224 New Customhouse
Denver 2, Colorado

October 12, 1951

Memorandum

To: G. O. Mittendorf, Director, Production Expansion Division
Defense Minerals Administration

From: Executive Officer, DMA Field Team, Region IV

Subject: DMA Docket 1885, Johnson Bros. & Prime, Nederland, Colorado

We have been advised by Johnson Bros. & Prime of Nederland, Colorado in a letter dated October 10 in reference to the above docket, that they no longer desire Government assistance.

Please cancel this application, sending us a copy of your action.

J. H. East, Jr.

JHE:ld

cc: DMA docket, chron.
Kostelnerm
Allman
Traver

REGIONAL DIRECTOR'S
OFFICE
REGION IV
OCT 12 1951
BUREAU OF MINES
DENVER, COLORADO

Nederland, Colorado
October 10, 1951

U.S. DEPARTMENT OF INTERIOR
DEFENSE MINERALS ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

Gentlemen:

In regard to our DMA Docket No. 1885 for the exploration of tungsten, we are returning to you the subordination agreement forms as we do not need the loan at this time.

Since applying for the loan, we have done part of the work, have good ore, and are able to meet our obligations without the government money.

Therefore we have decided not to take the loan.

Very truly yours,

JOHNSON BROS. & PRIME

Enclosures

224 New Customhouse
Denver 2, Colorado

October 12, 1951

Johnson Bros. & Prime
Nederland, Colorado

Re: DMA Docket 1885

Gentlemen:

This will acknowledge your letter dated October 10 and we note that you have decided that you do not need Government assistance.

We are advising our Washington office to this effect and we thank you for forwarding this information.

Yours very truly,

J. H. East, Jr.
Executive Officer
DMA Field Team, Region IV

JHE:ld

cc: DMA docket, chron.
Koschmann
Trevor

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

PMA

REGIONAL DIRECTOR'S OFFICE
REGION IV
SEP 27 1951
BUREAU OF MINES
DENVER, COLORADO

SEP 25 1951

Memorandum

To: Director, Production Expansion Division

Through: Director, Supply Division

From: Tungsten Branch

Subject: PMA-1875 Tungsten - Exploration loan-Government participation $11,250-Total cost $15,000.
Johnson Bros. and Prime Partners
Nederland, Colorado, Boulder County

The subject application for a Government loan to finance an exploration project costing $15,000 is recommended for approval by the Tungsten Branch.

George B. Holderer

George B. Holderer
Chief, Tungsten Branch

J.H.S.

Attachment

Approved:

Tom Lyon

Director, Supply Division

DAE
WGM

REPORT AND RECOMMENDATION OF
COMMODITY BRANCH ON APPLICATION
FOR GOVERNMENT ASSISTANCE

Docket No. 1885
Commodity - Tungsten

A. Name and Address of Applicant

Johnson Bros. and Prime, a partnership
Ralph L. Johnson, Louisville, Colorado
George A. Prime, Nederland, Colorado
Roy T. Johnson, Berthoud, Colorado

B. Location of Mine

The Hoosier Tungsten Mine
Two miles northeast of Nederland, Colorado
Boulder County, Colorado

C. Conclusions

1. The project is in accord with the program to develop tungsten deposits.

2. The mine has produced in excess of 10,000 units of WO_3. The prospects are good for continuation of the deposit to depth.

J-15

3. Requirements can be met.

4. Financing - $15,000 total cost of project. Government loan $11,250, applicant pays $3,750 or the equivalent. Standard exploration loan contract.

5. Applicants' are thoroughly competent.

D. Recommendations

The application is recommended for an exploration project costing $15,000, Government loan $11,250 - applicant $3,750 or the equivalent.

E. Proposal

Applicant proposes to extend the bottom level (225-foot level) 70 feet east and 80 feet west and to do 150 feet of raising. The project is estimated to cost $15,000, of which the Government lends $11,250.

F. Pertinence to Tungsten Program

The project is in accord with the program to develop tungsten ore bodies and expand production.

G. Technical Feasibility

1. Reserves - The Hoosier mine is about in the center of the highly productive western portion of the Boulder tungsten district. It has produced in excess of 10,000 units of WO_3. Ore is exposed in the bottom of the 150-foot level and on the 225-foot level; although no reserves can be estimated, from past production of the mine and the opinion of the field team, the chances are excellent for finding sufficient ore to justify the project.

2. Production is 15 tons per day averaging 0.5 to 1.0 percent WO_3. Mill feed at present comes from dumps on the surface and stope fills remaining above the 150-foot level.

3. Applicant has his own mill. No data available.

4. No problem in marketing.

5. Time schedule - 1[illegible] days.

H. Availability of Requirements

1. Most equipment and facilities needed are on the grounds.

2. New equipment needed are mostly accessories, supplies and small tools.

3. Transportation is available by good road.

4. Manpower available in area.

5. Power available from Public Service Company of Colorado.

I. Financing

1. Financing is by Government loan on exploration contract.

Government loan	$11,250
Rental of equipment to project	1,253
Applicants' supervision	500
Capital on hand or from profits	1,697
	$15,000

2. Considered adequate by field team.

3. No other security than offered in exploration contract.

4. As provided in contract.

J. Competence of Applicant

Applicants are thoroughly competent.

[illegible], New Customhouse
Denver 2, Colorado

Air Mail

September 13, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 1885, Johnson Brothers and Prime, applicants, The Monsier Tungsten Mine, Boulder County, Colorado

Enclosed herewith are the original and two copies of the report on the subject docket.

We concur with the conclusions and recommendations of the examining team that the exploration loan of $15,000 be approved.

The brochure is enclosed.

Paul T. Allsman

Paul T. Allsman, Alternate

A. H. Koschmann

A. H. Koschmann

Enclosures

WDM:oj
cc: DMA Subject and Chronological

Mining Division
Region IV

September 11, 1951

Memorandum

To: DMA Field Team, Region IV

From: [illegible], Mining Division, Region IV

Subject: Final Report, DMA Docket 1488, Johnson Brothers and Irvine, applicants, The Boulder Tungsten Mine, Boulder County, Colo.

The application of the subject docket is for the exploration of the Boulder Mine on and above the 225 foot level by means of 350 feet of drifting and 150 feet of raising at an estimated cost of $15,000.

Tungsten ore of good grade and quality has been mined from the surface to the 150 foot level with production of at least 10,000 units of tungsten trioxide.

Exploration of the 225 foot level is now being done with production of 15 tons of crude ore per day of one shift, averaging 0.90 to 1.00 percent tungsten trioxide.

The examining team highly recommends approval of the application, with which we concur.

The report contains the necessary information for an Exploration Project Contract, which will be prepared by this office.

Paul T. Allaman

WDM:oj
cc: DMA Subject and Chron.

August 15, 1951

Memorandum

To: W. H. Traver, Jr. (with brochure)

(Through Chief, Mining Division)

A. H. Koschmann

From: DMA Field Team, Region IV

Subject: DMA 1885, Johnson Bros. & Prime, Hoosier Mine (Tungsten)
Boulder County, Colorado

Enclosed herewith is the brochure on the above application for an exploration loan estimated to cost $15,000.

A field examination will be required. Please return the brochure with the final report.

F. V. Kilgas, Alternate

A. H. Koschmann

Enclosure

14

cc: DMA
Koschmann

Map MF-202 Lease 1885

Allkwitfgct

Cancelled

MF 200
(June 1951)

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Ralph L. Johnson, Roy W. Johnson & George A. Prime
Nederland, Boulder County
Colorado

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Colorado, County of Boulder described as follows: [3] Hoosier Lode No. 18340 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W. 6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes: [4]

~~(a) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following liens, encumbrances and claims, each of which the subordination agreement of the holder is attached:~~

(b) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 75 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $ 11250.00, which is 75 percent of the agreed estimated total cost of this project, $ 15,000.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ----------

By ----------

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT "A"

Exploration Project

The purpose of this loan is to aid in driving a drift on the vein approximately 270 feet eastward on the bottom level beneath stopes on the 150-foot level, and to drive a drift westward on the same level to the property line, a distance of approximately 80 feet. About 150 feet of raises will be driven at locations agreed upon by both parties to the contract or their representatives after part or all of the drifting is completed.

The location of the proposed drifting is shown on the accompanying map. The estimated working time is 100 days.

The following costs are estimated:

Labor and supervision	$ 9200.00
Operating equipment	624.00
Supplies	5176.00
	$15000.00

Fixtures and Improvements

None.

Operating Equipment

Equipment owned and furnished by applicants for which depreciation is allowed.

1 - Gardner-Denver drifter complete with column and hoses	$50.00/mo.
1 - Thor mounted jackhammer complete with column and hoses	30.00/mo.
1 - Sullivan 91 stoper complete with hoses	30.00/mo.
1 - 20 H.P. Fairbanks-Morse centrifugal pump	40.00/mo.
2 - Bucket dolly trucks	6.00/mo.
Total -	$156.00/mo.

Depreciation for four months - $624.00.

Supplies

Electric Power	450.00
Dynamite, fuse, caps	$ 2386.00
Mine rails, spikes and bolts	500.00
Compressed air pipe and water pipe, pipe fittings	250.00
Timber, ladders, nails, etc.	500.00
Drill bits and steel, misc. supplies	840.00
Oil, grease, replacement parts	150.00
Small tools	100.00
Total -	$5176.00

Labor and Supervision

2 miners @ $1.50 per hour
2 muckers @ $1.50 per hour
1 hoistman @ $1.50 per hour
1 topman @ $1.50 per hour
1 foreman @ $400.00 per month (½ time)
1 bookkeeper @ $25.00 per month

The above hourly rates are for an 8-hour day, 5-day week, with time and one-half for the sixth day.

Total estimated labor charges for 100 days are:

2 miners	$2600.00
2 muckers	2600.00
1 hoistman	1300.00
1 topman	1300.00
1 foreman	800.00
1 bookkeeper	100.00
Compensation Insurance, etc.	500.00
Total	$9200.00

MF-200
(June 1951)

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Ralph L. Johnson, Roy W. Johnson & George A. Prime Nederland, Boulder County Colorado

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Colorado, County of Boulder described as follows: [3] Hoosier Lode No. 18340 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W. 6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes: [4]

(a) [redacted]

(b) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of ---75--- percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $---11250.00---, which is ---75--- percent of the agreed estimated total cost of this project, $---15,000.00---.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

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Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

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Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ---

By ---

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT "A"

Exploration Project

The purpose of this loan is to aid in driving a drift on the vein approximately 270 feet westward on the bottom level beneath stopes on the 150-foot level, and to drive a drift westward on the same level to the property line, a distance of approximately 80 feet. About 150 feet of raises will be driven at locations agreed upon by both parties to the contract or their representatives after part or all of the drifting is completed.

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Operating equipment	624.00
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	$13000.00

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Equipment owned and furnished by applicants for which depreciation is allowed.

1 - Gardner-Denver drifter complete with column and hoses	$50.00/mo.
1 - Thor mounted jackhammer complete with column and hoses	30.00/mo.
1 - Sullivan 91 stoper complete with hoses	30.00/mo.
1 - 20 H.P. Fairbanks-Morse centrifugal pump	40.00/mo.
2 - Basket dolly trucks	6.00/mo.
Total -	$156.00/mo.

Depreciation for four months - $624.00.

Supplies

Electric Power	450.00
Dynamite, fuse, caps	$ 2286.00
Mine rails, spikes and bolts	300.00
Compressed air pipe and water pipe, pipe fittings	250.00
Timber, ladders, nails, etc.	500.00
Drill bits and steel, misc. supplies	860.00
Oil, grease, replacement parts	150.00
Small tools	100.00
Total -	$3176.00

Labor and Supervision

2 miners @ $1.50 per hour
2 muckers @ $1.50 per hour
1 hoistman @ $1.50 per hour
1 topman @ $1.50 per hour
1 foreman @ $400.00 per month (½ time)
1 bookkeeper @ $25.00 per month

The above hourly rates are for an 8-hour day, 5-day week, with time and one-half for the sixth day.

Total estimated labor charges for 100 days are:

2 miners	$2600.00
2 muckers	2600.00
1 hoistman	1300.00
1 topman	1300.00
1 foreman	800.00
1 bookkeeper	100.00
Compensation Insurance, etc.	500.00
Total	$9200.00

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this ..... day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Ralph L. Johnson, Roy W. Johnson & George A. Prime
Nederland, Boulder County
Colorado

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Colorado, County of Boulder described as follows: [3] Hoosier Lode No. 18340 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W.
6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes: [4]

~~(a) That he is the sole owner, in possession and entitled to possession, and the subordination agreement of the lessor is attached.~~

(*b*) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 75 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $11250.00, which is 75 percent of the agreed estimated total cost of this project, $15,000.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ----------

By ----------

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT "A"

Exploration Project

The purpose of this loan is to aid in driving a drift on the vein approximately 270 feet eastward on the bottom level beneath stopes on the 150-foot level, and to drive a drift westward on the same level to the property line, a distance of approximately 80 feet. About 150 feet of raises will be driven at locations agreed upon by both parties to the contract or their representatives after part or all of the drifting is completed.

The location of the proposed drifting is shown on the accompanying map. The estimated working time is 100 days.

The following costs are estimated:

Labor and supervision	$ 9200.00
Operating equipment	624.00
Supplies	5176.00
	$15000.00

Fixtures and Improvements

None.

Operating Equipment

Equipment owned and furnished by applicants for which depreciation is allowed.

1 - Gardner-Denver drifter complete with column and hoses	$50.00/mo.
1 - Thor mounted jackhammer complete with column and hoses	30.00/mo.
1 - Sullivan 91 stoper complete with hoses	30.00/mo.
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2 - Buckbat dolly trucks	6.00/mo.
Total -	$156.00/mo.

Depreciation for four months - $624.00.

Supplies

Electric Power	450.00
Dynamite, fuse, caps	$ 2386.00
Mine rails, spikes and bolts	500.00
Compressed air pipe and water pipe, pipe fittings	250.00
Timber, ladders, nails, etc.	500.00
Drill bits and steel, misc. supplies	840.00
Oil, grease, replacement parts	150.00
Small tools	100.00
Total -	$5176.00

Labor and Supervision

2 miners @ $1.50 per hour
2 muckers @ $1.50 per hour
1 hoistman @ $1.50 per hour
1 topman @ $1.50 per hour
1 foreman @ $400.00 per month (½ time)
1 bookkeeper @ $25.00 per month

The above hourly rates are for an 8-hour day, 5-day week, with time and one-half for the sixth day.

Total estimated labor charges for 100 days are:

2 miners	$2600.00
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1 hoistman	1300.00
1 topman	1300.00
1 foreman	800.00
1 bookkeeper	100.00
Compensation Insurance, etc.	500.00
Total	$9200.00

MI-200
(June 1951)

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Ralph L. Johnson, Roy W. Johnson & George A. Prime Nederland, Boulder County Colorado

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Colorado County of Boulder described as follows: [3] Hoosier Lode No. 18340 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W. 6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes: [4]

~~(a) That he is the sole owner in possession and entitled to possession, free and clear of all claims, liens, or encumbrances as to each of which the subordination agreement of the lessor is attached.~~

(b) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

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[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

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Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

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Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ----------

By ----------

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT "A"

Exploration Project

The purpose of this loan is to aid in driving a drift on the vein approximately 270 feet eastward on the bottom level beneath stopes on the 150-foot level, and to drive a drift westward on the same level to the property line, a distance of approximately 80 feet. About 150 feet of raises will be driven at locations agreed upon by both parties to the contract or their representatives after part or all of the drifting is completed.

The location of the proposed drifting is shown on the accompanying map. The estimated working time is 100 days.

The following costs are estimated:

Labor and supervision	$ 9200.00
Operating equipment	624.00
Supplies	5176.00
	$15000.00

Fixtures and Improvements

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Compensation Insurance, etc.	500.00
Total	$9200.00

MF-[illegible]0
(June 1951)

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Ralph L. Johnson, Roy W. Johnson & George A. Prime
Nederland, Boulder County
Colorado

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Hoosier Lode No. 18340 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W.
6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes: [4]

~~(a) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.~~

(*b*) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

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5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 75 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $11250.00, which is 75 percent of the agreed estimated total cost of this project, $15,000.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ----------

By ----------

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT "A"

Exploration Project

The purpose of this loan is to aid in driving a drift on the vein approximately 270 feet eastward on the bottom level beneath stopes on the 150-foot level, and to drive a drift westward on the same level to the property line, a distance of approximately 80 feet. About 150 feet of raises will be driven at locations agreed upon by both parties to the contract or their representatives after part or all of the drifting is completed.

The location of the proposed drifting is shown on the accompanying map. The estimated working time is 100 days.

The following costs are estimated:

Labor and supervision	$ 9200.00
Operating equipment	624.00
Supplies	5176.00
	$15000.00

Fixtures and Improvements

None.

Operating Equipment

Equipment owned and furnished by applicants for which depreciation is allowed.

1 - Gardner-Denver drifter complete with column and hoses	$50.00/mo.
1 - Thor mounted jackhammer complete with column and hoses	30.00/mo.
1 - Sullivan 91 stoper complete with hoses	30.00/mo.
1 - 20 H.P. Fairbanks-Morse centrifugal pump	40.00/mo.
2 - Bucket dolly trucks	6.00/mo.
Total -	$156.00/mo.

Depreciation for four months - $624.00.

Supplies

Electric Power	450.00
Dynamite, fuse, caps	$ 2386.00
Mine rails, spikes and bolts	500.00
Compressed air pipe and water pipe, pipe fittings	250.00
Timber, ladders, nails, etc.	500.00
Drill bits and steel, misc. supplies	840.00
Oil, grease, replacement parts	150.00
Small tools	100.00
Total -	$5176.00

Labor and Supervision

2 miners @ $1.50 per hour
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1 foreman @ $400.00 per month (½ time)
1 bookkeeper @ $25.00 per month

The above hourly rates are for an 8-hour day, 5-day week, with time and one-half for the sixth day.

Total estimated labor charges for 100 days are:

2 miners	$2600.00
2 muckers	2600.00
1 hoistman	1300.00
1 topman	1300.00
1 foreman	800.00
1 bookkeeper	100.00
Compensation Insurance, etc.	500.00
Total	$9200.00

MF-206
(June 1951)

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

It is agreed this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and[2] Ralph L. Johnson, Roy W. Johnson & George A. Prime
Nederland, Boulder County
Colorado

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Colorado, County of Boulder described as follows:[3] Hoosier Lode No. 18340 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W. 6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes:[4]

~~(a) That he is the owner of the property described above and entitled to possession, and the subordination agreement of the lessor is attached.~~

(*b*) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for[5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of[6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

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14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

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Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

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17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ----------

By ----------

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT "A"

Exploration Project

The purpose of this loan is to aid in driving a drift on the vein approximately 270 feet eastward on the bottom level beneath stopes on the 150-foot level, and to drive a drift westward on the same level to the property line, a distance of approximately 80 feet. About 150 feet of raises will be driven at locations agreed upon by both parties to the contract or their representatives after part or all of the drifting is completed.

The location of the proposed drifting is shown on the accompanying map. The estimated working time is 100 days.

The following costs are estimated:

Labor and supervision	$ 9200.00
Operating equipment	624.00
Supplies	5176.00
	$15000.00

Fixtures and Improvements

None.

Operating Equipment

Equipment owned and furnished by applicants for which depreciation is allowed.

1 - Gardner-Denver drifter complete with column and hoses	$50.00/mo.
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2 - Bucket dolly trucks	6.00/mo.
Total -	$156.00/mo.

Depreciation for four months - $624.00.

Supplies

Electric Power	450.00
Dynamite, fuse, caps	$ 2386.00
Mine rails, spikes and bolts	500.00
Compressed air pipe and water pipe, pipe fittings	250.00
Timber, ladders, nails, etc.	500.00
Drill bits and steel, misc. supplies	840.00
Oil, grease, replacement parts	150.00
Small tools	100.00
Total -	$5176.00

Labor and Supervision

2 miners @ $1.50 per hour
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1 hoistman @ $1.50 per hour
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1 foreman @ $400.00 per month (½ time)
1 bookkeeper @ $25.00 per month

The above hourly rates are for an 8-hour day, 5-day week, with time and one-half for the sixth day.

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1 hoistman	1300.00
1 topman	1300.00
1 foreman	800.00
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Compensation Insurance, etc.	500.00
Total	$9200.00

[redacted]00
(June 1951)

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this ..... day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Ralph L. Johnson, Roy W. Johnson & George A. Prime
Nederland, Boulder County
Colorado

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Colorado, County of Boulder described as follows: [3] Hoosier Lode No. 18340 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W. 6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes: [4]

~~(a) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances, a copy of which the subordination agreement of the holder is attached:~~

(b) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

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7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

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Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ---

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U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

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Exploration Project

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Dynamite, fuse, caps	$ 2386.00
Mine rails, spikes and bolts	500.00
Compressed air pipe and water pipe, pipe fittings	250.00
Timber, ladders, nails, etc.	500.00
Drill bits and steel, misc. supplies	840.00
Oil, grease, replacement parts	150.00
Small tools	100.00
Total -	$5176.00

Labor and Supervision

2 miners @ $1.50 per hour
2 muckers @ $1.50 per hour
1 hoistman @ $1.50 per hour
1 topman @ $1.50 per hour
1 foreman @ $400.00 per month (½ time)
1 bookkeeper @ $25.00 per month

The above hourly rates are for an 8-hour day, 5-day week, with time and one-half for the sixth day.

Total estimated labor charges for 100 days are:

2 miners	$2600.00
2 muckers	2600.00
1 hoistman	1300.00
1 topman	1300.00
1 foreman	800.00
1 bookkeeper	100.00
Compensation Insurance, etc.	500.00
Total	$9200.00

MF-200
(June 1951)

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Ralph L. Johnson, Roy L. Johnson & George A. Grise
Nederland, Boulder County
Colorado

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Colorado, County of Boulder, described as follows: [3] Hoosier Lode No. 18310 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W. 6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes: [4]

~~(a) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~

(*b*) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 75 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $ 11250.00, which is 75 percent of the agreed estimated total cost of this project, $ 15,000.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ----------

By ----------

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT "A"

Exploration Project

The purpose of this loan is to aid in driving a drift on the vein approximately 270 feet eastward on the bottom level beneath stopes on the 150-foot level, and to drive a drift westward on the same level to the property line, a distance of approximately 80 feet. About 150 feet of raises will be driven at locations agreed upon by both parties to the contract or their representatives after part or all of the drifting is completed.

The location of the proposed drifting is shown on the accompanying map. The estimated working time is 100 days.

The following costs are estimated:

Labor and supervision	$ 9200.00
Operating equipment	624.00
Supplies	5176.00
	$15000.00

Fixtures and Improvements

None.

Operating Equipment

Equipment owned and furnished by applicants for which depreciation is allowed.

1 - Gardner-Denver drifter complete with column and hoses	$50.00/mo.
1 - Thor mounted jackhammer complete with column and hoses	30.00/mo.
1 - Sullivan 91 stoper complete with hoses	30.00/mo.
1 - 20 H.P. Fairbanks-Morse centrifugal pump	40.00/mo.
2 - Bucket dolly trucks	6.00/mo.
Total -	$156.00/mo.

Depreciation for four months - $624.00.

Supplies

Electric Power	450.00
Dynamite, fuse, caps	$ 2386.00
Mine rails, spikes and bolts	500.00
Compressed air pipe and water pipe, pipe fittings	250.00
Timber, ladders, nails, etc.	500.00
Drill bits and steel, misc. supplies	840.00
Oil, grease, replacement parts	150.00
Small tools	100.00
Total -	$5176.00

Labor and Supervision

2 miners @ $1.50 per hour
2 muckers @ $1.50 per hour
1 hoistman @ $1.50 per hour
1 topman @ $1.50 per hour
1 foreman @ $400.00 per month (½ time)
1 bookkeeper @ $25.00 per month

The above hourly rates are for an 8-hour day, 5-day week, with time and one-half for the sixth day.

Total estimated labor charges for 100 days are:

2 miners	$2600.00
2 muckers	2600.00
1 hoistman	1300.00
1 topman	1300.00
1 foreman	800.00
1 bookkeeper	100.00
Compensation Insurance, etc.	500.00
Total	$9200.00

MF 200
(June 1951)

Docket No. DMA 1885
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this ..... day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Ralph L. Johnson, Roy W. Johnson & George A. Crime Nederland, Boulder County Colorado

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Colorado, County of Boulder described as follows: [3] Hoosier Lode No. 18340 in a portion of Sec. 6-7-8, T. 1 S., R. 72 W. 6 P.M., Grand Island Mining District, known as Hoosier Mine

with respect to which the Operator represents and undertakes: [4]

~~(a) That he is the sole owner, in possession and entitled to possession, free and clear of all claims, liens or encumbrances as to each of the properties described above.~~

(b) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 6 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 75 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $11250.00, which is 75 percent of the agreed estimated total cost of this project, $15,000.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

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Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ----------

By ----------

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT "A"

Exploration Project

The purpose of this loan is to aid in driving a drift on the vein approximately 270 feet eastward on the bottom level beneath stopes on the 150-foot level, and to drive a drift westward on the same level to the property line, a distance of approximately 80 feet. About 150 feet of raises will be driven at locations agreed upon by both parties to the contract or their representatives after part or all of the drifting is completed.

The location of the proposed drifting is shown on the accompanying map. The estimated working time is 100 days.

The following costs are estimated:

Labor and supervision	$ 9200.00
Operating equipment	624.00
Supplies	5176.00
	$15000.00

Fixtures and Improvements

None.

Operating Equipment

Equipment owned and furnished by applicants for which depreciation is allowed.

1 - Gardner-Denver drifter complete with column and hoses	$50.00/mo.
1 - Ther mounted jackhammer complete with column and hoses	30.00/mo.
1 - Sullivan 91 stoper complete with hoses	30.00/mo.
1 - 20 H.P. Fairbanks-Morse centrifugal pump	40.00/mo.
2 - Bucket dolly trucks	6.00/mo.
Total -	$156.00/mo.

Depreciation for four months - $624.00.

Supplies

Electric Power	450.00
Dynamite, fuse, caps	$ 2386.00
Mine rails, spikes and bolts	500.00
Compressed air pipe and water pipe, pipe fittings	250.00
Timber, ladders, nails, etc.	500.00
Drill bits and steel, misc. supplies	840.00
Oil, grease, replacement parts	150.00
Small tools	100.00
Total -	$5176.00

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2 miners @ $1.50 per hour
2 muckers @ $1.50 per hour
1 hoistman @ $1.50 per hour
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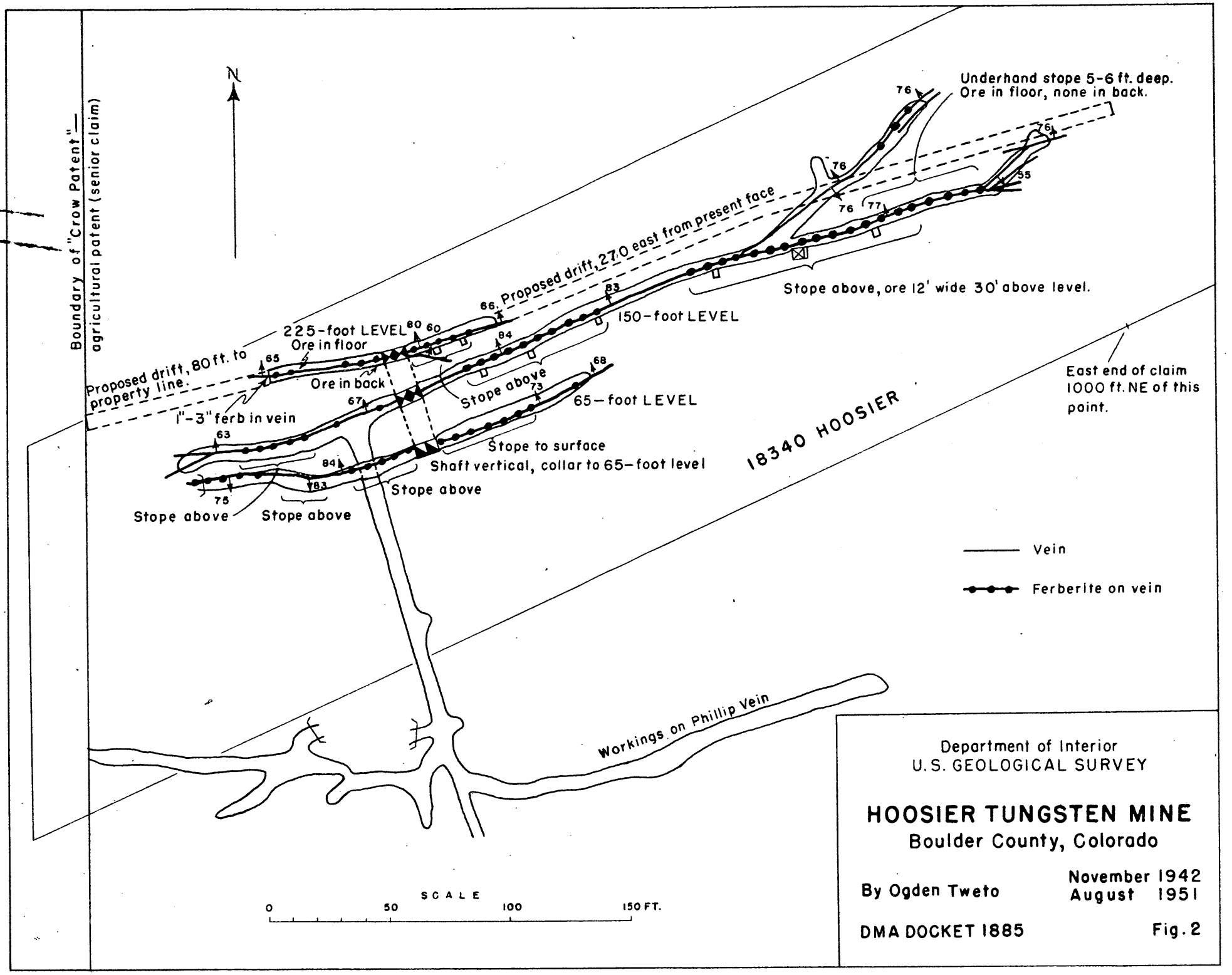
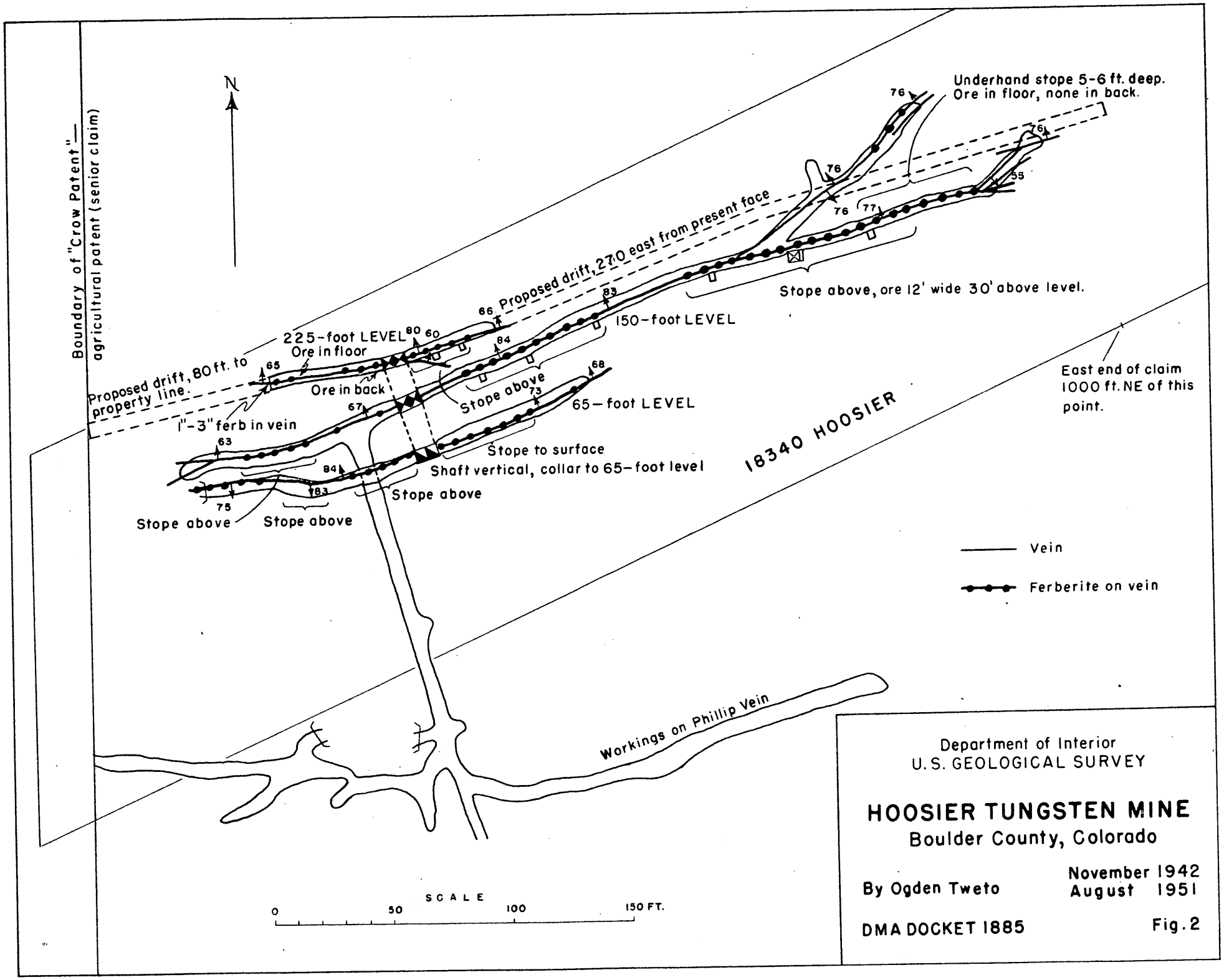
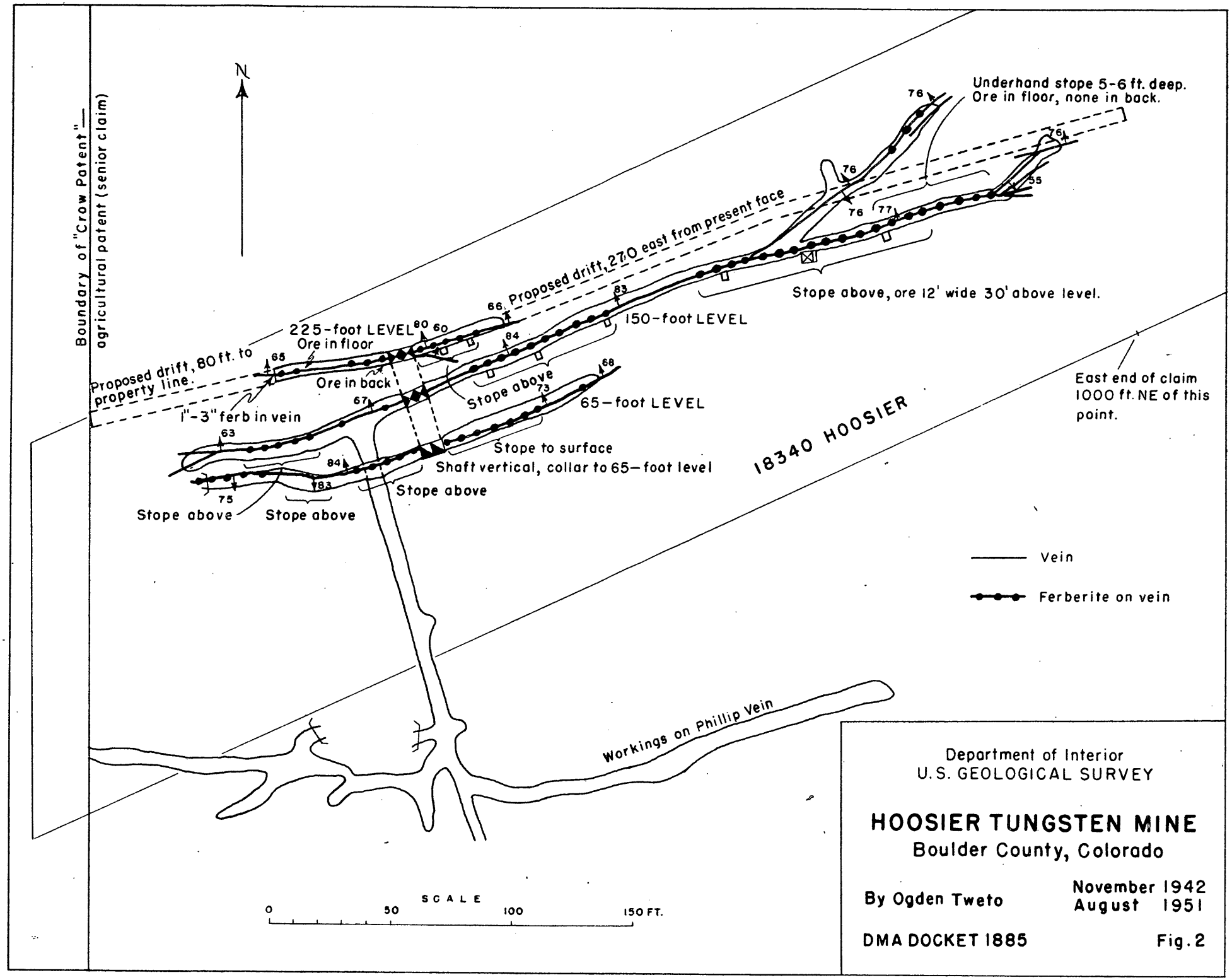
Total	$9200.00


N
Boundary of "Crow Patent" agricultural patent (senior claim)
Underhand stope 5-6 ft. deep.
Ore in floor, none in back.
Proposed drift, 270 east from present face
Stope above, ore 12' wide 30' above level.
150-foot LEVEL
225-foot LEVEL
Ore in floor
Ore in back
Proposed drift, 80 ft. to property line.
1"-3" ferb in vein
Stope above
65-foot LEVEL
Stope to surface
Shaft vertical, collar to 65-foot level
Stope above
Stope above
Stope above
East end of claim 1000 ft. NE of this point.
18340 HOOSIER
Vein
Ferberite on vein
Workings on Phillip Vein
SCALE
0
50
100
150 FT.
Department of Interior
U.S. GEOLOGICAL SURVEY
HOOSIER TUNGSTEN MINE
Boulder County, Colorado
By Ogden Tweto
November 1942
August 1951
DMA DOCKET 1885
Fig. 2


N
Boundary of "Crow Patent" — agricultural patent (senior claim)
Underhand stope 5-6 ft. deep. Ore in floor, none in back.
Proposed drift, 270 east from present face
Stope above, ore 12' wide 30' above level.
150-foot LEVEL
225-foot LEVEL
Ore in floor
Ore in back
Proposed drift, 80 ft. to property line.
1"-3" ferb in vein
Stope above
65-foot LEVEL
Stope to surface
Shaft vertical, collar to 65-foot level
Stope above
Stope above
Stope above
East end of claim 1000 ft. NE of this point.
18340 HOOSIER
Workings on Phillip Vein
Vein
Ferberite on vein
SCALE
0
50
100
150 FT.
Department of Interior
U.S. GEOLOGICAL SURVEY
HOOSIER TUNGSTEN MINE
Boulder County, Colorado
By Ogden Tweto
November 1942
August 1951
DMA DOCKET 1885
Fig. 2



Department of Interior
U.S. GEOLOGICAL SURVEY

HOOSIER TUNGSTEN MINE

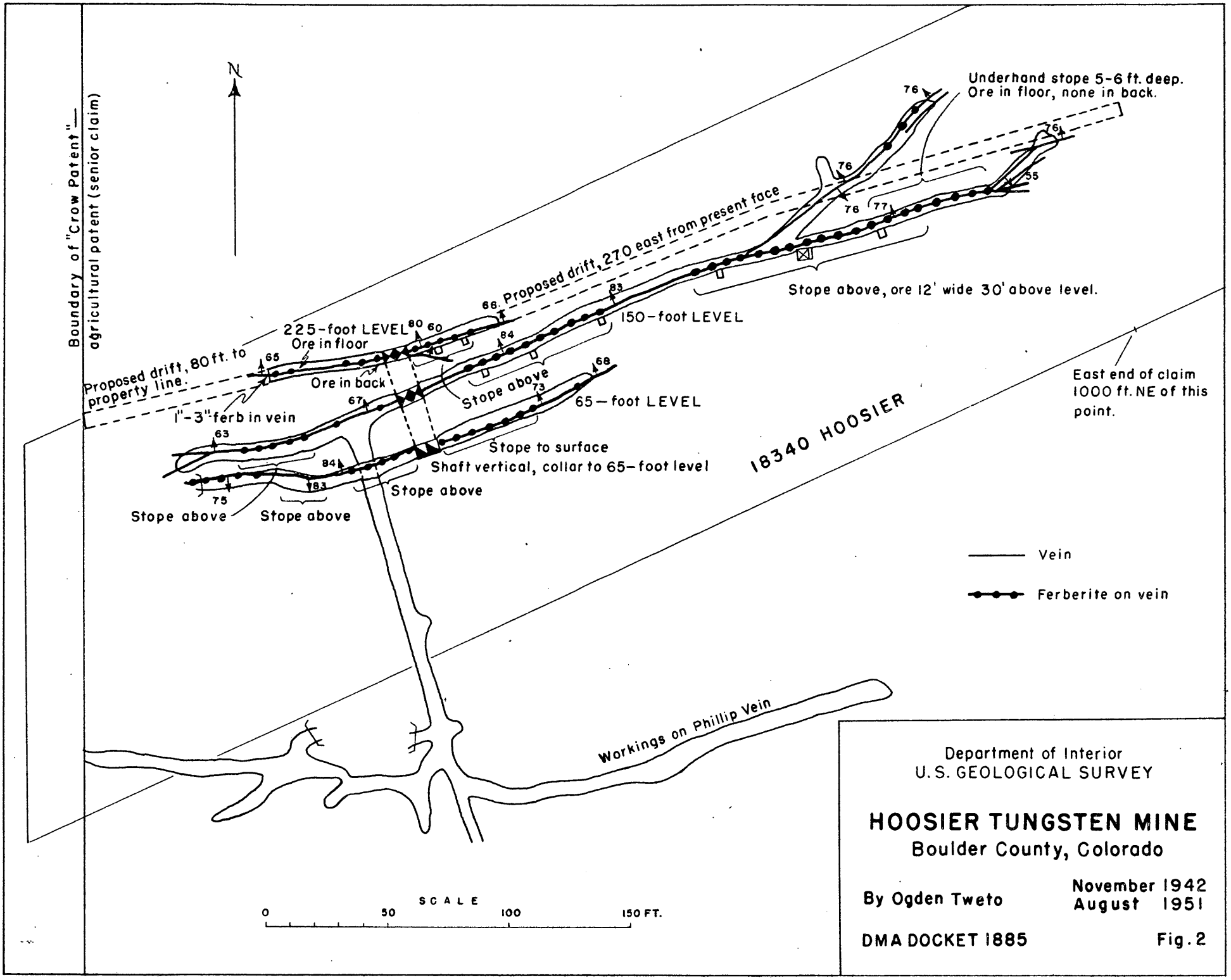
Boulder County, Colorado

By Ogden Tweto

November 1942
August 1951

DMA DOCKET 1885

Fig. 2



Department of Interior
U.S. GEOLOGICAL SURVEY

HOOSIER TUNGSTEN MINE

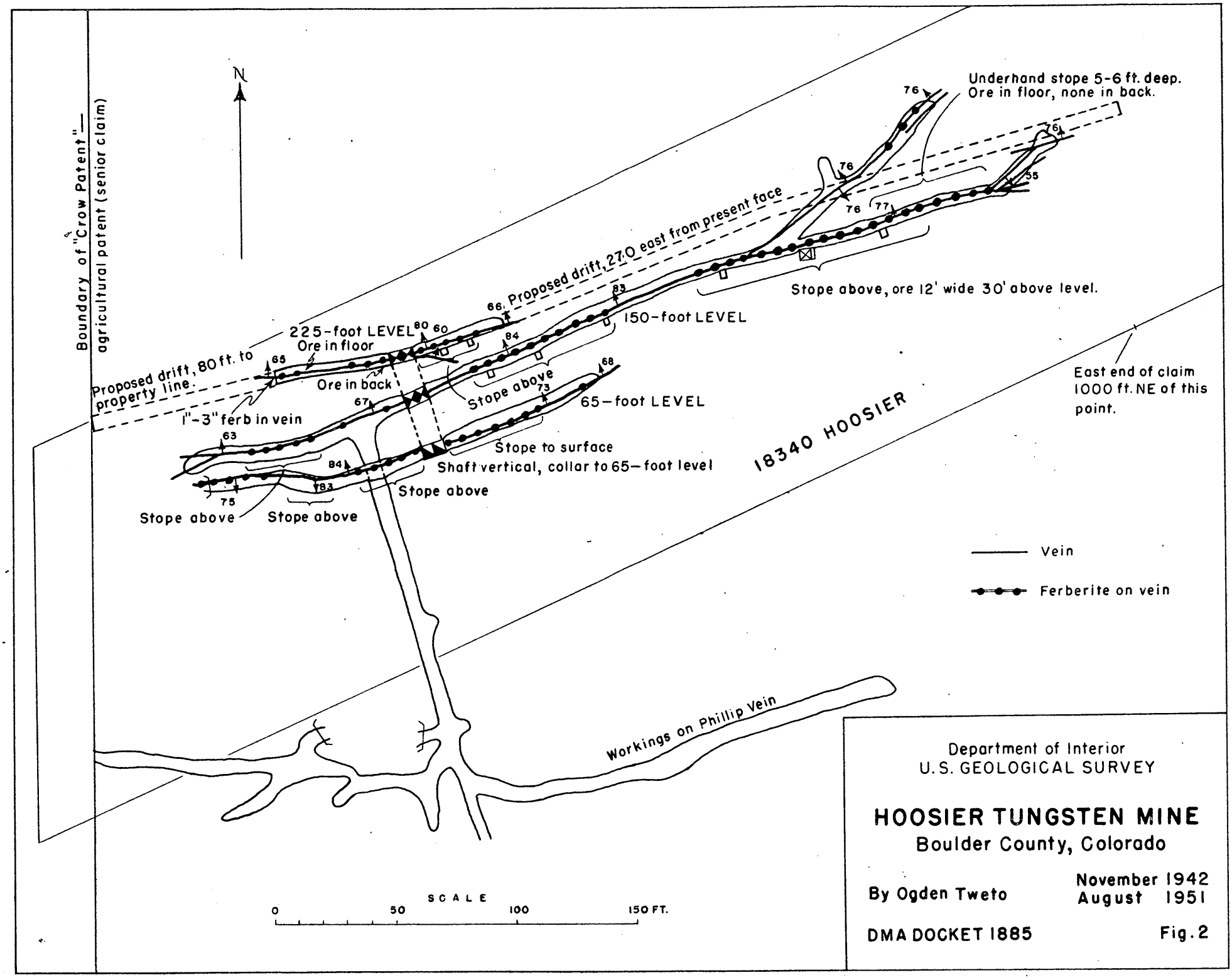
Boulder County, Colorado

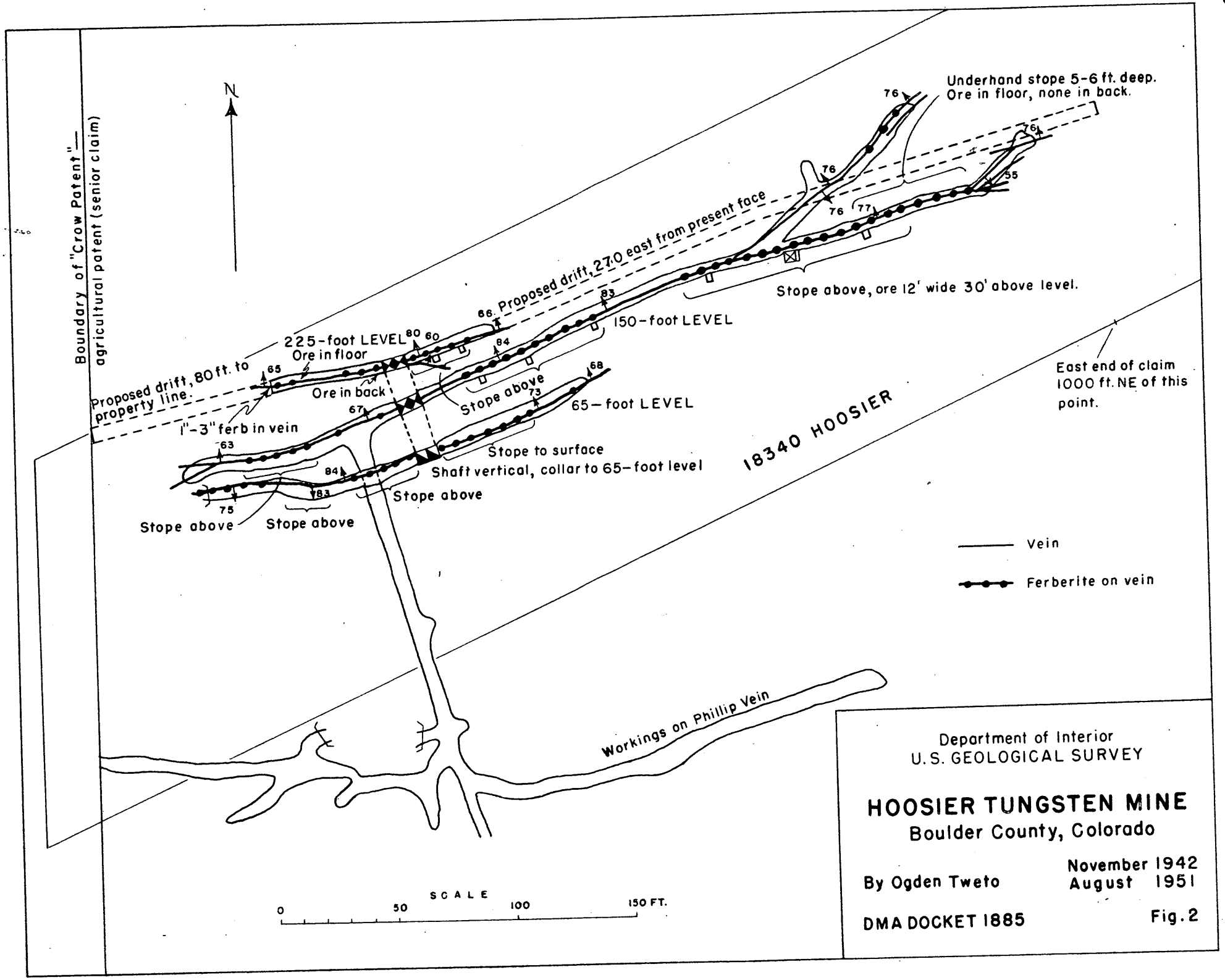
By Ogden Tweto

November 1942
August 1951

DMA DOCKET 1885

Fig. 2


N
Boundary of "Crow Patent" — agricultural patent (senior claim)
Underhand stope 5-6 ft. deep. Ore in floor, none in back.
Proposed drift, 27.0 east from present face
Stope above, ore 12' wide 30' above level.
150-foot LEVEL
225-foot LEVEL
Ore in floor
Ore in back
Proposed drift, 80 ft. to property line.
1"-3" ferb in vein
Stope above
65-foot LEVEL
Stope to surface
Shaft vertical, collar to 65-foot level
Stope above
Stope above
Stope above
East end of claim 1000 ft. NE of this point.
18340 HOOSIER
Vein
Ferberite on vein
Workings on Phillip Vein
SCALE
0
50
100
150 FT.
Department of Interior
U.S. GEOLOGICAL SURVEY
HOOSIER TUNGSTEN MINE
Boulder County, Colorado
By Ogden Tweto
November 1942
August 1951
DMA DOCKET 1885
Fig. 2



Department of Interior
U.S. GEOLOGICAL SURVEY

HOOSIER TUNGSTEN MINE

Boulder County, Colorado

By Ogden Tweto

November 1942
August 1951

DMA DOCKET 1885

Fig. 2

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

224 New Customhouse
Denver 2, Colorado

Air Mail

September 13, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 1085, Johnson Brothers and Prime, applicants, The Hoosier Tungsten Mine, Boulder County, Colorado

Enclosed herewith are the original and two copies of the report on the subject docket.

We concur with the conclusions and recommendations of the examining team that the exploration loan of $15,000 be approved.

The brochure is enclosed.

Paul T. Allsman

Paul T. Allsman, Alternate

A. H. Koschmann

A. H. Koschmann

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

September 11, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 1885, Johnson Brothers and Prime, applicants, The Hoosier Tungsten Mine, Boulder County, Colo.

The application of the subject docket is for the exploration of the Hoosier Mine on and above the 225 foot level by means of 350 feet of drifting and 150 feet of raising at an estimated cost of $15,000.

Tungsten ore of good grade and quality has been mined from the surface to the 150 foot level with production of at least 10,000 units of tungsten trioxide.

Exploration of the 225 foot level is now being done with production of 15 tons of crude ore per day of one shift, averaging 0.50 to 1.00 percent tungstic trioxide.

The examining team highly recommends approval of the application, with which we concur.

The report contains the necessary information for an Exploration Project Contract, which will be prepared by this office.

Paul T. Allsman

Paul T. Allsman

Mining Division
Date Rec'd.
SEP 10 1951
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
DENVER, COLORADO

Region IV

Building 20
Denver Federal Center
September 10, 1951

Memorandum

To: Chief, Mining Division, Region IV

From: W. M. Traver, Jr.

Subject: Docket DMA-1885, Johnson Brothers and Prime, The Hoosier Mine, Nederland, Colorado.

Please find enclosed the original and seven copies of the "Summary, Conclusions, and Recommendations", by Harrer and Tweto, and the same number of copies of Harrer's engineering report on the subject Defense Minerals Administration docket.

Harrer concludes that, in view of the tungsten mineralization exposed in the various mine workings, the past production history, favorable geologic environment, and reliability of the applicants, the exploration application for a $15,000.00 participating loan should be approved. I am in accord with the conclusions.

Sufficient data is available in the report to make up Exhibit A for a contract without any difficulty.

The application, copy of lease, and "Review of Application for Exploration Assistance", submitted by the Field Team, Region IV, through you August 15, 1951, are also enclosed.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Administration
200 New Customhouse
Denver 2, Colorado

September 6, 1951

Memorandum

To : DMA Field Team, Region IV

From : A. H. Koschmann

Subject: DMA Docket 1885 - Hoosier Tungsten Mine, Boulder Co., Colo., Johnson Bros. and Prime, applicants.

Attached are 8 copies of a geologic report by Ogden Tweto covering the Hoosier Tungsten mine, Boulder County, Colorado.

The Hoosier mine is about in the center of the highly productive western portion of the tungsten district. Some tungsten ore is present in the floor on the 150-foot level of the mine and the applicants wish to run a drift beneath it on the 225-foot level. Mr. Tweto reports that this is an excellent prospect for ore and recommends that an exploration loan of $15,000 be granted for this work.

I concur with Mr. Tweto's recommendation.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Attachments

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1885, Johnson Brothers and Prime, The Hoosier Mine

Nederland, Boulder County, Colo.

C. M. Harrer, Mining Engineer
U. S. Bureau of Mines

Ogden Tweto, Geologist
U. S. Geological Survey

September 7, 1951

JOHNSON BROTHERS AND PRIME
THE HOOSIER MINE
NEDERLAND, BOULDER COUNTY, COLO.

Summary, Conclusions, and Recommendations

By S. M. Harrer
Mining Engineer
U. S. Bureau of Mines

and

Ogden Tweto
Geologist
U. S. Geological Survey

JOHNSON BROTHERS AND PRIME
THE HOOSIER MINE
NEDERLAND, BOULDER COUNTY, COLO.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. M. Harrer and Ogden Tweto

The Hoosier mine is a small but relatively productive tungsten mine about a mile northeast of Nederland, in the western part of the Boulder tungsten district, Colo. It has produced at least 10,000 units of WO_3. Tungsten ore of good grade and quality was mined from the surface down to the 150-foot level, and good ore has been exposed in drifting now in progress on the short bottom, or 225-foot level.

The applicants request a loan of $15,000.00 to drive 270 feet eastward on the bottom level, beneath stopes on the 150-foot level, and to drive westward to the property line, a distance of 80 feet, (100 feet when the application was made). Provision is also made for 150 feet of raising, at sites to be selected after part or all of the drifting is done. This is an excellent prospect and sound basis for a loan.

The total cost of the proposed work is estimated as $15,000.00.

It is recommended that an exploration loan of $15,000.00 be granted to do this work (Government participation 75 percent, or $11,250.00).

HOOSIER TUNGSTEN MINE

BOULDER COUNTY, COLORADO

JOHNSON BROS. AND PRIME, APPLICANTS

DMA DOCKET 1885

Geology

By Ogden Tweto, Geologist
U. S. Geological Survey

HOOSIER TUNGSTEN MINE
BOULDER COUNTY, COLORADO
JOHNSON BROS. AND PRIME, APPLICANTS

The Hoosier mine is about a mile northeast of Nederland, on the west slope of Hurricane Hill, about in the center of the highly productive western portion of the Boulder tungsten district, Colorado. It is operated by Johnson Bros. and Prime, capable and reliable miners, who lease from Hetzer Mines, Inc., the owners. The mine is near the western end of the Hoosier claim (fig. 2), and is bounded on the west by the "Crow Patent," on which lies the adjoining Phillip Extension mine. The Phillip vein has been worked in both the Hoosier and the Phillip Extension mines, but the Hoosier vein has been worked only in the Hoosier mine.

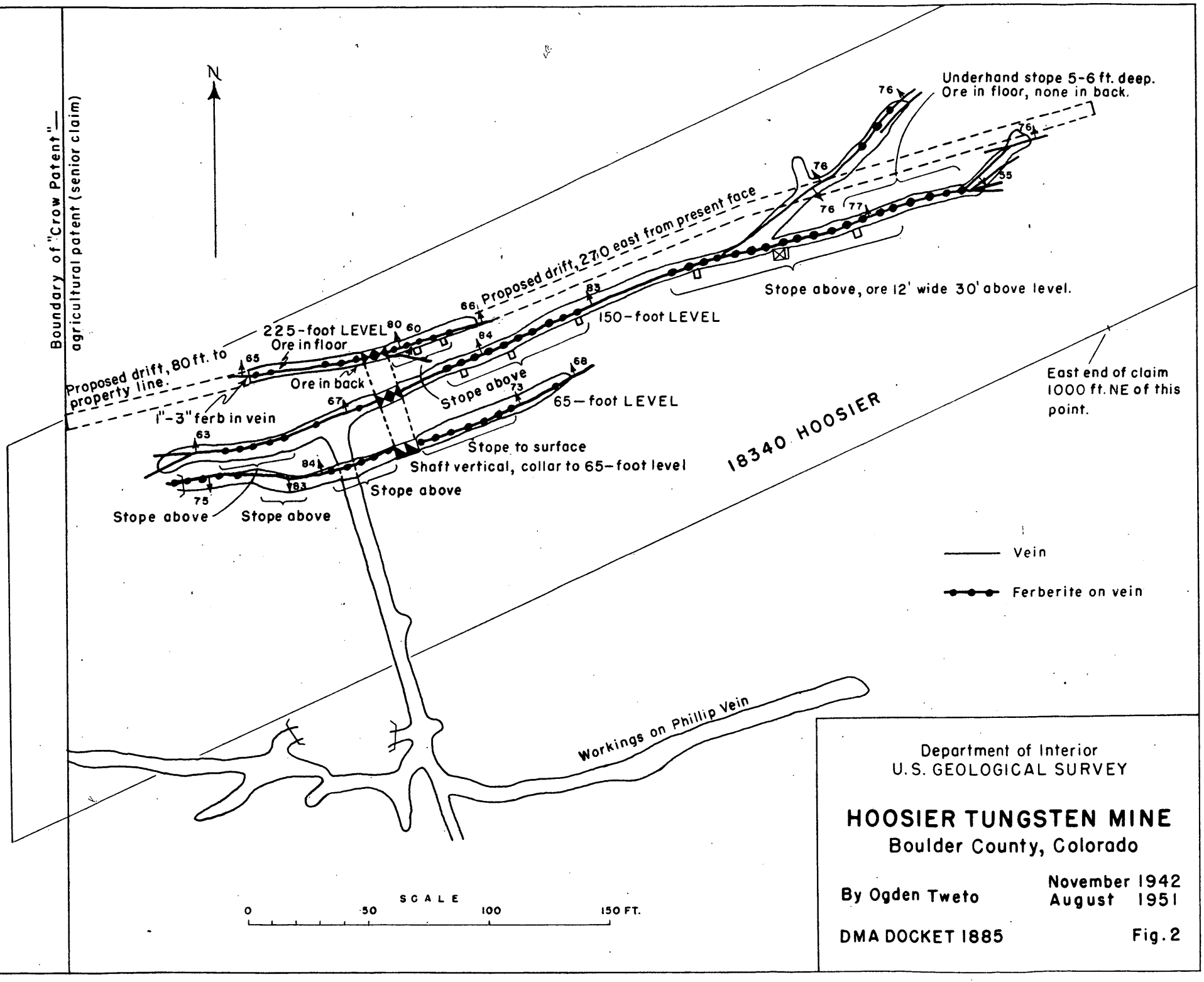
The Hoosier vein was one of the early discoveries in the Boulder district. It was worked at some time between 1901 and 1907, but no record of the output for this period is available. The mine was worked at times between 1907 and 1917, down to the 150-foot level, and it produced 442 tons of ore averaging 11.57% WO_3, or a total of 5114 units WO_3, at this time. Possibly 25% of this output came from the Phillip vein. The mine was under water from 1917 to 1943; it was reopened in 1943, and the shoot was sunk from the 150 to the 225-foot level, in ore most of the way. The mine was operated intermittently from 1943 to 1946, and was under water from 1946 to 1950, when the present lessees started operation. The output from 1943 to the present was at least 5000, and possibly as much as 7000, units WO_3.

The workings on the Hoosier vein are in aplite and pegmatite. The vein strikes about N. 75° E. and dips 60°-85° N. It is 6 to 15 inches wide in most exposures and consists of sheeted or brecciated silicified country rock and veinlets of horn quartz; at places it is a tight, crushed zone only 3 or 4 inches wide. Ferberite is, or was, present through much of the drift length on each level, as shown in figure 2. In the upper and western part of the mine the ore was relatively wide (6-18 inches), and was rather horny, but the ore on the 225-foot level and in the eastern stope above the 150 is in generally thinner seams of crystalline ferberite, free of horn quartz.

One main ore shoot, which widens and branches downward, has been found thus far on the Hoosier vein, and, in addition, several small bodies of ore have been stoped. The main ore shoot lies on either side of the shaft at the surface and on the first level, where it has a stope length of 105 feet. It pitches eastward across the shaft between the 65- and 150-foot levels, and evidently splits and widens. On the 150-foot level, there are two stopes east of the shaft, 60 and 100 feet long, separated by a barren pillar 35 feet long. Ore is present in the floor beneath both stopes and was worked in a shallow underhand stope for 25 feet east of the eastern stope, where no ore is present in the back of the drift. On the bottom level, good ore was exposed in the face of the drift west of the shaft when the mine was visited August 28, 1951, and ore was exposed in the floor and back of the drift at places between the breast and the shaft. A small stope east of the shaft was put up by previous operators, and workable ore is exposed at the back and in one end of it.

The applicants have requested a loan of $15,000 to drive the 225-foot level about 80 feet westward to the property line and about 270 feet eastward to a point a little beyond the easternmost exposure of ore on the 150-foot level. This is an excellent prospect for ore, and sound basis for a loan. Ore was stoped extensively above the 150-foot level and is present in the floor of the level. The next logical move is to drive beneath this ore on the 225-foot level and explore the block between levels by raising. The possibility of finding ore by such work seems almost certain.

According to the estimates of the Bureau of Mines (see Mr. Harrer's report) the proposed 350 feet of drift and 150 feet of raises (at sites to be chosen after drifting is completed) would cost about $15,000. Accordingly, it is recommended that an Exploration Loan of $15,000 be granted for this work (Government participation 75% or $11,250).



Department of Interior
U.S. GEOLOGICAL SURVEY

HOOSIER TUNGSTEN MINE

Boulder County, Colorado

By Ogden Tweto

November 1942
August 1951

DMA DOCKET 1885

Fig. 2

JOHNSON BROTHERS AND PRIME
THE HOOSIER MINE
NEDERLAND, BOULDER COUNTY, COLO.

Engineering Report

By G. M. Harrer
Mining Engineer
U. S. Bureau of Mines

JOHNSON BROTHERS AND PRICE
THE HOOSIER MINE
NEDERLAND, BOULDER COUNTY, COLO.

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Introduction	1
Location, topography, and physical features	1
History and production	2
Ownership and extent	2
Description of the deposits	3
Ore reserves	3
Present status	4
Project proposals and costs	5
Proposed financing	8
Conclusions	9
Recommendations	9

ILLUSTRATIONS

Figure	Follows Page
1. Index map, Hoosier mine, Boulder County, Colo.	1
2. Hoosier tungsten mine, Boulder County, Colo.	*

* See figures following "Geology Report".

JOHNSON BROTHERS AND PRIME
THE HOOSIER MINE
NEDERLAND, BOULDER COUNTY, COLO.

ENGINEERING REPORT

By

C. M. Harrer

INTRODUCTION

The Hoosier mine is operated under a lease agreement between Hetzer Mines, Inc., of Nederland, Colo., lessor, and Messrs. R. L. and R. W. Johnson and G. A. Prime, a partnership, lessees.

The lessees have applied for a $15,000.00 exploration loan to augment their tungsten reserves under the Defense Production Act of 1950.

Field examination of the property was completed on August 28, 1951, by engineers of the Colorado Branch, Bureau of Mines, Region IV, and a member of the U. S. Geological Survey in the company of lessee G. A. Prime, mine operator, and lessee R. W. Johnson, mill operator.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Hoosier mine is within the boundaries of the Hoosier lode claim, survey no. 18340, in secs. 6, 7, and 8, T. 1 S., R. 72 W., Boulder County tungsten mining district, Boulder County, Colo. (fig. 1), at an altitude of about 8,412 feet. The mine is 2.2 miles northeast of Nederland by a well maintained county road readily accessible throughout the year.

The climate is generally mild and mining can be carried on throughout the year. Ample water is available for customary milling operations. Timber in the area is small but suited for general mining operations.

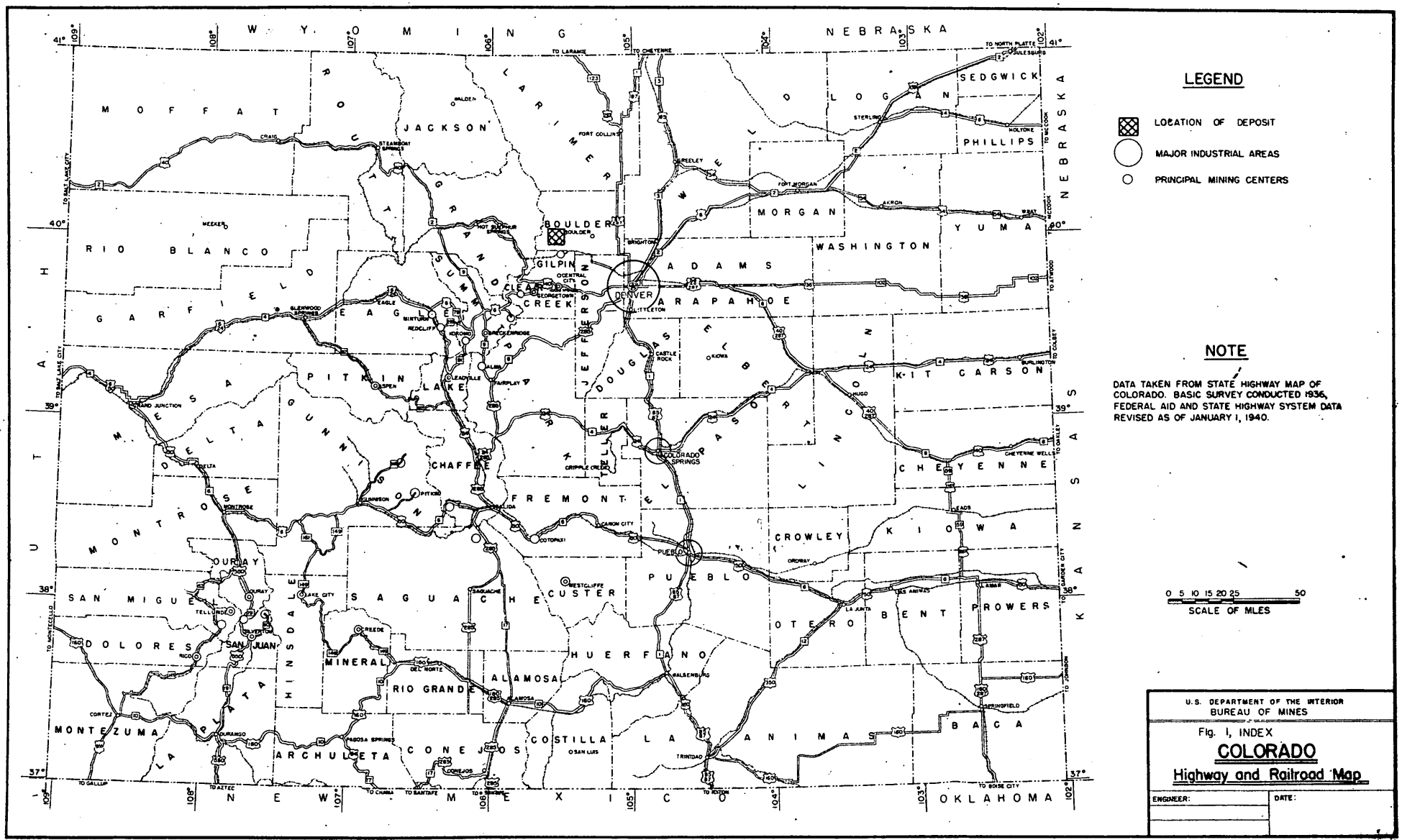

Fig. 1 - INDEX MAP, HOOSIER MINE, BOULDER CO. COLORADO. DMA-1885

Concentrates and supplies are trucked through Nederland. Railroad shipping points are Rollinsville on the Denver and Rio Grande Western Railroad, 5 miles from Nederland, and Boulder, on the Colorado and Southern and Union Pacific Railroads.

Electric power furnished by Public Service Company of Colorado, is now being used at the mine and mill.

HISTORY AND PRODUCTION

Tungsten as ferberite was discovered near Nederland, Colo., in 1899. Total production from the Boulder tungsten district through 1948 is reported as 24,480 tons of 60 percent WO_3 concentrates, valued at $23,700,000.00.

The Hoosier mine production for the period 1907-42 is estimated at 442 tons averaging 11.57 percent WO_3, which concentrated to a total of 5,114 units of 60 percent WO_3.

Present production is 15 tons of crude ore per day (8 hours), averaging between 1/2 to 1 percent WO_3. The mill produces 150 pounds of concentrates per day operating two 8-hour shifts. The concentrates average 55 percent WO_3.

OWNERSHIP AND EXTENT

The Hoosier lode claim, survey no. 18340, covering 5.65 acres in secs. 6, 7, and 8, T. 1 S., R. 72 W., Boulder County, Colo., is owned by Hetzer Mines, Inc., of Nederland, Colo.

Messrs. R. L. Johnson, of Louisville, Colo., R. W. Johnson, of Berthoud, Colo., and G. A. Prime, of Nederland, Colo., operate the mine on the above property under a 3-year lease agreement with Hetzer Mines, Inc., dated October 1, 1949, which will probably be renewable although this is not mentioned in the agreement.

A royalty of 15 percent of the net proceeds from the sale of any ores is stipulated. "Net proceeds" is interpreted as the net sale price of ores less transportation charges to the lessor's mill at Nederland. Lessees can sell all ores to the lessor, or to any other market, at the best price offered.

DESCRIPTION OF THE DEPOSITS

Tungsten occurs as massive to coarsely crystalline ferberite with a gangue of gray horn quartz (fig. 2). Veinlets, streaks, and lenses of ore are found along a prominent fissure and also in sets of more or less parallel fractures particularly noticed in the hanging wall of an old stope on the 150-foot level where the main fissure vein, formerly stoped to a width of 2 feet, is now being mined to a width of over 12 feet. Wall rocks are aplite and pegmatite.

Ferberite occurs as small, irregular bodies of high-grade ore raking to the east. Collectively, 50 ore shoots in the Boulder district have shown an average tonnage of about 350 tons assaying 8 percent WO_3. Veins vary in width from a fraction of an inch to 3 feet, and widths of over 15 feet may be mined where ferberite incrusts a network of fractures and prices are favorable. Old stopes on the 150-foot level of the Hoosier mine have firm, aplite walls and stand well with stull support. Coarse, barren wall rock broken is back-filled in the stopes.

ORE RESERVES

There is insufficient data available upon which to base ore reserve estimates for the Hoosier mine. As is customary in small mines in the Boulder tungsten field, ore is seldom developed in advance of mining operations. On the basis of previous production in mining from the surface to the150-foot level, and the good ore that has been exposed

in the shaft and in drifting recently started on the lower, or 225-foot, level, the assumption appears justified that sufficient ore reserves will be developed to warrant the loan recommended in this report.

PRESENT STATUS

Messrs. Ralph L. Johnson, Roy W. Johnson, and George A. Prime, lessees from Metzer Mines, Inc., are presently engaged in mining and milling ferberite tungsten ore from the Hoosier mine. Mill feed at present comes from dumps on the surface and stope fills remaining above the 150-foot level. Additional ferberite veinlets opened in the hanging walls of old stopes are being mined, and development rock from the west heading on the 225-foot level contains sufficient ferberite to sort and mill.

Underground development (fig. 2) is accessible through a 4 x 8 foot shaft with a 3 1/2 x 4 foot bucketway. The shaft is about 230 feet deep and both the 150-foot and 225-foot levels were examined.

The 150-foot level is developed by about 460 feet of drift and ore was mined from stopes on three different ore shoots.

The 225-foot, or bottom, level is being developed by two headings for a combined length of 95 feet, and is the site of the proposed exploration program.

The surface plant consists of a headframe with bucket dump, and buildings which house the shop, electrified mine hoist, air compressor, and Timken bit grinder with their electric controls. A rock house equipped with a 2-inch trommel screen is located nearby and is used for sorting out barren rock.

Well facilities for the gravity concentration of the ferberite are located on the adjoining Phillips Extension claim. They are owned jointly by G. A. Prime and Mrs. Halifield, of Nederland. Johnson brothers have a lease with option-to-purchase agreement with Mrs. Halifield for her half interest in the mill.

G. A. Prime is in charge of mine operations and is a thoroughly experienced leaser and ferberite miner. P. W. Johnson is in charge of milling and is a competent mill operator.

The Hoosier mine is now producing 15 tons of crude ore per day (8 hours), averaging 1/2 to 1 percent WO_3, and making 150 pounds of 55 percent WO_3 concentrate per day operating two 8-hour shifts.

At present 4 miners, 1 hoistman, and 3 mill operators are employed at a rate of $1.50 per hour.

PROJECT PROPOSALS AND COSTS

The lessees of the Hoosier mine propose to explore the Hoosier vein and various ferberite ore shoots known to extend below the 150-foot level and more or less traceable down the shaft and along the 225-foot level by about 80 feet of drifting westerly to the end line of the Hoosier claim and 270 feet easterly (fig. 2). In addition, 150-feet of exploratory raise will be driven from the 225-foot level to prospect favorable mineralized zones. This plan was worked out in a conference between the examining engineer and Messrs. G. A. Prime and R. W. Johnson.

Lessees do not pay rental on the surface plant and fixed equipment on the property and no rent payments involving Hetzer Mines, Inc., or their equipment is proposed.

Lessees expect to make their own mining equipment available at one-half the going rates, at a total rental of $12,53 per day arrived at from data made available by Associated Equipment Distributors of Denver, Colo.

Lessees propose to conduct exploration on a night shift basis and separate from their production activities which will be limited to the day shift.

Project Cost Data

Crew for exploration:

Distribution	Rate	Cost per day on a 6 day week basis ($13.00/day)
2 - miners at	$ 1.50/hour	$26.00
2 - mackers at	1.50/hour	26.00
1 - hoistman at	1.50/hour	13.00
1 - top trammer at	1.50/hour	13.00
1 - foreman at	400.00/month (1/2 time)	8.00
Social Security and Compensation Insurance		5.00
Total supervision and labor cost per day		$91.00

Total labor cost of project, for 100 days $9,100.00

Supplies to be used in driving 350 feet of drift: including sales tax

90 boxes dynamite at $11.25/box	$1,032.75
5 rolls fuse at $45.00/3,000 foot roll	229.50
2,800 blasting caps at $2.50/hundred	71.40
700 feet 8-pound mine rail at $140.00/ton	399.84
Ties, spikes, bolts, and fish plates	75.00
350 feet airline at $.30/foot	107.10
350 feet waterline at $.16/foot	57.12
Machine oil and repairs at $25.00/month	83.33
Small tools at $60.00	61.20
Total	$2,117.24

Supplies to be used in driving 150 feet of raise: including sales tax

75 boxes dynamite at $11.25/box	$ 860.63
2 1/3 rolls fuse at $45.00/3,000 foot roll	107.10
1,200 blasting caps at $2.50/hundred	30.60
76 - 5-foot stulls at $.10/foot	38.76
150 - 4-inch sheeting stulls, 16 feet long at $.50 each	76.50
150 feet of ladders at $.25/foot	38.25
100 pounds 60d nails at $16.00/hundred pounds	16.32
125 feet of 1-inch air line at $.30/foot	38.25
125 feet of 1/2-inch air line at $.16/foot	20.40
Wedges, etc.	30.00
Total	$1,256.81

General supplies: including sales tax

500 Timken bits, ground 3 times, at $.60 each	$306.00
Steel breakage and replacement for project	183.60
3 sets of drill steel	122.40
Total	$612.00

Equipment owned by lessees which will be available on a rental basis:

1 - Gardner-Denver S-55 drifter, complete with drilling column and hoses
1 - Ther model 75 jackhammer mounted on a shell, complete with drilling column and hoses.
1 - Sullivan 91 stoper complete with hoses
1 - 20 horsepower electric Fairbanks Morse, 2-inch, 2 stage centrifugal sump pump
2 - Bucket dolly trucks

Total rental per day, based on going rates of Associated Equipment Distributors of Denver, Colo., will be estimated at one-half of going rates, or $12.53 per day.

Total rental for project for 100 days $1,253,00

General costs:

Estimated power per day	$4.00
Maintenance per day	1.90
Total per day	$5.90
Total for project for 100 days	$590.00

Total project cost:

Work location	Days Estimated Time
Drift west on the 225-foot level	40
Drift east on the 225-foot level	100
Raises above the 225-foot level	50
Placing chutes and deadwork	10
Total length of project when crew for drifting west also drive raises	100 days

Recapitulation: (100 days operation)

Total supervision and labor	$9,100.00
Total drift supplies	2,117.24
Total raise supplies	1,256.81
Total general supplies	612.00
Total equipment rentals	1,253.00
Total general costs	590.00
Contingencies	70.95
Total cost of project	$15,000.00

The total cost of $15,000.00 is considered adequate for completion of the project.

PROPOSED FINANCING

R. L. and R. W. Johnson and G. A. Prime, as lessees of the Hoosier mine, are presently engaged in mining and milling ferberite ore at a profit. They expect to contribute their equipment on a rental basis, and services as detailed under project costs, at a total contribution of $2,053.00. The additional amount of $1,697.00 required as their share in 25 percent participation will be made up from profits of present operations and capital on hand. They are financially reliable and solvent.

CONCLUSIONS

Ferberite exposures in underhand steping and the stopes above the 150-foot level indicate extensions of ore shoots in depth. Ore incrusting fracture systems in the hanging walls of old stopes on the 150-foot level promise ore extensions beyond the walls of the main fissure.

Ferberite is braceable down the shaft and along the drifts on the 225-foot level which is the site of proposed exploration.

Ferberite occurs as narrow and discontinuous streaks and lenses in veins or along filled fissures which cannot be predicted by sampling and can be explored best by a drift with raises on promising exposures.

The past history of the mine and the favorable geologic environment exposed make this an attractive exploration program.

Lessees are competent and reliable ferberite operators familiar with the district.

Their lease will be active for 13 months which will be adequate for completion of the exploration project, estimated to require 100 days.

RECOMMENDATIONS

It is recommended that the application for a tungsten exploration loan of $15,000.00 under the Defense Production Act of 1950, Defense Minerals Administration docket 1885, be approved. The Government's participation will be 75 percent or $11,250.00 and the applicant's 25 percent or $3,750.00.

DIRECTOR'S OFFICE
REGION IV
OCT 22 1951
OCT 18 1951

Johnson Brothers and Price
Boulder County
Nederland, Colorado

Re: Docket No. DA - 1085

Gentlemen:

In accordance with your instructions in a letter dated October 10, 1951 to Mr. J. E. East, Jr., Executive Officer, Region IV, Defense Minerals Administration, we are cancelling the subject application.

Should you, in the future, file a new application for Governmental assistance involving the same property, please refer to the present docket by number.

Sincerely yours,

C. O. Mittendorf

C. O. Mittendorf, Director
Production Expansion Division

JSelfridge/neb
10/16/51
cc to: Admr's Reading Files
Reports and Records
Messrs. Mittendorf/Glund
Mr. Holderer
Mr. Geehan
Mr. Thayer
Field Team (Reg. IV)(2)
Mr. Selfridge
Docket

471.

Central