County, Colorado, as follows:

Claim Name	U. S. Survey No.
Big Cameron	19559
Fraction	19972
Jack	18346

Contract: Executed June 6, 1955; work to commence on or before July 15, 1955, and to be completed on or before January 1, 1956.

(a) Work authorized:

Sink two-compartment shaft, 60 feet @ $68.00/ft.	$4,080.00
Drift 152 feet @ $27.00/ft.	4,104.00
Assay 24 samples for WO_3 @ $4.00/each	96.00
Total estimated	$8,280.00
Government participation @ 75%	$6,210.00

(b) Amendment No. 1, executed December 15, 1955, extended the date of completion of the contract from January 1, 1956 to March 6, 1956.

(c) Work completed under the terms of the contract:

Drifting, 138 feet @ $27.00/ft.	$3,726.00
Shaft sinking, 60 feet @ $68.00/ft.	4,080.00
Assaying, 1 sample for WO_3 @ $4.00/each	4.00
Total approved cost of contract	$7,810.00
Government participation @ 75%	$5,857.50

(d) The contract was terminated by a Termination Agreement, executed April 9, 1956, effective as of February 29, 1956.

Audits:

A review in lieu of final audit was received April 23, 1956.

Reports:

The Operator's Final Report was received on April 5, 1956. The Final Report of the Field Team was received on September 17, 1956.

Comments and Recommendations:

The project was established to explore for tungsten in the Big Cameron mine in the Boulder Tungsten District, Boulder County, Colorado. Project work showed that although the Steel Plate vein continued southwesterly from the Big Cameron shaft, it was only weakly mineralized in the portion of the vein to the southwest of the shaft, both walls of the vein being schist, a rock type found to be generally unfavorable to deposition of tungsten minerals in the Boulder district. The only sample taken by the Operator, cut at about the 80-foot level of the Big Cameron shaft, assayed 1.74 percent WO_3. This ore was very limited in extent and was stoped for only a few feet east of the shaft within the Big Cameron claim. One lot of ore from this source (1.096 tons, average assay 5.79 percent WO_3), was shipped, the net value of which was $212.08, on which a royalty of $10.60 was paid to the Government. Very little mineralization, and no ore other than that noted above, were discovered by project work. In concurrence with the recommendation of the Field Team, this Division recommends that no certification of development be issued, and that the contract be closed by a letter of non-discovery, or "closing letter", to the Operator.

SPHOLT:foc
11/8/56
cc to: Docket
Code 400
Admr. Read. File
Oper. Comm.

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

IN REPLY REFER TO:

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

RECEIVED
OCT 23 1956

October 22, 1956

Re: DMEA 3546, Idm-E810
Mosch and Mosch
Big Cameron Mine
Boulder Co., Colorado
$8,280.00 - Tungsten

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Final Report.

The contract authorized the expenditure of $8,280.00 on exploration of the westerly end of the Steel Plate vein, a narrow low grade ferberite-bearing quartz vein by extending a 54-foot shaft and drifting. The examiners and the Field Team had recommended denial of the application.

The operators extended the shaft 60 feet and a cross-cut was driven northwesterly to the vein, after which the vein was drifted 138 feet to the southwest. The total expenditure was $7,810.00 of which the government's share was $5,857.00. Without assistance the operator drifted 32 feet to the northeast.

At a depth of about 80 feet in the shaft the operator recovered 1.096 tons of 5.79% WO_3. The net value was $212.08 and the royalty, $10.60, was paid.

The New Steel Plate and Big Cameron shafts and drifts from them indicate the Steel Plate vein in that area averages something less than 0.1% WO_3 and further work is not warranted.

The examiners and the Field Team recommend that no certification be made.

I concur with that recommendation.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Washington 25, D. C.

RECEIVED
SEP 21 1956

Date September 21, 1956

DMEA Docket No. 3546
DMEA Contract No. Idm-E810
Commodity Tungsten
Name of applicant
Name of property Mosch and Mosch (Bic Cameron mine)
Location of property Boulder County, Colorado
Estimated cost of project

Memorandum

To: W. S. Martin, Chief, Iron and Ferroalloys Division-DMEA
Through: Horace T. Reno, Acting Chief, HTR
Branch of Ferrous Metals & Ferroalloys

From: R. W. Holliday, Commodity Specialist, Branch of Ferrous Metals & Ferroalloys

Subject: Review of Final Report
(Application, Field Team Report, etc.)

1. Date of subject document: Aug 31,56 2. Date received by reviewer: Sept. 13, '56.
3. Prior reports on this property known to reviewer: Yes [x], No [ ].
4. Prior reports on nearby properties known to reviewer: Yes [x], No [ ].
5. Information available on past production: Yes [x], No [ ].
6. Other pertinent factors known to reviewer: Yes [x], No [ ].
7. Explain items marked yes above:

Prior reports summarized in subject report.

8. Factors needing special consideration:
   a. Location [ ]
   b. Ownership [ ]
   c. Evidence of mineralization [ ]
   d. Geology [ ]
   e. Proposed exploration method [ ]
   f. Alternate exploration method [ ]
   g. Costs [ ]
   h. None [X]

9. Action advised:
   a. Obtain information from applicant [ ]
   b. Refer to Field Team [ ]
   c. Denial [x]
   d. Agree with Field Team [x]
   e. Disagree with Field Team [ ]
   f. Suggest alternate plan [ ]
   g. Request another examination [ ]
   h. Approval [ ]
   i. Consult with Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary)

R W Holliday
R. W. Holliday

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

RECEIVED SEP 17 1956

224 New Customhouse
Denver 2, Colorado

September 13, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Contract Idm-E810, Mosch and Mosch (Big Cameron mine), Boulder County, Colorado - FINAL REPORT.

Enclosed are the original and three copies of a joint engineering and geologic report, dated August 31, 1956, from R. L. Bolmer, Mining Engineer, Bureau of Mines, and D. R. MacLaren, Geologist, Geological Survey, and transmittal thereof, dated September 12, 1956, from E. N. Harshman, Member of the Field Team, and John F. Shaw, Supervising Engineer. The original and one copy of the Operator's final report were forwarded to you by memorandum dated April 20, 1956.

Final payment to the Operator was processed by this office April 20, 1956 in conformance with the Report of Review of contract expenditures by the Contract Administration and Audit Division, dated April 20, 1956.

Exploration work completed comprised 54 feet of rehabilitation of the Big Cameron shaft, 50 feet of sinking the shaft to the 104-foot level, and drifting on the vein on that level 138 feet southwest from the shaft, at a total accepted cost of $7,810.00, of which the Government contributed 75%, or $5,857.50.

The project work did not result in the discovery of significant reserves of tungsten ore, and accordingly no Certification of Discovery or Development is recommended.

DMEA Field Team, Region III

By W. M. Traver
W. M. Traver
Executive Officer

Reviewed by
DMEA OPERATING COMMITTEE
9-21-56
(date)

3546

ACTION ON INTERIM
OR FINAL FIELD TEAM REPORT
Date 9.24

Referred to:

1. ~~Mr. [illegible]~~
2. ~~Mr. Johnson~~
3. ~~Mr. [illegible]~~
4. Docket Control Mails and Files
5. _____ Division
6. Docket Control Mails and Files

Note comments in report regarding:

1. Final - Burst!

2.

3.

4.

and take appropriate action.

- - - - - - - -

Action taken by Division:

Robert E. Adams

completed completed 24 feet of rehabilitation.
A, 20 feet of sinking the shaft to the
ing on the vein on that level 138 feet south-
a total accepted cost of $17,810.00, of which
buted 72%, or $12,827.50.

work did not result in the discovery

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

RECEIVED
SEP 17 1956

Chairman

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
September 12, 1956

DMEA
DEPARTMENT OF THE INTERIOR
SEP 12 1956
REGION III
DENVER, COLORADO

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman
John F. Shaw

Subject: Docket DMEA 3546 (Tungsten) Exploration Project Contract Idm-E810, Big Cameron Mine (Hans Mosch and Alvin Mosch) Boulder County, Colorado

Enclosed are the original and seven copies of the Joint Final Engineering and Geologic Report by R. L. Bolmer, mining engineer and D. R. MacLaren, geologist covering the work performed under Contract Idm-E810.

Exploration Contract Idm-E810 between the Government and Hans Mosch and Alvin Mosch authorized sinking the Big Cameron shaft 60 feet and drifting 152 feet southwesterly along the Steel Plate vein on a new 104-foot level. The estimated total cost of the project was $8,280.00.

The operator sank the shaft the required distance and drifted 138 feet southwesterly along the Steel Plate vein. The completion of the remaining 14 feet of drifting, authorized under the contract, is not warranted and the operator requested cancellation of the contract. The Government concurred with the operator that no further work should be performed. The contract was terminated by mutual consent.

The accepted cost of the project totaled $7,810.00. The amount of Government participation was $5,857.50. The project did not result in the discovery of significant reserves of tungsten and certification by the Government is not recommended.

E. N. Harshman

E. N. Harshman
Member Field Team

Reviewed by
DMEA OPERATING COMMITTEE
9-21-56
(date).

John F. Shaw

John F. Shaw
Supervising Mining Engineer

JFS:sh

cc: ENHarshman
Idm-E810
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

RECEIVED
SEP 17 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3546, Exploration Project Contract Idm-E810

Big Cameron Mine

Hans Mosch and Alvin Mosch

Boulder County, Colorado

Tungsten

Final Report of Project Operations

by

R. L. Bolmer, Mining Engineer
Bureau of Mines

D. R. MacLaren, Geologist
Geological Survey

August 31, 1956

Reviewed by
DMEA OPERATING COMMITTEE
9-21-56
(date)

CONTENTS

Introduction and Summary..... 1

Location of the Property. 4

Operator's Property Rights. 4

History and Production. 5

Geology. 6

Project Operations 8

Description of work completed 8

Cost of the project.. 11

Project equipment. 11

Efficiency of operations 12

Conclusions and Recommendations. 12

ILLUSTRATIONS

Figure		Follows Page
1.	Index map of the Boulder County tungsten district, Colorado, showing location of Big Cameron mine.	4
2.	Claim map, Big Cameron mine, Boulder County, Colo.	5
3.	Composite plan showing geology on surface and 104-foot level, and vertical projection along Steel Plate vein, Big Cameron mine, Boulder County, Colorado.	6
4.	Plan of 104-foot level, Big Cameron mine, Boulder County, Colorado showing drifting done under Contract Idm-E810.	10

TABLES

No.		Page
1	Tabulation of Costs of the Project.	11

DMEA 3546

BIG CAMERON MINE
HANS MOSCH AND ALVIN MOSCH
BOULDER COUNTY, COLORADO

RECEIVED
SEP 17 1956

INTRODUCTION AND SUMMARY

The tungsten exploration project authorized at the Big Cameron mine, Boulder County, Colorado under Exploration Project Contract Idm-E748 was terminated, effective February 29, 1956, by mutual consent of the Operator and the Government. That part of the project then carried out by the Operator had revealed the Steel Plate vein southwesterly along the lower level of the Big Cameron shaft to be a barren and weakening structure within an unfavorable host rock. Continued exploration of the structure in this direction was considered unfavorable. Exploration of the Steel Plate vein northeast from the shaft, while more promising, would be outside the property rights defined in the contract and on ground subordinated under Exploration Project Contract Idm-E54 (Cold Spring Tungsten, Inc.). Exploration of other areas of the property with Government assistance was not considered warranted.

In July 1954, a partnership comprised of Mac Brown, Hans Mosch, and Alvin Mosch made application for Government assistance the Big Cameron mine for tungsten. The partners were lessees of only the Big Cameron claim and the application was returned with the suggestion that certain adjacent property be secured. They subsequently leased the Fraction, Jack, and the west 300 feet of the Steel Plate No. 1 claims and resubmitted their application in October 1954. In their application (Docket No. DMEA 3546), the partners proposed to explore the Steel Plate vein which outcropped on portions of the Big Cameron and Steel Plate No. 1 claims.

Their specific proposal involved deepening the shallow Big Cameron shaft by 100 feet and drifting a total of 300 feet along the Steel Plate vein at the new depth. Their estimated total cost of the proposed project was $16,150.00.

The property was inspected November 3, 1955 by an examining team from the Bureau of Mines and Geological Survey. The Steel Plate vein was a strong well defined structure occurring within a highly productive area of the Boulder County tungsten district. The vein had produced small tonnages of tungsten ore from shallow workings along its outcrop but was relatively unexplored in the vicinity of the Big Cameron shaft. The older workings along the Steel Plate vein were caved and inaccessible and the structure was exposed only in the 54-foot Big Cameron shaft and along a short level off the bottom of that shaft. The examining team concluded that the vein did warrant further exploration. The amount of work proposed by the Applicants, however, was considered too extensive on the basis of the present exposures. A modified project involving only 50 feet of shaft sinking and 200 feet of drifting was recommended at an estimated total cost of $9,870.00 (Government participation $7,402.50).

The Big Cameron shaft was on the common end line of the Big Cameron and Steel Plate No. 1 claims. The drifting recommended northeasterly from the shaft would extend onto the Steel Plate No. 1 claim. Although exploration of the vein in both directions from the shaft originally was recommended, there was evidence that its exploration northeasterly on the Steel Plate claim was more promising. It developed, however, that the DMEA would not release the western 300 feet of the Steel Plate

claim from its subordination under Contract Idm-E54. Such action reduced the exploration potential of the recommended project by more than one-half. The examining team concluded that the southwesterly exploration of the vein on the Big Cameron claim alone was not of sufficient merit to justify the previously recommended project and recommended, with the concurrence of the Field Team, that the Applicant's request for exploration assistance be denied. The DMEA commodity group in Washington, however, reversed the field recommendations in this matter and short-form Exploration Project Contract Idm-E810, authorizing exploration on the Big Cameron claim only, was prepared.

Exploration Project Contract Idm-E810, dated June 6, 1955, was between the Government and Hans Mosch and Alvin Mosch (in the interim Mac Brown had withdrawn from the partnership). The contract authorized the deepening of the Big Cameron shaft by 60 feet and 152 feet of drifting southwesterly along the Steel Plate vein on a new 104-foot level off the shaft. The estimated total cost of the project was $8,280.00. The contract stipulated a fixed unit cost for each unit of work to be performed. The Government would contribute 75 percent of the fixed unit cost as the work was performed, in a total sum not in excess of $6,210.00. Project work was to commence on or before July 15, 1955 and was to be completed on or before January 1, 1956. The completion date subsequently was extended to March 6, 1956 by an amendment to the contract.

Project operations commenced July 7, 1955 and were more or less continuous through the effective termination date of the contract. During this period, the Operator sank the Big Cameron shaft 60 feet to a total depth of 114 feet from the surface and drifted a total of 138 feet

southwesterly along the Steel Plate vein on a new 104-foot level turned from the shaft. The accepted costs of the project--equivalent to the completed units of work at the stipulated unit prices--totaled $7,810.00. The Government contributed 75 percent of the accepted project costs or a total of $5,857.50. A small balance of the Government's contribution, which was withheld pending resolution of matters relative to closing the project account, was paid the Operator April 25, 1956.

LOCATION OF THE PROPERTY

The property under lease by the Operator is in SW¼ sec. 7, T. 1 S., R. 72 W., 6th P.M. (Grand Island Mining District), Boulder County, Colorado. The claims are located on the eastern flank of Hurricane Hill, a productive area in the central part of the Boulder County tungsten district (fig. 1), at an elevation of about 8,550 feet above sea level. The mine is about 2 miles northeast of Nederland, Colorado, via State Highway 160 and a graveled country road. It is accessible throughout the year. The nearest custom tungsten mill is located in Nederland.

OPERATOR'S PROPERTY RIGHTS

The Operator's property rights as described under Article 2 of the contract includes the following patented lode mining claims:

Big Cameron	U. S. Mineral Survey	19559
Fraction	" "	19972
Jack	" "	18346

In addition, the Operator was lessee of the western 300 feet of the Steel Plate No. 1 claim (U. S. Mineral Survey 19632) which is subordinated to the Government under Exploration Project Contract Idm-E54 (Cold

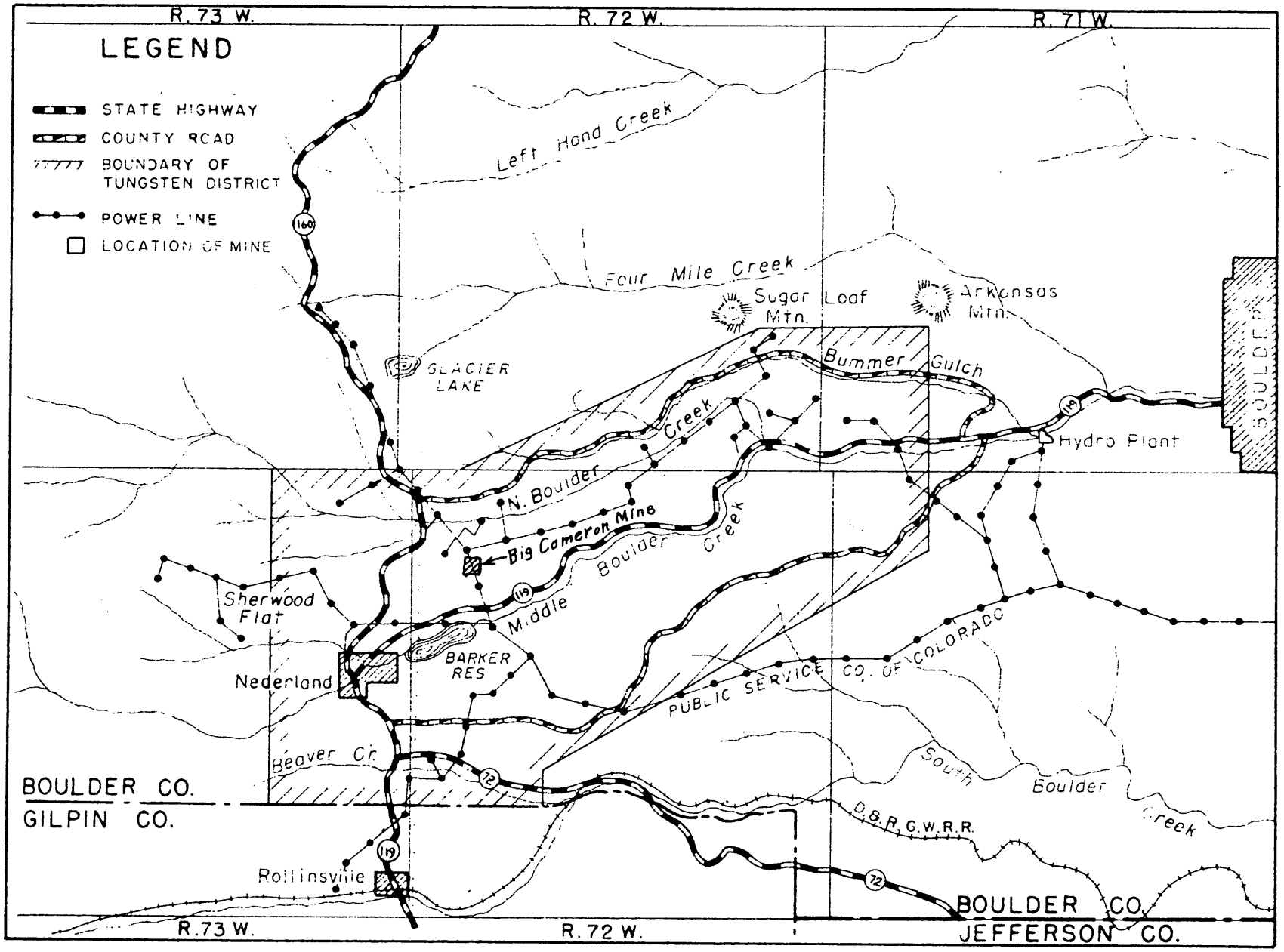


FIGURE 1. - INDEX MAP OF THE BOULDER COUNTY TUNGSTEN DISTRICT, COLO. SHOWING LOCATION OF BIG CAMERON MINE (MOSCH AND MOSCH DMEA 3546 Contract Idm-E810)

Spring Tungsten, Inc.).

On the date of the application for exploration assistance, the above described property was owned by Hetzer Mines, Inc. and leased to the Operator. The lease, dated July 10, 1954, was for a period of 3 years and provided for a royalty of 16 percent of the net proceeds realized from the sale of any ore produced from the premises. On May 31, 1955, Hetzer Mines was absorbed by Cold Spring Tungsten, Inc., 1036 First National Bank Building, Denver, Colorado. The Operator's lease on the property was reaffirmed by the new owner.

The relative locations of the Operator's property rights are indicated on figure 2. The Steel Plate vein outcrops southwesterly along the length of the Steel Plate No. 1 claim and extends onto the eastern end of the Big Cameron claim. The extension of the vein farther westerly on the Big Cameron claim is inferred; its outcrop in this direction is obscured by overburden. The exploration completed by the Operator during the project was confined to the eastern 150 feet of the Big Cameron claim.

HISTORY AND PRODUCTION

The total production from the Steel Plate No. 1 claim is reported as 115 short ton units of tungsten trioxide. This total includes some 11 units which were produced in 1951 during the sinking of the 50-foot shaft on the Steel Plate vein near the western end of the claim. The remainder, estimated in value at $5-6,000, reportedly was produced prior to World War I from a shallow shaft on the vein some 70 feet to the northeast. Early in 1954, the Operators sank a 54-foot shaft on the vein just inside

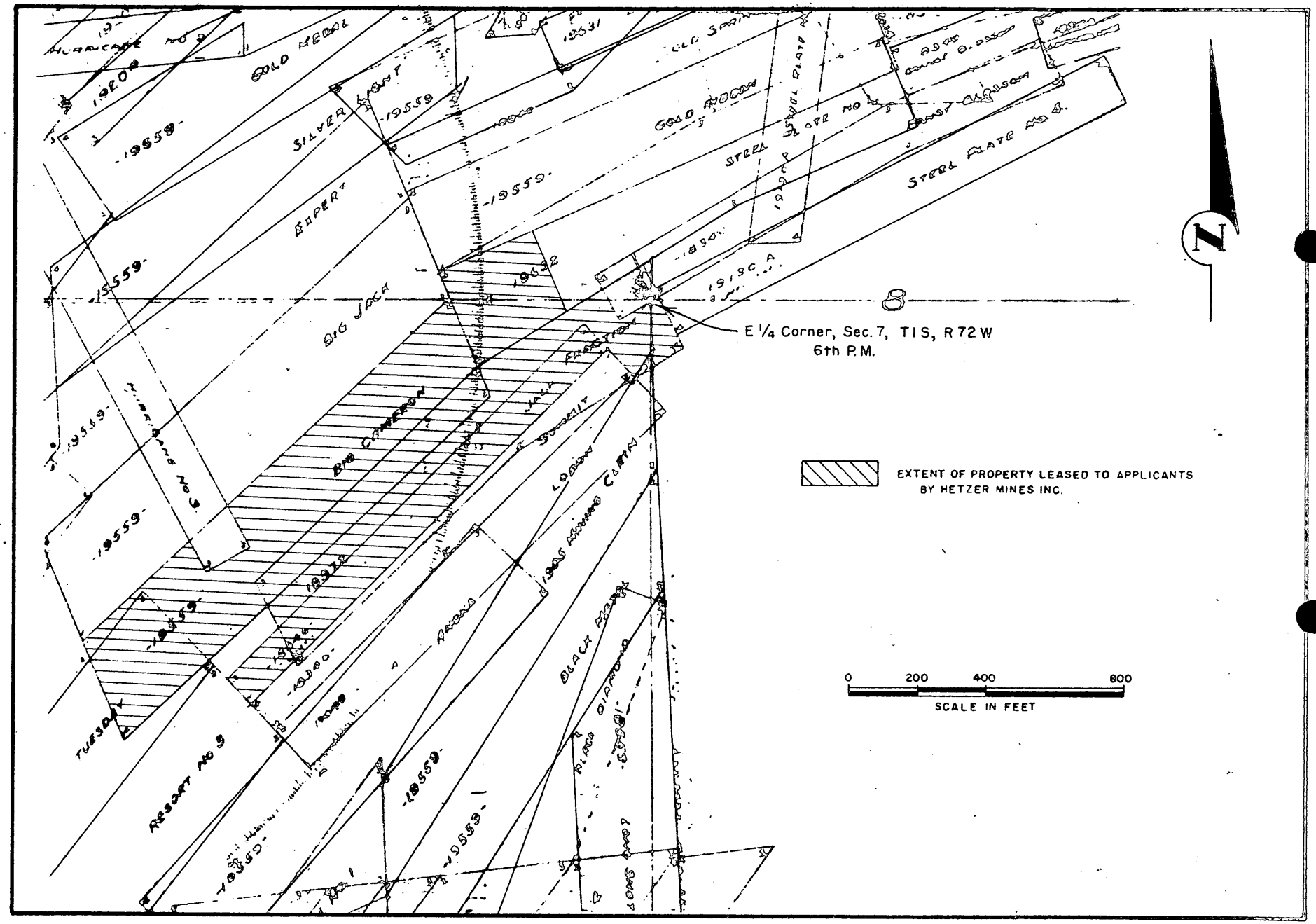


FIGURE 2- CLAIM MAP, BIG CAMERON MINE, BOULDER COUNTY, COLO.
(MOSCH AND MOSCH DMEA 3546, CONTRACT Idm-E 810)

the end line of the Big Cameron claim. A level drift was extended approximately 40 feet southwesterly along the vein from the bottom of the shaft. Ore containing about 33 units of WO_3 was recovered from this work. A small ore shoot subsequently was stoped to a height of about 30 feet above the 54-foot level. The production from this source, however, is unknown.

GEOLOGY

The geology of the Boulder County Tungsten District is described in U. S. Geological Survey Professional Paper 245 by Lovering and Tweto (1953), and that of the Steel Plate-Big Cameron claims in the Geologic Report, DMEA Docket 2100 by Ogden Tweto, and DMEA Docket 3546 by D. R. MacLaren.

The Steel Plate vein is one of the numerous tungsten veins in the highly productive area on the east flank of Hurricane Hill. It is a relatively long vein that strikes N. 55° E to N. 66° E. and dips 60° NW to vertical between walls of granite, aplite, pegmatite, gneiss, and schist. It has been worked mostly near the eastern end in the area south of the Cold Spring mine where it has been moderately productive from several shafts, tunnels, and trenches. The ore occurs as small bodies localized where the vein cuts dikes of aplite. Near the western end the vein has been virtually unexplored.

Near the west end of the Steel Plate No. 1 claim (fig. 3) an old caved shaft on the Steel Plate vein is said to have produced tungsten ore valued at $5,000 to $6,000 in 1917 and 1918. This shaft, reported to be 40 to 50 feet deep, was abondoned when the price of tungsten fell in 1918, and later caved. About 70 feet southwest of the old shaft is the

Steel Plate shaft. This shaft is now caved but in 1951 it was open and was examined by Ogden Tweto (DMEA Docket 2100). The vein in the shaft strikes N. 57° E. and dips 70° NW. It is almost indistinguishable to a depth of about 10 feet, but below that depth the vein, 8 to 24 inches wide, is well defined in a sheeted and locally silicified aplite and granite seamed with veinlets, nodules, and small pods of ferberite. The shaft is in what appears to be an irregular dike of aplite and, in places, granite. At a depth of about 20 feet there is a small patch of gneiss (partly assimilated schist) which grades into the bordering granite. Ferberite was found continuously in the shaft from the surface to the bottom, at a depth of about 50 feet, mostly in the narrow and harder part of the vein along the west side. At one place nodules were found in soft, altered, oxidized rock along the east side of the shaft.

The Big Cameron shaft is about 75 feet southwest of the Steel Plate shaft (fig. 3). Prior to the start of work under the DMEA contract the Big Cameron shaft had been sunk vertically on the vein to a depth of 54 feet and a drift had been driven 40 feet southwesterly from the shaft. Starting about 15 feet southwest of the shaft a lens of ore, about 20 feet long, was being stoped.

The vein followed by the 54-foot level drift has an average strike of N. 62° E., and dips 85° NW to vertical. Above the 54-foot level the wall rock in the shaft is mostly aplite and granite, but on and just above the level it is gneiss. The vein on and above the level is a sheeted zone up to 2 feet wide. In the gneiss it is much more weathered and stained by iron oxides than it is in the aplite or granite. Also in the gneiss nodules and small streaks of ferberite are much less abundant

than in the other rocks. Under the DMEA contract the shaft was deepened 60 feet and a drift was driven 137 feet southwesterly from the shaft on the 104-foot level. Below the 54-foot level the vein flattened to 75° NW while the shaft was sunk on a pitch of 85° NW. Below the 54-foot level the shaft was entirely in schist as was the 104-foot level. On the 104-foot level a 12-foot crosscut driven N. 83° W. from the southwest side of the shaft cut the vein at 10 feet. From this point the vein was followed by a drift for about 125 feet southwesterly. It strikes N. 66° E. and dips from 74° to 80° NW. The vein on the 104-foot level is a strong gouge-filled shear zone from 1 to 3 feet wide for about 80 feet. It then split into two well defined shears, the weaker one on the footwall passing into the southeast wall of the drift. The hangingwall split, about 1 foot wide, continued to the breast of the drift, with another weak foot wall split about 12 feet back from the breast.

The Operator, on his own account, drove the crosscut to the vein northeast of the shaft and started a drift to the northeast. When the contract was terminated this drift had followed a strong vein for about 15 feet.

The only ferberite found on the 104-foot level is in a few small nodules of peanut size in the last few feet of the drift driven by the Operator to the northeast.

PROJECT OPERATIONS

Description of work completed:

Project operations commenced July 7, 1955. The timber in the existing Big Cameron shaft was in disrepair and required considerable rehabilitation. New ladders and platforms were installed the full length of

the manway compartment and sections of both the manway and hoisting compartments were lagged. Water pipe and ventilation tubing were extended to a point near the existing bottom of the shaft.

Project sinking started at a depth of 54 feet in the Big Cameron shaft. The shaft was sunk 50 feet without interruption to a depth of the new 104-foot level. It was excavated to a 4-by 8-foot cross section inside the timber. The two-compartment sets were framed from round native timber. The upper sections of the shaft followed the nearly vertical Steel Plate vein. The wall rock was a soft schist and carried little water. The Steel Plate vein flattened somewhat toward the northwest at a depth of about 90 feet below the surface and the bottom 14 feet of the shaft was sunk in the more consolidated rock in the footwall of that structure.

The authorized 104-foot level heading initially was extended northwest from the shaft as a crosscut. The Steel Plate vein was intersected about 11 feet from the shaft and the heading thereupon was turned and driven southwesterly as a drift along that structure. The formation at this depth contained appreciable water and the Operator, therefore, decided to complete the remainder of the sinking authorized under the contract. The shaft was deepened to a total depth of 114 feet below the surface. The 10-foot section of shaft below the 104-foot level served as a drainage sump for that level and also provided room for loading a hoisting bucket and a shaft bailer.

The 104-foot level drift was continued southwesterly along the Steel Plate vein. The structure remained within a soft schist which sloughed badly and required timber support. The vein continued moderately strong

but barren for a distance of about 85 feet from the shaft at which point it split into a foot and hanging wall branch. Each branch of the structure rapidly weakened and eventually lost its identity among the cross fractures and shears within the schist. The 104-foot level drift on the Steel Plate vein had been extended a total of 138 feet southwest from the Big Cameron shaft by February 29, 1956. (fig. 4).

The structure essentially had died out. The completion of the remaining 14 feet of authorized project drifting was not warranted and the Operator therefore requested cancellation of the contract. The Government concurred with the Operator that no further work should be performed. The contract, therefore, was terminated by mutual consent. The official termination agreement, issued April 9, 1956, was effective February 29, 1956.

At intervals during the project period, the Operator crosscut a short distance from the shaft and drifted northeasterly along the Steel Plate vein. The drift had been extended to a point some 32 feet northeast of the shaft (22 feet beyond the end line of the Big Cameron claim) by the effective termination date of the contract (fig. 3). The vein exposed in this heading was much more promising than in the project drift and contained a few small streaks of ferberite. The Operator subsequently extended this heading farther onto the Steel Plate claim and reportedly raised on [redacted] a small showing of ore along the section of the vein. The showing was on ground subordinated under Exploration Project Contract Idm-E54.

After the termination of the contract, the Operator attempted to mine the small occurrence of ore that had been exposed during the project

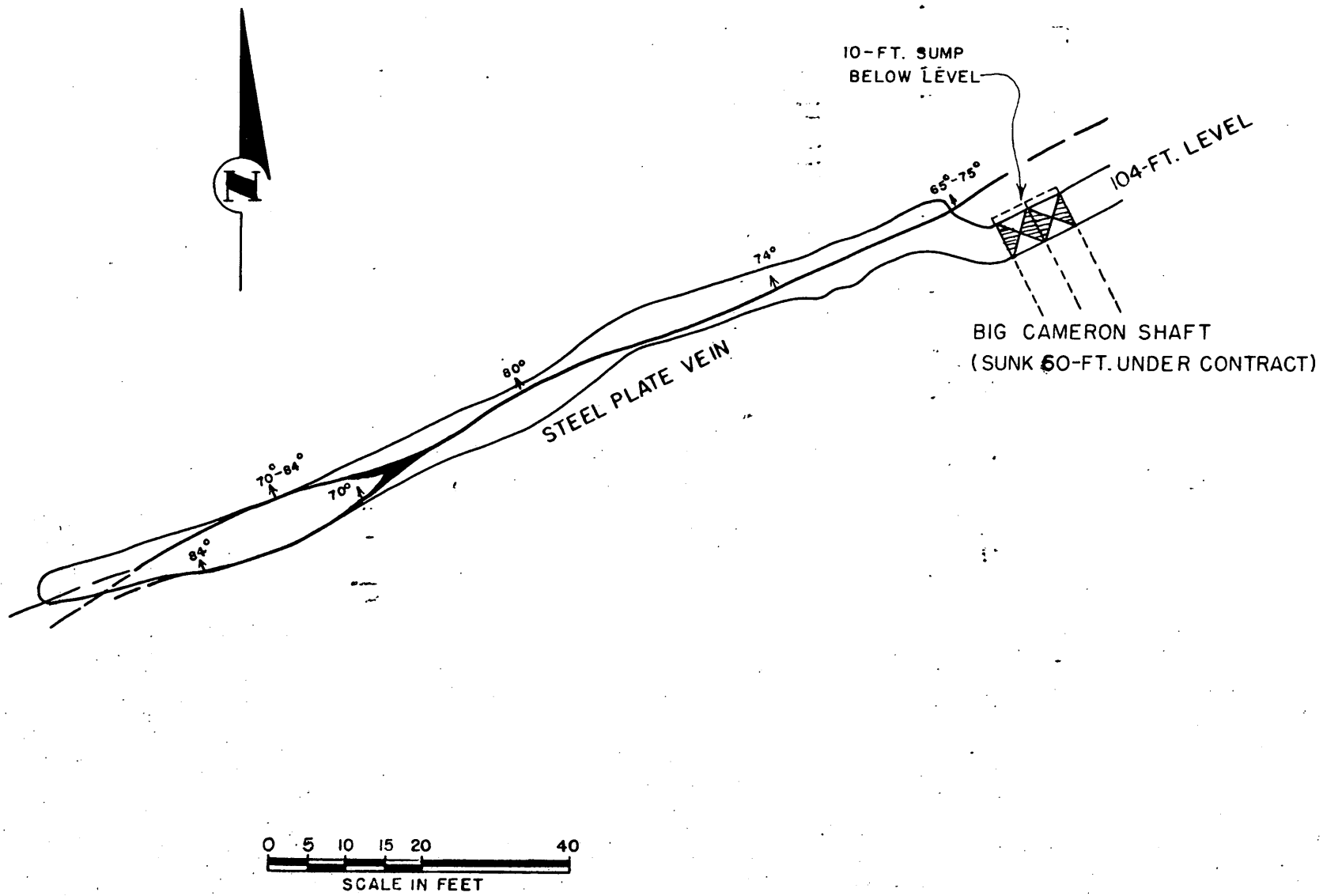


FIGURE 4-PLAN OF 104-FT. LEVEL, BIG CAMERON MINE, BOULDER COUNTY, COLO., DMEA 3546 (TUNGSTEN), SHOWING DRIFTING DONE UNDER CONTRACT Idm-E810

at a depth of approximately 80 feet in the Big Cameron shaft. The ore was very limited in extent and was stoped for only a few feet east of the shaft within the boundaries of the Big Cameron claim. One lot of ore from this source (1.096 tons averaging 5.79% WO^3) was shipped on April 25, 1956. The net value of the shipment was $212.08 on which a royalty in the amount of $10.60 was paid the Government.

COST OF THE PROJECT:

The authorized and the accepted costs of the project are summarized below. The summary also indicates the units of work both as authorized in the contract and as actually completed by the Operator.

Authorized Project Work				Project Work Completed	
Operation	Units	Unit Cost	Total Cost	Units	Accepted Costs
Sinking	60 ft.	$68.00	$4,080.00	60 ft.	$4,080.00
Drifting	152 ft.	27.00	4,104.00	138 ft.	3,726.00
Analysis of samples	24 ea.	4.00	96.00	1 ea.	4.00
Total Cost:			$8,280.00		$7,810.00
Government Participation:			$6,210.00		$5,857.50

The Government withheld an amount of $50.00 from reimbursement to the Operator pending resolution of matters relative to closing the project account. This balance of the Government's contribution in the costs of the project was paid the Operator on April 25, 1956.

PROJECT EQUIPMENT:

The fixed unit prices stipulated for the various types of project work reflected a reduction for the estimated value of any materials,

equipment, or other property that normally would unexpended and salvable at the completion of project operations. The Government, therefore, was not concerned with the disposition of such property upon the termination of the contract.

EFFICIENCY OF OPERATIONS:

Most of the project work was performed by the two Operators. The work was performed slower than normally would be expected. The operational efficiency otherwise was about average to that of comparable work performed elsewhere in the district. Much of the operating equipment was old and subject to frequent breakdowns. Heavy snowfall and freezing temperatures during part of the project period caused some delay in the work.

CONCLUSIONS AND RECOMMENDATIONS

That part of the program carried out prior to the termination of the project conformed to the specifications in the contract. The Government's contribution in the costs of the completed portion of the project, therefore, was valid and proper.

The project did not result in the discovery of significant reserves of tungsten ore and its certification by the Government, therefore, is not recommended.

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

RECEIVED
SEP 13 1956

224 New Customhouse
Denver 2, Colorado

September 11, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Contract Idm-E810, Mosch and Mosch (Big Cameron Mine), Boulder County, Colorado

In further reference to the origin of 1.096 tons of tungsten ore reported under settlement sheet No. 1941 issued by Cold Spring Tungsten, Inc., a portion of the forthcoming joint engineering and geologic Final Report of Project Operations on the subject contract by R. L. Bolmer, and Dr. MacLaren is quoted as follows:

> "After the termination of the contract, the Operator attempted to mine the small occurrence of ore that had been exposed during the project at a depth of approximately 80 feet in the Big Cameron shaft. The ore was very limited in extent and was stoped for only a few feet east of the shaft within the boundaries of the Big Cameron claim. One lot of ore from this source (1.096 tons averaging 5.79 WO^3) was shipped on April 25, 1956. The net value of the shipment was $212.08 on which a royalty in the amount of $10.60 was paid the Government".

First mention of this ore occurrence was made in the Operator's Narrative Report for the month of August, 1955 as follows:

> "The mineralized vein is rolling under the hanging wall. Some tungsten ore assaying tungsten oxide ($WO3$) 1.74% was exposed at a depth of about eighty feet".

In the Progress Report for August, 1955, the examining engineer, R. L. Bolmer, states as follows:

"One sample of the vein, which was taken by the operator at a depth of about 80 feet and presently is hidden behind the lagging reportedly assayed 1.74 percent WO_3."

Photocopy of the assay report retained by the Finance Office, Region III, substantuates the sample content of 1.74% WO_3.

Subsequent to this date, settlement sheet and royalty check was received in this office which stated ore purchased and covered by No. 1941 was shipped from Big Cameron. As our records indicated the Operator's efforts were being directed towards property subordinated under Contract E54, we thought perhaps the settlement sheet might be in error, hence our inquiry, dated May 16, 1956, to the Operator.

In reply of May 26, 1956 the Operator unequivocally stated:

"The recent shipment of tungsten ore from the Big Cameron Mine did not come from the Steel Plate Claim. It was mined from a stope east of the Big Cameron shaft and within the Big Cameron claim U. S. Survey No. 19559".

Thus, as we had no further evidence to believe otherwise, and knowing it to be virtually impossible to prove that the very small volume represented by the reported production could not have been mined from the Big Cameron Claim, we accepted the word of the Operator.

We therefore are satisfied that the ore reported by settlement sheet No. 1941, verified by the Operator in a letter dated May 26, 1956, and reported by R. L. Bolmer and D. R. MacLaren, was mined within the boundaries of the Big Cameron claim.

W. M. Traver

W. M. Traver

Docket
Martin
Selwidge
Kjorsman

SEP 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA-3546, Tungsten
Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado
Contract No. Idm-E810

Dear Mr. Traver:

This will acknowledge receipt of your letter of August 30, 1956, asking what further steps we wish you to take in the matter requested in our letter of August 27 regarding the subject project.

As you know, the Operator's final report, submitted to us with your letter of April 20, 1956, concluded as follows:

> "Supplementing DMEA sponsored contract drifting south-westerly from the shaft, another drift was driven north-easterly and on the vein. The vein as seen in the drift consisted of a six inch width of horn quartz saturated with red and black stain. Small thin seams of tungsten (Ferberite), lay adjacent to the vein within the hanging wall slickenside. Near the breast of this drift a raise was started. Twenty feet above the drift a back containing commercial ore was exposed. The ore lay in a four to eight inch streak of horn, and in a soft gouge adjacent to the horn. Evaluation is not yet available."

The last part of the first paragraph on page two of Bolmer's memorandum to you of March 9, 1956, included the following statement:

> " . . . Work northeast of the shaft is not authorized under the contract but is being carried out at the operator's own expense. The operator intends to continue this heading for a short distance to test the vein below the known ore shoots in the workings off the old Steel Plate shaft."

R.G.L.

Regarding the same project, as was mentioned in our letter to you of February 8, 1955, and repeated in our letter to you of July 5, 1955, in the last paragraph on page two thereof:

> "We will, however, consider an application for a small exploration project on the Big Cameron claim if Brown, Mosch and Mosch care to apply. The Big Cameron shaft is close to the end line of the same-named claim; and if ore should be mined from the Steel Plate No. 1 claim and extracted through the Big Cameron shaft, Cold Spring Tungsten, Inc., would then be liable to the Government for payment of the royalty, either directly or by the lessee."

We believe, therefore, that you should satisfy yourself as may be most practicable whether the ore in question was mined from the Big Cameron or the Steel Plate No. 1 claim and advise us accordingly.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Approved:

Frank D. Lamb

Member, Bureau of Mines

N. E. Nelson

Member, Geological Survey

cc: Docket
Code 400
Oper. Comm.
Adm. Read. File
Thor Kiilsgaard, USGS
R. W. Holliday, USBM
FT, Reg. 3

WSMartin/ls
9/6/56

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

RECEIVED
SEP - 4 1956

224 New Customhouse
Denver 2, Colorado

August 30, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Contract Idm-E810, Mosch and Mosch (Big Cameron Mine), Boulder County, Colorado

With reference to your letter of August 27, 1956, we too questioned the origin of production covered by settlement sheet No. 1941, hence our letter of May 16, 1956 to the Operator asking specifically from what claim was this ore produced.

The Operator's reply, dated May 26, 1956 stated quite positively that the ore did not come from the Steel Plate claim. The Operator further stated in his reply that the ore was mined within the Big Cameron claim.

We accepted the Operator's word as the very small tonnage involved conceivably could have been mined within the area between the Big Cameron shaft and the east end line of the Big Cameron claim.

Please advise us what steps to take if you wish further pursuit of the matter.

W. M. Traver

W. M. Traver

DOCKET
SURNAME
Holt
Martin
Seifridge
Eckman

400

AUG 27 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 3546 - Tungsten
Mesch and Mesch
Big Cameron Mine
Boulder County, Colorado
Contract No. Idm-2810

Dear Mr. Traver:

Reference is made to your letter of August 16, transmitting, as we had requested, photocopies of a letter to you from Alvin Mesch, dated May 26, 1956, relative to the origin of the ore tonnage on which the subject operator paid royalty.

Our maps show that the Big Cameron shaft is approximately 8 feet west of the east end line of the Big Cameron claim. If the production in question was mined east of the Big Cameron shaft, as Mr. Mesch's letter states, it is difficult to visualize how that production could have been mined from the Big Cameron claim.

Your comments on this question will be much appreciated.

Sincerely yours,

George C. Seifridge

Chairman, Operating Committee (JHB)

APPROVED:

FRANK D. LAMB (JHB)
Member, Bureau of Mines

N. E. Nelson (JHB)
Member, Geological Survey

SPHOLT:fcc 8/22/56
cc to: Docket
Code 400
Admr. Read. File
Oper. Comm.
FT. REG. III
Messrs. R. W. Holliday, USBM
T. N. Kiilsgaard, USGS

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

224 New Customhouse
Denver 2, Colorado

August 16, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments, Docket DMEA 3546 (Tungsten), Contract Idm-E810, Mosch and Mosch (Big Cameron Mine), Boulder County, Colorado

Enclosed are two photocopies of the letter, relative to the above subject contract, requested by your letter dated August 13, 1956.

W. M. Traver

W. M. Traver

Enclosure

RECEIVED
AUG 20 1956

5275 Dover St.
Arvada Colo.

May 26, 1956

Re; Docket No. DMEA 3546
Idm 8IO

DMEA
Rec'd

MAY 29 1956

BUREAU OF MINES

W.M. Traver, Exec. Officer
DMEA Field Office Region III

Dear Mr. Traver,

The recent shipment of tungsten ore from the Big Cameron Mine did not come from the Steel Plate claim. It was mined from a stope east of the Big Cameron Shaft and within the Big Cameron claim U.S. Survey No. I9559.

Very Sincerely Yours,

Alvin Mosch

RECEIVED
AUG 30 1956

REPLY TO OUR LETTER DTD MAY 16, 1956

DOCKET
surname:
Martin
Talbert
Selfridge
Peterson
McHenry

AUG 13 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3546, Tungsten
Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado
Contract No. Idm-E810

Dear Mr. Traver:

Reference is made to your letter of May 16, 1956, to Mr. Hans Mosch regarding royalty payments at the subject project and inquiring whether the same Operator's Lot No. 1941, shipped April 25, 1956, was mined from the Steel Plate No. 1 claim or the Big Cameron claim.

It is noted that deposit of the royalty in the amount of $10.60 was credited to the referenced project, and, therefore, presumably the ore was mined from the Big Cameron claim. However, to complete our records, a copy of the reply received to your letter of May 16 would be appreciated.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (NB)

APPROVED:

FRANK D. LAMB (NB)
Member, Bureau of Mines

N. E. Nelson (NB)
Member, Geological Survey

cc: Docket
Code 400
Oper. Committee
Adm. Read. File
T. Kilsgaard, USGS
R. W. Holliday, USBM
FT, Reg. 3
Code 800-Audits

WSMartin/EDTalbert/ls
8/13/56

R.C.S.

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

RECEIVED
MAY 18 1956

224 New Customhouse
Denver 2, Colorado

May 16, 1956

Mr. Hans Mosch
5275 Dover Street
Arvada, Colorado

Re: Royalty payments, Docket DMEA 3546 (Tungsten) Contract Idm-E810, Mosch and Mosch, (Big Cameron Mine), Boulder County, Colorado

Dear Mr. Mosch:

The settlement sheets and royalty payment check to the amount of $10.61 from Lot No. 1941 shipped April 25, 1956, from the Big Cameron Mine has been received by this office.

From what claim was this ore produced? If the ore was produced from the Steel Plate No. 1 claim, the royalty payment of $10.61 will be applied to DMEA Contract Idm-E54. If the ore was produced from the Big Cameron claim, the royalty payment of $10.61 will be applied to DMEA Contract Idm-E810.

A prompt reply from you will assist us to make proper application of the royalty now being withheld.

Yours very truly,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

cc: Dr. G. C. Ridland

MEM/vj
cc: Royalty File E810
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Chron.

DOCKET
SURNAME

400

Chapman
Martin
Chapman
Selfridge
Gordon
Whitenoff

APR 27 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3546 - Tungsten
Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado
Contract No. Idm-E810

Dear Mr. Traver:

Reference is made to the Operators' letter of March 12, 1956, and undated Final Report on the above noted project, advising that, in drifting to the northeast from the Big Cameron shaft, a well mineralized zone was encountered and ore was found in a 20 foot raise. Presumably this new work is on the Steel Plate No. 1 claim which is part of the area certified under Contract No. Idm-E54 (Docket No. DMEA-1447). You should, therefore, advise Cold Spring Tungsten, Inc., of its liability for royalties on any ores extracted from said claim by Mosch and Mosch or other Operators.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (24B)

APPROVED:

/s/ Robert W. Geehan (24B)
Member, Bureau of Mines

Thor H. Kiilsgaard (24B)
Member, Geological Survey

TLChapman/foc 4/26/56
cc to: Docket
Code 400
Admr. Read. File
Operating Comm.
FT. REG. III
R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

R.C.S.

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

RECEIVED
APR 23 1956

224 New Customhouse
Denver 2, Colorado

April 20, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Contract Idm-E810, Mosch and Mosch (Big Cameron mine), Boulder County, Colorado

Enclosed are the Government's, Division, and Docket copies of the "TERMINATION AGREEMENT" forwarded by your letter of April 10, 1956, for signature by the Operators.

Also enclosed are four sets of data relative to termination of the Contract.

Copies of the Termination Agreement have been distributed to the Operators, the Finance Office, Region III, and other offices concerned.

W. M. Traver

W. M. Traver

Enclosures

RECEIVED
APR 23 1956
DMEA
Date Rec'd.
MAR 23 1956

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
March 22, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shea Swift for
E. N. Marshman

From: R. L. Belmer and D. R. MacLaren

Subject: DMEA 3546, Contract Idm-2810 (Tungsten), Mesch and Mesch, (Big Cameron mine), Boulder County, Colorado -- Recommendations regarding requested termination of project.

The operator under the subject contract, in a letter to the DMEA Field Team, Region III, dated March 12, 1956, requested that the authorized and nearly completed exploration project at the Big Cameron mine be terminated. The Field Team has asked for our recommendations regarding the matter.

All of the exploration work authorized for the project, with the exception of 14 feet of drifting and 23 assays, had been completed by the end of February, 1956. The final phase of the authorized program provided for 152 feet of drifting southwesterly along the Steel Plate vein on a new 104-foot level off the Big Cameron shaft. The operator has completed 138 feet of the authorized drifting.

The Steel Plate vein, as exposed southwesterly along the 104-foot level, was never a strong or well defined structure and remained barren of all tungsten mineralization. The structure itself began to weaken and split up about 100 feet west of the shaft. Beyond this point, the project heading followed the stronger or footwall branch of the vein. This structure was poorly defined and split again near the present breast of the drift. Each split narrowed to a knife edge and lost its identity among the other fractures in the country rock. The vein remained in schist for its full exposed distance. In the Boulder County tungsten district, schist is a notably poor host rock for ore deposition.

The Steel Flake vein, as exposed southwesterly along the 104-foot level, is a weak and barren structure within an unfavorable host rock. There is no apparent justification for continuing the project heading on such unpromising prospects. We concur with the operator that further exploration of the structure in this direction is not warranted and recommend that the project be terminated by mutual consent.

R. L. Bolmer

R. L. Bolmer
Mining Engineer, Bureau of Mines

D R Macharen

D. R. Macharen
Geologist, Geological Survey

RLB/mr
cc 9
IAm-MRIO
EKMarshman
Chron

DMEA
Date Rec'd.

5275 Dover St.
Arvada Colo.

March 12, 1956

MAR 16 1956

BUREAU OF MINES
Denver, Colorado

United States Dept. Of Interior
DMEA Administration

RECEIVED
APR 23 1956

Re: Docket DMEA 3546 (Tungsten)
Contract No. Idm-E810

Gentlemen;

DMEA contract work alloted to our Partnership for The Big Cameron Mine is nearly completed. Fourteen feet of south-westerly drifting remains unfinished. In recognizing that this drift has revealed a negligible indication of encouraging mineralization and rock structure, and that it is very costly due to the necessity for its having to be heavily timbered, our Partnership requests the Government to effect its cancelation.

Recently completed drifting north-easterly on the vein from the Big Cameron shaft has opened up a highly mineralized area. Our Partnership seeks to devote full time toward exploration of this portion of the vein.

Very Respectfully Yours,

Hans Mosch

Hans Mosch(Partner)

Alvin Mosch

Alvin Mosch(Partner)

RECEIVED
APR 23 1956
DMEA
Date Rec'd.
MAR 23 1956
BUREAU OF MINES
Denver, Colorado

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
March 20, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shea
E. N. Zaudtke

From: R. L. Palmer and D. R. Maclaren

Subject: DMEA 3546, Contract 16n-2810 (Tungsten), Marek and Marek, (Big Cameron mine), Boulder County, Colorado — Recommendations regarding requested termination of project.

The operator under the subject contract, in a letter to the DMEA Field Team, Region III, dated March 18, 1956, requested that the authorized and nearly completed exploration project at the Big Cameron mine be terminated. The Field Team has asked for our recommendations regarding the matter.

All of the exploration work authorized for the project, with the exception of 14 feet of drifting and 23 ounces, had been completed by the end of February, 1956. The final phase of the authorized program provided for 152 feet of drifting southwesterly along the Steel Plate vein on a new 104-foot level off the Big Cameron shaft. The operator has completed 138 feet of the authorized drifting.

The Steel Plate vein, as exposed southwesterly along the 104-foot level, was never a strong or well defined structure and remained barren of all tungsten mineralization. The structure itself began to weaken and split up about 100 feet west of the shaft. Beyond this point, the project heading followed the stronger or footwall branch of the vein. This structure was poorly defined and split again near the present terminal of the drift. Each split narrowed to a knife edge and lost its identity among the other fractures in the country rock. The vein remained in solution for its full exposed distance. In the Boulder County tungsten district, solution is a notably poor host rock for ore deposition.

The Steel Plate vein, as exposed southwesterly along the 105-foot level, is a weak and barren structure within an unfavorable host rock. There is no apparent justification for continuing the project heading on such unpromising prospects. We concur with the operator that further exploration of the structure in this direction is not warranted and recommend that the project be terminated by mutual consent.

R. L. Bolmer

R. L. Bolmer
Mining Engineer, Bureau of Mines

D R Mackaren

D. R. Mackaren
Geologist, Geological Survey

BLB/mr
cc 9
Idaho-Maryland
L.Markuhman
Carson

RECEIVED
APR 23 1956
DMEA
Date Rec'd.

5275 Dover St.
Arvada Colo.

March 12, 1956

MAR 16 1956
BUREAU OF MINES
Denver, Colorado

United States Dept. Of Interior
DMEA Administration

Re: Docket DMEA 3546 (Tungsten)
Contract No. Ioa-SBIQ

Gentlemen;

DMEA contract work alloted to our Partnership for The Big Cameron Mine is nearly completed. Fourteen feet of south-westerly drifting remains unfinished. In recognizing that this drift has revealed a negligible indication of encouraging mineralization and rock structure, and that it is very costly due to the necessity for its having to be heavily timbered, our Partnership requests the Government to effect its cancelation.

Recently completed drifting north-easterly on the vein from the Big Cameron shaft has opened up a highly mineralized area. Our Partnership seeks to devote full time toward exploration of this portion of the vein.

Very Respectfully Yours,

Hans Mosch
Hans Mosch (Partner)

A. Levin Mosch
Alvin Mosch (Partner)

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

RECEIVED
APR 23 1956

224 New Customhouse
Denver 2, Colorado

April 20, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Contract Idm-E810, Mosch and Mosch (Big Cameron mine), Boulder County, Colorado

In compliance with instructions contained in the Minutes, Operating Committee, No. 622, dated January 27, 1956, we are enclosing the original and one copy of the Operator's Final Report.

W. M. Traver

W. M. Traver

Enclosures

DMEA
Date Rec'd.
APR 5 1956
BUREAU OF MINES
Denver, Colorado

RECEIVED
APR 23 1956

RECEIVED
APR 6 - 1953
Bureau of Mines Technology
BUREAU OF MINES
Denver Experiment Station
Denver, Colorado

COMPLETION REPORT

Re; Big Cameron Mine
DMEA 3546
Contract No. Idm E&IO

Contract work authorized by the Government for the exploration of the Steel Plate vein as located within the Big Cameron Mining Claim, U.S. Survey No. I9972, consisted of sinking the Big Cameron Shaft sixty feet, thus extending it to a depth of one-hundered and fourteen feet, and of drifting one hundered and fifty-two feet south-westerly along the vein. The sinking has been completed. One-hundered and thirty-eight feet of south-westerly drift was driven.

During the sinking and about eighty feet deep, small traces of tungsten oxide(WO_3) assaying I.74% was exposed. At the same depth a water level was reached, and the vein changed it's dip, rolling somewhat under the hanging wall. The newly opened angle of dip remained constant in all lower workings. The upper portion of the sinking penetrated through a schist, and the lower through a complexity of boulder creek granite, iron oxidized quartz, a sill of aplite, and more schist. Shortly after opening up a flatter dip of the vein, it was purposely left unexposed within the hanging wall. This was necessary in order to gain the benefit of hoisting through a vertical shaft.

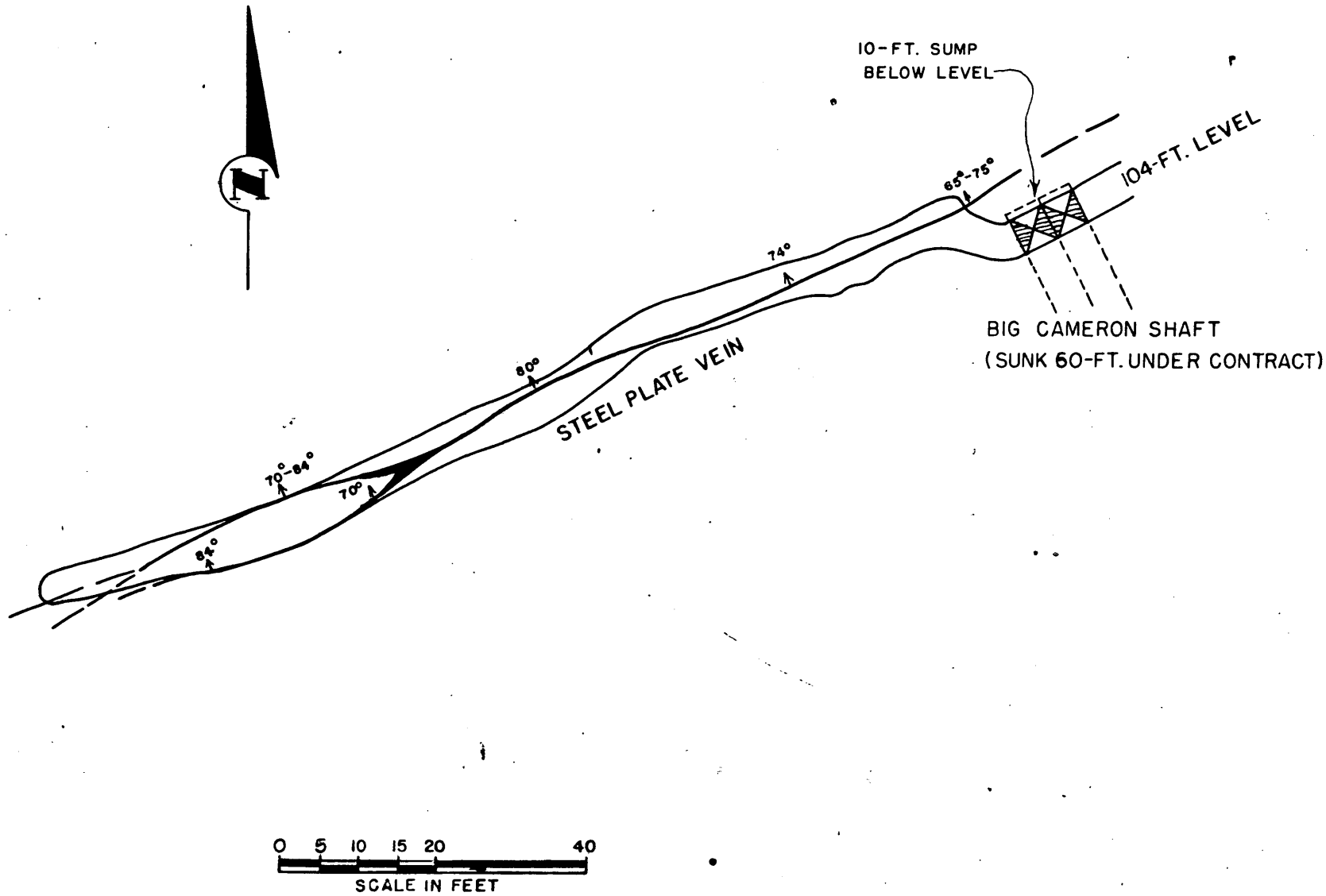
At a depth of one-hundered and four feet, a drift was driven into the hanging wall. About ten feet from the shaft, the vein was again opened up. It consisted of a mineralized composition of gouge and horn quartz. The drift was then turned south-westerly and commenced to follow the vein for a distance of one-hundered and thirty-eight feet. Shortly after its exposure the vein widened to about eight inches and remained relatively uniform for about fifty feet. From fifty to approximately one hundered feet, the gradual dimminishing of the vein was observed. The last thirty-eight feet of drifting was through a gouge of schist separating granite walls six to eight feet apart. Little vein was present.

The abundance of heavy schist throughout the entirety of drifting necessitated a complete timbering of most of the drift. During an interval between periods of drifting, a ten foot sump was sunk and timbered. The square set method of timbering a two compartment shaft was utilized throughout the distance of sinking.

Supplementing DMEA sponsored contract drifting south-westerly from the shaft, another drift was driven north-easterly and on the vein. The vein as seen in the drift consisted of a six inch width of horn quartz saturated with red and black stain. Small thin seams of tungsten(Ferberite), lay adjacent to the vein within the hanging wall slickenside. Near the breast of this drift a raise was started. Twenty feet above the drift a back containing commercial ore was exposed. The ore lay in a four to eight inch streak of horn, and in a soft gouge adjacent to the horn. Evaluation is not yet available.

Alvin Mosch

Alvin Mosch(Partner, Big Cameron)



PLAN OF 104-FT. LEVEL, BIG CAMERON MINE, BOULDER COUNTY, COLO., DMEA 3546 (TUNGSTEN), SHOWING DRIFTING DONE UNDER CONTRACT Idm-E810

RECEIVED
APR 23 1956

C

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

RECEIVED
APR 1 [illegible]

224 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

April 13, 1956

Messrs. Hans Mosch
and Alvin Mosch
5275 Dover
Arvada, Colorado

Re: Docket DMEA 3546 (Tungsten)
Contract Idm-E810
(Big Cameron mine)
Boulder County, Colorado

Gentlemen:

Enclosed are the Government's, Division, Docket, Finance Office, and Field Team copies of a TERMINATION AGREEMENT which was prepared in Washington and has been signed by the Administrator, DMEA, for the Government, to effect termination of Contract Idm-E810, effective February 29, 1956.

If the TERMINATION AGREEMENT is satisfactory to you, all copies are to be signed by both partners as indicated and all copies promptly returned to this office.

Upon return of the properly executed copies of the TERMINATION AGREEMENT, the "Operator's Copy" will be forwarded to you.

As soon as the TERMINATION AGREEMENT is executed, the report of review of contract expenditures by the Contract Administration and Audit Division will be completed and upon its release to us final payment will be made to you of the balance which was suspended from your last accounting report.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

[illegible]r. Comm. (2)

DOCKET
SURNAME

400

Holt
Martin
Chambers
Selfridge
Johnson
Mathews

APR 1 0 1956

Mr. W. M. Trever, Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 3546 - Tungsten
Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado
Contract No. Idm-8810

Dear Mr. Trever:

Enclosed are the original and five copies of a proposed Termination Agreement to the above-referenced contract, signed by the Administrator for the Government. Two extra copies are enclosed for the use of the Field Team.

If the terms and conditions of this proposed agreement are satisfactory to you and the Operator, all six copies should be signed by the Operator and the usual distribution made.

If any part of the proposed agreement does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Although we advised you in our teletype of March 28, 1956, that the effective date of this agreement would be left blank for you to insert, we have inserted in Article 1 the date February 29, 1956, inasmuch as your letter of March 13 to the Operator stated that the contract had expired on March 6, 1956, and that no work had been performed during the period March 1-6, 1956.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Enclosures

APPROVED:

J. W. Pennington
Member, Bureau of Mines

N. E. Nelson
Member, Geological Survey

SPHOLT/foc 4/9/56
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. III
R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

P.G.S.

DOCKET
Surname:
Martin

400

March 28, 1956

MEMORANDUM

To: Associate Solicitor, Division of Mineral Resources

From: Iron and Ferro-Alloys Division, DMEA

Subject: Preparation of Termination Agreement
Docket No. DMEA-3546, Tungsten
Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado
Contract No. Idm-E810

Attached is a teletype dated March 26, 1956, received from Mr. Trever, and a teletype prepared here in reply.

It will be appreciated if you will prepare an appropriate termination agreement.

W. S. Martin

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

Attachments

cc: Docket
Code 400

SPHolt/ls

Interior Department
Defense Minerals Exploration
Administration
14X1401 (GL) Revolving Fund, DMEA,
Allocated Working Fund to the
Office of the Secretary)

DOCKET
SURNAME

Martin
Holt
Burton
Dwyer
Gerhon
Nelson
Selfridge
Fehrman
Matteuder

MAR 2 8 1956

TELETYPE

Mr. W. M. Trower, Executive Officer
DMEA Field Team, Region 3
224 New Customhouse
Denver 2, Colorado

REFERTY MARCH 26, DOCKET 3546, CONTRACT XDM-2610, MERCH AND MERCH, BIG CAMERON MINE. PLEASE ADVISE OPERATOR WE ARE PREPARING TERMINATION AGREEMENT HERE. WILL LEAVE EFFECTIVE DATE BLANK FOR YOU TO INSERT.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (243)

SFEGLT:fec
3/28/56
cc to: Docket
Code 400
Admr. Read. File
Operating Comm.
FT. REG. 3 - CONFIRMATION
R. W. Holliday, WSEM
T. M. Kiilsgaard, WSGS

P.G.J.

Chairman, Oper. Comm. D.M.E.A.

RECEIVED
MAR 27 1956

BUR MINES DN 235 3-26-56 4-37 PM

CHAIR MAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA 3546, CONTRACT IDM-E810, MOSCH AND MOSCH, BIG CAMERON MINE. OPERATOR REQUESTS AND THIS OFFICE CONCURS THAT CONTRACT BE TERMINATED BY MUTUAL AGREEMENT ATXXX AFTER COMPLETING ONLY 138 FEET OF DRIFTING IN THE SOUTHWESTERLY DIRECTION LEAVING 14 FEET OF DRIFTING INCOMPLETED. NO CERTIFICATION TO BE RECOMMENDED. PLEASE TELETYPE I NSTRUCTIONS AS TO HOW WE SHOULD PROCEED IN THE MATTER.

W M TRAVER

Denver, Colo.

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

RECEIVED
MAR 15 1956

224 New Customhouse
Denver 2, Colorado

March 13, 1956

Messrs. Hans Mosch and Alvin Mosch
5275 Dover
Arvada, Colorado

Re: DMEA Docket 3546 (Tungsten)
Contract Mmo-E810
Big Cameron Mine
Boulder County, Colorado

Gentlemen:

Your Monthly Report and Voucher for the period February 1956 has been received and is being processed for payment. As the contract expired on March 6, 1956, which was prior to the date of inspection of February progress, and as no work was performed during the period March 1-6, 1956 an amount of $50.00 is withheld pending resolution of matters relative to closing the account, which includes the rendering of an acceptable Final Engineering and Geologic Report as stipulated in Article 6 (c) of the contract, and the release of a Report of Review of Contract expenditures by the Contract Administration and Audit Division, DMEA.

If you should need any advice regarding the preparation of the Final Report, please feel free to contact this office or Mr. Shaw's office.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

JDC:jy
cc: Corresp. E810
Sec. Op. Comm. (2)
Harshman
Shaw (2)
Townsend
Chron.

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

February 15, 1956

Memorandum

To: Miss Curtin, Statistics and Control Division, DMEA

From: Hazel Berry, Operating Committee, DMEA
Ey 257

Subject: Amendment to Contract

Attached is the following docket copy of an amendment to a contract which has been reviewed and approved by the Commodity Division, Contract Administration and Audit Division, and the Legal Division. The official docket is also attached.

Mosch and Mosch, DMEA-3546, Idm-E810, Amendment No. 1.

Attachment-1

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

RECEIVED
JAN 3 1956

224 New Customhouse
Denver 2, Colorado

December 29, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3546 (Tungsten), Contract Idm-E810
Mosch and Mosch, Boulder County, Colorado

Enclosed are original and two copies of Amendment No. 1 to Contract Idm-E810, which has been executed under authority delegated to this office, to extend the period for completion of the project work from January 1, 1956 to March 6, 1956. Also enclosed are four copies of the Operator's letter of December 9, 1955, requesting the extension.

Copies of the amendment have been given to the Operator, Finance Office, Region III, and distributed to other offices concerned.

W. M. Traver

Encls.

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

RECEIVED
SEP - 2 1955

August 29, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA Docket 3546, (Tungsten), Contract Idm-E810, Mosch and Mosch, Big Cameron Claim, Boulder County, Colorado

In accordance with your letter of August 22, 1955 on the subject docket enclosed are four copies of the Operator's letter dated August 16, 1955 and four copies of our reply to the Operator.

W. M. Traver

Enclosures

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

RECEIVED
SEP - 2 1955

[illegible] 2, 1955

224 New Customhouse
Denver 2, Colorado

Mr. Alvin Joe Mosch
5273 Dover Street
Arvada, Colorado

Re: DMEA Docket 3546, (Tungsten),
Contract Idm-E810, Mosch and
Mosch, Big Cameron Claim,
Boulder County, Colorado

Dear Mr. Mosch:

Our letter of August 11, 1955 in which we stated consideration would be given to an Amendment to provide for drifting northeasterly from the Big Cameron shaft was in error.

The Steel Plate No. 1 claim has been subordinated to the Government on a previous DMEA contract. If you have a lease on any part of the Steel Plate claim and desire to do work on it at your own expense either through the Big Cameron shaft or otherwise royalty would accrue to the Government on all ore production. Cold Spring Tungsten is liable for royalties on all ores mined on the Steel Plate No. 1 claim unless they are paid by you.

Very truly yours,

W. M. Traver

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:ab
cc: Sec. Oper. Comm. (4)
Shaw (2)
Harshman
Docket 3546 Idm--E810
Chron.

5275 Dover St.
Arvada Colorado

August I6, I955

DMEA
Date Rec'd.
AUG 18 1955
BUREAU OF MINES
Denver, Colorado

W.M. Traver
Executive Officer, DMEA
Field Team, Region III

Re: DMEA Docket No. 3546
Contract Idm-E8TO

Dear Sir,

We are interested in consideration given to an amendment for our present exploration contract as stated in your letter dated August II, I955. We do request this proposed amendment. Recently we surface prospected the northeasterly area of the Steel Plate vein as located from the Big Cameron shaft. About 250 feet northeast of the Big Cameron shaft, we dug an eight foot deep prospect hole and unearthed the Steel Plate vein. The vein as observed in this hole, was highly mineralized, and bore a streak of leached ore-bearing horn rock. Northeasterly and from 30 to 50 feet away from the hole we found bits of tungsten float. The exact portion of the vein which yielded the float is yet unknown to us.

Your letter stated that we need lease the west 300 feet of the Steel Plate No. I Lode Mining Claim, U.S. Survey No. I9632. We consulted our new lease dated March 22, I955, and found this land to have been leased to us from Cold Springs Tungsten Inc. along with the Big Cameron, Fraction Lode, and The Jack Lode Mining Claim. Our first and oldest lease of the above listed claims did not include the west 300 feet of the Steel Plate No. I Lode Mining Claim. I believe that copies of both leases are in your files, though the former one is now invalid. Perchance I have erred in understanding this matter please let me know so that I may correct it.

Very truly yours,

Kevin Joe Mosch

400

DOCKET
Surname:
Holt
Chapman
Selfridge
Selfridge
Hutchinson

AUG 22 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 3546 - Tungsten
Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado
Contract No. Idm-E810

Dear Mr. Traver:

Reference is made to your letter of August 11, 1955, and to a copy of your letter to Mosch and Mosch, of the same date, on the captioned project.

We are sorry to advise that there has been a misapprehension concerning the last paragraph (which you quote) in our letter of July 5, 1955. We assumed that the Operator would probably desire to do some work on the Steel Plate claim at his own expense if he obtained a lease from Cold Spring Tungsten, Inc., and we did not wish to imply that the Government would participate in this work. The intention was to indicate the liability for royalties.

Please advise the Operator of this misapprehension.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Approved:

/s/ Robert W. Geehan

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

cc: Docket
Code 400
Oper. Comm.
Adm. Reading File
Thor Kiilsgaard, USGS
Robt. Holliday, USBM
FT, Region 3
Code 800

TLChapman/ls
8/17/55

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

Noted
CDM

August 19, 1955

Memorandum

To: The Files

From: George C. Selfridge
Special Assistant

Subject: Docket DMEA-3546, Contract Idm-E810 (Tungsten), Mosch and Mosch, Big Cameron Mine, Boulder County, Colorado.

The subject contract was discussed over the telephone today with Mr. Traver, explaining that it was not the intention of DMEA to participate in work on the Steel Plate claim as suggested in the Region III memorandum dated August 11, 1955. The writer explained to Mr. Traver what DMEA intended, and that the reference to work on the Steel Plate claim was made only to inform the operator of the subject property that DMEA was not adverse to his doing work on the Steel Plate claim at his own expense. Mr. Traver was informed that a letter would follow.

George C. Selfridge

George C. Selfridge

Selfridge

August 19, 1955

Memorandum

To: The Files

From: George C. Selfridge
Special Assistant

Subject: Docket DMEA-3546, Contract Ldm-8810 (Tungsten), Mesch and Mesch, Big Cassarom Mine, Boulder County, Colorado.

The subject contract was discussed over the telephone today with Mr. Traver, explaining that it was not the intention of DMEA to participate in work on the Steel Plate claim as suggested in the Region III memorandum dated August 11, 1955. The writer explained to Mr. Traver what DMEA intended, and that the reference to work on the Steel Plate claim was made only to inform the operator of the subject property that DMEA was not adverse to his doing work on the Steel Plate claim at his own expense. Mr. Traver was informed that a letter would follow.

George C. Selfridge

George C. Selfridge (HB)

GCSelfridge/hb/fw

cc: Docket file
Admr. Read. File
Mr. Mittendorf
F. E. Johnson
Mr. Martin
Mr. Selfridge

RCG

D
Dat
JUL 28 1955
BUREAU OF MINES
Denver, Colorado

Region III

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
July 28, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw

Subject: DMEA 3546, Contract Idm-E810 (Tungsten), Mosch and Mosch, Big Cameron mine, Boulder County, Colorado

Reference is made to the letter from the Chairman of the Operating Committee dated July 5, 1955, explaining why a contract was prepared on docket DMEA 3546. We do not see anything in any of the quotations in the letter which would justify preparing a contract for drifting southwest along the Steel Plate vein. The fact that the Bureau engineer stated that the Steel Plate vein is strong and well defined is not sufficient justification for a contract.

The early recommendations for a contract were based on the premise that drifting would be northeast and southwest. Subsequent to these recommendations the operator did additional underground work and an examination of this work resulted in Balmer making the following statement in his memorandum dated April 18, 1955, "The southwest exploration of the vein on the Big Cameron mine is not considered of sufficient merit to justify the previously recommended project." We believe that this statement along should be sufficient to indicate to the Washington office that a contract should not be prepared without further discussion with the Field office.

John F. Shaw
John F. Shaw
Supervising Mining Engineer

cc 9
EWHarshman
E810
Chron

JFS/cm

RECEIVED
AUG 16 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER DENVER COLORADO

DMEA
Date Rec'd
JUL 18 1955
Geologic Division
BUREAU OF M[illegible]S
Denver, Colorado

IN REPLY REFER TO

[illegible]

Memorandum

To: [illegible], [illegible] Officer, DMEA Field Team, Region III

From: [illegible] Marshman

Subject: Comments on letter from the Chairman of the Operating Committee as requested in your memorandum dated July 13, 1955. Docket DMEA [illegible]

The last paragraph of the Chairman's letter states: "--if the same applicant should subject a lease on the west 300 feet of the Steel Plate ---Cold Spring Paragon, Inc. would be liable for any royalties due the Government---". Balmer's report of January, 1955 states on page [illegible] that "---the [illegible] claims are leases of the---West 300 feet of the Steel Plate No. 1 [illegible]---". If it was not necessary to transfer subordination of the west 300 feet of the Steel Plate to Brown, Mosch, and Mosch, it seems to me that a contract, as recommended in the original report, should have been drawn up. Our mistaken understanding that such a transfer was necessary and could not be made, thus ruling out the most promising area for exploration, compelled us to change our recommendation from approval to denial.

If the applicant has not dropped the lease on the west 300 feet of the Cold Spring, I suggest that the contract be amended to allow 200 feet of drifting northeast and/or southwest of the shaft, the relative amount of drifting in each direction to be determined as the work progresses.

MacLaren's memorandum on Docket DMEA 3546, dated April 12, 1955, contains the following paragraph justifying his recommendation for denial: "The meager evidence upon which these conclusions and recommendations were based (in his original report), suggest that the most likely target area extended from 35 or 40 feet southwest of the Big Cameron shaft to about 155 or 160 feet northeast of the shaft. With the west 300 feet of the Steel Plate claim excluded from the exploration area, this favorable zone is reduced to a length of 60 to 69 feet. On the surface the Steel Plate vein can be traced for only about

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

224 New Customhouse
Denver 2, Colorado

August 11, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA-3546 (Tungsten), Contract Idm-E810, Mosch & Mosch, Big Cameron Mine, Boulder County, Colorado

The last paragraph of your letter of July 5, 1955 on the subject docket stated:

> "Incidentally, if the same applicants should obtain from Cold Spring Tungsten, Inc., a lease on the west 300 feet of Steel Plate and should mine this area through the Big Cameron shaft, Cold Spring Tungsten, Inc., would be liable for any royalties due the Government unless these were paid by the subject applicant."

This was not in keeping with our understanding of your letter of February 8, 1955 which in part stated:

> "As Cold Spring Tungsten, Inc. is liable for royalties on any ores mined on the Steel Plate No. 1 claim, we see no advantage to the Government in transferring any part of this claim to another Operator."

Enclosed are four copies of field memoranda recommending drifting on the vein northeast of the shaft.

An amendment to the Operator's lease from Hetzer Mines, dated September 29, 1954, included a lease on the west 300 feet of the Steel Plate No. 1 Lode Mining Claim, U. S. Survey No. 19632. Hetzer Mines have since been merged with and now are a part of Cold Spring Tungsten, Inc.

RECEIVED
AUG 15 1955

We will ask the applicants if they are still interested in drifting northeast from the Big Cameron shaft. If they are interested, we will advise them that consideration would be given to an amendment to allow some drifting in that direction providing they obtain a lease from Cold Spring Tungsten, Inc. on the west 300 feet of Steel Plate No. 1.

W. M. Traver

E. N. Harshman

Enclosures

RECEIVED
AUG 16 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER COLORADO

IN REPLY REFER TO

DMEA
Date Rec'd
Geologic Division
JUL 18 1955
BUREAU OF MINES
Denver, Colorado

July [illegible], 1955

Memorandum

To: [illegible]

From: [illegible]

Subject: Comments on letter from [illegible] of the Operating Committee [illegible] in your memorandum dated July 13, 1955. Docket [illegible]

The last paragraph of the Chairman's letter states: "--if the same applicants should obtain a lease on the west 300 feet of the Steel Plate---Cold Spring [illegible]. This [illegible] liable for any royalties due the Government---". [illegible] of January, 1955 states on page 4 that "---the applicants are interested in the---West 300 feet of the Steel Plate [illegible]---". If it is not necessary to transfer subordination of the west 300 feet of the Steel Plate to Brown, Mosch, and Mosch, it seems to me that a contract, as recommended in the original report, should have been drawn up. Our mistaken understanding that such a transfer was necessary and could not be made, thus ruling out the most promising area for exploration, compelled us to change our recommendation from approval to denial.

If the applicant has not dropped the lease on the west 300 feet of the Cold Spring, I suggest that the contract be amended to allow 300 feet of drifting northeast and/or southwest of the shaft, the relative amount of drifting in each direction to be determined as the work progresses.

MacLaren's memorandum on Docket DMEA 3546, dated April 12, 1955, contains the following paragraph justifying his recommendation for denial: "The meager evidence upon which these conclusions and recommendations were based (in his original report), suggest that the most likely target area extended from 35 or 40 feet southwest of the Big Cameron shaft to about 155 or 160 feet northeast of the shaft. With the west 300 feet of the Steel Plate claim excluded from the exploration area, this favorable zone is reduced to a length of 60 to 69 feet. On the surface the Steel Plate vein can be traced for only about

250 feet to the southwest, then it dies out. The bottom of the Big Cameron shaft and the floor of the existing drift are in gneiss and schist, much less favorable host rocks for the ore than the overlying aplite and granite. Although the operators have shipped [illegible],157 pounds of sorted ore, containing 1,164.14 pounds of WO_3 from a small stope above the drift southwest of the shaft, no ore was [illegible] in the drift floor or in the [illegible] of the drift." In my letter of transmittal, accompanying this memorandum, I summarize the [illegible] "We [illegible] conclude that the loss of the western [illegible] of the [illegible] claim has adversely affected the chance of making a significant discovery and recommend---."

E. N. Harshman

E. N. Harshman
Member, Field Team

ENHarshman:dr

D M
Date Rec'd
JUL 28 1955
BUREAU OF MINES
Denver, Colorado

Region III

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
July 26, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw

Subject: DMEA 3546, Contract Idm-EE10 (Tungsten), Mosch and Mosch, Big Cameron mine, Boulder County, Colorado

Reference is made to the letter from the Chairman of the Operating Committee dated July 5, 1955, explaining why a contract was prepared on docket DMEA 3546. We do not see anything in any of the quotations in the letter which would justify preparing a contract for drifting southwest along the Steel Plate vein. The fact that the Bureau engineer stated that the Steel Plate vein is strong and well defined is not sufficient justification for a contract.

The early recommendations for a contract were based on the premise that drifting would be northeast and southwest. Subsequent to these recommendations the operator did additional underground work and an examination of this work resulted in Balmer making the following statement in his memorandum dated April 18, 1955, "The southwest exploration of the vein on the Big Cameron mine is not considered of sufficient merit to justify the previously recommended project." We believe that this statement alone should be sufficient to indicate to the Washington office that a contract should not be prepared without further discussion with the Field office.

John F. Shaw
John F. Shaw
Supervising Mining Engineer

cc 9
MMHarshman
EE10
Chron

JFS/cm

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

224 New Customhouse
Denver 2, Colorado

August 11, 1955

Mosch and Mosch
5275 Dover
Arvada, Colorado

Re: DMEA Docket No. 3546
Contract Idm-E810

Gentlemen:

We are wondering if you are still interested in some drifting northeasterly from the Big Cameron shaft on the Steel Plate vein. If you are interested in doing this work now, or at any time during the life of your present contract, consideration would be given to an amendment to provide for this exploration work.

In the event that you should request such an amendment, it would be necessary for you to obtain a lease from Cold Spring Tungsten, Inc. on the west 300 feet of Steel Plate No. 1 Lode Mining Claim, U.S. Survey No. 19632. Cold Spring Tungsten, Inc. would be liable for any royalties due the Government unless these were paid by Mosch and Mosch.

Very truly yours,

W. M. Traver

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:bh

cc-Ch. Op. Comm. (2)
Harshman
Shaw (2)
Townsend
Subject
Chron.

RECEIVED
AUG 15 1955

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

RECEIVED
JUL - 8 1955

224 New Customhouse
Denver, Colorado

July 6, 1955

Memorandum

To: Chairman, Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Contract Idm-E810, Mosch and Mosch, Boulder County, Colorado

Enclosed are the original and two copies of Form MF-203, owner's Consent to Lien, which we neglected to attach to the Washington office copies of Contract Idm-E810 before it was forwarded to you on July 1. Copies of the owner's Consent to Lien will be forwarded by copies of this letter to the Finance Office, Region III and to others concerned.

W. M. Traver

W. M. Traver

Enclosures

DOCKET
Surname:

400

JUL - 5 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 3546 - Tungsten
Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado

Dear Mr. Traver:

Reference is made to your letter of June 9, 1955, and our wire of June 16, 1955, concerning the captioned proposed contract.

On October 25, 1954, we received the application of Brown, Mosch and Mosch (dated July 26, 1954) for a DMEA loan on the Big Cameron claim. Possibly as a result of some suggestion that they include additional ground in their application, the applicants obtained and sent to you on September 30, 1954, leases on two additional claims and the west 300 feet of the Steel Plate No. 1 claim, which was then under lease to Cold Springs and had been included in our Cold Springs contract No. Idm-E54 (Docket No. DMEA 1447).

The conclusions of R. L. Bolmer, Mining Engineer, in a report received January 27, 1955, were as follows:

> "The Steel Plate vein is a strong and well defined structure occurring within a highly productive area of the Boulder tungsten district. The vein itself has had a small production from shallow workings along its outcrop, but is relatively unexplored in the vicinity of the Big Cameron shaft. The formation, in which the present development off the shaft occurs, is not too favorable a host rock for ore deposition but more favorable host rocks outcrop in the immediate vicinity. Should the vein enter such rocks, the chances of it making ore in significant quantities is considered promising. . ."

All the work referred to above is in the Big Cameron claim and ore has been mined from this area.

R.C.H.

In the report of D. R. MacLaren, Geologist, received January 27, 1955, the following recommendations are made:

"It is recommended that a program to deepen the Big Cameron shaft 50 feet and to drift 200 feet from the bottom of the shaft or the bottom of the ore, whichever comes first, be approved. The relative amount of drifting northeast and southwest will have to be determined as the work progresses."

Similarly, in the second paragraph of your letter of December 9, 1954, you advised us as follows:

"Bolmer concludes the Steel Plate vein is strong, well defined, and is in a favorable area. Some production has been made where it occurs in less receptive host rocks, and there is a possibility, as indicated by surface outcrops, of its entering a more favorable host rock formation. In this event, it could conceivably make a significant body of tungsten ore."

Up to that time, all your reports that had reached us recommended a contract, including the west 300 feet of the Steel Plate No. 1 claim, but it seems that most of the references to ore apply to the Big Cameron shaft and the drift on the 50-foot level.

In the second paragraph of our letter to you of February 8, 1955, we therefore advised as follows:

"As Cold Spring Tungsten, Inc., is liable for royalties on any ores mined from the Steel Plate No. 1 claim, we see no advantage to the Government in transferring any part of this claim to another operator.

"We will, however, consider an application for a small exploration project on the Big Cameron claim if Brown, Mosch and Mosch care to apply. The Big Cameron shaft is close to the end line of the same-named claim; and if ore should be mined from the Steel Plate No. 1 claim and extracted through the Big Cameron shaft, Cold Spring Tungsten, Inc., would then be liable to the Government for payment of the royalty, either directly or by the lessee.

"We suggest that you ascertain the applicant's reaction to the foregoing."

Your letter to Brown, Mosch and Mosch, dated February 11, 1955, stated:

"Our Washington office advises that they would give consideration to an exploration project on the Big Cameron claim southwest of the Big Cameron shaft. The Steel Plate No. 1 claim is approximately 25 feet north and east of the Big Cameron shaft and has been subordinated to the Government under another DMEA pro-project.

"Would your partnership be interested in confining your exploration work on the vein southwest of the Big Cameron shaft? If so, will you please forward this office four copies of an amended application indicating the amount and kind of work you would choose to do in a southwesterly direction from the Big Cameron shaft."

Thus it would appear that, inasmuch as your office then had all the necessary data, recommending a denial would have been better policy, rather than leading the applicant to believe we might make a contract on the above-stated basis.

Your memorandum of March 25, 1955, moreover, recommended that the application be held active for at least an additional 30 days, and your memorandum of March 28 advised that the applicants had made three shipments of ore from the 50-foot level of the Big Cameron shaft and were continuing stoping operations.

Consequently, we were surprised when we received the memorandums of D. R. MacLaren, dated April 11, 1955, of E. N. Harshman, dated April 12, 1955, and of R. L. Bolmer, dated April 18, 1955, all recommending denial. Under these circumstances, we decided that a contract would be more appropriate than a denial, and we believe that after reviewing the entire docket, you will agree with us.

DOCKET
Surname:
Chapman
Newton
Selfridge
Johnson
Mittendorf

Incidentally, if the same applicants should obtain from Cold Spring Tungsten, Inc., a lease on the west 300 feet of the Steel Plate and should mine this area through the Big Cameron shaft, Cold Spring Tungsten, Inc., would be liable for any royalties due the Government unless these were paid by the subject applicants.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Approved:

/s/ Robert W. Geehan

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

cc: Docket ✓
FT, Region 3
Code 400
Adm. Read. File
Thor Kiilsgaard, USGS
Robt. Holliday, USBM
Operating Committee

THChapman/ls
6/30/55

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

RECEIVED
JUL - 5 1955

224 New Customhouse
Denver, Colorado

July 1, 1955

Registered Mail

Memorandum

To: Chairman, Operating Committee

From: Executive Officer, DMEA, Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Contract Idm-E810, Mosch and Mosch, Boulder County, Colorado

Enclosed are the Government, Division and Docket copies of Contract Idm-E810 which have been signed by the operator.

Copies of the contract have been given to the operator, the Finance Office, Region III, and a copy has been retained for our files.

W. M. Traver

W. M. Traver

Enclosures

RECEIVED
JUL - 5 1955

224 New Customhouse
Denver, Colorado

July 1, 1955

Registered Mail

Mosch and Mosch
5275 Dover
Arvada, Colorado

Gentlemen:

Enclosed herewith is your copy of Exploration Project Contract No. Ida-2550, Docket No. DMEA 3546.

Also enclosed are six copies of Form MP-104 "Operator's Monthly Report and Voucher" and six copies of Form MP-104A "Operator's Unit Cost and Progress Report". At the completion of the first calendar month of operation and monthly thereafter, you are required to submit five copies of the forms to Mr. John F. Shaw, U. S. Bureau of Mines, Room 137, Building 20, Denver Federal Center, Denver 2, Colorado. The sixth form is for your records.

Please note that the monthly report requires a narrative report which should be accompanied by maps or sketches. The narrative report must be signed by the operator. The monthly report will not be processed for payment unless accompanied by a narrative report. Additional copies of Forms MP-104 and 104A will be forwarded to you as required.

For your information and in reply to many questions that have been asked, after Forms MP-104 and 104A are received an engineer will check progress and approve your accounts, after which it will be sent to the Regional Office, Region III, U. S. Bureau of Mines, 224 New Customhouse, Denver 2, Colorado, for auditing and vouchering. If the report is in order a check will be issued by the Treasury Department for the Government's portion of the costs. If you have any difficulty in completing these forms and the reports, please call on Mr. Shaw or this office for assistance.

Your attention is directed to the regulation that provides that reimbursement for the cost of work accomplished prior to the date of the contract will not be allowed.

Please advise this office in writing the date work actually starts under the contract, with a copy of your letter to Mr. Shaw.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Subject
Chron
Amendment File
Chairman, Op. Comm. (2) ✓
Townsend

Manager

cc: Harshman
Shaw

Docket

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

RECEIVED
JUN 20 1955

224 New Customhouse
Denver 2, Colorado

June 16, 1955

REGISTERED

Copy retained 400

Mr. Hans Mosch
5275 Dover Street
Arvada, Colorado

Re: Docket DMEA-3546 (Tungsten),
Hans Mosch and Alvin Mosch,
(Big Cameron mine), Boulder
County, Colorado - Proposed
Exploration Project Contract
Idm-E810

WSM

Dear Mr. Mosch:

Enclosed are the "Government's", "Division", "Docket", "Finance Office" and "Field Team" copies of Proposed Exploration Project Contract Idm-E810, which was prepared in Washington and has been signed by the Administrator, DMEA for the Government. In addition we are enclosing the original and five copies of form MF-203, Revised March 24, 1955, Owner's Consent to Lien which is necessary in lieu of the Owner's Consent to Lien you previously supplied. The prior Owner's Consent to Lien was prepared on a form now obsolete. In addition Mac Brown was included as a partner in the lease which now is not the case.

If the contract is satisfactory to you, all copies are to be signed by both partners as indicated. Upon return to this office of all copies of the Owner's Consent to Lien and of the contract properly executed the "Operator's copy" of the contract will be forwarded to you together with instructions relative to the start of work and reporting on work performed under the contract.

Your attention is directed to the provision in the contract that costs of work performed prior to the date of the contract will not be allowed.

The starting point of work will be established by a Government engineer and further information in that matter will be given you at the time the "Operator's copy" of the contract is forwarded.

JWT:sr

Very truly yours,

W. M. Traver

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

cc Chairman Op. Comm. (2)
Subject
Harshman
Shaw
Townsend
Chron
Enclosures

DOCKET
Surname:
Chapman
Martin
Rutin
Kiilsgaard
Geehan
Selfridge
Fellman

JUN 16 1955

Interior Department
Defense Minerals Exploration Administration
14X4401(01) Revolving Fund, Defense Production Act,
Interior (Allocated Working Fund to the Office of the Secretary)

T E L E T Y P E

W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Reurlet June 9, Docket DMEA 3546, Tungsten, Mosch and Mosch, Big Cameron Mine, Boulder County, Colorado.

Legal advises leases are in order and contract should be forwarded for signature. Letter follows showing reasons for contract.

George C. Selfridge
Chairman, Operating Committee (GCS)

cc: Docket
Adm. Read. File
Code 400
Oper. Committee
Thor Kiilsgaard, USGS
Robt. Holliday, USBM
FT, Reg. 3 - confirmation

TLChapman/ls
6/15/55

RCH

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

RECEIVED
JUN 10 1955

224 New Customhouse
Denver 2, Colorado

Copy retained 400

June 9, 1955

Memorandum

WSM

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3546 (Tungsten), Mosch & Mosch (Big Cameron mine), Boulder County, Colorado

The basic lease, mentioned in your letter of June 6, 1955, is attached. Also attached is a copy of the applicant's new lease dated March 22, 1955 between Hetzer Mines, Inc., Lessor, and Hans Mosch and Alvin Mosch, Lessees.

Will you please teletype your approval so that this office may forward the contract to the applicants for signature.

Inasmuch as the Field Team, Region III recommended denial of this application, we will appreciate information for our future guidance as to the DMEA policy in matters of this nature.

W. M. Traver

W. M. Traver

Enclosures

6/14/55

(1) If Legal approves TT should say so

(2) TT should also say something like this: "If you do not understand our policy and require future guidance please write more fully, making clear just what it is that puzzles you."

L E A S E

THIS INDENTURE, Made and entered into this 22nd day of March, 1955, between HETZER MINES, INC., a corporation, hereinafter called the Lessor, and HANS MOSCH and ALVIN MOSCH, hereinafter called the Lessee,

WITNESSETH: That the Lessor, in consideration of the covenants and agreements of the Lessee hereinafter expressed to be kept and performed by the Lessee, and upon and subject to the conditions hereinafter provided, has leased and demised, and by these presents does lease and demise unto the Lessee, the following described mining property or premises situate in Grand Island Mining District, Boulder County, Colorado, to-wit:

Big Cameron Lode Mining Claim Survey Lot. No. 19559;

Fraction Lode Mining Claim, U. S. Survey Lot No. 19972;

The Jack Lode Mining Claim, U. S. Survey No. 18346;

The West 300 feet of the Steel Plate No. 1 Lode Mining Claim, U. S. Survey No. 19632.

TO HAVE AND TO HOLD The said demised premises, only however to the extent necessary for the purpose of mining the same for tungsten ore and for no other purpose, for a term of three (3) years from the date hereof.

IN CONSIDERATION OF this lease, the Lessee covenants and agrees as follows, to-wit:

1. To work the said premises in thorough mine-fashion to the end of the safe development and preservation of the same as a workable mine, at all times extracting as much ore therefrom as is possible consistent with safe and prudent mining; and in this connection it is agreed and understood that the Lessor may at its election require the Lessee to produce ore instead of doing development work.

2. To work the demised premises continuously from March 22, 1955, performing at least 40 shifts of work therein underground during each calendar month during the time this lease shall remain in force and effect; any excess labor performed during any calendar month shall not apply on the work required hereunder in any preceding or following calendar month. The word "shift" is taken and accepted to mean the labor of one man for one day of at least 8 hours.

3. To make all shafts and inclines eight (8) feet long by four (4) feet wide in the clear, with bucket ways three and one-half (3½) by four (4) feet in the clear, and all drifts seven(7) feet high by four (4) feet wide in the clear, provided that existing shafts, drifts and inclines shall, unless otherwise directed by the Lessor, be continued with their present dimensions, The Lessor reserves the right to change the dimensions of any workings as and

whenever in the judgement of the Mining Superintendent of the Lessor the same may be necessary or expedient.

4. To do no underhand stoping, whether for the purpose of taking out ore or for any other purpose whatsoever.

5. To neither mine, extract nor remove the ground to a point nearer than four (4) feet to each side of any working shaft, and always to leave at least four (4) feet of ground, in its original condition, to support each such shaft. To leave more than four (4) feet of ground to support each such shaft if the Mining Superintendent of the Lessor shall so direct and to crib or rip-rap any shaft at the Lessee's expense, if the said Mining Superintendent shall so request the Lessee.

6. To allow the officers, agents and representatives of the Lessor at all times to enter upon and into the said premises and all parts thereof for the purpose of inspection and sampling, and to make any surveys they may desire, and to render them all the assistance in the power of the Lessee in so doing.

7. To keep and maintain the drifts, shafts, tunnels and other workings in the said premises thoroughly drained and clear of loose rock and rubbish, and in a safe and secure condition, except as prevented by extraordinary mining casualty, and to maintain at all times and leave the floors of all drifts and workings in good, even and unobstructed condition; to stow no waste underground except with the consent in writing of and under the direction of the Mining Superintendent of the Lessor.

8. To keep posted in conspicuous places on the surface of the said premises all notices which may be furnished by the Lessor for posting thereon.

9. To not assign this lease or any interest therein, nor to sublet the said premises or any part thereof; and tonot assign or transfer to anyone any interest in the sums payable by the Lessor, or any other, to the Lessee for ores produced from the demised premises, without the written consent of the Lessor first had and obtained.

10. To pay monthly in advance to the Public Service Company of Colorado its charges for electric power required to be furnished to the Lessee at the said premises, together with all proper costs of making such power available to the Lessee.

11. The Lessee hereby agrees and premises that on or before the 10th day of each calendar month after the date hereof, the Lessee will make, sign and deliver to the Lessor a written report, in duplicate, of the payroll for all operations under this agreement of lease upon the premises hereinabove described, for the preceding calendar month, on such forms as the Lessor and/or the State Compensation Insurance Fund shall direct from time to time; and the Lessee agrees and promises that each such report shall be in sufficient detail so that the actual payroll may be ascertained for all operations under this lease upon the demised premises during the preceding calendar month, including the Lessee's own time at Lessee's actual wages, but in any event at not less than the minimum rate of pay fixed from time to time by the State Compensation Insurance Fund or the Industrial Commission of Colorado for a Lessee, and

including the payroll of his sublessees and employees, if any, and including the payroll on account of contractors and subcontractors and their employees, if any, so that from such report there may be ascertained the amount of premium payable by the Lessor to the State Compensation Insurance Fund or other insurance carrier for compensation insurance covering the Lessee, his employees and sublessees, if any, and all contractors and subcontractors, if any, and the employees thereof, for operations on the said premises under this lease.

The Lessee agrees hereby to pay to the Lessor the cost of such compensation insurance as may be carried by the Lessor on account of or for the Lessee and Lessee's sublessees and employees, if any, and on account of each contractor with the Lessee and subcontractor, if any, and the employees of each thereof, if any, because of any operations on the demised premises under this lease; and the Lessee agrees to pay the cost of such insurance to the Lessor in cash monthly installments payable on or before the 20th day of each calendar month during the life of this lease for the operations of the preceding calendar month; and the Lessee agrees further that the Lessor, at its option, may withhold and deduct each such monthly installment, and any unpaid monthly installments, if any, from sums otherwise payable to the Lessee upon ore settlements from operations under this lease, or from any other money due or owing or to become due in any fashion to the Lessee from the Lessor.

12. The Lessee agrees to pay to the Lessor and the Lessor reserves a royalty of sixteen (16) percent of the net proceeds from the sale of any ores produced by the Lessee. The "net proceeds" is agreed to be the net sale price of said ores less the cost of hauling the same to the Lessor's mill at Nederland, Colorado.

IT IS MUTUALLY AGREED By and between the Lessor and Lessee as follows:

(a) The Lessor agrees that as long as it has a market for ore, it will maintain what it considers a fair schedule of prices for tungsten ore produced from properties owned or leased by it. The Lessor shall have the right to purchase and the Lessee agrees to sell to the Lessor, all ore produced by the Lessee from the leased premises. The sale price of such ores to be the schedule of prices posted by the Lessor.

(b) It is further mutually understood and agreed that in the event the Lessee delivers to the Lessor shipments or lots of ore of a value less than $100.00 per lot, that the Lessee shall pay to the Lessor the cost of milling such ore and the cost of sampling the same.

(c) It is further mutually understood and agreed that in the event the Lessee fails to pay the royalty herein reserved, or fails to pay compensation insurance premiums, the Lessor shall have the right to terminate this lease immediately and without notice to the Lessee. In the event of the violation of any other term, provision or condition of this lease by the Lessee, the Lessor shall have the right to terminate this lease upon giving thirty (30) days written notice to the Lessee. In the event the Lessee corrects any such defaults within thirty (30) days, said lease shall not be terminated. In the event any default shall not be corrected at the end of said thirty-day period, then said lease shall be terminated as of the end of said thirty-day period. Said notice shall be given in writing, addressed to the Lessee at

5275 Dover, Arvada, Colorado.

(d) The title to any ores broken or mined on said leased premises at the termination of this lease, shall be the property of the Lessor, and it shall not be liable for the payment to the Lessee for the same before any costs or expenses of breaking or mining said ore.

IN WITNESS WHEREOF, The Lessor has caused its name to be hereunto subscribed by its Vice-President and attested by its Assistant Secretary and its seal affixed hereunto, and the Lessee has hereunto set their hands and seals the day and year first above written.

HETZER MINES, INC.,

BY: Elmer Hetzer
Vice-President

ATTEST:

G. C. Rickland
Assistant Secretary

Hans Mosch
Hans Mosch

Alvin Joe Mosch
Alvin Joe Mosch

L E A S E

THIS INDENTURE, Made and entered into this 10th day of July 1954, between HETZER MINES, INC., a corporation, hereinafter called the Lessor, and MAC BROWN, HANS MOSCH and ALVIN MOSCH hereinafter called the Lessee,

WITNESSETH: That the Lessor, in consideration of the covenants and agreements of the Lessee hereinafter expressed to be kept and performed by the Lessee, and upon and subject to the conditions hereinafter provided, has leased and demised, and by these presents does lease and demise unto the Lessee, the following described mining property or premises situate in Grand Island Mining District, Boulder County, Colorado, to-wit:

Big Cameron Lode Mining Claim Survey Lot No. 19559

TO HAVE AND TO HOLD The said demised premises, only however to the extent necessary for the purpose of mining the same for tungsten ore and for no other purpose, for a term of three (3) years from the date hereof.

IN CONSIDERATION OF this lease, the Lessee covenants and agrees as follows, to-wit:

1. To work the said premises in thorough mine-fashion to the end of the safe development and preservation of the same as a workable mine, at all times extracting as much ore therefrom as is possible consistent with safe and prudent mining; and in this connection it is agreed and understood that the Lessor may at its election require the Lessee to produce ore instead of doing development work.

2. To work the demised premises continuously from date performing at least 40 shifts of work therein underground during each calendar month during the time this lease shall remain in force and effect; any excess labor performed during any calendar month shall not apply on the work required hereunder in any preceding or following calendar month. The word "shift" is taken and accepted to mean the labor of one man for one day of at least 8 hours.

3. To make all shafts and inclines eight (8) feet long by four (4) feet wide in the clear, with bucket ways three and one-half (3-½) by four (4) feet in the clear, and all drifts seven (7) feet high by four (4) feet wide in the clear, provided that existing shafts, drifts and inclines shall, unless otherwise directed by the Lessor, be continued with their present dimensions. The Lessor reserves the right to change the dimensions of any workings as and whenever in the judgment of the Mining Superintendent of the Lessor the same may be necessary or expedient.

4. To do no underhand stoping, whether for the purpose of taking out ore or for any other purpose whatsoever.

5. To neither mine, extract nor remove the ground to a point nearer than four (4) feet to each side of any working shaft, and always to leave at least four (4) feet of ground, in its original condition, to support each such shaft. To leave more than four (4) feet of ground to support each such shaft if the Mining Superintendent of the Lessor shall so direct and to crib or rip-rap any shaft at the Lessee's expense, if the said Mining Superintendent shall so request the Lessee.

6. To allow the officers, agents and representatives of the Lessor at all times to enter upon and into the said premises and all parts thereof for the purpose of inspection and sampling, and to make any surveys they may desire, and to render them all the assistance in the power of the Lessee in so doing.

7. To keep and maintain the drifts, shafts, tunnels and other workings in the said premises thoroughly drained and clear of loose rock and rubbish, and in a safe and secure condition, except as prevented by extraordinary mining casualty, and to maintain at all times and leave the floors of all drifts and workings in good, even and unobstructed condition; to stow no waste underground except with the consent in writing of and under the direction of the Mining Superintendent of the Lessor.

8. To keep posted in conspicuous places on the surface of the said premises all notices which may be furnished by the Lessor for posting thereon.

9. To not assign this lease or any interest therein, nor to sublet the said premises or any part thereof; and to not assign or transfer to anyone any interest in the sums payable by the Lessor, or any other, to the Lessee for ores produced from the demised premises, without the written consent of the Lessor first had and obtained.

10. To pay monthly in advance to the Public Service Company of Colorado its charges for electric power required or to be furnished to the Lessee at the said premises, together with all proper costs of making such power available to the Lessee.

11. The Lessee hereby agrees and promises that on or before the 10th day of each calendar month after the date hereof, the Lessee will make, sign and deliver to the Lessor a written report, in duplicate, of the payroll for all operations under this agreement of lease upon the premises hereinabove described, for the preceding calendar month, on such forms as the Lessor and/or the State Compensation Insurance Fund shall direct from time to time; and the Lessee agrees and promises that each such report shall be in sufficient detail so that the actual payroll may be ascertained for all operations under this lease upon the demised premises during the preceding calendar month, including the Lessee's own time at Lessee's actual wages, but in any event at not less than the minimum rate of pay fixed from time to time by the State Compensation Insurance Fund or the Industrial Commission of Colorado for a Lessee, and including the payroll of his sublessees and employees, if any, and including the payroll on account of contractors and subcontractors and their employees, if any, so that from such report there may be ascertained the amount of premium payable by the Lessor to the State Compensation Insurance Fund or other insurance carrier for compensation insurance covering the Lessee, his employees and sublessees, if any, and all contractors and subcontractors, if any, and the employees thereof, for operations on the said premises under this lease.

The Lessee agrees hereby to pay to the Lessor the cost of such compensation insurance as may be carried by the Lessor on account of or for the Lessee and Lessee's sublessees and employees, if any, and on account of each contractor with the Lessee and subcontractor, if any, and the employees of each thereof, if any, because of any operations on the demised premises under this lease; and the Lessee agrees to pay the cost of such insurance to the Lessor in cash monthly installments payable on or before the 20th day of each calendar month during the life of this lease for the operations of the preceding calendar month; and the Lessee agrees further that the Lessor, at its option, may withhold and deduct each such monthly installment, and any unpaid monthly installments, if any, from sums otherwise payable to the Lessee upon ore settlements from operations under this lease, or from any other money due or owing or to become due in any fashion to the Lessee from the Lessor.

12. The Lessee agrees to pay to the Lessor and the Lessor reserves a royalty of sixteen (16) percent of the net proceeds from the sale of any ores produced by the Lessee. The "net proceeds" is agreed to be the net sale price of said ores less the cost of hauling the same to the Lessor's mill at Nederland, Colorado.

IT IS MUTUALLY AGREED By and between the Lessor and Lessee as follows:

(a) The Lessor agrees that as long as it has a market for ore, it will maintain what it considers a fair schedule of prices for tungsten ore produced from properties owned or leased by it. The Lessor shall have the right to purchase and the Lessee agrees to sell to the Lessor, all ore produced by the Lessee from the leased premises. The sale price of such ores to be the schedule of prices posted by the Lessor.

(b) It is further mutually understood and agreed that in the event the Lessee delivers to the Lessor shipments or lots of ore of a value less than $100.00 per lot, that the Lessee shall pay to the Lessor the cost of milling such ore and the cost of sampling the same.

(c) It is further mutually understood and agreed that in the event the Lessee fails to pay the royalty herein reserved, or fails to pay compensation insurance premiums, the Lessor shall have the right to terminate this lease immediately and without notice to the Lessee. In the event of the violation of any other term, provision or condition of this lease by the Lessee, the Lessor shall have the right to terminate this lease upon giving thirty (30) days written notice to the Lessee. In the event the Lessee corrects any such defaults within thirty (30) days, said lease shall not be terminated. In the event any default shall not be corrected at the end of said thirty-day period, then said lease shall be terminated as of the end of said thirty-day period. Said notice shall be given in writing, addressed to the Lessee at 7802 Reno Drive, Arvada, Colorado.

(d) The title to any ores broken or mined on said leased premises at the termination of this lease, shall be the property of the Lessor, and it shall not be liable for the payment to the Lessee for the same before any costs or expenses of breaking or mining said ore.

IN WITNESS WHEREOF, The Lessor has caused its name to be hereunto subscribed by its President and attested by its Secretary and its seal affixed hereunto, and the Lessee has hereunto set their hands and seals the day and year first above written.

HETZER MINES, INC.,

BY: [signature]
President.

ATTEST:

[signature]
Secretary

DOCKET
Surname:

Chapman
Martin
Holliday
Nelson
Chambers
Selfridge
Zimmer
Wittendorf

JUN - 6 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House Building
Denver 2, Colorado

Re: Docket No. DMEA 3546 - Tungsten
Mosch and Mosch
Big Cameron mine
Boulder County, Colorado

Dear Mr. Traver:

Enclosed are the original and five copies of a proposed contract for an exploration program by the above-referenced applicant, signed by the Administrator for the Government, together with Exhibit "A" (1 page), Annex 1 (1 page), and 2 maps.

If any part of the proposed contract does not have your approval or that of the applicant and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

We do not have in this office a copy of the basic lease but we have a copy of an amendment to same. Before the contract is executed, the basic lease should be examined, either by our legal staff or your local counsel, whichever would be more expeditious.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (J.H.B.)

Enclosures

APPROVED:

J. H. Hedges (J.H.B.)
Member, Bureau of Mines

Thor H. Kiilsgaard (J.H.B.)
Member, Geological Survey

cc: Docket
Oper. Committee
Adm. Reading File
Field Team, Reg. 3
Code 400
Thor Kiilsgaard, USGS
Robt. Holliday, USBM

TLChapman/ls
6/2/55

R.H.

400

May 19, 1955

MEMORANDUM

To: Acting Assistant Solicitor, Defense Minerals

From: Chief, Iron and Ferro-Alloys Division, DMEA

Subject: Review and preparation of exploration contract
Docket No. DMEA 354 - Tungsten
Nasch and Nasch
Big Cameron Mine
Boulder County, Colorado

Transmitted herewith is a rough draft of a proposed contract for your use in preparing the final draft.

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

Attachment

cc to: Docket
Code 400

TLChapman:foc
5-19-55

MF-200A
(Revised June 1954)

Docket No. DMEA 3546

Commodity Tungsten

Contract No. Idm-E

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT[1]
(Short Form)

It is agreed this ..... day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Hans Mosch and Alvin Mosch

.....

.....

....., whose mailing address is Arvada, Colorado

....., hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200A), the attached Exhibit "A," Annex I, and .....

.....

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Colorado, County of Boulder, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] lessee of [5] all mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] lease and assignment, [7] recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: .....

.....

.....

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.), are attached, as follows: .....

.....

.....

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 7, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 7(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of tungsten ore The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before January 1, 1956 (unless the Operator's obligation to complete the work is terminated—see Article 8) shall complete the work.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—A fixed cost for each unit of work to be performed (per foot of drifting, per foot of drilling, per hour of operations, etc.) is hereby agreed upon, and is set forth in Exhibit "A" in connection with the estimated total cost of the project in the sum of $8,280.00 The Government will contribute 75 percent of the fixed unit costs as work is performed, in a total sum not in excess of $6,210.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 6(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work

performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records or accounts.

ARTICLE 7. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 6) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 8. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 8 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 9. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 10. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 11. *Changes and added provisions.*—

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

.....
(Operator)

By .....

By .....

.....

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—70618-1

EXPLORATION PROJECT CONTRACT
MOSCH AND MOSCH
DOCKET NO. DMEA 3546

ANNEX I

The land referred to in Article 2 of the Contract is as follows:

Big Cameron, U. S. Survey No. 19559; Fraction, U. S. Survey No. 19979; and the Jack, U. S. Survey No. 19346, all held by U. S. Patent. These claims are located in section 7, T. 1 S., R. 72 W., 6th P. M. Boulder County, Colorado.

The Metger Mines, Inc., gave a lease dated July 10, 1954, on the above noted mining claims, to Hans Mosch, M. F. Brown and Alvin Mosch, all of Arvada, Colorado. On March 22, 1955, M. F. Brown made an assignment of his interest therein to Hans Mosch and Alvin Mosch.

We do not have copy of the lease or Owner's Consent to Lien.

EXPLORATION PROJECT CONTRACT
MOSCH AND MOSCH
DOCKET NO. DMEA 3546

EXHIBIT "A"

The maps attached to and made a part of this contract are as follows:

Fig. 1. Map showing location of the property in the District.

Fig. 2. Map showing proposed work and location of Cameron shaft in relation to Cameron and Steel Plate No. 1, claims.

1. Sink the present 2 compartment shaft from the 54 foot level, a distance of 60 feet to the 114 foot level. The shaft to be not less than 4 feet by 8 feet in the clear of timber.

2. Drift from the shaft 152 feet south-westerly on the 104 foot level along the Steel Plate vein. This drift not to be less than 4 feet by 6½ feet in cross-section. All mineralized zones are to be sampled and assayed.

Estimated Cost of the Project

Fixed Unit Costs

Sink two compartment shaft 60 feet at $68.00 per foot	$4,080.00
Drift 152 feet at $27.00 per foot	4,104.00
Assay approximately 24 samples for WO_3 at $4.00	96.00
Total estimated cost of project	$8,280.00
Government participation at 75 percent	$6,210.00

3546

May 11, 1955

Memorandum

To: W. S. Martin, Room 3538

From: R. W. Holliday

Subject: Review of Supplemental Report of Field Team, recommending approval of application.

Since this application was recommended for approval when it included the west 300 feet of the adjacent Steel Plate, it is again recommended for approval even though the Government already holds a lien on production from the Steel Plate. The reason for this recommendation is that a DMEA loan of $12,000 will materially improve the chance of collecting some $90,000 still due on a previous loan (DMEA 1447). It is because of this previous loan that the Government holds the lien on the west 300 feet of the Steel Plate but repayment of that loan is contingent on production and the present applicants hold a lease entitling them to mine both east and west from the Cameron shaft.

R. W. Holliday

RWHolliday/kwh

400

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

224 New Customhouse
Denver 2, Colorado

April 22, 1955

WJM

Memorandum

To: Secretary to the Operating Committee

From: Field Team, Region III

Subject: Report of Examination and Supplemental Report, Docket DMEA-3546 (Tungsten), Mosch & Mosch, Big Cameron Mine, Boulder County, Colorado

Enclosed are the original and two copies of the report pertaining to the above application. One copy of the original report of examination was forwarded to you January 26, 1955 and an extra copy of the supplemental report is attached herewith to accompany that copy of the original report.

Because of the elimination of the western 300 feet of the Steel Plate claim from the proposed exploration project, the southwesterly exploration is not considered to be warranted, and we recommend denial of the application.

W. M. Traver

Enclosures

W. M. Traver

for D R Macharen
E. N. Harshman
DMEA Field Team, Region III

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

REFERRED TO: DATE 4/27

1.
2.
3. 400
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: I believe you have this docket.

Latha: this is now being carried as being your case, cy of F. T. rpt. was sent to your div. on 1/28/55 & I have sent O. C. the 3 that came in this morn.

Check (X) before the items needing attention.

GPO 16—63815-1

ROBERT E. ADAMS
Initials of sender.

DMEA
Date Rec'd.
APR 22 1955
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region III

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado

April 18, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw

From: R. L. Bolmer

Subject: DMEA Docket 3546 (Tungsten), Moesh and Moesh, Big Cameron mine, Boulder County, Colo. - Supplemental report of examination

The Big Cameron shaft is on the common end line of the Big Cameron and Steel Plate No. 1 claims. The previous examination report on the subject docket recommended deepening this shaft by 50 feet and drifting in both directions from the shaft on the Steel Plate vein. The drifting recommended northeasterly from the shaft would be on the Steel Plate No. 1 claim.

Although exploration of the vein in both directions from the shaft was recommended, there was evidence that its exploration northeasterly on the Steel Plate claim was the more promising. Inasmuch as the DMEA will not release the western 300 feet of the Steel Plate No. 1 claim from its subordination under Contract Ida-254, the exploration potential of the previously recommended project is reduced by more than fifty percent.

The southwesterly exploration of the vein on the Big Cameron claim alone is not considered of sufficient merit to justify the previously recommended project. The denial of the applicant's request for exploration assistance, therefore, is recommended.

R. L. Bolmer

R. L. Bolmer
Mining Engineer

RLB/mh

cc: 8 w/orig

IN REPLY REFER TO:
DMEA
Date Rec'd.

APR 13 1955

BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

April 12, 1955

Memorandum

To: Field Team, Region III

From: E. N. Hershman

Subject: DMEA Docket 3546 (tungsten), Mesch and Mesch, Big Cameron mine, Boulder County, Colorado

Enclosed are the original and 8 copies of a memorandum by D. H. McLaren, U. S. Geological Survey, covering his recommendations on the subject application for exploration assistance.

McLaren concludes that the loss of the western 300 feet of the Steel Plate claim has adversely affected the chances of making a significant discovery and recommends that the application for exploration assistance be denied.

I concur with this recommendation.

E. N. Hershman

E. N. Hershman
Member, Field Team

Enclosures (9)

EHershman:arh

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

April 11, 1955

Memorandum

To: E. N. Harshman

From: D. R. MacLaren

Subject: DMEA Docket 3546 (tungsten), Mosch and Mosch, Big Cameron Mine, Boulder County, Colorado

In a letter dated March 22, 1955, the subject applicants have requested that the program outlined in the original application for DMEA assistance be revised to provide for sinking the Big Cameron shaft 100 feet and drifting 300 feet southeast from the bottom of the shaft. Accompanying the letter was a notarized agreement and assignment whereby Mac Brown, one of the original applicant-partners relinquished all his interest in the operation and assigned his rights in the leases concerned to Hans and Alvin Mosch.

The original geologic report led to the following conclusions: "... that the chance of making a discovery of tungsten ore containing at least 1,000 units of WO_3 is promising. However, due to lack of exploration and adequate information in the immediate area, it is concluded that 100 feet of shaft sinking and 300 feet of drifting as requested by the applicants, is excessive." It was recommended that approval be given to deepen the shaft 50 feet and to drift a total of 200 feet from the bottom of the shaft. The relative amount of drifting in each direction was left to be determined as work progressed.

The meager evidence upon which these conclusions and recommendations were based, suggested that the most likely target area extended from 35 or 40 feet southwest of the Big Dunsmuir shaft, to about 155 or 160 feet northeast of the shaft. With the west 300 feet of the Steel Plate claim excluded from the exploration area, this favorable zone is reduced to a length of 60 to 65 feet. On the surface the Steel Plate vein can be traced for only about 250 feet to the southwest, then it dies out. The bottom of the Big Dunsmuir shaft and the floor of the existing drift are in gneiss and schist, much less favorable host rocks for the ore than the overlying aplite and granite. Although the operators have shipped 18,157 pounds of sorted ore containing 1,165.14 pounds of WO_3 from a small stope above the drift southwest of the shaft, no ore was found in the drift floor or in the breast of the drift. 6.42% WO_3

6 ft, 25 cm?

It is concluded that the chance of finding an ore body in the gneiss or schist below the existing level and southwest from the shaft is poor, and that if such a body exists, it will contain no more than 200 to 300 units of WO_3. Therefore, it is recommended that the exploration be denied.

D.R. Macdonald
D. R. Macdonald

DRMacdonald

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

MAY 31 1955.

Memorandum

To: The Administrator, DMEA
Attention: W. S. Martin

WSM

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-3546 (Tungsten) Mosch and Mosch
Boulder County, Colorado

As requested in Mr. Martin's memorandum dated May 19 we have prepared the attached contract.

The docket contains a copy of an amendment to the lease but not the basic lease, and a copy of the basic lease should be examined before the contract is executed.

either by our legal staff here or by Counsel in the Field

The Consent to Lien of the lessor, Hetzer Mines, Inc., is required to be attached to the contract prior to execution.

WSM 6/2/55

The map "Figure 3 - Plan and Section of Big Cameron Mine . . .," has also been identified as "Figure 2." The latter identification should be marked out on the map as the contract recites the prior identification. The maps, Figures 1 and 3, should be attached prior to execution.

Henry C. Rubin
H. C. Rubin
For J. L. Hofflund
Acting Assistant Solicitor,
Defense Minerals

Attachment

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

MAY 31 1955.

Memorandum

To: The Administrator, DMEA
Attention: W. S. Martin

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-3546 (Tungsten) Mosch and Mosch
Boulder County, Colorado

As requested in Mr. Martin's memorandum dated May 19 we have prepared the attached contract.

The docket contains a copy of an amendment to the lease but not the basic lease, and a copy of the basic lease should be examined before the contract is executed.

The Consent to Lien of the lessor, Hetzer Mines, Inc., is required to be attached to the contract prior to execution.

The map "Figure 3 - Plan and Section of Big Cameron Mine . . .," has also been identified as "Figure 2." The latter identification should be marked out on the map as the contract recites the prior identification. The maps, Figures 1 and 3, should be attached prior to execution.

/s/ H. C. Rubin
For J. L. Hofflund
Acting Assistant Solicitor,
Defense Minerals

Attachment

HCRubin:gjb 5/31/55
Copy to: DMEA Docket
Sol. Docket
W. S. Martin (2)
J. L. Hofflund
H. C. Rubin
Chron. File

Docket

IN REPLY REFER TO:

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

Department of the Interior
Defense Minerals Administration
RECEIVED
MAY 13 1955

May 11, 1955

Re: DMEA-3546
Mosch and Mosch
Big Cameron Mine
Boulder Co., Colo.
Tungsten

WSM

Copy returned 200

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Supplemental Report of Field Team, recommending denial of application

In my memorandum of May 5th, 1955, I failed to mention that stoping above the southwest drift has yielded 18,157 pounds of sorted ore containing 1,165.14 pounds (58.25 units) of WO_3. This is in addition to the 31 units recovered from 310 tons of material excavated in sinking the shaft and drifting. No figures are given as to the amount of material broken in the stoping, but it may be assumed the grade was well above the average, 0.1%, for the material excavated in sinking the shaft and driving the drift.

Probably this ore was stoped near the point sampled by the Bureau of Mines engineer. The sample, taken across 24 inches, assayed 1.52% WO_3. The Field Team report does not say whether or not the stope was producing at the time of the recent examination.

In sinking the 50± New Steel Plate shaft, 163.7 pounds (8.18 short ton units) of WO_3 were recovered. Probably 100± tons of material was handled ($\frac{4 \times 7 \times 50}{13}$) giving an average of approximately .0818% WO_3. We are not told what the vein looked like at the shaft bottom. The Big Cameron shaft and drift appears to have averaged 0.1% and the fact that ore of better grade has been stoped does not change the average for the block between and near the two shafts. If stoping is continuing and there are other indicated pockets of good grade the average may rise. Otherwise the grade for the block of ground between and near the Big Cameron and New Steel Plate shafts would seem to be about 0.1% and there is no reason for thinking it will be better below the 50 foot horizon if, as stated, the change in wall rocks is an unfavorable factor.

The Field Team has good reasons for changing its opinion of the block of ground in question and the denial recommendation looks to be in order, but another inspection is recommended.

N. E. Nelson

N. E. Nelson

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 13 1955

May 11, 1955

Memorandum

Dmea - 3546

WSM

To: W. S. Martin, Room 3538

From: R. W. Holliday

Subject: Review of Supplemental Report of Field Team, recommending approval of application.

Since this application was recommended for approval when it included the west 300 feet of the adjacent Steel Plate, it is again recommended for approval even though the Government already holds a lien on production from the Steel Plate. The reason for this recommendation is that a DMEA loan of $12,000 will materially improve the chance of collecting some $90,000 still due on a previous loan (DMEA 1447). It is because of this previous loan that the Government holds the lien on the west 300 feet of the Steel Plate but repayment of that loan is contingent on production and the present applicants hold a lease entitling them to mine both east and west from the Cameron shaft.

R W Holliday

R. W. Holliday

May 11, 1955

Memorandum

To: W. S. Martin, Room 3538

From: R. W. Holliday

Subject: Review of Supplemental Report of Field Team, recommending approval of application.

Since this application was recommended for approval when it included the west 300 feet of the adjacent Steel Plate, it is again recommended for approval even though the Government already holds a lien on production from the Steel Plate. The reason for this recommendation is that a DMEA loan of $12,000 will materially improve the chance of collecting some $90,000 still due on a previous loan (DMEA 1447). It is because of this previous loan that the Government holds the lien on the west 300 feet of the Steel Plate but repayment of that loan is contingent on production and the present applicants hold a lease entitling them to mine both east and west from the Cameron shaft.

R. W. Holliday

RWHolliday/kwh

IN REPLY REFER TO:

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

Defense Minerals Administration
RECEIVED
MAY 6 1955

May 5, 1955

Re: DMEA-3546
Mosch and Mosch
Big Cameron Mine
Boulder Co., Colo.
Tungsten

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Supplemental Report of Field Team, recommending denial of application

This recommendation for denial is timely. If 310 tons of excavated material produced 31 short ton units of WO_3 the material averaged 0.1% WO_3. Such material is hardly commercial when mined from a narrow vein.

I concur with this recommendation of the Field Team.

Compare Page 6 of Balmer's report
WSM

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

MAY 6 - 1955

May 5, 1955

Re: DMEA-3546
Mosch and Mosch
Big Cameron Mine
Boulder Co., Colo.
Tungsten

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Supplemental Report of Field Team, recommending denial of application

This recommendation for denial is timely. If 310 tons of excavated material produced 31 short ton units of WO_3 the material averaged 0.1% WO_3. Such material is hardly commercial when mined from a narrow vein.

I concur with this recommendation of the Field Team.

N. E. Nelson

N. E. Nelson

NENelson:hlm
G-5/5/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
R. W. Holliday, 3513 Interior

Docket

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

224 New Customhouse
Denver 2, Colorado

April 22, 1955

Memorandum

To: Secretary to the Operating Committee

From: Field Team, Region III

Subject: Report of Examination and Supplemental Report, Docket DMEA-3546 (Tungsten), Mosch & Mosch, Big Cameron Mine, Boulder County, Colorado

Enclosed are the original and two copies of the report pertaining to the above application. One copy of the original report of examination was forwarded to you January 26, 1955 and an extra copy of the supplemental report is attached herewith to acoompany that copy of the original report.

Because of the elimination of the western 300 feet of the Steel Plate claim from the proposed exploration project, the southwesterly exploration is not considered to be warranted, and we recommend denial of the application.

W. M. Traver

Enclosures

W. M. Traver

for D R Macharen
E. N. Harshman
DMEA Field Team, Region III

5-2-55
(date)

DMEA
Date Rec'd.

APR 20 1955

BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region III

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado

April 18, 1955

TRANSMITTED

APR 22 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw

From: R. L. Bolmer

Subject: DMEA Docket 3546 (Tungsten), Mosch and Mosch, Big Cameron mine, Boulder County, Colo. - Supplemental report of examination

The Big Cameron shaft is on the common end line of the Big Cameron and Steel Plate No. 1 claims. The previous examination report on the subject docket recommended deepening this shaft by 50 feet and drifting in both directions from the shaft on the Steel Plate vein. The drifting recommended northeasterly from the shaft would be on the Steel Plate No. 1 claim.

Although exploration of the vein in both directions from the shaft was recommended, there was evidence that its exploration northeasterly on the Steel Plate claim was the more promising. Inasmuch as the DMEA will not release the western 300 feet of the Steel Plate No. 1 claim from its subordination under Contract Ism-894, the exploration potential of the previously recommended project is reduced by more than fifty percent.

The southwesterly exploration of the vein on the Big Cameron claim alone is not considered of sufficient merit to justify the previously recommended project. The denial of the applicant's request for exploration assistance, therefore, is recommended.

R. L. Bolmer

R. L. Bolmer
Mining Engineer

RLB/mh

cc: 8 w/orig

Reviewed by
DMEA OPERATING COMMITTEE
5-2-55
(date)

IN REPLY REFER TO:
DMEA
Date Rec'd.
APR 13 1955
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

April 12, 1955

TRANSMITTED
APR 22 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3546 (tungsten), Mosch and Mosch, Big Cameron mine, Boulder County, Colorado

Enclosed are the original and 8 copies of a memorandum by D. R. MacLaren, U. S. Geological Survey, covering his recommendations on the subject application for exploration assistance.

MacLaren concludes that the loss of the western 300 feet of the Steel Plate claim has adversely affected the chance of making a significant discovery and recommends that the application for exploration assistance be denied.

I concur with this recommendation.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (9)

ENHarshman:arh

5-2-55

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

April 11, 1955

Memorandum

To: E. N. Harshman

From: D. R. MacLaren

Subject: DMEA Docket 3546 (tungsten), Mosch and Mosch, Big Cameron mine, Boulder County, Colorado

In a letter dated March 22, 1955, the subject applicants have requested that the program outlined in the original application for DMEA assistance be revised to provide for sinking the Big Cameron shaft 100 feet and drifting 300 feet southwest from the bottom of the shaft. Accompanying the letter was a notarized agreement and assignment whereby Mac Brown, one of the original applicant-partners relinquished all his interest in the operation and assigned his rights in the leases concerned to Hans and Alvin Mosch.

The original geologic report led to the following conclusions: "... that the chance of making a discovery of tungsten ore containing at least 1,000 units of WO_3 is promising. However, due to lack of exploration and adequate information in the immediate area, it is concluded that 100 feet of shaft sinking and 300 feet of drifting as requested by the applicants, is excessive." It was recommended that approval be given to deepen the shaft 50 feet and to drift a total of 200 feet from the bottom of the shaft. The relative amount of drifting in each direction was left to be determined as work progressed.

5-2-55

The meager evidence upon which these conclusions and recommendations were based, suggested that the most likely target area extended from 35 or 40 feet southwest of the Big Cameron shaft, to about 155 or 160 feet northeast of the shaft. With the west 300 feet of the Steel Plate claim excluded from the exploration area, this favorable zone is reduced to a length of 60 to 65 feet. On the surface the Steel Plate vein can be traced for only about 250 feet to the southwest, then it dies out. The bottom of the Big Cameron shaft and the floor of the existing drift are in gneiss and schist, much less favorable host rocks for the ore than the overlying aplite and granite. Although the operators have shipped 18,157 pounds of sorted ore containing 1,165.14 pounds of WO_3 from a small stope above the drift southwest of the shaft, no ore was found in the drift floor or in the breast of the drift.

It is concluded that the chance of finding an ore body in the gneiss or schist below the existing level and southwest from the shaft is poor, and that if such a body exists, it will contain no more than 200 to 300 units of WO_3. Therefore, it is recommended that the application be denied.

D R MacLaren
D. R. MacLaren

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region III

224 New Customhouse
Denver, 2, Colorado

January 13, 1955

Memorandum

To: DMEA Field Team, Region IV

From: Superintendent, Denver Experiment Station

Subject: Report of Examination, DMEA Docket 3546 (Tungsten), Brown, Mosch & Mosch, Big Cameron Mine, Boulder County, Colorado.

Enclosed are nine copies of the engineering report of examination on the subject docket.

The applicant requested $16,150.00 to explore the Steel Plate vein by sinking the Big Cameron shaft 100 feet and drifting 300 feet on the vein.

The engineer examiner recommends a modified program of exploration which is agreeable to the applicants. This work to consist of sinking the shaft 50 feet and drifting 200 feet at a total estimated cost of $9,870.00. We concur in this recommendation.

W. H. King

W. H. King

Enclosures

5-2-55

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
December 9, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

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

Subject: DMEA 3546 (Tungsten) Brown, Mosch, and Mosch (Big Cameron mine) Boulder County, Colorado

Enclosed are the original and eight copies of the "Summary, Conclusions, and Recommendations," by R. L. Bolmer, Bureau of Mines, and D. R. Maclaren, Geological Survey, and of Bolmer's engineering report on the above docket.

Bolmer concludes the Steel Plate vein is strong, well defined, and is in a favorable area. Some production has been made where it occurs in less receptive host rocks, and there is a possibility, as indicated by surface outcrops, of its entering a more favorable host rock formation. In this event, it could conceivably make a significant body of tungsten ore. A unit-cost, short-form contract appears applicable and such is recommended including 50 feet of shaft sinking after shaft repair to establish a level at 104 feet below the collar of the shaft from which 200 feet of drifting will be considered, subject to Region IV Field Team written authorization. The total cost is estimated as $9,870.00--Government participation 75 percent, or $7,402.50.

I concur with the conclusions and recommendations with the same comments applying in this case as those made on Docket 3502, Fraction lode. Bolmer suggests that you may consider the Big Jack claim, belonging to Metzer Mines, Inc., of sufficient importance to the recommended project to warrant its incorporation in the property subordinated.

The brochure furnished with your memorandum of October 22, 1954, instructing that we make a field examination and prepare a suitable report, is also enclosed.

W. M. Traver

W. M. Traver

enclosures

cc 8
DMEA 3546
DMEA Chron

5-2-55

WMT/pah

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

November 29, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3546, Big Cameron Mine, Boulder County, Colorado

Enclosed are 9 copies of a geologic report by D. R. MacLaren of the U. S. Geological Survey covering the above docket.

The applicants, Mac Brown, Hans Mosch, and Alvin Mosch, propose to explore the Steel Plate vein by deepening the present 53 feet shaft an additional 100 feet and drifting 300 feet west on the vein. The proposed program is similar to that presented in a prior application (DMEA Docket 2100) and approved with some modification in Contract Idm-E292. This contract was subsequently terminated before the start of work.

The program is designed to explore the western end of the Steel Plate vein which to the east has been productive to a depth of 100 feet. MacLaren concludes that the chances of discovering significant amounts of tungsten ore by exploration on the Big Cameron and Steel Plate No. 1 claims is good. However, he believes that the known geologic facts do not warrant the amount of exploration requested by the applicants and he recommends a somewhat reduced program consisting of 50 feet of shaft sinking and 200 feet of drifting.

I concur in MacLaren's recommendations.

E. N. Hauchman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

Reviewed by
DMEA CONTRACT COMMITTEE
5-2-55
(date)

U.S. DEPT. OF INTERIOR
Minerals Exploration
RECEIVED
APR 28 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3546, Brown, Mosch, and Mosch

Big Cameron mine

Boulder County, Colorado

Tungsten

R. L. Bolmer, Mining Engineer
Bureau of Mines

D. R. MacLaren, Geologist
Geological Survey

November 30, 1954

Reviewed by
DMEA OPERATING COMMITTEE
5-2-55
(Date)

DMEA 3546

BROWN, MOSCH, AND MOSCH
BIG CAMERON MINE
BOULDER COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By R. L. Bolmer
Mining Engineer
Bureau of Mines

D. R. MacLaren
Geologist
Geological Survey

5-2-55

DMEA 3546

BROWN, MOSCH, AND MOSCH
BIG CAMERON MINE
BOULDER COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By R. L. Bolmer and D. R. MacLaren

Mac Brown, Hans Mosch, and Alvin Mosch made application for Government assistance to explore the Big Cameron mine in Boulder County, Colorado, for tungsten (DMEA Docket 3546). The applicants proposed to deepen the shallow Big Cameron shaft by 100 feet and to drift 300 feet on the Steel Plate vein at the new depth. They estimated the total cost of the proposed project as $16,150.00.

The Steel Plate vein is a strong and well defined structure occurring within a highly productive area of the Boulder tungsten district. The vein itself has had a small production of tungsten from shallow workings along its outcrop but is relatively unexplored in the vicinity of the Big Cameron shaft.

It was concluded that the vein did warrant certain exploration and that the chances of discovering significant reserves of tungsten by means of such exploration appeared promising. It was further concluded that the deposit, the applicants themselves, and the property leased by them, upon which the exploration would be performed, otherwise appeared to meet the various requirements for Government aid in an exploration project.

The older workings on the Steel Plate vein are caved and inaccessible and the structure presently is exposed only in the 54-foot Big Cameron shaft and along a short level off the bottom of that shaft. The amount of exploration proposed for the vein was considered too extensive on the basis of its present exposures.

A modified project, involving only 50 feet of shaft sinking and 200 feet of drifting on the vein and estimated to cost only $9,870.00--Government participation $7,402.50--was recommended for approval.

BIG CAMERON MINE

BOULDER COUNTY, COLORADO

DMEA DOCKET 3546

Geologic Report

By D. R. MacLaren
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
5-2-55
(date)

BIG CAMERON MINE
BOULDER COUNTY, COLORADO

INTRODUCTION

Partners Mac Brown, Hans Mosch, and Alvin Mosch of Nederland, Colorado, have applied to the Defense Minerals Exploration Administration for assistance to explore for tungsten on the Big Cameron and Steel Plate claims near Nederland, Boulder County, Colorado. The applicants propose to explore the western part of the Steel Plate vein by deepening the Cameron shaft, now 53 feet deep, another 100 feet and drifting 300 feet west from the shaft. They estimate the cost of this proposal to be $16,500, of which the Government's share will be 75% or $12,112.50.

The claims are about two miles north of Nederland, Colorado, on the east flank of Hurricane Hill in sec. 7, T. 1 S., R. 72 W., 6th P. M., and are accessible throughout most of the year over fair gravel roads. An examination was made November 3, 1954, in the company of R. L. Bolmer of the U. S. Bureau of Mines and the partners. It was found that the proposed work is essentially the same as that in DMEA Docket 2100, which was approved with modifications and for which Contract Idm-E292 was prepared and signed April 16, 1952. The shaft that was to have been deepened under Contract Idm-E292 caved and Brown's partners, at that time A. F. Eccker and Roy Munroe, left the district. Therefore the contract was terminated before any work was performed. Brown has now entered another partnership with Hans and Alvin Mosch and they have sunk a new shaft to a depth of 53 feet on the Steel Plate vein about 64 feet southwest of the former shaft and have drifted 37 feet southwest from the bottom of the shaft.

Reviewed by
DMEA OPERATING COMMITTEE
5-2-55
(date)

It is concluded that the chance of making a significant discovery of tungsten ore on the Steel Plate vein is promising but that the amount of work proposed is excessive. A reduced program to allow 50 feet of shaft sinking and 200 feet of drifting was suggested to the applicants and was acceptable to them. It is recommended that a reduced program, the estimated cost of which is given in the Engineer's Report, be approved.

GEOLOGY

The geology of the Boulder Tungsten District is described in U. S. Geological Survey Professional Paper 245 by Lovering and Tweto (1953), and of the Steel Plate - Big Cameron claims in the Geologic Report, DMEA Docket 2100 by Ogden Tweto.

The Steel Plate vein is one of the numerous tungsten veins in the highly productive area on the east flank of Hurricane Hill. It is a relatively long vein that strikes N. 55° E. and dips 60° to 85° NW between walls of granite, aplite, pegmatite and gneiss. It has been worked mostly near the eastern end in the area south of the Cold Spring mine where it has been moderately productive from several shafts, tunnels, and trenches. The ore occurs as small bodies locallized where the vein cuts dikes of aplite. Near the western end the vein has been virtually unexplored.

Near the west end of the Steel Plate No. 1 claim (figure 3) an old shaft on the Steel Plate vein, now caved, is said to have produced tungsten ore valued at $5,000 to $6,000 in 1917 and 1918. This shaft, reported to be 40 to 50 feet deep, was abandoned when the price of tungsten fell in 1918, and later caved. About 65 feet southwest of the old shaft is the Steel Plate shaft. This shaft is now caved but in 1951 it was open and was examined by Ogden Tweto (DMEA Docket 2100). The vein in the

shaft strikes N. 57° E. and dips 73° NW. It is almost indistinguishable to a depth of about 10 feet but below that depth the vein, 8 to 24 inches wide, is well defined in a sheeted and locally silicified aplite and granite seamed with veinlets, nodules, and small pods of ferberite. The shaft is in what appears to be an irregular dike of aplite and, in places, granite. At a depth of about 20 feet there is a small patch of gneiss (partly assimilated schist) which grades into the bordering granite. Ferberite was found continuously in the shaft from the surface to the bottom, at a depth of about 50 feet, mostly in the narrow and harder part of the vein along the west side. At one place nodules were found in soft, altered, oxidized rock along the east side of the shaft.

The Big Cameron shaft, which the applicants propose to deepen, is about 64 feet southwest of the Steel Plate shaft, and is on the Big Cameron claim. This shaft has been sunk vertically to a depth of about 53 feet. From the bottom of the shaft a drift has been driven 37 feet southwest along the vein which has the same strike as in the Steel Plate shaft, N. 57° E., but the dip is steeper, being 85° NW to vertical. Throughout most of the shaft the wall rock is aplite and granite, but just above and on the level it is gneiss. The vein maintains the sheeted character noted in the Steel Plate shaft, but in the gneiss it is much more weathered and stained by iron oxides than in the aplite or granite. Also in the gneiss nodules and small streaks of ferberite are much less abundant than in the other rocks. Two samples taken from the drift by the Bureau of Mines examiner, one at the breast and the other at 27 feet from the shaft, assayed .01% and 1.52% WO_3.

In addition to the ore valued between $5,000 and $6,000 reported as produced from the old caved shaft, Tweto reports two small shipments

of sorted ore from the Steel Plate shaft, one of 762 pounds averaging 11.7% WO_3, the other of 2,485 pounds averaging 3.0% WO_3. The applicants report three shipments of hand sorted ore from the Big Cameron shaft and level, the first of 8,000 pounds averaging 3.2% WO_3, the second of 1,180 pounds averaging 14% WO_3, and the third of 1,165 pounds averaging 18.6% WO_3.

CONCLUSIONS AND RECOMMENDATIONS

The eastern portion of the Steel Plate vein has been moderately productive to a depth of about 100 feet. The western end has been virtually unexplored, but where the vein is exposed in three shafts and one short drift it has an average width of 18 inches. It is in sheeted and well silicified aplite, granite, and gneiss, containing veinlets, nodules, and small pods of ferberite. Material from the shafts and the drift indicates that the vein has an average grade of .80% WO_3 over a length of 190 feet and to a depth of 50 feet. The ferberite content is less when the vein is in gneiss than when it is in aplite or granite. It is concluded that the chance of making a discovery of tungsten ore containing at least 1,000 units WO_3 is promising. However, due to lack of exploration and adequate information in the immediate area, it is concluded that 100 feet of shaft sinking and 300 feet of drifting, as requested by the applicants, is excessive. A reduced program was discussed with the applicants and is acceptable to them.

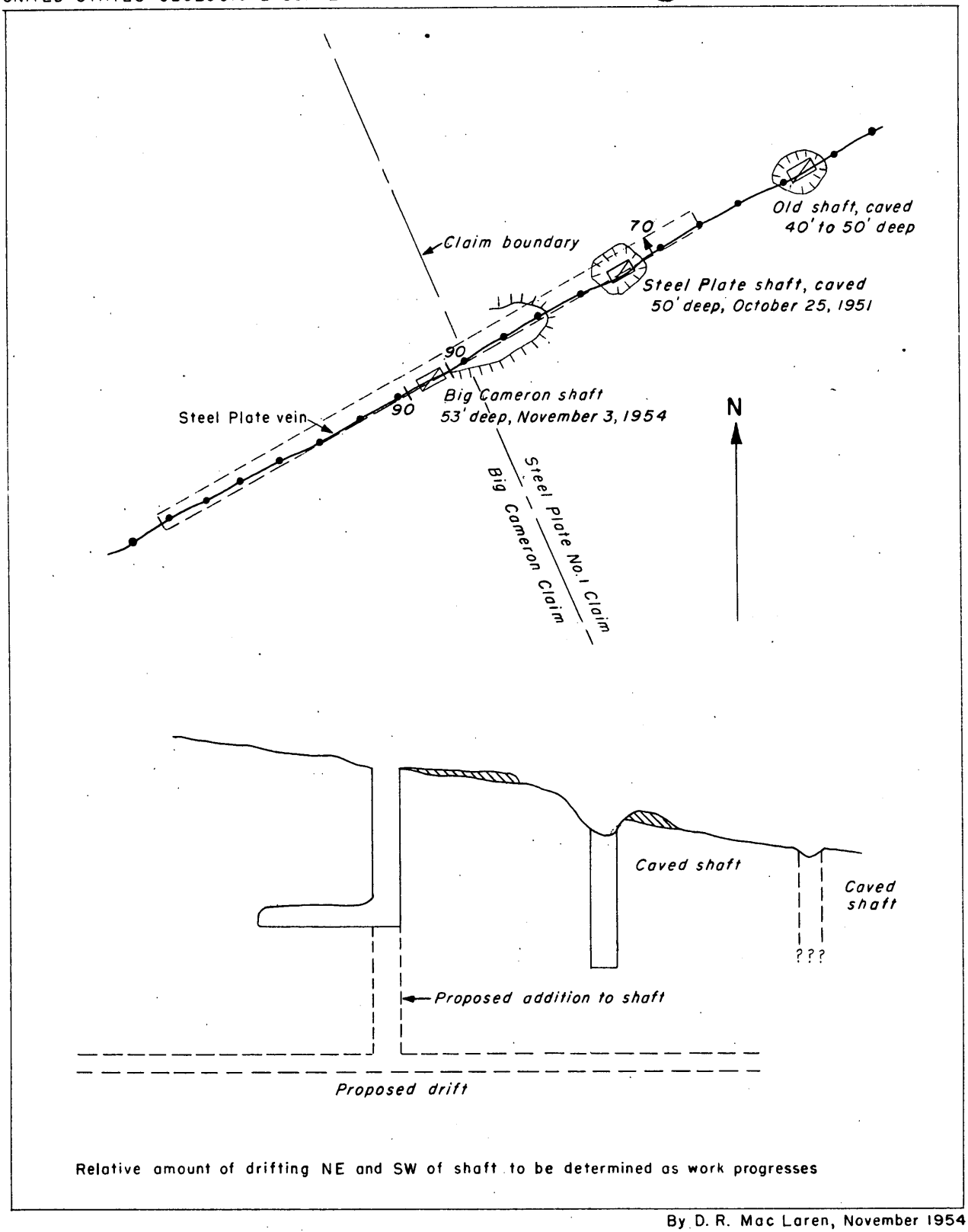
It is recommended that a program to deepen the Big Cameron shaft 50 feet and to drift 200 feet from the bottom of the shaft or the bottom of the ore, whichever comes first, be approved. The relative

amount of drifting northeast and southwest will have to be determined as the work progresses.

REFERENCES

Lovering, T. S., and Tweto, Ogden (1953) Geology and ore deposits of the Boulder County tungsten district, Colorado. U. S. Geol. Survey Prof. Paper 245, 1953, pp. 199.

Tweto, Ogden, Geologic Report, DMEA Docket 2100



By D. R. Mac Laren, November 1954

FIGURE 3--PLAN AND SECTION SHOWING EXISTING AND PROPOSED WORKINGS, BIG CAMERON MINE, BOULDER COUNTY, COLORADO

50 25 0 50 Feet

DMEA 3546

BROWN, MOSCH, AND MOSCH
BIG CAMERON MINE
BOULDER COUNTY, COLORADO

Engineering Report

By R. L. Bolmer
Mining Engineer
Bureau of Mines

5-2-55

DMEA 3546

BROWN, MOSCH, AND MOSCH
BIG CAMERON MINE
BOULDER COUNTY, COLORADO

CONTENTS

Engineering Report — Page

Introduction 1
Location 2
History and production 3
Ownership and extent 4
Description of the deposit 5
Mineable ore reserves 6
Present status 7
  Exploration and development 7
  Mining and milling equipment and other facilities 7
Project proposals, with costs 9
Proposed financing 11
Conclusions 11
Recommendations 12

ILLUSTRATIONS

Figure — Follows page

1. Location map, Big Cameron mine, Boulder County, Colorado 2
2. Claim map, Big Cameron mine, Boulder County, Colorado 4
3. Plan and section, Big Cameron mine, Boulder County, Colorado 7

TABLES

1. Estimated costs of exploration project recommended at Big Cameron mine, Boulder County, Colorado 12

DMEA OPERATING COMMITTEE
5-2-55
(date)

DMEA 3546

BROWN, MOSCH, AND MOSCH
BIG CAMERON MINE
BOULDER COUNTY, COLORADO

ENGINEERING REPORT

By R. L. Bolmer

INTRODUCTION

Mac Brown, Hans Mosch, and Alvin Mosch, a partnership of Nederland, Colorado, made application for aid in an exploration project, pursuant to DMEA Order 1, under the Defense Production Act of 1950, as amended. The applicant partners are lessees of a group of four adjacent mining claims located within the Boulder County tungsten district, Colorado. They propose to explore the Steel Plate vein, which outcrops on portions of the Big Cameron and Steel Plate No. 1 claims, for tungsten. The specific project proposed by the applicants involves deepening the shallow Big Cameron shaft by 100 feet and drifting a total of 300 feet on the Steel Plate vein at the new depth. The applicants estimate the total cost of the proposed project as $16,150.00

The current proposal is substantially the same as was proposed in an earlier application for aid in an exploration project at this property (Ecker, Brown, and Munroe, Docket No. DMA 2100) and as was authorized under Exploration Project Contract Idm-E292. The contract later was rescinded due to the failure of the operator to commence work within the period provided.

Mac Brown of the present partnership is the M. F. Brown of the former contract. The former partnership was dissolved before any contract work could be performed. Brown recently formed a new partnership with Hans and Alvin Mosch. In the interim, the Steel Plate shaft, which was

to be deepened under the former contract, had caved. Rather than rehabilitate the former shaft, the partners began a new shaft on the vein some 75 feet southwest of the former location and just inside the end line of the Big Cameron claim. It is the new shaft on the Big Cameron claim that the present applicants propose to deepen.

The new application, dated July 26, 1954, has been assigned Docket No. DMEA 3546. When the application first was submitted, the partners were lessees of only the Big Cameron claim. The application, therefore, was returned with the suggestion that certain adjacent property be secured. The partners subsequently leased the Fraction, Jack, and the western 300 feet of the Steel Plate No. 1 claims and resubmitted their application.

A field examination and suitable report on the property and the new application has been requested by the DMEA Field Team, Region IV. The property was examined November 3, 1954, with D. R. MacLaren of the Geological Survey and in the company of the applicants. This report is based on that examination and on a review of the earlier examination reports on the property by Ogden Tweto of the Geological Survey and F. D. Everett of the Bureau of Mines (Docket No. DMA 2100). Much of the data in these earlier reports are unchanged and will not be repeated.

LOCATION

The property under lease by the applicants is located in the E1/2 sec. 7, T. 1 S., R. 72 W., sixth principal meridian (Grand Island mining district) Boulder County, Colorado. The claims are located on the eastern flank of Hurricane Hill, a productive area in the central portion of the Boulder County tungsten district (fig. 1) at an elevation of about 8,550 feet above sea level. The mine is about 2 miles northeast

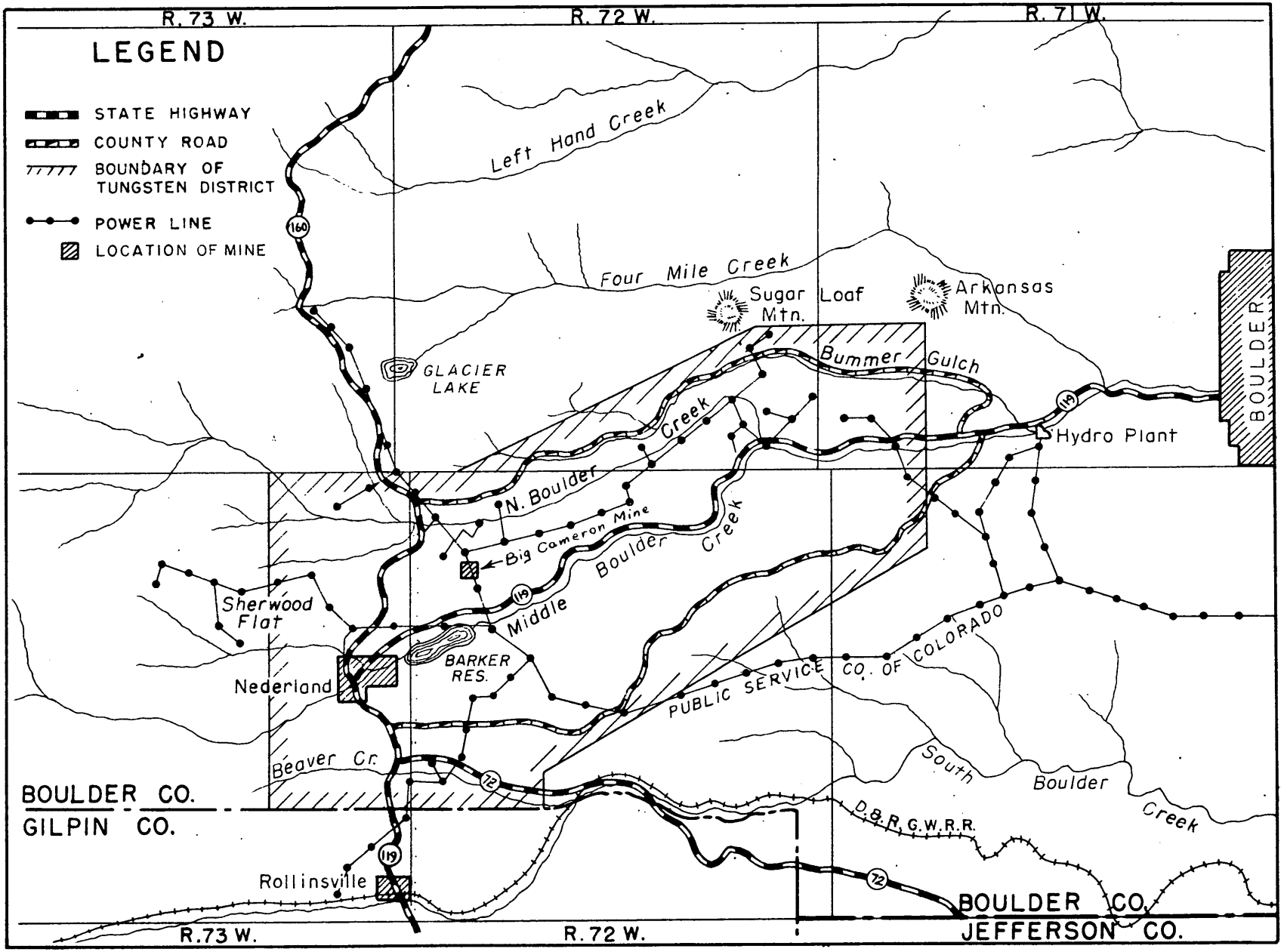


FIGURE 1 - LOCATION MAP, BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

of Nederland, Colorado, via State Highway 160 and a graveled county road. It is accessible throughout the year. Electric power is not available on the property but the transmission lines of the Public Service Company of Colorado do pass within 600 feet of the Big Cameron shaft. Water, other than that made in the underground workings, is not available on the property. Some of the timber on the property is suitable for mining purposes. The nearest custom tungsten mill is located in Nederland.

HISTORY AND PRODUCTION

The total production from the Steel Plate No. 1 claim, through 1953, is reported as 115 short ton units of tungsten trioxide. This total includes some 11 units which were produced by Ecker, Brown, and Munroe in sinking a 50-foot shaft on the Steel Plate vein near the western end of the claim during 1951. The remainder, estimated in value at between $5,000 and $6,000, reportedly was produced prior to World War I from a shallow shaft on the vein located some 70 feet to the northeast.

Early in 1954, the present applicants began sinking on the vein some 75 feet to the southwest and just inside the end line of the Big Cameron claim. On the date of inspection, the shaft had been sunk to a depth of 54 feet below the surface, at which point a drift had been driven 37 feet southwesterly on the vein. The applicants report that the following lots of hand-sorted ore, originating from this work, have been marketed:

8,000 pounds of 3.2 percent WO_3
1,180 pounds of 14.0 percent WO_3
1,165 pounds of 18.6 percent WO_3

In addition, some 500 pounds of sorted ore, probably averaging 3 percent WO_3, were stockpiled on the surface at the time of the inspection.

OWNERSHIP AND EXTENT

Hetzer Mines, Inc., 403 Interstate Trust Building, Denver, Colorado, is the owner and lessor, and the applicants are the lessees of the following patented mining property:

Big Cameron lode mining claim	U.S. Survey No. 19559
Fraction lode mining claim	U.S. Survey No. 19972
Jack lode mining claim	U.S. Survey No. 18346
West 300 feet of Steel Plate No. 1 lode mining claim	U.S. Survey No. 19632

The relative locations of the above claims are indicated on figure 2. The Steel Plate vein outcrops southwesterly along the length of the No. 1 claim and extends onto the eastern end of the Big Cameron claim. The extension of the vein farther southwesterly on the Big Cameron claim is inferred, however; its outcrop in this direction is obscured by overburden. The exploration proposed by the applicants will occur within 200 feet of either side of the common end lines of the two claims.

The applicants' lease on the above property, dated July 10, 1954, is for a period of 3 years and provides for a royalty payment to the lessor of 16 percent of the net proceeds from the sale of any ore produced by the lessees.

It is understood that Hetzer Mines is willing to subordinate its interest in the property to those of the Government as set forth in the usual exploration contract.

Heretofore, the entire Steel Plate No. 1 claim has been leased to Cold Spring Tungsten, Inc., and it is listed in that operator's property rights under Exploration Project Contract Idm-E54. There is no record of

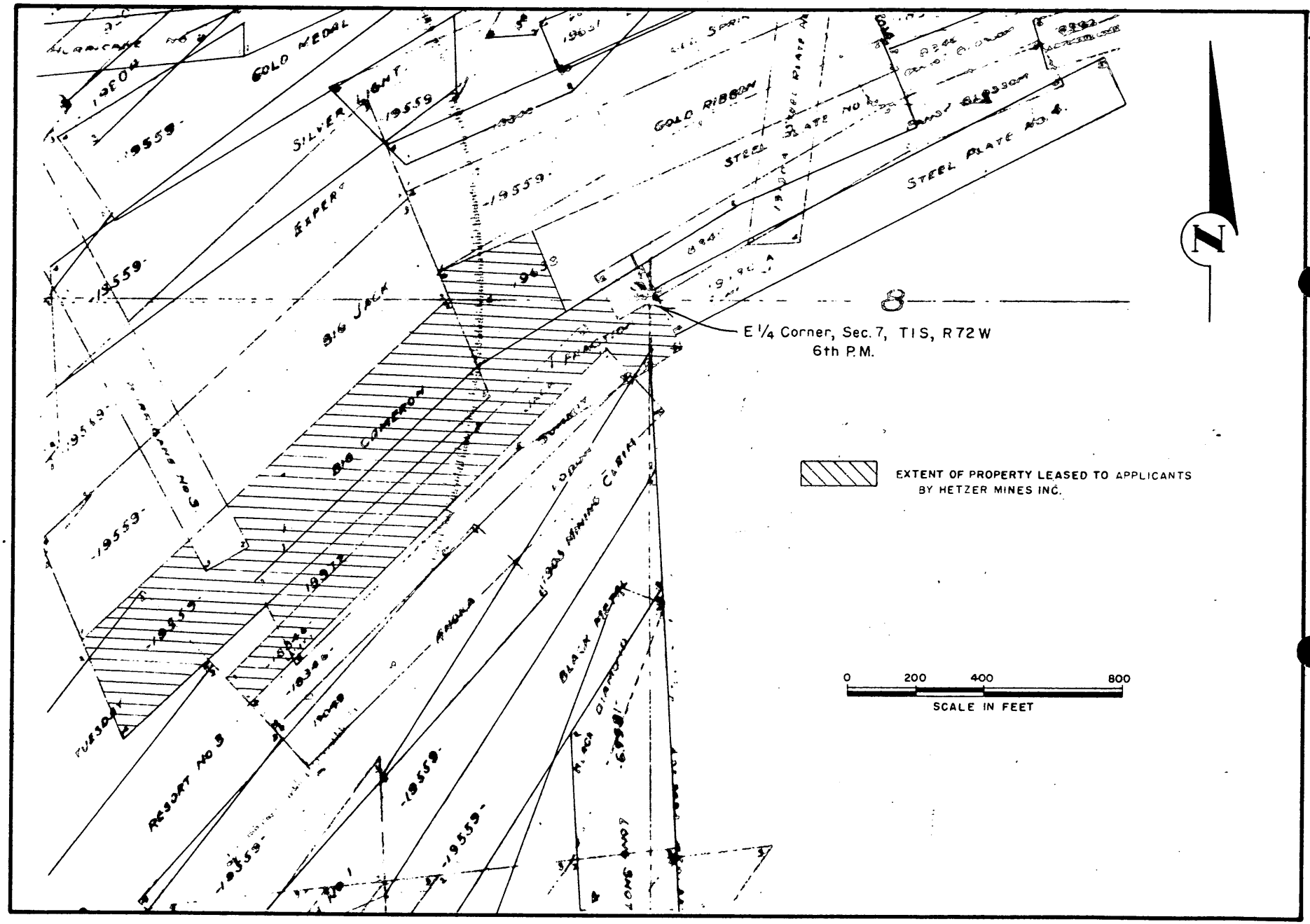


FIGURE 2.- CLAIM MAP, BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

a release of the western 300 feet of the claim by that operator to the present applicants. The ore bodies discovered under Contract Idm-E54, in part, extend only onto the eastern sections of this claim. The release of its western 300 feet, for inclusion under a new contract, therefore, would not effect the Government's interest.

The Government may consider the Big Jack claim, U. S. Survey No. 19559, which lies immediately north of the Big Cameron claim and which also is owned by Hetzer Mines, Inc., as pertinent to the exploration project proposal by the applicants.

DESCRIPTION OF THE DEPOSIT

The Steel Plate vein and its development on the No. 1 claim has been described in the examination reports prepared for DMA Docket No. 2100.

The upper portions of the new Big Cameron shaft has been lagged off and the vein in this section could not be observed. It is understood that most of the production by the present applicants came from this section. The vein exposed in the lower sections of the shaft and southwesterly from the shaft along the 54-foot level is a well defined, nearly vertical fissure zone occurring mostly in schist and gneiss. It consists of between 18 and 24 inches of brecciated and altered wall rock, vein quartz, gouge, and, along certain sections, contains the tungsten mineral ferberite ($FeWO_4$). The vein in the breast of the southwest heading contained no visible ferberite and assayed only 0.01 percent WO_3 over a width of 18 inches. The vein midway along the level contained ferberite mineralization for widths of up to 6 inches along its north wall and assayed 1.52 percent WO_3 across a width of 24 inches.

MINEABLE ORE RESERVES

The ore shoot encountered in the Big Cameron shaft, as indicated by the mineralization exposed along its lower level, appears to extend for some 25 feet west of the shaft. To date, the applicants have excavated about 310 tons of material in their sinking and drifting operations, from which they reportedly have recovered some 31 short ton units of WO_3. Assuming the reported production is correct, the rock excavated appears to have averaged about 1 percent WO_3 over development widths approaching 5 feet. The vein for some 25 feet west of the shaft and to a depth of the lower level, therefore, is indicated as containing some 500 short ton units of WO_3 (250 tons of 2 percent ore over a mining width of 30 inches). Similar reserves are inferred for a block of ground occurring immediately east of this shaft.

The sinking of the Steel Plate shaft to a depth of 50 feet by the former applicants, reportedly resulted in a production of 11.2 units of WO_3 and indicates an average grade of ore in that shoot of about 0.6 percent WO_3 over similar development widths. The vein for some 25 feet on either side of the Steel Plate shaft and to a depth of 50 feet below the surface, therefore, is indicated to contain additional reserves of about 600 short ton units of WO_3.

The reserves estimated above, if upgraded by screening and hand sorting to between 2.5 and 3 percent WO_3, would have a market value at the local custom mills of about $30.00 per unit.

The Steel Plate vein in this area is relatively unexplored, especially to any appreciable depth. Ore shoots in the district more commonly occur within crystalline rocks such as granite, pegmatite, and aplite. Such rocks outcrop in the vicinity of the Big Cameron shaft and may be encountered by exploration laterally and with greater depth. If

so, the chances of encountering significant additional reserves, through the proposed project, appear promising.

PRESENT STATUS

Exploration and Development

The existing development of the Steel Plate vein on the western sections of the No. 1 claim and the eastern sections of the Big Cameron claim is indicated on figure 3. The vein is relatively unexplored in this area.

The Big Cameron shaft, which the applicants propose to deepen, is nearly vertical. It was sunk on the vein to a cross section of about 5 by 9 feet. The shaft is two-compartment, timbered, and partially lagged to the 54-foot level. No ground support has been employed along the level. The level is within a soft schist, which eventually will require at least partial timber support.

The manway compartment of the shaft is not in a safe operating condition. It needs to be lagged off from the hoisting compartment and will require some additional lagging on the other three walls. The existing ladders require repair or replacement and should be staggered. There are no platforms in the compartment. The needed repairs to the manway should be completed before any attempt is made to deepen the shaft.

The workings to their present depth are dry and the shaft has not been extended below the 54-foot level to provide for a sump.

Mining and Milling Equipment and Other Facilities

The short access road to the surface plant at the collar of the Big Cameron shaft is adequate for exploration purposes. The applicants

TABLE I.--Estimated costs of exploration project recommended at Big Cameron mine, Boulder County, Colorado

Items of Cost	Total Costs	Distributed Costs: Shaft repair	Shaft sinking	Drifting	Sampling
Labor and Supervision					
2 miners, 1 surfaceman at $14.00 per shift each	$5,418.00	$126.00	$2,520.00	$2,772.00	---
Operating Materials and Supplies					
Timber	525.00	75.00	250.00	200.00	
Explosives	825.00		275.00	550.00	
Pipe	130.00*		30.00*	100.00*	
Track	200.00*			200.00*	
Drill steel, bits	285.00		85.00	200.00	
Gasoline, oil, grease	378.00	8.00	175.00	195.00	
Small tools	262.50	2.50	60.00	200.00	
Other miscellaneous supplies	262.50	2.50	60.00	200.00	
	$2,868.00	$ 88.00	$ 935.00	$1,845.00	---
Operating Equipment					
Depreciation of owned equipment at $55.00 per month	272.00	6.00	128.00	138.00	
Rental (air hoist at $60.00 per month)	296.00	6.00	140.00	150.00	
Purchase (rock drill, air leg)	570.00*		214.00*	356.00*	
	$1,138.00	$ 12.00	$ 482.00	$ 644.00	
Miscellaneous					
Taxes, insurance	$ 271.00	$ 6.00	$ 126.00	$ 139.00	
Repairs to equipment	263.00	3.00	60.00	200.00	
Analyses of samples	150.00	--	--	--	$150.00
	$ 684.00	$ 9.00	$ 186.00	$ 339.00	$150.00
Contingencies					
± 2 percent of above costs to cover unforeseen expenses	212.00	5.00	79.00	128.00	---
Total estimated cost	$10,320.00	$240.00	$4,202.00	$5,728.00	$150.00
Less salvage value of items indicated by asterisk above:	-450.00	---	-122.00	-328.00	---
Net total estimated cost	$ 9,870.00	$240.00	$4,080.00	$5,400.00	$150.00
Government participation	$ 7,402.50				

	Shaft repair	Shaft sinking	Drifting	Sampling
Units to be completed	Complete job	60 feet	200 feet	25 assays
Net unit cost	$240/job	$68.00/foot	$27.00/foot	$6.00/assay

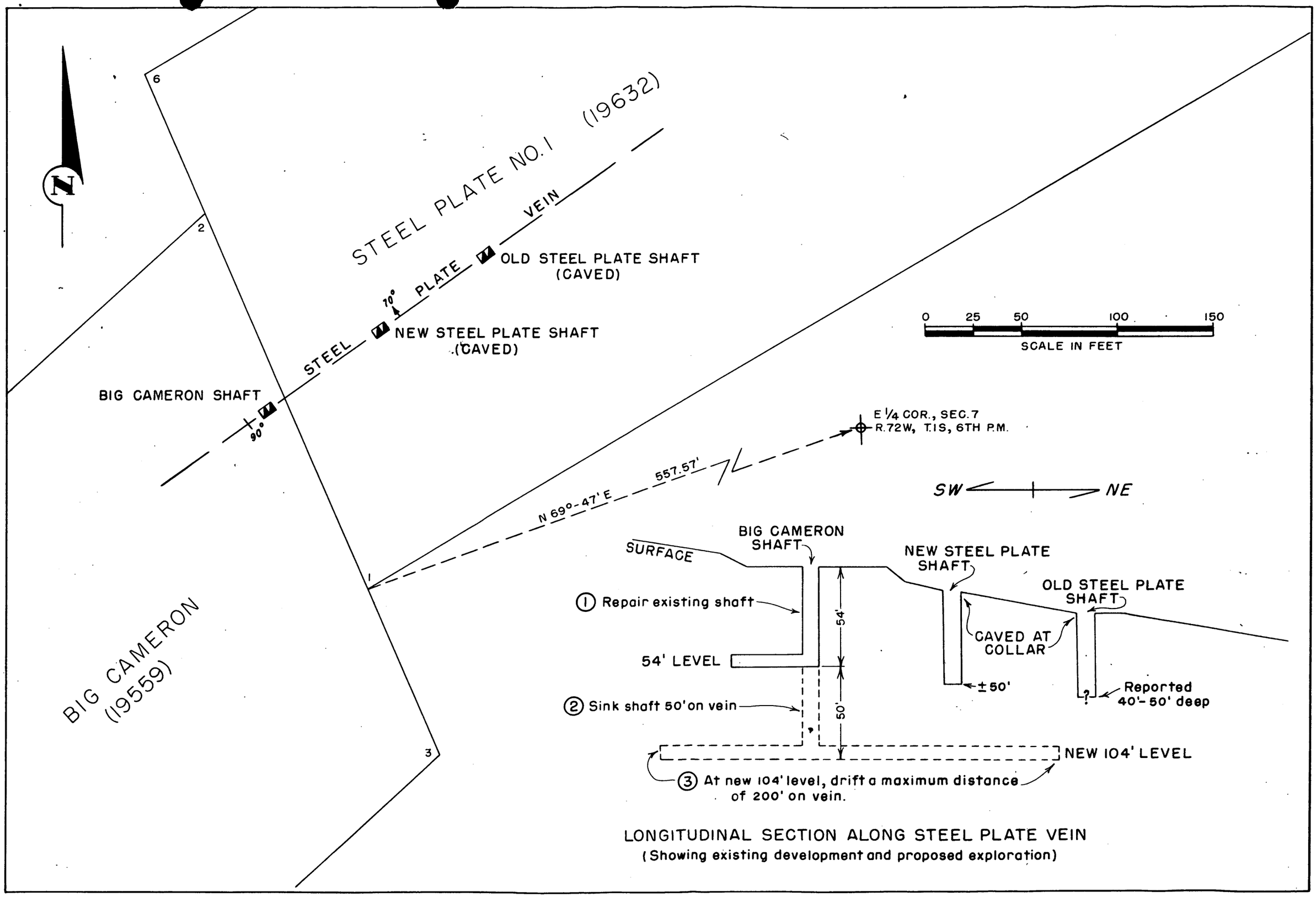


FIGURE 3-PLAN AND SECTION OF BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

have constructed a suitable shelter building near the collar of the shaft which houses their compressor and also serves a repair shop and warehouse for their operation. The Big Cameron shaft is provided with a 20-foot, wooden, A-type headframe equipped with a sheave wheel and dumping plate. Hoisting is performed by means of a shaft bucket and a single drum, compressed air tugger.

Most of the mining equipment observed on the property during the inspection was old and second-hand but in general appeared to be in satisfactory operating condition. It is understood that the equipment observed on the property (itemized below with its estimated value) will be employed in the proposed project work. Except for a new rock drill, which was being used on a trial basis, and a tugger hoist, which was rented with an option to purchase, the equipment listed below reportedly is owned outright by the applicants:

Description	Estimated Value
Sullivan WG6, 9-inch by 8-inch air compressor, belt driven by a Buda, 140 hp, 6 cylinder gasoline engine	$2,500.00
3- by 7-foot steel air receiver	250.00
Gardner-Denver single drum air hoist with 150 feet of 1/2-inch wire rope (rented for $60.00 per month with option to purchase for $750.00)	---
1/2-ton capacity hoisting bucket	50.00
2 16-cubic feet, end dump mine cars; 1 bucket dolly	250.00
Atlas RH656 rock drill and pneumatic leg, complete with hoses, oiler, etc. (used on trial with option to purchase for about $570.00)	--

40-gallon steel water pressure tank	$ 50.00
Forge, steel sharpener, other shop and hand tools	200.00
Total estimated value of owned equipment	$3,300.00

Depreciation of the above-owned equipment at the standard monthly rate of 1/60 of its estimated value, or $55.00 per month, is included in the engineering cost estimate for the proposed project. The rental of the air hoist at $60.00 per month and the purchase of the rock drill for $570.00 less salvage also are included in the cost estimate.

PROJECT PROPOSALS, WITH COSTS

The applicants propose to deepen the Big Cameron shaft 100 feet and to drift 300 feet westerly on the vein at the new depth or possibly at intermediate levels if conditions encountered warrant. They estimate the total cost of such work at $16,150.00.

The work proposed by the applicants is considered too extensive on the basis of the showings exposed at present. The matter was discussed with the applicants and they were agreeable to a modified project involving the following work which is being recommended for approval in this report:

	Estimated Cost (See Table I for details)
1. Repair manway in the existing 54-foot depth of the Big Cameron shaft (install new ladders, platforms, compartment dividers, lagging where needed) (Complete job at $240.00)	$ 240.00
2. Sink the existing Big Cameron shaft an additional 50 feet on the Steel Plate vein to a new depth of 104 feet below its present collar (a two-compartment, fully timbered shaft with a cross section of 4-	

by 8-foot inside timber is the minimum recommended)	
(50 feet of sinking at $68.00 per foot)	$3,400.00
3. Drift a maximum of 200 feet on the Steel Plate vein along the new 104-foot level of the Big Cameron shaft. (Drifts are to be driven 7 by 4 feet in the clear and timbered as needed and may be extended in either or both directions from the shaft as conditions encountered determine)	
(200 feet of drifting at $27.00 per foot)	5,400.00
4. If water should be encountered in the work allowed in 2 and 3 above, deepen shaft up to a maximum of 10 feet below the new 104-foot level to provide for a sump.	
(Up to 10 feet of sinking at $68.00 per foot)	680.00
5. Sample and analyse any mineral occurrences encountered along the vein exposed by work provided in 2 and 3 above (25 assays at $6.00 each)	150.00
Total estimated cost of recommended project	$9,870.00
Government participation--75 percent	$7,402.50

The location of the recommended work is indicated on figure 3.

The three applicant partners intend to perform the project work themselves, each at a daily wage rate of $14.00. This rate is equivalent to approximately $1.60 per hour including overtime payment for the sixth 8-hour shift worked per week and is about standard for the district. Two underground employees and one surfaceman are the minimum labor force considered necessary for the proposed work.

The estimated time for completion of the recommended project is as follows:

Operation	Estimated time for completion
Shaft repair	3 shifts or approximately 0.1 month
60 feet of shaft sinking	60 shifts or approximately 2.3 months
200 feet of drifting	66 shifts or approximately 2.5 months
Total	129 shifts or approximately 5 months

Project work can be started immediately.

PROPOSED FINANCING

The applicants have no cash reserves but propose to finance their share of the cost of the project principally through the use of their own equipment and by performing all the project labor themselves.

CONCLUSIONS

The Steel Plate vein is a strong and well defined structure occurring within a highly productive area of the Boulder tungsten district. The vein itself has had a small production from shallow workings along its outcrop but is relatively unexplored in the vicinity of the Big Cameron shaft. The formation, in which the present development off the shaft occurs, is not too favorable a host rock for ore deposition but more favorable host rocks outcrop in the immediate vicinity. Should the vein enter such rocks, the chances of it making ore in significant quantities is considered promising. The deposit appears to meet the necessary general requirements for the Government assistance in its exploration.

Little is known of the applicants' ability or resources. The modified program recommended, however, is straight forward enough and not so excessive as to be beyond the applicants' apparent financial means. The work recommended is applicable to a short-form unit-cost type of contract.

RECOMMENDATIONS

The exploration project proposed by the applicants, with the limiting modifications and the estimated costs outlined in this report, is recommended for approval.

RLB/pah

DOCKET
Surname:
Martin
Selfridge
Brown
Whitaker

APR - 4 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 3546 - Tungsten
Mesch, Brown, and Mesch
Big Cameron Mine
Boulder County, Colorado

Dear Mr. Traver:

This will acknowledge receipt of your letter of March 25, 1955, concerning the subject application.

We agree that the application should be held active for at least 30 days from March 25, 1955. Incidentally, we see no reason for setting a specific time limit in this case, because, according to our files, your letter to the applicant of February 7, 1955, (giving the applicant only 30 days to advise you further) was superseded by your letter to him of February 10, 1955 (stating that the docket would be kept in line for further processing).

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Approved:

J. H. Hedges

Member, Bureau of Mines (JHH)

/s/ R. D. Trace

Member, Geological Survey (RDT)

cc: Docket
Code 400
Oper. Committee
Adm. Read. File
Thor Kiilsgaard, USGS
Robt. Holliday, USBM
Field Team, Region 3

WSMartin/ls
3/31/55

A.C.S.

DOCKET

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

224 New Customhouse
Denver 2, Colorado

March 28, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Mosch and Mosch, Big Cameron mine, Boulder County, Colorado

This has further reference to your letter of February 8, 1955 on the subject docket wherein you requested that we ascertain the applicant's reaction to confining the proposed exploration work to the Big Cameron claim.

Attached are two copies of the letter from the applicant partnership and two copies of an agreement and assignment from Mac Brown to Hans Mosch and Alvin Mosch.

The field examiners will be asked to prepare a supplemental report based on the proposal to confine all exploration work to the Big Cameron claim.

W. M. Traver

W. M. Traver

Enclosures

DMEA
Date Rec'd.

MAR 28 1955

BUREAU OF MINES
Denver, Colorado

Denver, Colorado
March 22, 1955

Dear Sirs: Re: DMEA-3546

We, Hans Mosch and Alvin Mosch, as partners with Mac Brown, accept from Mac Brown all his interests in The Big Cameron Lode Mining Claim, survey number 19559, Fraction Lode Mining Claim, U.S. survey number 18346 and the west 300 feet of the Steel Plate Number One Lode Mining Claim, U.S. survey number 19632.

We wish to continue with our DMEA assistance application and will accept the responsibilities of Mac Brown as invested in leasing the above mining claims. Our amended application should therefore be in a partnership consisting of Hans Mosch and Alvin Mosch.

We will perform the exploration work previously requested by the partnership of Mac Brown, Hans Mosch and Alvin Mosch.

Our intentions are to sink the Big Cameron shaft 100 feet and to drive a drift from the bottom of the vein 300 feet in a southwesterly direction on the Big Cameron vein.

We will not drift or sink on the west 300 feet of The Steel Plate Number One Lode Mining Claim.

Yours truly,

Alvin Mosch

Alvin Mosch

AGREEMENT AND ASSIGNMENT

For and in consideration of the sum of One ($1.00) Dollars, and other valuable considerations, I, MAC BROWN, of Arvada, Colorado, hereby do sell, assign, transfer, and convey unto HANS MOSCH and ALVIN MOSCH, also of Arvada, Colorado, all of my right, title, and interest, in and to a lease executed by Hetzer Mines, Inc., to Mac Brown, Hans Mosch and Alvin Mosch, on or about the 10th day of July, 1954, and amended September 29, 1954.

Said lease, as amended, covers the following claims:

The Big Cameron Lode Mining Claim, U. S. Survey Lot No. 19559;

Fraction Lode Mining Claim, U. S. Survey Lot No. 19972;

The Jack Lode Mining Claim, U. S. Survey No. 18346;

The West 300 feet of the Steel Plate No. 1 Lode Mining Claim, U. S. Survey No. 19632.

I further sell, assign, transfer and convey to the said Hans Mosch and Alvin Mosch, my entire right, title, and interest in and to the aforesaid claims, it being the intention of this instrument to vest the absolute title in and to said claims and interest in and to said lease, in the said Hans Mosch and Alvin Mosch.

TO HAVE AND TO HOLD unto the said Hans Mosch and Alvin Mosch, their heirs, successors, and assigns forever.

Witness my hand and seal this 22nd day of March, 1955.

Mac F. Brown

STATE OF COLORADO)
) ss.
COUNTY OF JEFFERSON)

The above and foregoing instrument was acknowledged before me this 25th day of March, 1955, by Mac Brown.
Witness my hand and official seal.
My commission expires February 24, 1959.

Lucille D. Lane
Notary Public

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

224 New Customhouse
Denver 2, Colorado

March 28, 1955

Memorandum

To: J. F. Shaw
E. N. Harshman

From: DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Mosch and Mosch, Big Cameron mine, Boulder County, Colorado

Attached is a copy of a letter from Alvin Mosch and a copy of the agreement and assignment from Mac Brown to Hans and Alvin Mosch.

Will you please prepare a supplemental report of examination based on the revised proposal to confine the exploration work to the Big Cameron claim.

The applicants state that since the time of the field examination three shipments of ore have been made from a stope above the 54 foot level, and that they are still mining ore from the property.

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

Enclosures

HMC:sr

cc Chairman Op. Comm. (2)
Connors
Harshman
Subject
Chron

Docket

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

224 New Customhouse
Denver 2, Colorado

March 25, 1955

Region 3 under delegated authority

Memorandum

To: Chairman, Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3546 (Tungsten), Mosch, Brown, and Mosch, Big Cameron Mine, Boulder County, Colorado

This is to inform your office that one of the applicants was in this office on March 22, at which time he stated that they were making an attempt to comply with our request of February 11, 1955.

We therefore recommend that the application be held active for at least 30 days from this date, pending receipt of this information.

W. M. Traver

W. M. Traver

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

FEB 14 1955

224 New Customhouse
Denver 2, Colorado

February 11, 1955

Memorandum

To: Chairman of the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3546 (Tungsten), Brown, Mosch and Mosch, Big Cameron Mine, Boulder County, Colorado

Enclosed is a copy of a letter to the applicants on the subject docket in accordance with your letter dated February 8, 1955.

We will advise you at a later date of the applicant's reaction to our letter.

W. M. Traver

Enclosure

W. M. Traver

224 New Customhouse
Denver 2, Colorado

February 11, 1955

Mac Brown
Hans Mosch
Alvin Mosch
Nederland, Colorado

Re: Docket DMEA-3546

Gentlemen:

Our Washington office advises that they would give consideration to an exploration project on the Big Cameron claim southwest of the Big Cameron shaft. The Steel Plate No. 1 claim is approximately 25 feet north and east of the Big Cameron shaft and has been subordinated to the Government under another DMEA project.

Would your partnership be interested in confining your exploration work on the vein southwest of the Big Cameron shaft? If so, will you please forward this office four copies of an amended application indicating the amount and kind of work you would choose to do in a southwesterly direction from the Big Cameron shaft.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:pw
cc: Harshman
Chairman Op.Comm. (2)
Shaw
Subject
Chron

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 14 1955

224 New Customhouse
Denver 2, Colorado

February 10, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3546 (Tungsten), Mosch, Brown, and Mosch, Big Cameron Mine, Boulder County, Colorado

Enclosed is a copy of a letter from Mac Brown, one of the partners in the subject application.

As soon as we are advised regarding your decision as to the subordination of the west 300 feet of Steel Plate No. 1, we will continue to process this application.

W. M. Traver

Enclosure

W. M. Traver

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 1 1955

224 New Customhouse
Denver 2, Colorado

February 10, 1955

Mr. Mac Brown
5672 Wadsworth Avenue
Arvada, Colorado

Re: Docket DMEA-3546

Dear Mr. Brown:

This will acknowledge receipt of your letter dated February 7, 1955 requesting that we disregard your letter of February 3, 1955 relative to the cancellation of your DMEA application for exploration aid on the Big Cameron Mine.

This docket will be kept in line for further processing.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer
DMEA Field Team, Region III

WMC:pw

cc: Shaw
Harshman
Connors
Subject
Chron
Chairman Op. Comm. (2)

Dmea

FEB 9 1955

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED

Arvada, Colo. Feb. 7 1955

DMEA 3546

U. S. Department of The Interior.
Bureau of Mines, Attn. Mr Connors,
Denver, Colo.
Re; Loan" Mac Brown, Hans Mosch & Al Mosch

Dear Sir:-

Please disregard my letter of February third relative cancellation of application for loan, and proceed with the processing.

Yours truly,

Mac Brown
5672 Wadsworth

Docket

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 14 1955

224 New Customhouse
Denver 2, Colorado

Corr'd Cont. 200

February 10, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3546 (Tungsten), Mosch, Brown, and Mosch, Big Cameron Mine, Boulder County, Colorado

Enclosed is a copy of a letter from Mac Brown, one of the partners in the subject application.

As soon as we are advised regarding your decision as to the subordination of the west 300 feet of Steel Plate No. 1, we will continue to process this application.

W. M. TRAVER

Enclosure

W. M. Traver

Docket

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

DEPARTMENT OF THE INTERIOR
Denver Library Service Center
DENVER
FEB 9 1955

224 New Customhouse
Denver 2, Colorado

February 7, 1955

Copy retained 400

Memorandum

WSM

To: Chairman, Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3546 (Tungsten), Mosch, Brown, and Mosch, Big Cameron mine, Boulder County, Colorado

Enclosed is a copy of a letter from Mac Brown, one of the partners in the subject docket, and a copy of our reply.

W. M. Traver

W. M. Traver

Enclosures

HMC;pw

224 New Customhouse
Denver 2, Colorado

February 7, 1955

Mr. Mac Brown
5672 Wadsworth Avenue
Arvada, Colorado

Re: Docket DMEA-3546

Dear Mr. Brown:

This will acknowledge receipt of your letter dated February 3, 1955 in which you request that the application for DMEA Exploration assistance on the Cameron Mine be cancelled in so far as you are concerned.

If we do not hear from you within thirty days, we will close this docket.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer
DMEA Field Team, Region III

WMC:pw

cc: Subject
Chron
Chairman Op.Comm. (2)
Shaw
Harshman
Connors

FEB 3 1955

Nederland, Colo. Feby 3 1955

U. S. Department of the Interior,
Bureau of Mines,
224 New Customhouse
Denver, Colo.

DMEA 3546

Dear Sir;-

You have pending an application for Government loan filed in the Partnership of" Mac Brown-Hans Mosch and Alvin Mosch" which I request be cancelled insofar as I am concerned.

I have terminated my business relations with these characters and will request Hetzer Mines re-issue a lease in my favor eliminating the two Mosch men. If successful in obtaining the lease I will continue the operation but with more efficient, honorable and inteligent men.

Sorry to have caused this unnecessary work but obstacles have arisen that cannot be tolerated.

Yours Truly,

Mac Brown

Mac Brown,
5672 Wadsworth Ave
Arvada, Colo.

400

DOCKET
Surname:
Chapman
Martin
Selfridge
Fehrman
Mittendorf

FEB 8 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 3546-Tungsten
Brown, Mosch and Mosch
Big Cameron Mine
Boulder County, Colorado

Dear Mr. Traver:

Reference is made to the above-docketed application for exploration assistance and our exchange of correspondence initiated by your letter of December 16, 1954, and resulting in your letter of January 26, 1955, with attached Field Team geologic and engineering reports.

" As Cold Spring Tungsten, Inc., is liable for royalties on any ores mined on the Steel Plate No. 1 claim, we see no advantage to the Government in transferring any part of this claim to another operator.

We will, however, consider an application for a small exploration project on the Big Cameron claim if Brown, Mosch and Mosch care to apply. The Big Cameron shaft is close to the end line of the same-named claim; and if ore should be mined from the Steel Plate No. 1 claim and extracted through the Big Cameron shaft, Cold Spring Tungsten, Inc., would then be liable to the Government for payment of the royalty, either directly or by the lessee.

We suggest that you ascertain the applicant's reaction to the foregoing. "

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (JHB)

Approved:

J. H. Hedges
Member, Bureau of Mines (JHB)

Thor H. Kiilsgaard
Member, Geological Survey (JHB)

cc: Docket
FT, Reg. 3
Code 400
Adm. Read. File
Oper. Committee
W. McInnis, USBM
T. Kiilsgaard, USGS

TLChapman/WSMartin/ls
2/7/55

R.C.h.

Docket

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

224 New Customhouse
Denver 2, Colorado

January 26, 1955

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3546, Contract Idm-E54, Brown, Mosch, & Mosch, Report of Examination

In compliance with your teletype request January 26,1955 enclosed is one copy of the subject Report of Examination, DMEA Docket No. 3546.

Additional Washington office copies will be transmitted in the regular manner.

W. M. Traver

W. M. Traver

Enclosure

RDB:pw

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

Mining Division
Region III

224 New Customhouse
Denver, 2, Colorado

January 13, 1955

Memorandum

To: DMEA Field Team, Region IV

From: Superintendent, Denver Experiment Station

Subject: Report of Examination, DMEA Docket 3546 (Tungsten), Brown, Mosch & Mosch, Big Cameron Mine, Boulder County, Colorado.

Enclosed are nine copies of the engineering report of examination on the subject docket.

The applicant requested $16,150.00 to explore the Steel Plate vein by sinking the Big Cameron shaft 100 feet and drifting 300 feet on the vein.

The engineer examiner recommends a modified program of exploration which is agreeable to the applicants. This work to consist of sinking the shaft 50 feet and drifting 200 feet at a total estimated cost of $9,870.00. We concur in this recommendation.

W. H. King

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

DEPARTMENT OF THE INTERIOR
Minerals Administration
RECEIVED
JAN 27 1955

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
December 9, 1954

Memorandum

To: Executive Officer, DMRA Field Team, Region IV

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

Subject: DMRA 3546 (Tungsten) Brown, Meech, and Meech (Big Cameron mine) Boulder County, Colorado

Enclosed are the original and eight copies of the "Summary, Conclusions, and Recommendations," by R. L. Balmer, Bureau of Mines, and N. R. Maclaren, Geological Survey, and of Balmer's engineering report on the above docket.

Balmer concludes the Steel Plate vein is strong, well defined, and is in a favorable area. Some production has been made where it occurs in less receptive host rocks, and there is a possibility, as indicated by surface outcrops, of its entering a more favorable host rock formation. In this event, it could conceivably make a significant body of tungsten ore. A unit-cost, short-form contract appears applicable and such is recommended including 50 feet of shaft sinking after shaft repair to establish a level at 104 feet below the collar of the shaft from which 200 feet of drifting will be considered, subject to Region IV Field Team written authorization. The total cost is estimated as $9,870.00--Government participation 75 percent, or $7,402.50.

I concur with the conclusions and recommendations with the same comments applying in this case as those made on Docket 3502, Fraction lode. Balmer suggests that you may consider the Big Jack claim, belonging to Metzner Mines, Inc., of sufficient importance to the recommended project to warrant its incorporation in the property subcontinued.

The brochure furnished with your memorandum of October 22, 1954, instructing that we make a field examination and prepare a suitable report, is also enclosed.

W. M. Traver

W. M. Traver

enclosures

cc 8
DMRA 3546
DMRA Chron

WMT/pah

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

November 29, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. N. Kaechmann

Subject: DMEA Docket 3546, Big Cameron Mine, Boulder County, Colorado

Enclosed are 9 copies of a geologic report by D. R. MacLaren of the U. S. Geological Survey covering the above docket.

The applicants, Mac Brown, Hans Mosch, and Alvin Mosch, propose to explore the Steel Plate vein by deepening the present 55 foot shaft an additional 100 feet and drifting 300 feet west on the vein. The proposed program is similar to that presented in a prior application (DMEA Docket 2100) and approved with some modification in Contract Idm-2252. This contract was subsequently terminated before the start of work.

The program is designed to explore the western end of the Steel Plate vein which to the east has been productive to a depth of 100 feet. MacLaren concludes that the chances of discovering significant amounts of tungsten ore by exploration on the Big Cameron and Steel Plate No. 1 claims is good. However, he believes that the known geologic facts do not warrant the amount of exploration requested by the applicants and he recommends a somewhat reduced program consisting of 50 feet of shaft sinking and 200 feet of drifting.

I concur in MacLaren's recommendations.

E. N. Kaechmann
for A. N. Kaechmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3146, Brown, Moech, and Moech

Big Chemron mine

Boulder County, Colorado

Tungsten

R. L. Bolmer, Mining Engineer
Bureau of Mines

D. H. Maclaren, Geologist
Geological Survey

November 30, 1954

DMEA 3546

BRONN, MEGGH, AND MEGGH
BIG CAMERON MINE
BOULDER COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By R. L. Palmer
Mining Engineer
Bureau of Mines

D. R. Macleren
Geologist
Geological Survey

DMEA 3546

BROWN, MOSCH, AND MOSCH
BIG CAMERON MINE
BOULDER COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By R. L. Balmer and D. R. Maclaren

Mae Brown, Hans Mosch, and Alvin Mosch made application for Government assistance to explore the Big Cameron mine in Boulder County, Colorado, for tungsten (DMEA Docket 3546). The applicants proposed to deepen the shallow Big Cameron shaft by 100 feet and to drift 300 feet on the Steel Plate vein at the new depth. They estimated the total cost of the proposed project as $16,150.00.

The Steel Plate vein is a strong and well defined structure occurring within a highly productive area of the Boulder tungsten district. The vein itself has had a small production of tungsten from shallow workings along its outcrop but is relatively unexplored in the vicinity of the Big Cameron shaft.

It was concluded that the vein did warrant certain exploration and that the chances of discovering significant reserves of tungsten by means of such exploration appeared promising. It was further concluded that the deposit, the applicants themselves, and the property leased by them, upon which the exploration would be performed, otherwise appeared to meet the various requirements for Government aid in an exploration project.

The older workings on the Steel Plate vein are caved and inaccessible and the structure presently is exposed only in the 54-foot Big Cameron shaft and along a short level off the bottom of that shaft. The amount of exploration proposed for the vein was considered too extensive on the basis of its present exposures.

A modified project, involving only 50 feet of shaft sinking and 200 feet of drifting on the vein and estimated to cost only $9,870.00--Government participation $7,402.50--was recommended for approval.

BIG CAMERON MINE

BOULDER COUNTY, COLORADO

DMEA DOCKET 3846

Geologic Report

By D. R. MacLaren
U. S. Geological Survey

BIG CAMERON MINE
BOULDER COUNTY, COLORADO

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

INTRODUCTION

Partners Mac Brown, Hans Noach, and Alvin Noach of Nederland, Colorado, have applied to the Defense Minerals Exploration Administration for assistance to explore for tungsten on the Big Cameron and Steel Plate claims near Nederland, Boulder County, Colorado. The applicants propose to explore the western part of the Steel Plate vein by deepening the Cameron shaft, now 53 feet deep, another 100 feet and drifting 300 feet west from the shaft. They estimate the cost of this proposal to be $16,500, of which the Government's share will be 75% or $12,112.50.

The claims are about two miles north of Nederland, Colorado, on the east flank of Hurricane Hill in sec. 7, T. 1 S., R. 72 W., 6th P. M., and are accessible throughout most of the year over fair gravel roads. An examination was made November 3, 1954, in the company of R. L. Boiner of the U. S. Bureau of Mines and the partners. It was found that the proposed work is essentially the same as that in DMEA Docket 2100, which was approved with modifications and for which Contract Idm-E292 was prepared and signed April 16, 1952. The shaft that was to have been deepened under Contract Idm-E292 caved and Brown's partners, at that time A. F. Ecker and Roy Munroe, left the district. Therefore the contract was terminated before any work was performed. Brown has now entered another partnership with Hans and Alvin Noach and they have sunk a new shaft to a depth of 53 feet on the Steel Plate vein about 64 feet southwest of the former shaft and have drifted 37 feet southwest from the bottom of the shaft.

It is concluded that the chance of making a significant discovery of tungsten ore on the Steel Plate vein is promising but that the amount of work proposed is excessive. A reduced program to allow 30 feet of shaft sinking and 200 feet of drifting was suggested to the applicants and was acceptable to them. It is recommended that a reduced program, the estimated cost of which is given in the Engineer's Report, be approved.

GEOLOGY

The geology of the Boulder Tungsten District is described in U. S. Geological Survey Professional Paper 243 by Lovering and Tweto (1953), and of the Steel Plate - Big Cameron claims in the Geologic Report, DMEA Docket 2100 by Ogden Tweto.

The Steel Plate vein is one of the numerous tungsten veins in the highly productive area on the east flank of Hurricane Hill. It is a relatively long vein that strikes N. 55° E. and dips 60° to 82° NW between walls of granite, aplite, pegmatite and gneiss. It has been worked mostly near the eastern end in the area south of the Cold Spring mine where it has been moderately productive from several shafts, tunnels, and trenches. The ore occurs as small bodies localized where the vein cuts dikes of aplite. Near the western end the vein has been virtually unexplored.

Near the west end of the Steel Plate No. 1 claim (figure 3) an old shaft on the Steel Plate vein, now caved, is said to have produced tungsten ore valued at $5,000 to $6,000 in 1917 and 1918. This shaft, reported to be 40 to 50 feet deep, was abandoned when the price of tungsten fell in 1918, and later caved. About 65 feet southwest of the old shaft is the Steel Plate shaft. This shaft is now caved but in 1951 it was open and was examined by Ogden Tweto (DMEA Docket 2100). The vein in the

shaft strikes N. 57° E. and dips 73° NW. It is almost indistinguishable to a depth of about 10 feet but below that depth the vein, 8 to 24 inches wide, is well defined in a sheared and locally silicified aplite and granite seamed with veinlets, nodules, and small pods of ferberite. The shaft is in what appears to be an irregular dike of aplite and, in places granite. At a depth of about 20 feet there is a small patch of gneiss (partly assimilated schist) which grades into the bordering granite. Ferberite was found continuously in the shaft from the surface to the bottom, at a depth of about 50 feet, mostly in the narrow and harder part of the vein along the west side. At one place nodules were found in soft, altered, oxidized rock along the east side of the shaft.

The Big Cameron shaft, which the applicants propose to deepen, is about 64 feet southwest of the Steel Plate shaft, and is on the Big Cameron claim. This shaft has been sunk vertically to a depth of about 53 feet. From the bottom of the shaft a drift has been driven 37 feet southwest along the vein which has the same strike as in the Steel Plate shaft, N. 57° E., but the dip is steeper, being 85° NW to vertical. Throughout most of the shaft the wall rock is aplite and granite, but just above and on the level it is gneiss. The vein maintains the sheared character noted in the Steel Plate shaft, but in the gneiss it is much more weathered and stained by iron oxides than in the aplite or granite. Also in the gneiss nodules and small streaks of ferberite are much less abundant than in the other rocks. Two samples taken from the drift by the Bureau of Mines examiner, one at the breast and the other at 27 feet from the shaft, assayed .01% and 1.52% WO_3.

In addition to the ore valued between $5,000 and $6,000 reported as produced from the old caved shaft, Tweto reports two small shipments

of sorted ore from the Steel Plate shaft, one of 762 pounds averaging 11.7% WO_3, the other of 2,485 pounds averaging 3.0% WO_3. The applicants report three shipments of hand sorted ore from the Big Cameron shaft and level, the first of 5,000 pounds averaging 3.2% WO_3, the second of 1,180 pounds averaging 14% WO_3, and the third of 1,165 pounds averaging 18.6% WO_3.

CONCLUSIONS AND RECOMMENDATIONS

The eastern portion of the Steel Plate vein has been moderately productive to a depth of about 100 feet. The western end has been virtually unexplored, but where the vein is exposed in three shafts and one short drift it has an average width of 18 inches. It is in sheeted and well silicified aplite, granite, and gneiss, containing veinlets, nodules, and small pods of ferberite. Material from the shafts and the drift indicates that the vein has an average grade of .80% WO_3 over a length of 190 feet and to a depth of 50 feet. The ferberite content is less when the vein is in gneiss than when it is in aplitic granite. It is concluded that the chance of making a discovery of tungsten ore containing at least 1,000 units WO_3 is promising. However, due to lack of exploration and adequate information in the immediate area, it is concluded that 100 feet of shaft sinking and 300 feet of drifting, as requested by the applicants, is excessive. A reduced program was discussed with the applicants and is acceptable to them.

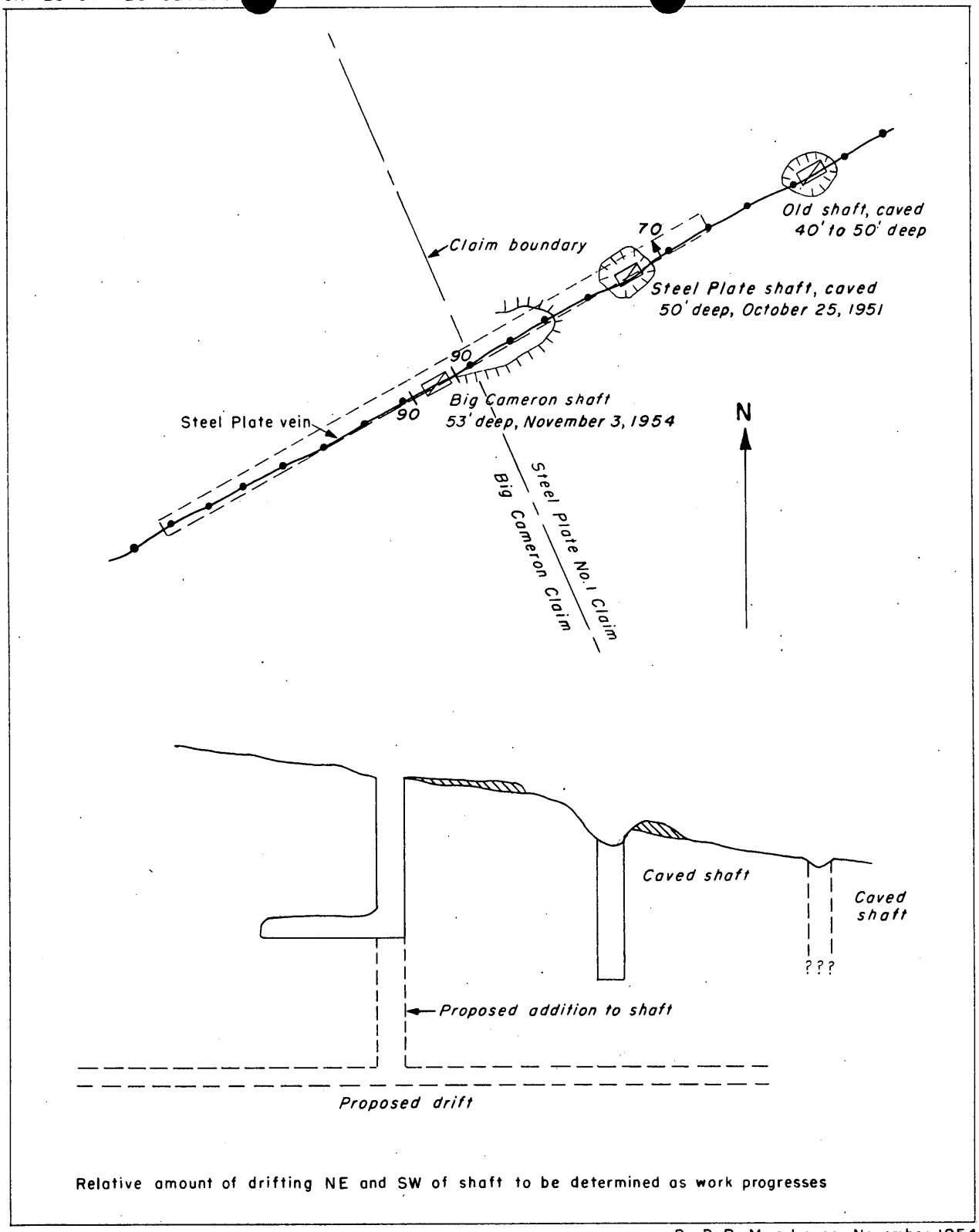
It is recommended that a program to deepen the Big Cameron shaft 50 feet and to drift 200 feet from the bottom of the shaft or the bottom of the ore, whichever comes first, be approved. The relative

amount of drifting northeast and southwest will have to be determined as the work progresses.

REFERENCES

Lovering, T. S., and Tweto, Ogden (1953) Geology and ore deposits of the Boulder County tungsten district, Colorado. U. S. Geol. Survey Prof. Paper 245, 1955, pp. 199.

Tweto, Ogden, Geologic Report, DMEA Docket 2100



By D. R. Mac Laren, November 1954

FIGURE 3--PLAN AND SECTION SHOWING EXISTING AND PROPOSED WORKINGS, BIG CAMERON MINE, BOULDER COUNTY, COLORADO

50 25 0 50 Feet

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

DMRA 3546

MOORE, MOORE, AND MORCH
BIG CARBONATE MINE
BOULDER COUNTY, COLORADO

Engineering Report

By R. L. Palmer
Mining Engineer
Bureau of Mines

RMRA 3546

BROWN, MINER, AND MORTE
BIG CAMERON MINE
BOULDER COUNTY, COLORADO

CONTENTS

Engineering Report	Page
Introduction	1
Location	2
History and production	3
Ownership and extent	4
Description of the deposit	5
Minable ore reserves	6
Present status	7
Exploration and development	7
Mining and milling equipment and other facilities	7
Project proposals, with costs	9
Proposed financing	11
Conclusions	11
Recommendations	12

ILLUSTRATIONS

Figure	Follows page
1. Location map, Big Cameron mine, Boulder County, Colorado	2
2. Claim map, Big Cameron mine, Boulder County, Colorado	4
3. Plan and section, Big Cameron mine, Boulder County, Colorado	7

TABLES

1. Estimated costs of exploration project recommended at Big Cameron mine, Boulder County, Colorado	12

DMEA 3546

BROWN, MOSCH, AND MOSCH
BIG CAMPROS MINE
BOULDER COUNTY, COLORADO

ENGINEERING REPORT

By R. L. Bolmer

INTRODUCTION

Mac Brown, Hans Mosch, and Alvin Mosch, a partnership of Nederland, Colorado, made application for aid in an exploration project, pursuant to DMEA Order 1, under the Defense Production Act of 1950, as amended. The applicant partners are lessees of a group of four adjacent mining claims located within the Boulder County tungsten district, Colorado. They propose to explore the Steel Plate vein, which outcrops on portions of the Big Camprox and Steel Plate No. 1 claims, for tungsten. The specific project proposed by the applicants involves deepening the shallow Big Camprox shaft by 100 feet and drifting a total of 300 feet on the Steel Plate vein at the new depth. The applicants estimate the total cost of the proposed project as $16,150.00

The current proposal is substantially the same as was proposed in an earlier application for aid in an exploration project at this property (Baker, Brown, and Munroe, Docket No. DMA 2130) and as was authorized under Exploration Project Contract Idm-2892. The contract later was rescinded due to the failure of the operator to commence work within the period provided.

Mac Brown of the present partnership is the M. F. Brown of the former contract. The former partnership was dissolved before any contract work could be performed. Brown recently formed a new partnership with Hans and Alvin Mosch. In the interim, the Steel Plate shaft, which was

to be deepened under the former contract, had caved. Rather than rehabilitate the former shaft, the partners began a new shaft on the vein some 75 feet southwest of the former location and just inside the end line of the Big Cameron claim. It is the new shaft on the Big Cameron claim that the present applicants propose to deepen.

The new application, dated July 26, 1954, has been assigned Docket No. DMEA 3546. When the application first was submitted, the partners were lessees of only the Big Cameron claim. The application, therefore, was returned with the suggestion that certain adjacent property be secured. The partners subsequently leased the Fraction, Jack, and the western 300 feet of the Steel Plate No. 1 claims and resubmitted their application.

A field examination and suitable report on the property and the new application has been requested by the DMEA Field Team, Region IV. The property was examined November 1, 1954, with D. R. Shelarum of the Geological Survey and in the company of the applicants. This report is based on that examination and on a review of the earlier examination reports on the property by Ogden Tweto of the Geological Survey and F. D. Everett of the Bureau of Mines (Docket No. DMA 2100). Much of the data in these earlier reports are unchanged and will not be repeated.

LOCATION

The property under lease by the applicants is located in the E1/2 sec. 7, T. 1 S., R. 72 W., sixth principal meridian (Grand Island mining district) Boulder County, Colorado. The claims are located on the eastern flank of Hurricane Hill, a productive area in the central portion of the Boulder County tungsten district (fig. 1) at an elevation of about 8,530 feet above sea level. The mine is about 2 miles northeast

of Nederland, Colorado, via State Highway 160 and a graveled county road. It is accessible throughout the year. Electric power is not available on the property but the transmission lines of the Public Service Company of Colorado do pass within 600 feet of the Big Cameron shaft. Water, other than that made in the underground workings, is not available on the property. Some of the timber on the property is suitable for mining purposes. The nearest custom tungsten mill is located in Nederland.

HISTORY AND PRODUCTION

The total production from the Steel Plate No. 1 claim, through 1953, is reported as 115 short ton units of tungsten trioxide. This total includes some 11 units which were produced by Baker, Brown, and Munroe in sinking a 50-foot shaft on the Steel Plate vein near the western end of the claim during 1951. The remainder, estimated in value at between $5,000 and $6,000, reportedly was produced prior to World War I from a shallow shaft on the vein located some 70 feet to the northeast.

Early in 1954, the present applicants began sinking on the vein some 75 feet to the southwest and just inside the end line of the Big Cameron claim. On the date of inspection, the shaft had been sunk to a depth of 54 feet below the surface, at which point a drift had been driven 37 feet southwesterly on the vein. The applicants report that the following lots of hand-sorted ore, originating from this work, have been marketed:

8,000 pounds of 3.2 percent WO_3
1,180 pounds of 14.0 percent WO_3
1,165 pounds of 18.6 percent WO_3

In addition, some 500 pounds of sorted ore, probably averaging 3 percent WO_3, were stockpiled on the surface at the time of the inspection.

OWNERSHIP AND EXTENT

Hetzer Mines, Inc., 403 Interstate Trust Building, Denver, Colorado, is the owner and lessor, and the applicants are the lessees of the following patented mining property:

Big Cameron lode mining claim	U.S. Survey No. 19559
Fractional lode mining claim	U.S. Survey No. 19572
Jack lode mining claim	U.S. Survey No. 18946
West 300 feet of Steel Plate No. 1 lode mining claim	U.S. Survey No. 19638

The relative locations of the above claims are indicated on figure 2. The Steel Plate vein outcrops southwesterly along the length of the No. 1 claim and extends onto the eastern end of the Big Cameron claim. The extension of the vein further southwesterly on the Big Cameron claim is inferred, however; its outcrop in this direction is obscured by overburden. The exploration proposed by the applicants will cover within 300 feet of either side of the common end lines of the two claims.

The applicants' lease on the above property, dated July 10, 1954, is for a period of 3 years and provides for a royalty payment to the lessor of 16 percent of the net proceeds from the sale of any ore produced by the lessees.

It is understood that Hetzer Mines is willing to subordinate its interest in the property to those of the Government as set forth in the usual exploration contract.

Heretofore, the entire Steel Plate No. 1 claim has been leased to Gold Spring Tungsten, Inc., and it is listed in that operator's property rights under Exploration Project Contract Ida-254. There is no record of

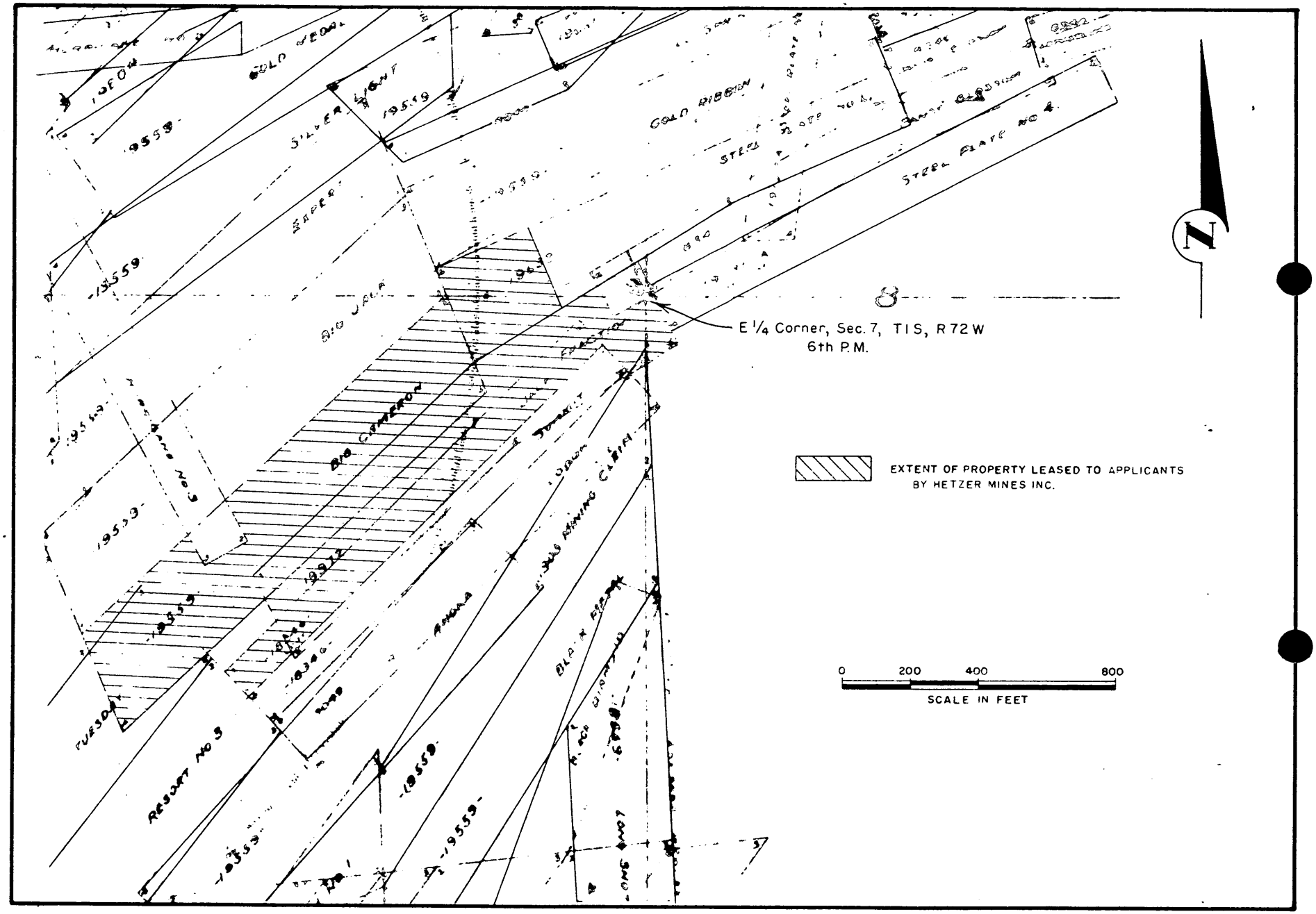


FIGURE 2- CLAIM MAP, BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

a release of the western 300 feet of the claim by that operator to the present applicants. The ore bodies discovered under Contract Ida-834, in part, extend only into the eastern portions of this claim. The release of its western 300 feet, for inclusion under a new contract, therefore, would not affect the Government's interest.

The Government may consider the Big Buck claim, U. S. Survey No. 19339, which lies immediately north of the Big Cameron claim and which also is owned by Rotour Mines, Inc., as pertinent to the exploration project proposed by the applicants.

DESCRIPTION OF THE DEPOSIT

The Steel Plate vein and its development on the No. 1 claim has been described in the examination reports prepared for BMM Docket No. 2160.

The upper portions of the new Big Cameron shaft has been lagged off and the vein in this section could not be observed. It is understood that most of the production by the present applicants came from this section. The vein exposed in the lower portions of the shaft and southwesterly from the shaft along the 34-foot level is a well defined, nearly vertical fissure zone occurring mostly in schist and gneiss. It consists of between 18 and 24 inches of brecciated and altered wall rock, vein quartz, gouge, and, along certain sections, contains the tungsten mineral ferberite ($FeWO_4$). The vein in the breast of the southwest heading contained no visible ferberite and assayed only 0.01 percent WO_3 over a width of 18 inches. The vein midway along the level contained ferberite mineralization for widths of up to 6 inches along its north wall and assayed 1.52 percent WO_3 across a width of 24 inches.

[illegible] ON [illegible]

The ore shoot encountered in the Big Cameron shaft, as indicated by the mineralization exposed along the lower level, appears to extend for some 25 feet west of the shaft. To date, the applicants have uncovered about 310 tons of material in their sinking and drifting operations, from which they reportedly have recovered over 31 short ton units of WO_3. Assuming the reported production is correct, the rock uncovered appears to have averaged about 1 percent WO_3 over development widths approaching 5 feet. The vein for some 25 feet west of the shaft and to a depth of the lower level, therefore, is indicated as containing some 500 short ton units of WO_3 (250 tons of 2 percent ore over a mining width of 30 inches). Similar reserves are inferred for a block of ground occurring immediately east of this shaft.

The sinking of the Steel Plate shaft to a depth of 50 feet by the former applicants, reportedly resulted in a production of 11.2 units of WO_3 and indicates an average grade of ore in that shaft of about 0.6 percent WO_3 over similar development widths. The vein for some 25 feet on either side of the Steel Plate shaft and to a depth of 50 feet below the surface, therefore, is indicated to contain additional reserves of about 600 short ton-units of WO_3.

The reserves estimated above, if upgraded by screening and hand sorting to between 2.5 and 3 percent WO_3, would have a market value at the local custom mills of about $30.00 per unit.

The Steel Plate vein in this area is relatively unexplored, especially to any appreciable depth. Ore shoots in the district have commonly occur within crystalline rocks such as granite, pegmatite, and aplite. Such rocks outcrop in the vicinity of the Big Cameron shaft and may be encountered by exploration laterally and with greater depth. If

so, the chances of encountering significant additional reserves, through the proposed project, appear promising.

PRESENT STATUS

Exploration and Development

The existing development of the Steel Plate vein on the western sections of the No. 1 claim and the eastern sections of the Big Cameron claim is indicated on figure 3. The vein is relatively unexplored in this area.

The Big Cameron shaft, which the applicants propose to deepen, is nearly vertical. It was sunk on the vein to a cross section of about 5 by 9 feet. The shaft is two-compartment, timbered, and partially lagged to the 54-foot level. No ground support has been employed along the level. The level is within a soft schist, which eventually will require at least partial timber support.

The manway compartment of the shaft is not in a safe operating condition. It needs to be lagged off from the hoisting compartment and will require some additional lagging on the other three walls. The existing ladders require repair or replacement and should be staggered. There are no platforms in the compartment. The needed repairs to the manway should be completed before any attempt is made to deepen the shaft.

The workings to their present depth are dry and the shaft has not been extended below the 54-foot level to provide for a sump.

Mining and Milling Equipment and Other Facilities

The short access road to the surface plant at the collar of the Big Cameron shaft is adequate for exploration purposes. The applicants

DEPARTMENT OF THE INTERIOR

FEDERAL CREDIT UNION

February 2, 1955

Notice to Interior Employees:

Pursuant to instructions from the Bureau of Federal Credit Unions and pending further determination of issues, the Department of the Interior Federal Credit Union finds it necessary to discontinue cashing checks for employees of the Department of the Interior except those tendered in payment on shares or loans.

Leon M. Headley

President, Board of Directors

74877

have constructed a suitable shelter building near the collar of the shaft which houses their compressor and also serves a repair shop and warehouse for their operation. The Big Cameron shaft is provided with a 20-foot, wooden, A-type headframe equipped with a sheave wheel and dumping plate. Hoisting is performed by means of a shaft bucket and a single drum, compressed air tugger.

Most of the mining equipment observed on the property during the inspection was old and second-hand but in general appeared to be in satisfactory operating condition. It is understood that the equipment observed on the property (itemized below with its estimated value) will be employed in the proposed project work. Except for a new rock drill, which was being used on a trial basis, and a tugger hoist, which was rented with an option to purchase, the equipment listed below reportedly is owned outright by the applicants:

Description	Estimated Value
Sullivan WB6, 9-inch by 8-inch air compressor, belt driven by a Buda, 140 hp, 6 cylinder gasoline engine	$8,500.00
3- by 7-foot steel air receiver	250.00
Gardner-Denver single drum air hoist with 150 feet of 1/2-inch wire rope (rented for $60.00 per month with option to purchase for $750.00)	---
1/2-ton capacity hoisting bucket	50.00
2 16-cubic feet, end dump mine cars; 1 bucket daily	250.00
Atlas RH56 rock drill and pneumatic leg, complete with hoses, oiler, etc. (used on trial with option to purchase for about $970.00)	--

40-gallon steel water pressure tank	$ 50.00
Forge, steel sharpener, other shop and hand tools	800.00
Total estimated value of owned equipment	$3,300.00

Depreciation of the above-owned equipment at the standard monthly rate of 1/60 of the estimated value, or $55.00 per month, is included in the engineering cost estimate for the proposed project. The rental of the air hoist at $60.00 per month and the purchase of the rock drill for $770.00 less salvage also are included in the cost estimate.

[illegible], [illegible]

The applicants propose to deepen the Big Cameron shaft 100 feet and to drift 320 feet westerly on the vein at the new depth or possibly at intermediate levels if conditions encountered warrant. They estimate the total cost of such work at $16,150.00.

The work proposed by the applicants is considered too extensive on the basis of the showings exposed at present. The matter was discussed with the applicants and they were agreeable to a modified project involving the following work which is being recommended for approval in this report:

	Estimated Cost (See Table I for details)
1. Repair manway in the existing 34-foot depth of the Big Cameron shaft (install new ladders, platforms, compartment dividers, lagging where needed) (Complete job at $840.00)	$ 840.00
2. Sink the existing Big Cameron shaft an additional 50 feet on the Steel Plate vein to a new depth of 104 feet below its present collar (a two-compartment, fully timbered shaft with a cross section of 4-	

by 8-feet inside timber is the minimum recommended)

(50 feet of sinking at $68.00 per foot) $3,400.00

3. Drift a maximum of 200 feet on the Shoal Plate vein along the new 104-foot level of the Big Cameron shaft. (Drifts are to be driven 7 by 4 feet in the clear and timbered as needed and may be extended in either or both directions from the shaft as conditions encountered determine)

(200 feet of drifting at $27.00 per feet) 5,400.00

4. If water should be encountered in the work allowed in 2 and 3 above, deepen shaft up to a maximum of 10 feet below the new 104-foot level to provide for a sump.

(Up to 10 feet of sinking at $68.00 per feet) 680.00

5. Sample and analyze any mineral occurrences encountered along the vein exposed by work provided in 2 and 3 above (25 assays at $6.00 each) 150.00

Total estimated cost of recommended project $9,870.00

Government participation--75 percent $7,402.50

The location of the recommended work is indicated on figure 3.

The three applicant partners intend to perform the project work themselves, each at a daily wage rate of $14.00. This rate is equivalent to approximately $1.60 per hour including overtime payment for the sixth 8-hour shift worked per week and is about standard for the district. Two underground employees and one surfaceman are the minimum labor force considered necessary for the proposed work.

The estimated time for completion of the recommended project is as follows:

Operation	Estimated time for completion
Shaft repair	3 shifts or approximately 0.1 month
60 feet of shaft sinking	60 shifts or approximately 2.3 months
200 feet of drifting	66 shifts or approximately 2.5 months
Total	129 shifts or approximately 5 months

Project work can be started immediately.

PROPOSED FINANCING

The applicants have no cash reserves but propose to finance their share of the cost of the project principally through the use of their own equipment and by performing all the project labor themselves.

CONCLUSIONS

The Steel Plate vein is a strong and well defined structure occurring within a highly productive area of the Boulder tungsten district. The vein itself has had a small production from shallow workings along its outcrop but is relatively unexplored in the vicinity of the Big Cameron shaft. The formation, in which the present development off the shaft occurs, is not too favorable a host rock for ore deposition but more favorable host rocks outcrop in the immediate vicinity. Should the vein enter such rocks, the chances of it making ore in significant quantities is considered promising. The deposit appears to meet the necessary general requirements for the Government assistance in its exploration.

Little is known of the applicants' ability or resources. The modified program recommended, however, is straight forward enough and not so excessive as to be beyond the applicants' apparent financial means. The work recommended is applicable to a short-form unit-cost type of contract.

RECOMMENDATIONS

The exploration project proposed by the applicants, with the limiting modifications and the estimated costs outlined in this report, is recommended for approval.

RLB/pah

TABLE I.--Estimated costs of exploration project recommended at Big Cameron mine, Boulder County, Colorado

Items of Cost	Total Costs	Distributed Costs: Shaft repair	Shaft sinking	Drifting	Sampling
Labor and Supervision					
2 miners, 1 surfaceman at $14.00 per shift each	$5,418.00	$126.00	$2,520.00	$2,772.00	---
Operating Materials and Supplies					
Timber	325.00	75.00	250.00	200.00	
Explosives	825.00		275.00	550.00	
Pipe	130.00*		30.00*	100.00*	
Track	200.00*			200.00*	
Drill steel, bits	285.00		85.00	200.00	
Gasoline, oil, grease	378.00	8.00	175.00	195.00	
Small tools	262.50	2.50	60.00	200.00	
Other miscellaneous supplies	262.50	2.50	60.00	200.00	
	$2,868.00	$ 88.00	$ 935.00	$1,845.00	---
Operating Equipment					
Depreciation of owned equipment at $55.00 per month	272.00	6.00	128.00	138.00	
Rental (air hoist at $60.00 per month)	296.00	6.00	140.00	150.00	
Purchase (rock drill, air leg)	570.00*		214.00*	356.00*	
	$1,138.00	$ 12.00	$ 482.00	$ 644.00	
Miscellaneous					
Taxes, insurance	$ 271.00	$ 6.00	$ 126.00	$ 139.00	
Repairs to equipment	263.00	3.00	60.00	200.00	
Analyses of samples	150.00	--	--	--	$150.00
	$ 684.00	$ 9.00	$ 186.00	$ 339.00	$150.00
Contingencies					
± 2 percent of above costs to cover unforeseen expenses	212.00	5.00	79.00	128.00	---
Total estimated cost	$10,320.00	$240.00	$4,202.00	$5,728.00	$150.00
Less salvage value of items indicated by asterisk above:	-450.00	---	-122.00	-328.00	---
Net total estimated cost	$ 9,870.00	$240.00	$4,080.00	$5,400.00	$150.00
Government participation	$ 7,402.50				

	Shaft repair	Shaft sinking	Drifting	Sampling
Units to be completed	Complete job	60 feet	200 feet	25 assays
Net unit cost	$24[illegible]/job	$68.00/foot	$2[illegible].00/foot	$0.00/assay

DEPARTMENT OF THE INTERIOR

FEDERAL CREDIT UNION

February 2, 1955

Notice to Interior Employees:

Pursuant to instructions from the Bureau of Federal Credit Unions and pending further determination of issues, the Department of the Interior Federal Credit Union finds it necessary to discontinue cashing checks for employees of the Department of the Interior except those tendered in payment on shares or loans.

Leon M. Holden

President, Board of Directors

74877

Dept. of the Interior
Defense Minerals Exploration
Administration
14X0101(01) Revolving Fund, Defense
Production Act, Interior
(Allocated Working Fund to the Office
of the Secretary)

DOCKET
SURNAME
Martin
Hotchkiss
Hedges
Kiilsgaard
Selfridge
Johnson
Mitchell

TELETYPE

JAN 26 1955

W. M. Trever, Executive Officer
DMEA Field Team, Region III
Denver, Colorado

Before replying urtt rewrlet January 11 Dockets DMEA 1447 and 3546 we require more specific information on results Bacon, Moosh and Moosh project. Please airmail copy field team report.

George C. Selfridge
Chairman, Operating Committee (26)

WEMartin/foc
1/26/55
cc to: Docket
Code 400
Adm. Reading File
Operating Committee
FT. REG. III
W. McInnis, USBM
T. N. Kiilsgaard, USGS

SENT
JAN 26 1955
Clerical Service Section

R.C.S.

XXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXX

Dept. [redacted]he Interior
Defense Minerals Exploration
Administration
14X1&X1(G) Revolving Fund, Defense
Production Act, Interior
(Allocated working Fund to the Office
of the Secretary)

DOCKET
SURNAME
Martin
Rubin
Hoffland
Selfridge

TELETYPE

W. M. Trauer, Executive Officer
DMEA Field Team, Region XIII
Denver, Colorado

Reurtt Docket DMEA 1447 and 1546. We are preparing an amendment No. 19 to Contract 14m-854 deleting land for which you requested exception. Amendment to become effective when Brown, Mesch and Mesch contract is executed.

George C. Selfridge

Chairman, Operating Committee (246)

WSMartin/fce
cc to: Docket
Code 400
Adm. Reading File
Operating Committee
FT. REG. III
W. McInnis, USBM
T. H. Kiilsgaard, USGS

SUMT

Central Service Section

C
O
P
Y

TELETYPE

DN 235 BUREAU MINES 1-24- 55 4-39PM

CHAIRMAN, OPERATING COMMITTEE

DMEA

RE DOCKET DMEA 1447, CONTRACT IDM-E54, DOCKET 3546, BROWN MOSCH AND MOSCH, LAST PARAGRAPH OF OUR MEMORANDUM JANUARY 11. PLEASE TELETYPE ADVICE AS TO YOUR DECISION IN THE MATTER.

W. M. TRAVER

DEPARTMENT OF THE INTERIOR

FEDERAL CREDIT UNION

February 2, 1955

Notice to Interior Employees:

Pursuant to instructions from the Bureau of Federal Credit Unions and pending further determination of issues, the Department of the Interior Federal Credit Union finds it necessary to discontinue cashing checks for employees of the Department of the Interior except those tendered in payment on shares or loans.

Leon M. Geddes

President, Board of Directors

74877

3546 DOCKET
Surname:
Martin
Johnson
Selfridge
Whitehead

400

JAN - 5 1955

INTERIOR DEPT.
DEC 29 1954
SOLICITOR

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

INTERIOR DEPT.
DEC 31 1954
SOLICITOR

Re: Docket No. DMEA 1447 - Tungsten
Cold Spring Tungsten, Inc.
Cold Spring mine
Boulder County, Colorado
Contract No. Idm-E54

and

Docket No. DMEA 3546 - Tungsten
Brown, Mosch, and Mosch
Big Cameron mine
Boulder County, Colorado

Dear Mr. King:

Reference is made to the subject dockets and your letter of December 16, 1954, requesting an amendment that would delete the western 300 feet of the Steel Plate No. 1 lode mining claim from the land set forth under Article 2 of Contract No. Idm-E54, in order to include the same area under a new contract which the DMEA Field Team, Region IV, will approve on Docket No. DMEA 3546.

By Amendment No. 13 to Contract No. Idm-E54, the following claims were substituted for the property previously described under Article 2 - Operator's Property Rights.

"Cold Spring, Gem, Missing Link, Side Line, Corner, Germania, Orange Blossom, Magnolia, Lotus Blume, Pansy Blossom, Survey Number 18340; Tenderfoot, Sur. No. 19048; Gold Ribbon, Survey No. 19559, except west 400 feet thereof; Rose, Sur. No. 19954; Steel Plate No. 1, Sur. No. 19632, in Secs. 7 and 8, T. 1 N.; R. 72 W., 6th P.M.; and a tract of land 600 feet square in the southwest corner of the northwest quarter of the northwest quarter of Sec. 8, T. 1 S., R. 72 W., 6th P.M."

The Annex covering certification and repayment was added by Amendment No. 18 to Contract No. Idm-E54, and, in case of certification, royalty would be payable on all production from the land described in Article 2.

R.G.

The total accepted cost of the exploration under Contract No. Idm-E54 was $178,627.86, of which the Government's share at 75% was $133,970.90. As of October 1, 1954, the operator had paid the Government royalty in the amount of $38,601.01. In addition, known reserves should repay in royalties some $6,000.00 more, or a total of about one-third of the amount spent by the Government. We do not, therefore, see how it could be to the Government's advantage to delete any of the ground subject to royalty under Contract No. Idm-E54.

In a somewhat similar case, however, we have by agreement extended the repay period to make all royalty payable to the account of the original contract until the funds expended by the Government under that contract have been repaid, whereupon all succeeding royalty payments will be payable to the account of the second contract.

Your comments and recommendations on this matter will be appreciated.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (SHB)

APPROVED:

J. H. Hedges

Member, Bureau of Mines (SHB)

Thor H. Kiilsgaard

Member, Geological Survey (SHB)

cc: DOCKET
CODE 400
FIELD TEAM, REG. IV
OPER. COMMITTEE
ADM. READ. FILE
R. W. GERHAN, USBM
THOR KIILSGAARD, USGS

WARutledge/ls
12/27/54

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

DEC 30 1954

Memorandum

To: The Administrator, DMEA
Attention: Mr. W. S. Martin

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-1447, Cold Spring Tungsten, Inc. Contract No. Idm-854 (Tungsten) and Docket No. DMEA-3546, Brown, Mosch, and Mosch (Tungsten)

Reference is made to a letter prepared for the signature of the Chairman of the Operating Committee to the Executive Officer, Region IV, in response to the memorandum of the Executive Officer to the Operating Committee dated December 16. I do not understand either the memorandum or the proposed letter, but I think the facts in the matter are as follows:

Cold Spring Tungsten is a lessee, and is paying royalty under its Contract No. Idm-854, Docket No. DMEA-1447, on production which is being made in advance of any certification. This production, at present at least, does not come from one parcel of the leased land which it is now desired to include in a contract the application for which is pending from Brown, Mosch, and Mosch under Docket No. DMEA-3546. The Executive Officer, I believe, suggests that this parcel be released of any liability for royalty under the Cold Spring contract and be made subject to any royalty that may accrue under the proposed Brown, Mosch, and Mosch contract.

The proposed letter from the Operating Committee to the Executive Officer states:

> "We do not . . . see how it could be to the Government's advantage to delete any of the ground subject to royalty under Contract No. Idm-854 [the existing contract with Cold Spring]."

Whether or not it would be to the advantage of the Government to clear this parcel of the Government's claim for royalty under the existing contract and subject it to a claim for royalty under the proposed new contract depends on the facts and circumstances of the case. If the Government considers that the proposed exploration project under the new contract would be beneficial, and that the operator (Brown, Mosch, and Mosch) will not enter into it without the inclusion of the parcel from the existing contract free and clear of royalty claim, the advantage of carrying out the Executive Officer's proposal is apparent.

If Cold Spring Tungsten considers the parcel in question to be valuable for production under their project, presumably they would not be willing to release it for further exploration under the project of Brown, Mosch, and Mosch. At any rate, it would not seem reasonable to me to expect an operator to release some part of its ground to a new operator and still hold the ground subject to royalties from the first operator. Assuming that there is small likelihood of production from this parcel under the existing contract with Cold Spring Tungsten, I can see no objection to releasing the Government's royalty claim against it under that contract and making it subject to any claim that may accrue under the proposed new contract with a new operator. Of course, the problem is essentially for administrative rather than legal determination.

I think that the proposed letter from the Operating Committee to the Executive Officer requires further consideration and restatement.

J. L. Hofflund

J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachments

JLHofflund/emd
Copy to: DMEA Docket (2)
Solicitor's Docket
W. S. Martin (2)
J. L. Hofflund
chron.

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

224 New Customhouse
Denver 2, Colorado

December 16, 1954

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 3546 (Tungsten) Brown, Mosch and Mosch (Big Cameron Mine), Boulder County, Colorado -- Request for Amendment to Contract Idm-E54 (DMEA-1447)

The subject application was originally submitted to include only the Big Cameron claim. The applicant's lease on this property was later amended to include the Fraction lode mining claim, U.S. Survey No. 19972, the Jack lode mining claim, U.S. Survey No. 18346, and the west 300 feet of the Steel Plate No. 1 lode mining claim, U.S. Survey No. 19632.

Contract Idm-E54 has subordinated all of the Steel Plate No. 1 lode mining claim. The ore bodies discovered under Contract Idm-E54, in part, extend only into the eastern section of this claim.

Request is made to release by amendment the subordination on the western 300 feet of the Steel Plate No. 1 lode mining claim so that this area may be included under a new contract which the DMEA Field Team, Region IV, will approve on Docket DMEA 3546.

Enclosed is a copy of a letter from Hetzer Mines, Inc., dated September 30, 1954, in which Cold Spring Tungsten, Inc., will relinquish the westerly 300 feet of Steel Plate No. 1 claim to Brown, Mosch and Mosch, who are the subject applicants. Also enclosed is a copy of the amendment to the applicant's lease, signed by the President of Hetzer Mines, Inc., to include the west 300 feet of the steel Plate No. 1 lode mining claim.

The amendment will not affect the Government's interest, since the western 300 feet of the Steel Plate No. 1 will be subordinated under the new contract.

If you concur in this matter please prepare an amendment to Contract Idm-E54 effecting the release of that portion of Steel Plate No. 1 as outlined above, upon receipt of which we will prepare the contract on Docket DMEA 3546.

W H King
W. H. King

Enclosures

HETZER MINES, INC.

BOULDER, COLORADO

~~P. O. BOX 180~~

403 Interstate Trust Building
Denver 2, Colorado

September 30, 1954

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

Re: Application for DMEA Assistance (Tungsten)
Hans Mosch, M. F. Brown, and Alvin Mosch
Boulder County, Colorado

Dear Mr. King:

We herewith enclose a copy of amendment to lease held by Hans Mosch, M. F. Brown (Mac Brown), and Alvin Mosch, increasing the size of the ground surrounding the discovery made by these gentlemen on the Big Cameron lode mining claim.

You may include this additional ground in the application of the above lessees.

The entire Steel Plate No. 1 claim originally was leased to Cold Spring Tungsten, Inc. Cold Spring Tungsten, Inc., will relinquish the westerly 300 feet to the above applicants. This, of course, will in no way affect the operation of Cold Spring Tungsten.

Yours very truly,

HETZER MINES, INC.

G. C. Ridland, Manager

GCR/at

Enclosure

AMENDMENT TO LEASE

WHEREAS, on the tenth day of July, 1954, Metzer Mines, Inc., a corporation, as Lessor, entered into a mining lease with Mac Brown, Hans Mosch and Arvil Mosch, as Lessees; and

WHEREAS, the Lessor leased to the Lessees the Big Cameron lode mining claim, Survey Lot No. 19559, for a term of three years;

NOW, THEREFORE, the Lessor hereby amends the lease to include the Fraction lode mining claim, U. S. Survey No. 19972, the Jack lode mining claim, U. S. Survey No. 18346, and the west 300 feet of the Steel Plate No. 1 lode mining claim, U. S. Survey No. 19632.

DATED this twenty-ninth day of September, 1954.

METZER MINES, INC.

By_____
President

ATTEST:

_____
Assistant Secretary

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

224 New Customhouse
Denver 2, Colorado

Defense Minerals
RECEIVED
OCT 25 1954

October 22, 1954

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: Code 200

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docketing for Exploration Assistance

Enclosed herewith in duplicate is DMEA Form 3a and MF-103 and supporting data pertaining to the following applications for Government assistance in exploration work:

Cherokee-Utah Uranium Corporation	Uranium
Mosch, Brown, and Mosch	Tungsten

W. H. King

W. H. King

Enclosures

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
RECEIVED
OCT 25 1954

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

Not to be filled in by applicant

Docket No. 3546
Metal or Mineral TUNGSTEN
Date Received
Estimated Cost $16,150
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Mac Brown, Hans Hoech and Alvin Hoech, A Partnership, Nederland, Colo.

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Big Cameron Lode Mining Claim Survey Lot No. 19599.

(*b*) State any mine name by which the property is known. Big Cameron.

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

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

(*e*) If you own the land, describe any liens or encumbrances on it Do not own land.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Patented

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

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

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

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. Good gravel road to project., one and half mile to market.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.
Manpower furnished by partners, additional labor available., Material and supplies available at Boulder, Colo. Compressor now on the job, together with jack hammer and hoist. Electric power located within two hundred yards of mine.

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

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

(*c*) The work will start within now in progress days and be completed within 18 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

[X] Money [X] Use of equipment owned by you [ ] Other And our labor.

Explain in detail on acompanying paper. See appendix C

CERTIFICATION

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

Dated July 26, 196

Mac Brown, Bono Bosch & Alvin Bosch,
Partnership (Applicant)

By Mac Brown

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.

Department of the Interior
Defense Minerals Administration
RECEIVED
OCT 25 1954

Appendix A to DF-103.

5 b

Proposed work.

Sinking shaft 100 feet and drifting at levels showing best indications, approximately 300 feet west, or possibly 100 feet on each of three levels. sketch to follow.

5 d. Operating experience.

Hans Hosch; Thirty years mining in Clear Creek, Gilpin and Boulder Counties.

Ike Brown, 35 years mining Gilpin and Boulder Counties.

Alvin Hosch, 5 years Mining Gilpin and Clear Creek Counties.

Principal supervision by Hans Hosch.

6 b

Labor, supervision.

Labor and supervision will be rated at $14.00 per day each of the three partners, No engineering or Geological consultants contemplated.

6 D

Operating equipment.

Gasoline compressor owned and furnished by partnership.

Tugger hoist being used on option at $750.00.

Jack hammer owned and furnished by Partners.

Ore buckets owned and furnished by Partners.

6e

Rehabilitation & repairs.

No cost beyond labor for repairs, approximately $42.00

6f

New buildings installations.

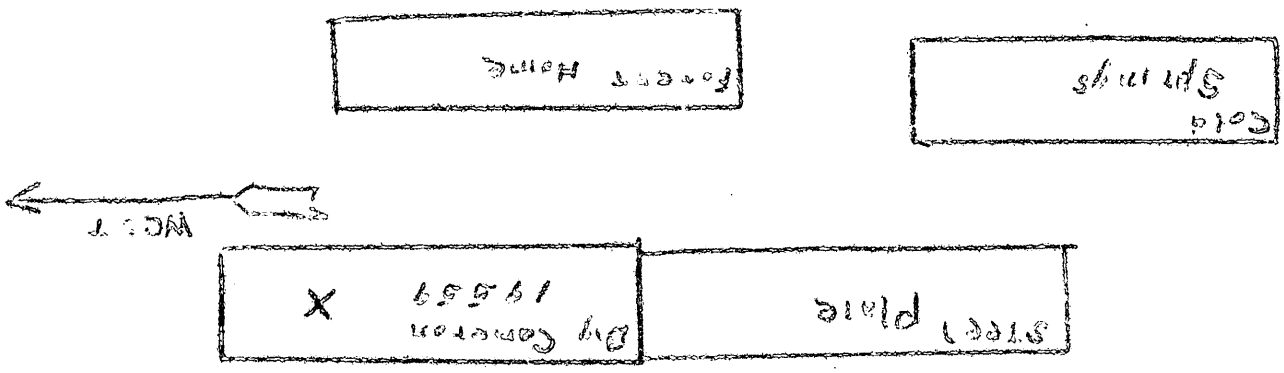
None necessary beyond repairs to shaft house as in 6e.

Appendix B to MP-103.

6 Estimate of costs.

b Sinking shaft 100 feet @ $90.00 per foot,	Labor	$9,000.00
Drifting 300 feet @ $30.00 per foot,	Labor	9,000.00
c Operating equipment,		
Fuel, Gasoline approximately		500.00
Drill steel, "		250.00
Lowder, "		300.00
d Miscellaneous,		
Costs of repairs approximately		300.00
Accounting, "		300.00
Workmen's compensation and liability Ins,		300.00
Total Cost		$21,150.00

Map of Location



Several other Tungsten mines in immediate vicinity, names not known to me.

Appendix C to MT-102
Brown Hoech & Hoech., of July 26 54

We propose to furnish our share the cost of proposed project in the form of our own equipment, our own labor and remaining costs in moneys.,

The equipment we are furnishing for the project is as follows;-

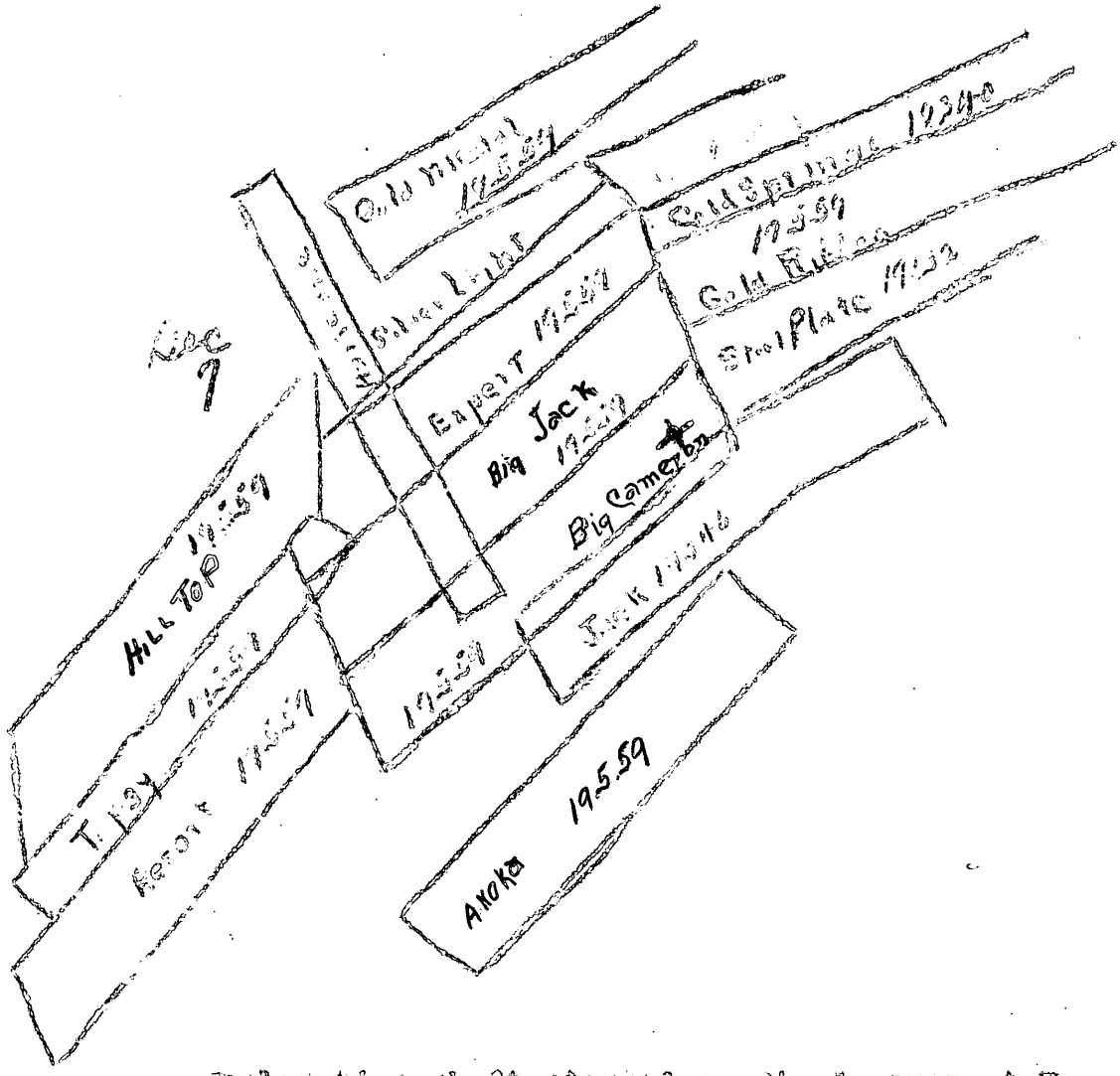
Air compressor, Jackhammer, hose, drill steel on hand, air hose, water hose, air hoist, two ore buckets, mine car and track, shaft house and many small tools on hand.

Appendix D to MF-103,

Brown Mosch & Mosch Exploration contract

Boulder County

T1SR 72 W



Exploration shaft started on Big Cameron at X 50 feet from East end line

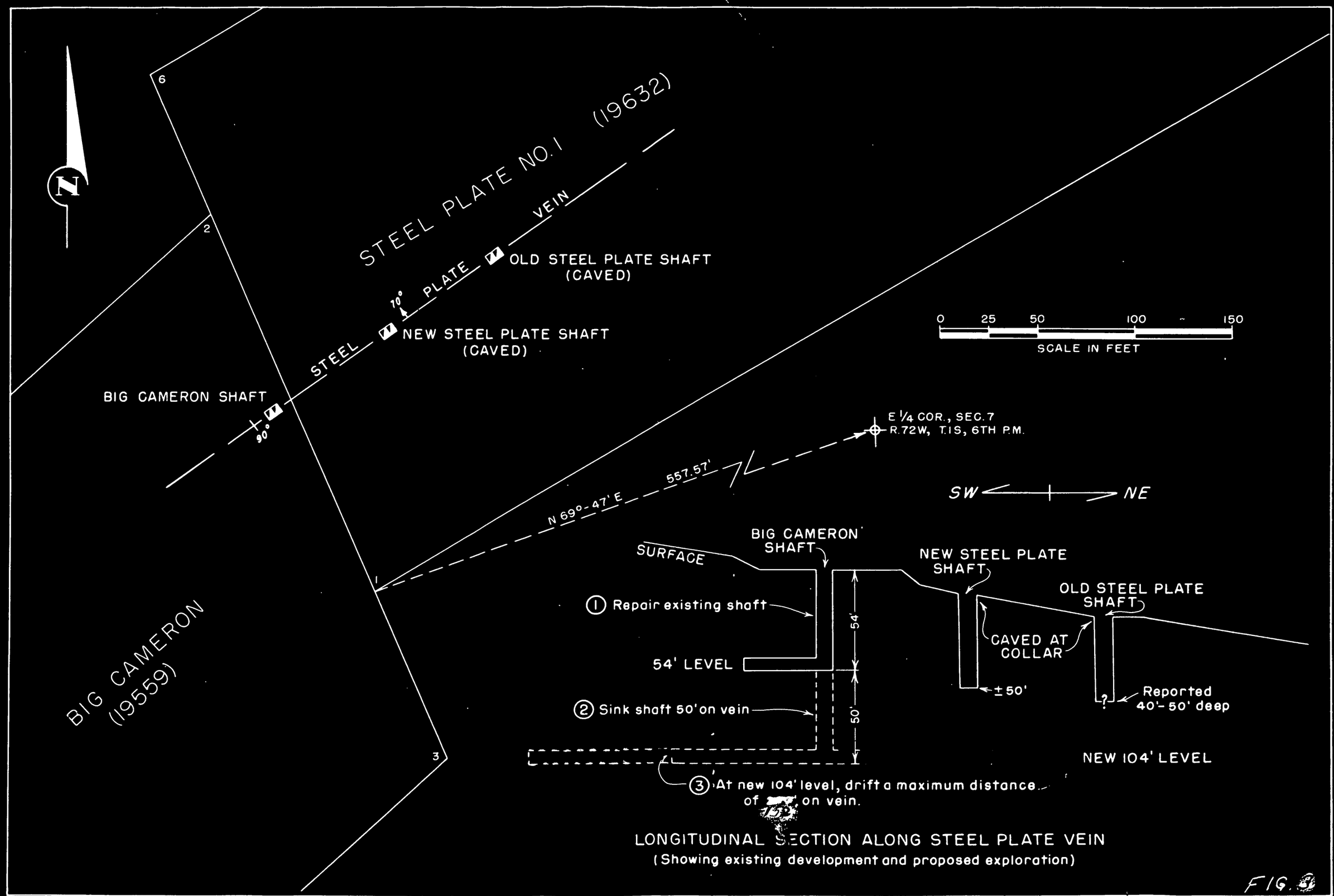


FIGURE 3 - PLAN AND SECTION OF BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

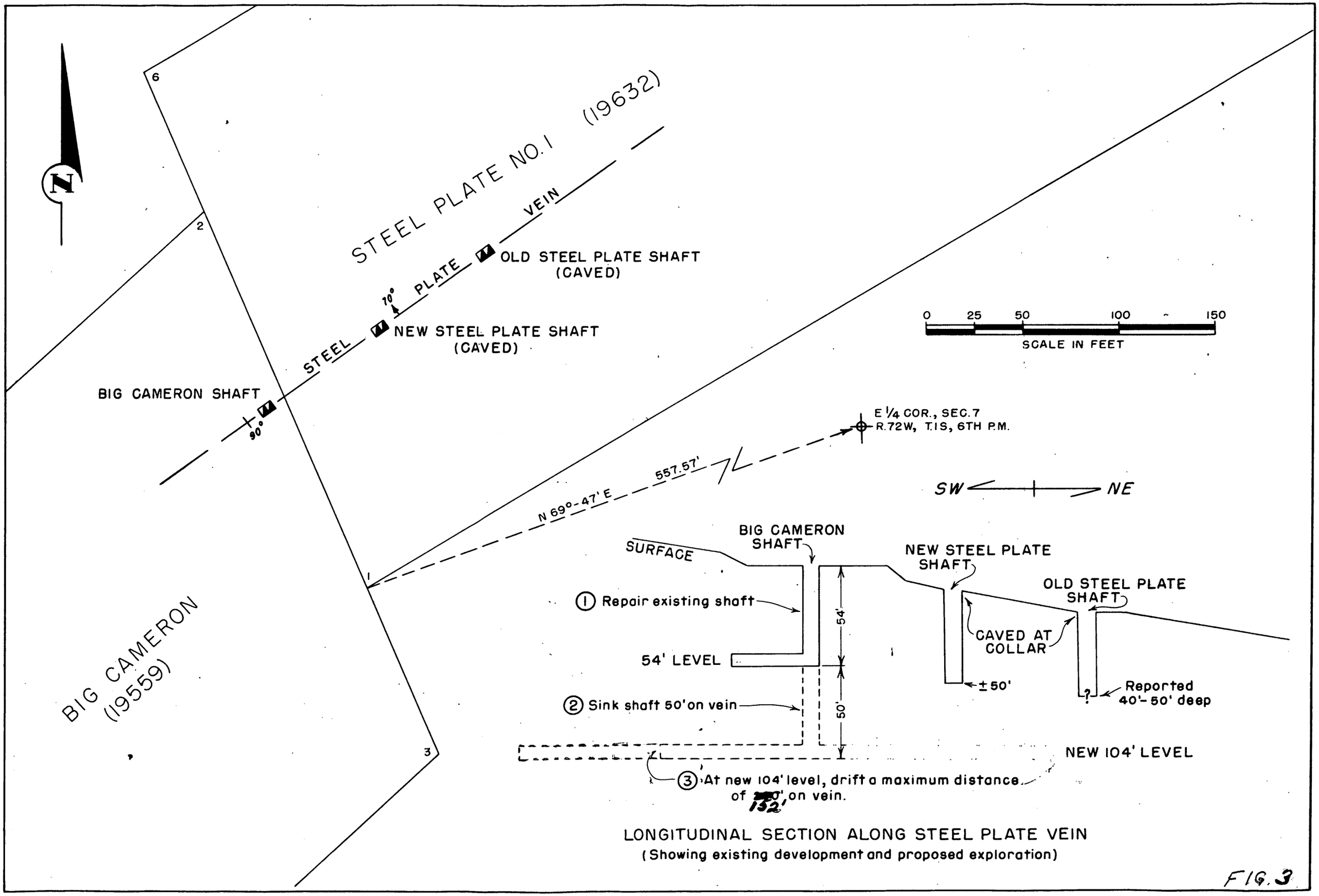


FIGURE 3-PLAN AND SECTION OF BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

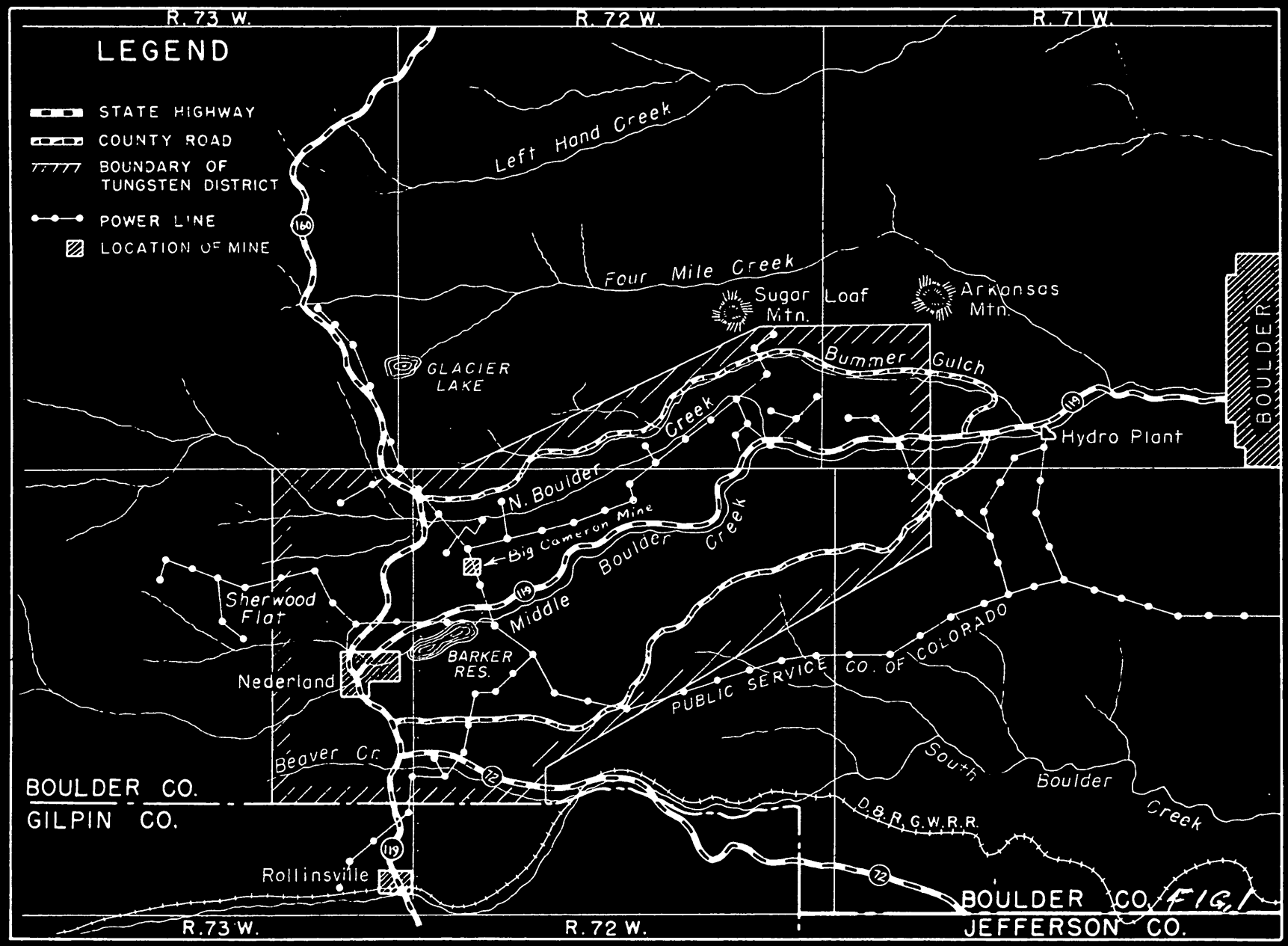


FIGURE 1 - LOCATION MAP, BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

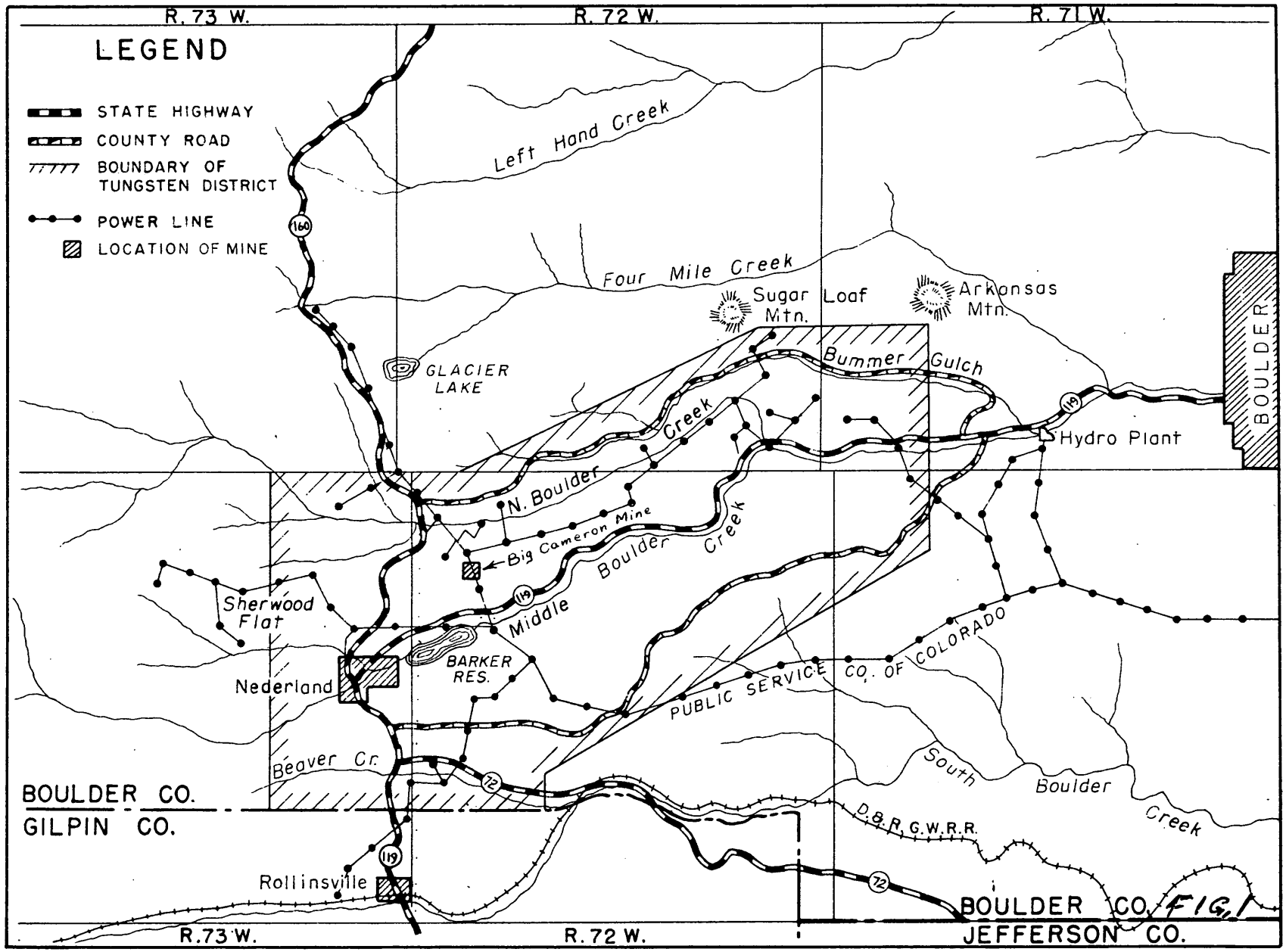


FIGURE 1 - LOCATION MAP, BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

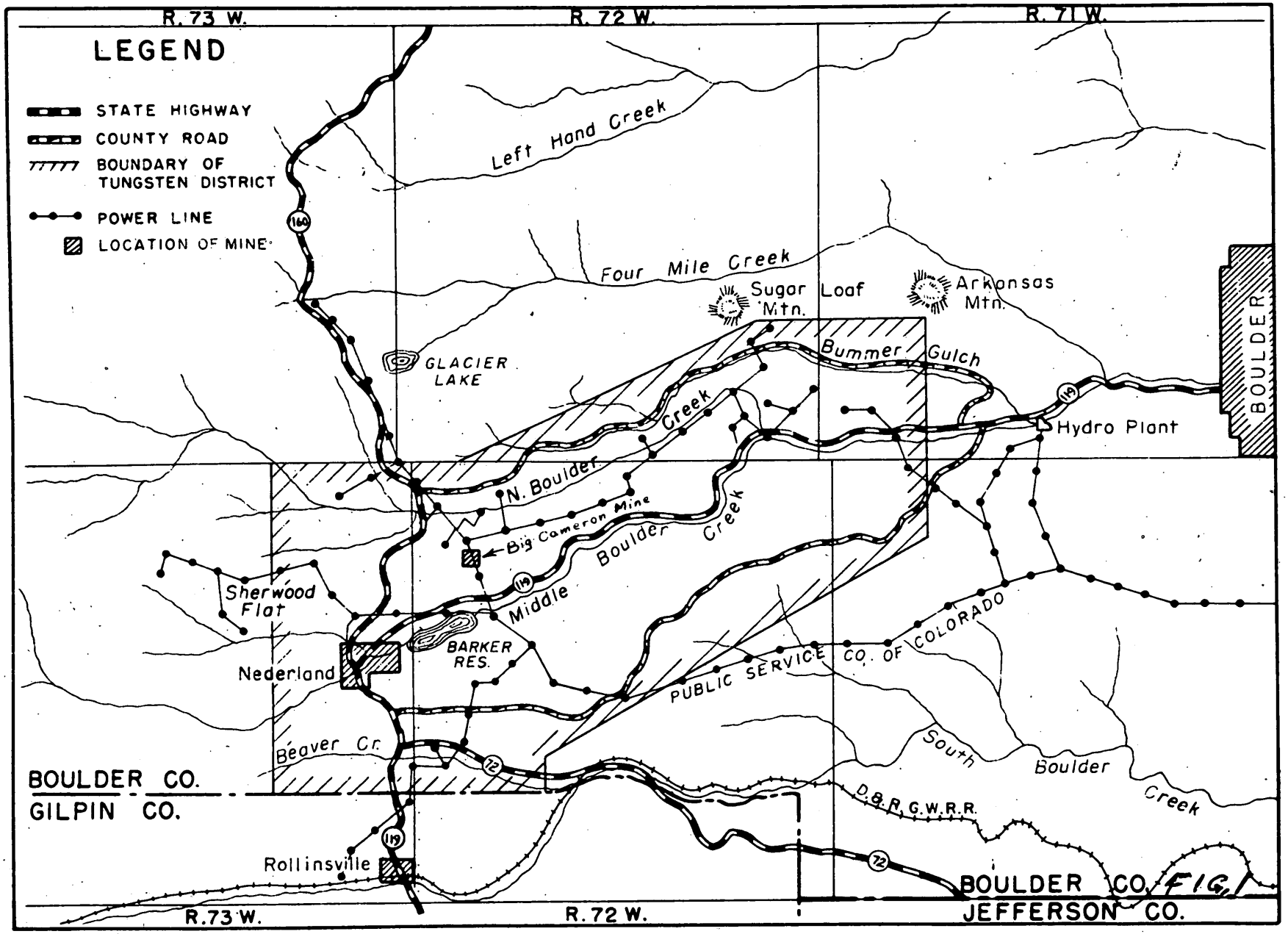


FIGURE 1 - LOCATION MAP, BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

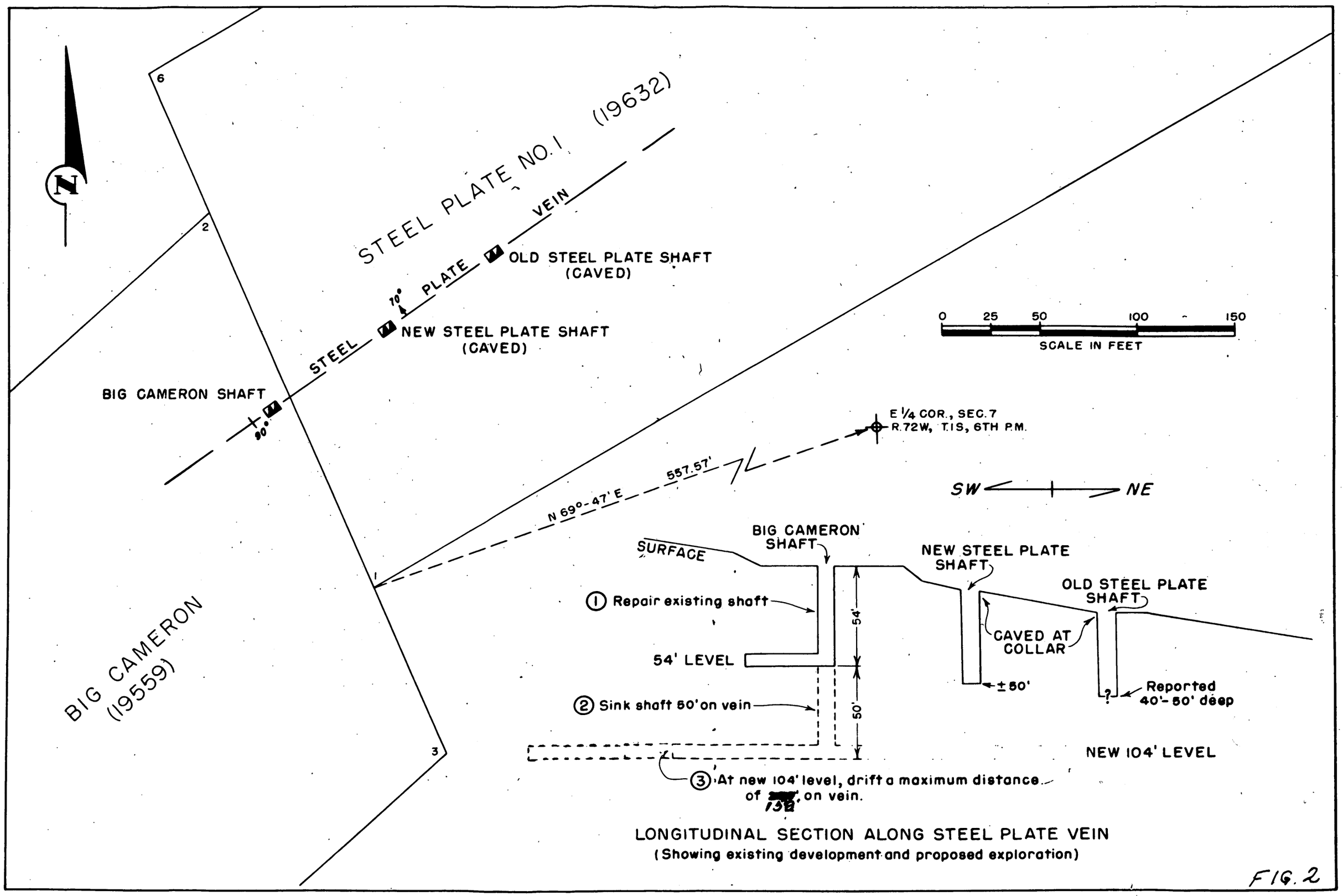


FIGURE 3- PLAN AND SECTION OF BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

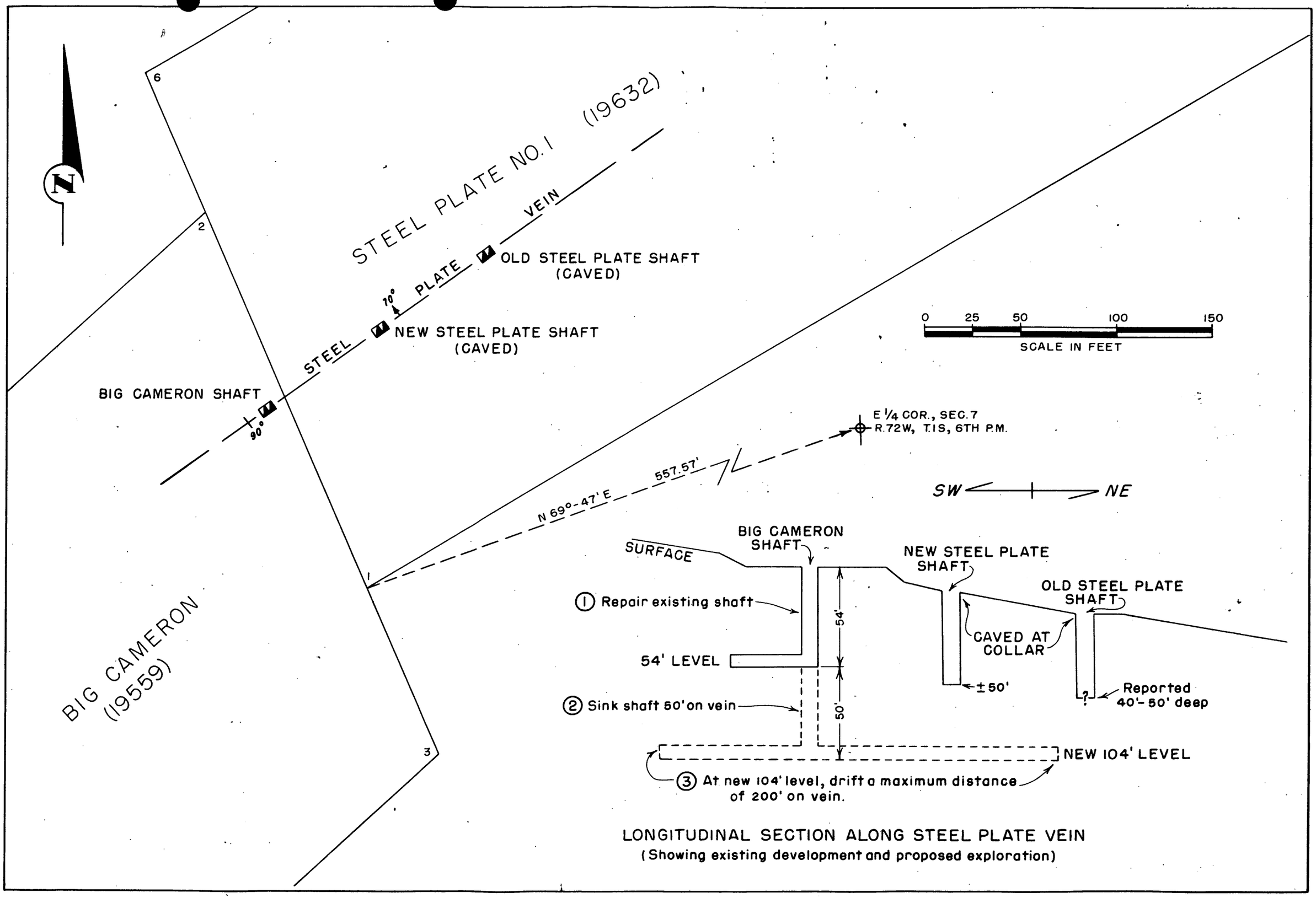


FIGURE 3- PLAN AND SECTION OF BIG CAMERON MINE, BOULDER COUNTY, COLO. (DMEA 3546)

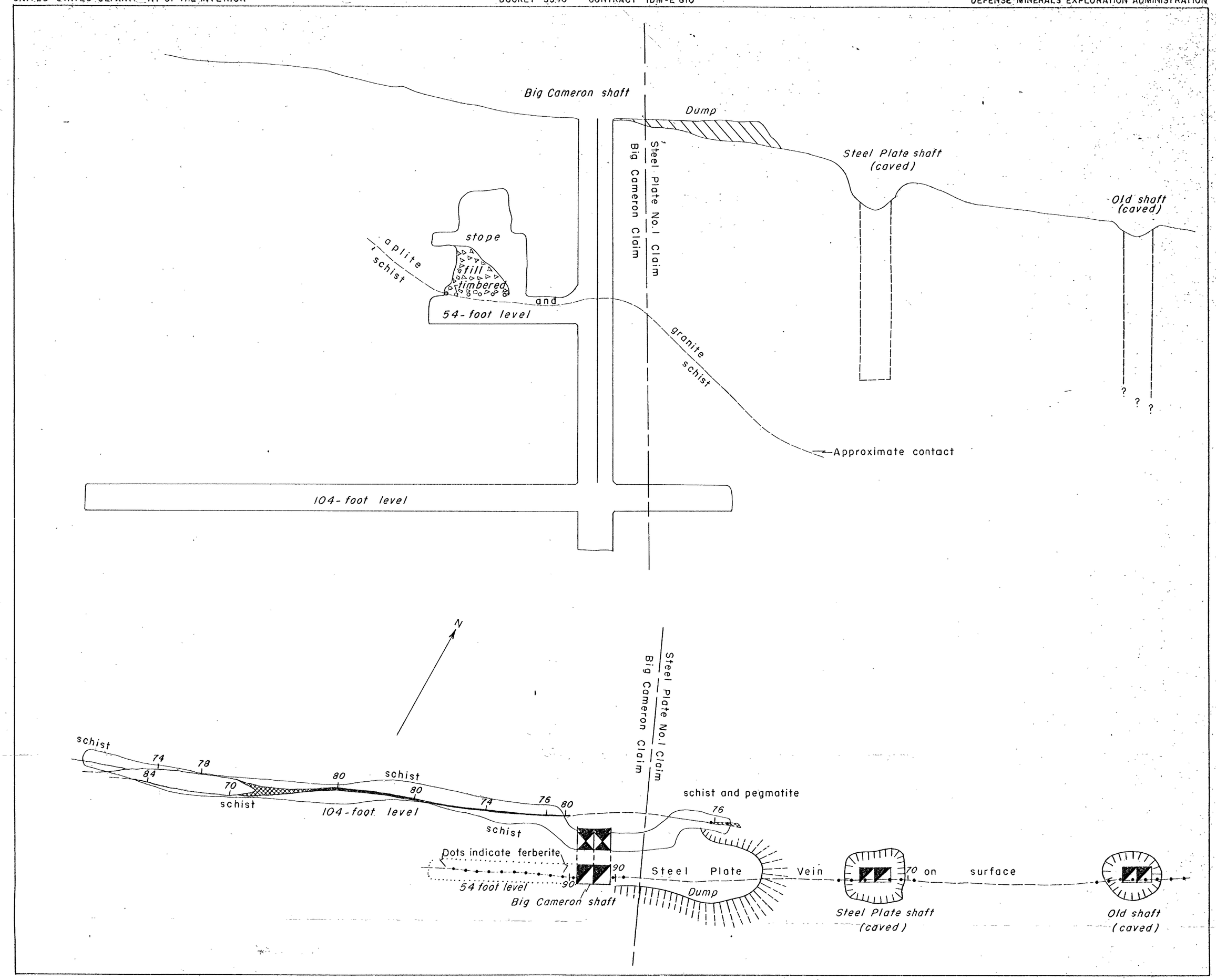


FIGURE 3—COMPOSITE PLAN SHOWING GEOLOGY ON SURFACE AND 104-FOOT LEVEL, AND VERTICAL PROJECTION ALONG THE STEEL PLATE VEIN. BIG CAMERON MINE, BOULDER COUNTY, COLORADO.