DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Idm-E NO. 248

DMEA NO. 2082

Application
- [ ] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [x] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [x] Royalty Audits
- [x] Certification of Discovery
- [ ] Closing Letter
- [x] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [x] Contract Amendments
- [x] Contract with all exhibits and annexes
- [x] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- [x] Project summary (final)
- [x] Work Completed analysis (final)
- All other material filed in chronological order including the following reports if checked:
- [x] Field Team Semi-Annual Report for Certified Project
- [x] Final Field Team Report (Tab)
- [x] Operator's Final Report (Tab)
- [x] Interim Field Team Reports
- [x] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. _____: Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with transmittal, narrative and maps.

Folders No. _____: Maps (Use pocket folder or envelope)

Folders No. _____: Settlement Sheets

Folders No. _____: Drill Logs

Folders No. _____: Royalty material

17963

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Washington office pertaining to Amended Contract Idm-E248, Docket OMEA-2082 (tungsten), dated May 11, 1955, and Contract Idm-E774, Docket OMEA-5428 (lead-zinc), dated March 15, 1955, with

Mt. Wheeler Mines, Inc.
P. O. Box 1446
Salt Lake City 10, Utah

for the purpose of determining the amount of royalty payable to the U. S. Government on sales of minerals from property referred to as the Mt. Wheeler Mine and Pole Adit, located in White Pine County, Nevada, during the period July 1, 1955, through November 6, 1961.

A certification of discovery or development pursuant to the provisions of Amended Contract Idm-E248 was issued on April 7, 1955, and, in accordance with Annex II and Articles 7 and 11 of Contract Idm-E774, royalty is payable on all minerals produced from the land described in Article 2 of Contract Idm-E774 until March 15, 1967, or until the total net amounts contributed under both contracts by the Government without interest are fully repaid, whichever occurs first. Reports of Review dated April 25, 1955, and May 16, 1957, indicated accepted costs under the exploration project contracts and the Government's contributions as follows:

		Idm-E248	Idm-E774	Total
Accepted costs		$140,832.90	$282,892.92	$423,725.82
Contributions:	Rate	75%	50%	58.31% (Av.)
	Amount	105,624.68	141,446.46	247,071.14

The status of the project, the scope of the review, and the reasons therefor are stated on page 2.

This review established no sales subject to the Government's royalty subsequent to the periods covered by a prior Report of Royalty Review and a Royalty Audit Certificate, which found the sales subject to the Government's royalty and the status of the royalty accounts as of June 30, 1955, and December 31, 1958, to be:

	Idm-E248	Idm-E774	Total
Sales	$13,037.64	$ -0-	$13,037.64
Royalty Payable	$ 573.67	$ -0-	$ 573.67
Royalty Paid	573.67	-0-	573.67
Balance of Royalty Due	$ -0-	$ -0-	$ -0-

As of November 6, 1961, the royalty accounts of this project were found to be unchanged and as stated above.

W. D. Talbert, OME Auditor

November 24, 1961

Idm-E248 and 774 Mt. Wheeler Mines, Inc. DMEA-2082 and 3428

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

As no milling facilities were available in the immediate area to the property under the contract, the Operator discontinued the mining of tungsten ores upon the termination in October 1954 of the exploration work under Amended Contract Idm-E248. All sales of production through June 30, 1955, were covered by a Royalty Audit Certificate and Report, which included the following summary:

Tons, Wet Weight	436.790
Tons, Dry Weight	429.691
Gross Value	$17,417.71
Allowable Deductions	4,380.07
Proceeds	$13,037.64
Royalty:	
$ 2,234.62 @ 1.5%	$ 33.52
10,803.02 @ 5%	540.15
$13,037.64 @ 4.4% (Av.)	$ 573.67

The exploration work under Contract Idm-E774 was started in March 1955 and discontinued at the end of November 1956. No ores were produced during that period and the property remained inactive until September 1959.

On September 10, 1959, the Operator entered into an exploration and development agreement with a joint venture composed of Beryllium Resources, Inc., The Hidden Splendor Mining Company, Federal Uranium Corporation, Lisbon Uranium Corporation, and Radorock Resources, Inc. Exploration and development work performed by Beryllium Resources, Inc., between that date and March 1, 1960, resulted in the stockpiling of about 2,000 tons of ore estimated to average 0.75 percent BeO.

Sometime later in 1960, The Anaconda Company acquired a two year option on the property and continued the beryllium development started by Beryllium Resources, Inc. This work also resulted in the stockpiling of some low-grade beryllium ores, i.e., approximately 1,000 tons.

Article 7(b) of Contract Idm-E774 provides that the Operator, as principal if the producer or as surety if not the producer, shall pay the Government's percentage royalty on all minerals produced from the land described in the contracts. Furthermore, Article 7(d) grants to the Government the option of requiring computation and payment of the royalty on any stockpiled production unsold after the lapse of six months from extraction.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) Examinations by field representatives have confirmed that all sales of production have been reported and proper royalty thereon paid;

(2) Except for low-grade beryllium ores stockpiled since 1959 as the result of exploration and development work, no minerals were produced from the property after 1954; and

(3) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

Check Sheet of Examining Engineer

Operator's Name Mt. Wheeler Mines, Inc.,

Address P. O. Box 1446

Salt Lake City 10, Utah

Exploration Contract No. Idm-E 248 Docket No. DMEA-2082 (Tungsten)

	Check One Yes	No
1. (a) Does the Operator stockpile ore subject to royalty repayment?	X	
(b) If so, is segregation and identification procedure adequate?	X	
2. (a) Does Operator commingle production subject to DMEA royalties with exempt production?		X
(b) If so, do you consider the allocation of the commingled production equitable?		
3. (a) Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?		X
(b) If so, are adequate records maintained on such material to protect the Government's interest?		
4. Do you consider the assay controls in effect are adequate?	X	
5. Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	X	
6. Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA royalties?	X	
7. Does the Operator buy from or sell to other Operators?		X

8. Comment on any item 2 (b) to 6 if answer is No.

No tungsten ores have been produced subsequent to 1954.

Date November 6, 1961

Mining Engineer
Glenn G. Gentry
Acting Field Officer
OME Region 11

82448

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

RECEIVED
NOV 17 1955

FIRST ROYALTY AUDIT CERTIFICATE

I have examined the records and sales documents pertaining to the sale of tungsten ore, for the period January 29, 1952 to June 30, 1955, by the:

Mt. Wheeler Mines, Inc.
a corporation duly organized and existing
under and by virtue of the laws of the
State of Nevada
218 Felt Building
Salt Lake City 1, Utah

2082

produced from the Mt. Wheeler Mine, located in White Pine County, Nevada, under the terms of Contract No. Idm-E248, Docket No. DMEA-2082, dated January 29, 1952 and Amended Contract No. Idm-E248, Docket No. DMEA-2082, dated May 11, 1953.

My examination was made in accordance with generally accepted standards applicable in the circumstances.

The audit established the total net sales of tungsten ore for this period to be $13,037.64. Royalties due the U. S. Government at the contract rates are $573.67. The royalty paid and balance due are as follows:

Total Royalties Due	$573.67
Total Royalties Paid	573.67
Balance of Royalties Due	-0-

George Mavor
George Mavor
Auditor

November 9, 1955

Royalty Auditor

FIRST ROYALTY AUDIT REPORT

RECEIVED
NOV 17 1955

I INTRODUCTION

On September 8, 1955, an audit of royalty payments received, was made for the period January 29, 1952 to June 30, 1955, covering tungsten ore produced and sold under Contract No. Idm.-8248, Docket No. DMEA-2082, dated January 29, 1952 and Amended Contract No. IDM-8248, Docket No. DMEA-2082, dated May 11, 1953, by the:

Mt. Wheeler Mines, Inc.
A corporation duly organized and existing under and by virtue of the laws of the State of Nevada
218 Felt Building
Salt Lake City 1, Utah

covering a project of exploration for tungsten ore, on property known as the Mt. Wheeler Mine, located in White Pine County, Nevada.

The mining properties are reached by proceeding on highway 93 south from Ely, Nevada, a distance of 34 miles to the left turnout to the Swallow and Kirby ranches. A gravel road is followed east and southeast a distance of 8.6 miles to a left turnout to Pole Canyon. The canyon is followed on a 10% upgrade a distance of 4.4 miles to mine site.

The records pertaining to this contract are located in the company's office, in the Felt Building, Salt Lake City, Utah, and the following officials were consulted during the course of audit.

C. F. Burton, Secretary
J. D. Williams, President

Their cooperation and assistance greatly facilitated the audit.

Mr. Glenn G. Gantry, Mining Engineer, U. S. Bureau of Mines, collaborated in the audit, for which his assistance is hereby acknowledged.

II GENERAL INFORMATION

A certificate of discovery was issued under date of April 7, 1955, and the producing areas subject to royalties are set forth in Article 2, of Amended Contract, dated May 11, 1953, as follows:

> The Mt. Wheeler Mine comprised of the unpatented Mining claims Pole Cat and Pole Cat Nos. 1 to 5 inclusive, all in T.12.N., R.68E, Mt. Diablo B & M, in the Mt. Washington Mining District, all indicated on the map attached to Prior Contract.

Under Annex 111, paragraph (b), of the Amended Contract, the royalty repayment period has been changed from 10 years to 15 years, from date of first contract, January 29, 1952.

The contract was completed October 10, 1954, and the total cost of the contract, together with the Government 75% participation, is as follows:

	Cost	Government Participation 75%
Cost of Contract	$140,832.00	$105,624.68

The sum of $573.67 has been received by the Finance Officer, covering royalty repayments on tungsten ore sales. This leaves an unpaid balance of $105,051.01 due on the Government loan as of June 30, 1955.

III SCOPE OF AUDIT AND FINDINGS

The audit was limited to determining the accuracy and propriety of royalty payments received by the Finance Officer during the period January 29, 1952 to June 30, 1955, and a determination that all indicated sales of ore subject to repayment royalties under the exploration contract, for which settlement sheets had been released, have been properly accounted for.

The extent of the audit and findings follow:

Conference with Examining Engineer

Conference with the Examining Engineer, U. S. Bureau of Mines, during the audit disclosed the following:

The operator does not stockpile ore subject to DMEA royalty repayment.

The operator does not commingle production subject to DMEA royalties with exempt production.

The operator does not stockpile mine or mill rejects that may have potential value within the royalty payment period.

The assay controls in effect are considered adequate.

The manner of disposing of production is considered as giving the Government its fair royalty returns.

Periodic examinations indicate the operator is properly reporting the production of ores subject to DMEA repayment royalties.

There has been no indication that sales of ore have been made by the operator to other than the Combined Metals Reduction Company Plant, Bauer, Utah.

Audit of Settlement Statements

A detailed summarization of Royalty Purchases by Smelter was prepared from settlement statements submitted by the operator during the audit period January 29, 1952 to June 30, 1955. The total net sales of tungsten ore as shown on this summary aggregated $13,037.64 and the royalty payment at contract rates amounted to $573.67. The royalty payments were verified to the certificates of deposit and the Finance Office ledger record.

Operator's Accounts and Records

The operator maintains a general ledger and subsidiary records for the exploration project activities, including the supporting records on royalty repayments to DMEA. The net amount of $13,037.64 subject to royalties was verified to Mining Revenue Account, and the royalties paid in amount of $573.67 was verified to payments charged to the Development Cost Account in the general ledger. The cash records covering the foregoing transactions were also examined.

The settlement statements are based on Combined Metals Reduction Company "Custom Ore Schedules", and the prices shown therein were verified during the course of the audit.

The ore is shipped by truck from the Mt. Wheeler Mine to Delta, Utah, and loaded into freight cars for reshipment by rail to the Combined Metals Reduction Plant at Bauer, Utah, and during the audit an examination was made of invoices and freight bills covering trucking and freight charges, which were listed as deductions on settlement statements.

IV CONCLUSIONS

An analysis of the operator's production and sales of tungsten ore to the Combined Metals Reduction Company, Bauer, Utah, subject to DMEA royalties, are as follows:

Wet Weight	873,580 lbs
Dry Weight	859,382 lbs
Dry Weight	429.691 tons
Gross Value	$17,417.71
Allowable Deductions	4,380.07
Net Value	$13,037.64
Average Value Per Ton (Dry Weight)	$ 30.34

Royalties

Net Sales	Royalty %	Royalties Paid
$2,234.62	1 1/2%	$ 33.52
10,803.02	5%	540.15
$13,037.64		$ 573.67

A detail of royalty payments is filed as part of my audit working papers.

The audit has confirmed the accuracy and propriety of the royalty payments received by the Finance Officer, during the period January 29, 1952 to June 30, 1955. It has also determined that all indicated sales of ore subject to DMEA Royalties under the exploration contract, for which settlement sheets have been released, have been properly accounted for.

George Mavor

George Mavor
Auditor

November 9, 1955

Check Sheet of Examining Engineer

Operator's Name Mt. Wheeler Mines, Inc.

Address James D. Williams, President

P. O. Box 150, Salt Lake City, Utah

RECEIVED NOV 17 1955

Exploration Contract No. Idm-E774 Docket No. DMEA-3428

	Check One Yes	No
1. (a) Does the Operator stockpile ore subject to royalty repayment?		X
(b) If so, is segregation and identification procedure adequate?		
2. (a) Does Operator commingle production subject to DMEA royalties with exempt production?		X
(b) If so, do you consider the allocation of the commingled production equitable?		
3. (a) Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?		X
(b) If so, are adequate records maintained on such material to protect the Government's interest?		
4. Do you consider the assay controls in effect are adequate?	X	
5. Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	X	
6. Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA royalties?	X	
7. Does the Operator buy from or sell to other Operators?		X
8. Comment on any item 2 (b) to 6 if answer is No.		

Glenn G. Gentry
Mining Engineer

Date 9/27/55

82448

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 4/29/55

REFERRED TO:

1. ~~Mr. Mittendorf~~
2. ~~Mrs. Johnson~~
3. ~~Mr. Selfridge~~
4. ~~Mr. Martin~~

FOR:

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

REMARKS:

Note method of handling equipment disposal

Check (X) before the items needing attention.

J. L. Chambers
Initials of sender.

GPO 16—63815-1

400

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Mt. Wheeler Mines, Inc.
A corporation duly organized and existing
under and by virtue of the laws of the State of Nevada
218 Felt Building
Salt Lake City 1, Utah

WSM

pertaining to Exploration Project Contract No. Idm-2248, Docket No. DMEA-2082, dated January 29, 1952, including Amendments Nos. 1 and 2, and an Amended Contract No. Idm-2248, Docket No. DMEA-2082, dated May 11, 1953, including Amendments Nos. 1, 2, 3, 4 and 5, for the period January 29, 1952 to October 10, 1954, covering a project for the exploration of tungsten, on property known as the Mt. Wheeler Mine, located in White Pine County, Nevada.

My review included an examination of the Monthly Reports (Forms MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, consultation with Executive Officer in charge of the project, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reasons:

(a) the administrative cost to the Government of an audit would be excessive in relation to the estimated amount of possible disallowances thereunder;

(b) a major portion of accepted costs ($74,751.71) for work performed on an actual cost basis were covered by an Interim Audit Report and Audit Certificate, dated February 20, 1953, and the remaining costs ($14,866.19) on an actual cost basis, were supported by documentary proof of the costs incurred under the contract; and

(c) all remaining costs incurred ($67,215.00) were under a contract provision for payment by the Government on the basis of agreed estimated costs of units of work actually performed.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost, as billed by contractor	$156,832.90
Less: Proceeds from property disposition (see schedule attached)	16,000.00
	$140,832.90
Exceptions	-0-
Total accepted cost	$140,832.90

The contract calls for a 75 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of One Hundred Five Thousand Six Hundred Twenty Four and 68/100 Dollars

$105,624.68

is valid and proper.

This certificate is issued on the provision that the Regional Executive Officer, the Administrator, or other competent official has accepted, or will accept, the project as having otherwise met the terms of the contract.

Contr

George Mayer
George Mayer
Auditor

April 25, 1955

EXPLANATION SCHEDULE
PROCEEDS FROM SALE OF PROPERTY

Mt. Wheeler Mines, Inc. IMEA-2082 Idm-E248

The proceeds from sale of property under this contract will be accounted for under Mt. Wheeler Mines, Inc. Contract No. Idm-E774, Docket No. IMEA-3428, dated March 15, 1955, and the method of payments is described in Annex 11, paragraph 4, as follows:

> "The Government shall deduct from its contributions for drifting, crosscutting, and raising under this contract the sum of $2.00 per foot to apply on the purchase price of said property remaining under the prior contract, until said purchase price in the sum of $12,000.00 is fully paid. This would make the net total expenditure by the Government, under the prior contract, the sum of $105,624.68, subject to audit and acceptance or rejection of December 1954 work."

For audit purposes, the above-mentioned $12,000.00 from sale of property, represents 75 percent due from operator; therefore, in order to include the Government's equity of 75 percent, the amount is listed at $16,000.00, covering proceeds from property disposition, and shown as such, in the Report of Review.

Estimated Cost of Property Sold to Operator

3 Air Slushers	$ 2,776.90
10 Mine Cars	5,065.00
1 General Purpose Truck	6,040.00
1 Compressor Building	2,711.65
1 Blacksmith Shop and Change Room	1,391.41
2 3" Drifters	1,750.00
20# Rail, Ties, Spikes, etc.	3,255.13
2" and 3" Air Lines - 1" Water Line	1,959.99
1 Joy Blower	518.63
Jackleg and Machine	526.58
Ventube	880.85
Other Material	1,845.39
Total Cost of Property Sold	$28,721.53

$12,000.00 ÷ $28,721.53 = 41.7%

on $16,000 = 55.8%

Mails & Files

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 5 1952

AUDIT CERTIFICATE

I have examined the records and transactions of:

Mt. Wheeler Mines Inc.
218 Felt Building
Salt Lake City, Utah

pertaining to Exploration Project Contract No. Idm-[illegible]248, Docket No. DMEA 2082, for the period January 29 to July 31, 1952.

My examination was made in accordance with generally accepted standards applicable in the circumstances.

WSM

The audit disclosed the following facts in regard to amount to be paid the Contractor:

Total Cost as Billed by Contractor		$32,848.83
Exceptions (See Audit Report for details)		
During this audit	$349.23	
Prior to this audit	100.00	449.23
Total Accepted Cost		$32,399.60

The contract calls for a 75 per cent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Twenty-four thousand two hundred ninety-nine and 70/100 Dollars

-$24,299.70-

is valid and proper.

This certificate is issued on the provision that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

October 1, 1952

Donald T. Finch

Donald T. Finch
Auditor, Region IV

Audit 1/29-7/31/52

Mt. Wheeler Mines, Inc.
Exploration Project
Contract No. E248
Docket No. DMEA 2082

GCL
12/12/52

I. INTRODUCTION

An audit was made on September 16, 1952 of Defense Minerals Exploration Contract No. E248, Docket No. DMEA 2082, Mt. Wheeler Mines Inc. The records pertaining to this contract are in the office of the Mt. Wheeler Mines, Inc., 218 Felt Building, Salt Lake City 1, Utah. The audit covered the period January 29, through July 31, 1952 of contract that continues until November 29, 1952. The project, which is located in White Pine County, Nevada was inoperative--February 28 to April 14, 1952 because of snow conditions.

We were advised that Mt. Wheeler Mines Inc. is a Nevada corporation and that the officers are: James D. Williams, President, L. K. Requa, Vice-president, and O. F. Burton, Secretary-Treasurer.

Mr. Robert M. Hull, DMEA Auditor, collaborated in the audit. Mr. Williams was present and consulted when necessary.

II. EXTENT AND SCOPE OF AUDIT

1. Independent Contracts

Cross Cutting

Charges for this item were properly vouched and unit payments were in accord with the contract.

Bulldozing

Charges for bulldozing amounted to $800.00 and represented payment at the rate of $8.00 per hour. This total amount was charged to Operating Equipment Rental on the operator's MF-104 form for June.

According to the voucher support, the bulldozing operations consisted of:

April 14-19, 1952 Snow Clearance	$256.00
June 2-9, 1952 Building Sites	192.00
June 10-18, 1952 Digging Trench for Water Line	352.00
	$800.00

An invoice receipt and a cancelled check in payment for the above items to Earl B. Robinson was examined.

2. Labor and Supervision

Labor

A complete detailed examination was made of all payroll records for the period January 29 through July 31, 1952. The total to date for labor of $762.35 as shown on the operator's MF-104 for July, 1952 is understated by $4129.90. The item consists of the following elements:

Labor Charges MF-104 Feb. 1952	$914.10
Labor Charges MF-104 April-May 1952	3215.80
Labor charges consolidated on revised form MF-104 (exact distribution as to) (nature of work performed) (not readily determinable)	4129.90

Supervision

The total to date of $500.00 shown on the operator's MF-104 for July, 1952 is understated by $1000.00. This difference is included in the total to date for New Buildings and Equipment. It consists of Supervision charged as such on MF-104 forms for February, and for April-May combined. Payments were evidenced by cancelled checks payable to J. D. Williams.

The Mt. Wheeler operations were recessed for one-half of February, all of March and one-half of April. Mr. Williams was paid $250.00 for the one-half of February and $250.00 for one-half of April, 1952.

During this same period Mr. Williams was also supervising the operations at the Harrington Mine, Exploration Contract Idm-E131. The Harrington mine is approximately 130 miles from the Mt. Wheeler operations.

The Mt. Wheeler Exploration contract specifically provides the Superintendent-Engineer at a salary of $500.00 per month, that he devote his entire time to the project and if, for any reason his services are used elsewhere his salary shall be prorated.

Exception is therefore taken to one-half of the salary of Mr. Williams for the half months of February and April, 1952. This exception amounts to $125.00 for each one-half month or a total of $250.00.

3. Operating Materials and Supplies:

(Explosives, Pipe, Track, Steel and bits, Fuel and Lube Oil)

The operator does not maintain a Stores Account. All materials and supplies are charged direct to the project. All items of this nature were properly vouched and were audited in detail for the period January 29 through July 31, 1952.

4. Operating Equipment

(Rental)

The total to date for equipment rental of $6169.08 includes $800.00 for bulldozing services purchased at $8.00 per hour, which has previously been commented on earlier in this report. All charges for equipment rented were properly vouched and audited in detail for

the period January 29 through July 31, 1952. Rentals for individual items did not exceed amounts authorized by the contract.

(Purchases)

All equipment purchases during the period January 29 through July 31, 1952 were audited in detail. Prices paid were equal or less than authorized by the contract.

5. Initial Rehabilitation and Repairs

All Material charges to this account for the period January 29 through July 31, 1952 were audited in detail. The principal charges to this account are for Labor submitted on the MF-104 form for June, 1952. According to the operator's records, the charge for labor and supervision consisted of the following elements:

Enlarge and Timber Portal	$314.19
Install air Lines & Trackage	314.19
Miscellaneous	314.19
Total	$942.57

6. New Buildings, Improvements, etc.

All material charges to New Buildings and Improvements for the period January 29 through July 31, 1952 were audited in detail. An analysis of the charges disclosed the following components:

Labor reported on MF-104 forms for February and for April-May, 1952 (Subsequently consolidated) (on revised Form)		$4129.90
Supervision reported on MF-104 forms for February and for April-May, 1952 (Subsequently consolidated on) (revised form)		1000.00
*Labor Installing Equipment		628.38
*Labor Installing Water Line		942.57
*Labor-Compressor Building	$628.38	
Materials and Freight	1050.33	1678.71

Total to Date shown on MF-104 form, July, 1952 $8379.56

* Includes proration of Supervision for June, 1952

7. Miscellaneous

(Repairs to Equipment, Payroll Taxes, Workmen's)
(Compensation Insurance)

All charges for the above items were checked in detail for the period January 29, through July 31, 1952.

Administrative Expense

All charges for Administrative Expense for the period January 29 through July 31, 1952 were audited in detail. An analysis of these charges revealed the following components:

Month	Accounting	Mileage J. D. William's Personal Jeep	Office Supplies	Total
February, 1952	$100.00	$ 34.82		$134.82
April-May, 1952	100.00	105.50		205.50
June, 1952	100.00	122.18	$ 34.31	256.49
July, 1952	100.00	62.30	25.20	187.50
Totals to Date July 31, 1952	$400.00	$324.80	$ 59.51	$ 784.31

Charges for mileage paid to J. D. Williams were supported by itemized statements showing date, From, To, Miles, rate and amounts. The mileage rate for short trips, i.e. Wheeler to mine and camp was 10 cents per mile. For extended trips i.e. Wheeler to Salt Lake City, the rate charged was 6 cents per mile. Total mileage at 10cents per mile amounted to 2108 miles for the period under audit. Exception is taken to mileage charge in excess of 7 cents per mile. Exception is also taken to an unexplained mileage charge of $1.50 shown on the operator's MF-104 for February, 1952. It is, therefore, recommended that the total allowance for mileage be reduced $64.74.

8. Contingencies

(Freight-Supplies, Freight-Equipment, Truck Rent)

All freight charges were supported by invoices and were audited in detail for the period January 29 through July 31, 1952.

Charges to truck rental were supported by invoices which were audited in detail for the period January 29 through July 31, 1952. This item is more in the nature of drayage.

III. FINDINGS

The records maintained by Mt. Wheeler Mines Inc., are in excellent condition and adequate. Payrolls are in permanent form, supporting data is filed in Payroll sequence. Purchase invoices are attached to duplicate check vouchers, cancelled checks are attached to the vouchers which are filed in numerical sequence. Checks are signed by J. D. Williams and countersigned by Mr. O. F. Burton.

Exception is taken to the following Cash Discounts taken by the operator which were not credited to the applicable purchase account.

Buildings	$15.66
Track	16.07
Pipe	2.76
Total	$34.49

The DMEA Finance Officer has previously excepted $100.00 for Jeep Rental on company-owned Jeep claimed on MF-104 form for February, 1952. This Jeep, according to Mr. Williams, should not be confused with his personal Jeep.

Exhibit A attached to this report reflects the Totals to Date shown by the operator on form MF-104 for July, 1952. It also

EXHIBIT "A"

MT. WHEELER MINES INC.

Contract Idm
E248, Docket
No. DMEA 2082

	Totals to Date-MF-104 7/31/52	Previous Exceptions	Exceptions During Audit	Accepted Costs 7/31/52
Independent Contracts				
Crosscutting	$1235.00			$1235.00
Labor & Supervision				
Labor	762.35			762.35
Supervision	500.00			500.00
Materials & Supplies				
Explosives	2102.66			2102.66
Pipe	1799.99		$ 2.76	1797.23
Track	2317.68		16.07	2301.61
Steel Bits	1295.79			1295.79
Fuel & Lubricating Oil	1016.05			1016.05
Operating Equipment				
Rental	6169.08	$100.00		6069.08
Purchase	2907.19			2907.19
Initial Rehabilitation & Repairs	1141.43			1141.43
New Buildings and Improvements	8379.56		(250.00 (15.66	8113.90
Repairs to Equipment	94.88			94.88
Payroll Taxes	484.63			484.63
Workmen's Compensation Insurance	940.93			940.93
Administrative Expense	784.31		64.74	719.57
Freight-Supplies	446.86			446.86
Freight-Equipment	270.44			270.44
Truck Rent-Hauling	200.00			200.00
Totals to Date	$32848.83	$100.00	$349.23	$32399.60

DOCKET
Surname:

Rutledge
Martin
Talbot
R Holliday
Newcomb
Kilpatrick
Selfridge
Hedges
Johnston

APR - 7 1955

Mt. Wheeler Mines, Inc.
218 Felt Building
Salt Lake City 1, Utah

INTERIOR DEPT.
APR 1 - 1955
SOLICITOR

Re: Docket No. DMEA 2082-Tungsten
Mt. Wheeler mine
White Pine County, Nevada
Contract No. Idm-E248

Gentlemen:

Transmitted herewith is a certification of discovery or development issued under the amended contract dated May 11, 1953.

By the terms of the exploration project contract, the amended exploration project contract, and of the certification, all production from the lands described in the amended contract, as amended, from the date of the exploration project contract is subject to the Government's percentage royalty as set forth in the contract until the sum of $117,624.68 (subject to audit) is paid or until January 29, 1967, whichever occurs first.

Payments should be made to Mr. Spangler Ricker, Executive Officer, DMEA Field Team, Region II, 1605 Evans Avenue, Reno, Nevada. Checks should be payable to the Defense Minerals Exploration Administration. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward check direct to the Executive Officer. Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the price and charges certified to be correct by the purchaser.

You are requested to notify Mr. Ricker of any changes in ownership or production rights that might have any effect on the Government's right to its percentage

R.C.S.

royalty. Also, if production ceases at any time for any extended period, please notify Mr. Ricker at 6-month intervals that no production has been made, when that is the case.

Sincerely yours,

C. O. Mittendorf (for)
Administrator

Enclosure

cc: Docket
Code 400-Mr. Martin
Code 110-Mr. Johnson
Code 800-Mr. Chambers
Admin. Reading File
Operating Committee
J. H. Hedges, USBM
Robt. Holliday, USBM
Thor Kiilsgaard, USGS
Field Team, Reg. 2
3 lessors - Mr. & Mrs. R. E. Kaufman, Baker, Nev.
Mr. & Mrs. Bryan S. Robison, Ely, Nev.
Mr. & Mrs. Shirley G. Robison, Ely, Nev.

FARutledge/ls
3/30/55

DOCKET
Surname:

Rutledge
Martin
Talbut
Holliday
Newcomb
Hoffmann
Kiilsgaard
Selfridge
Hedges
Fedorow

CERTIFICATION BY THE UNITED STATES OF AMERICA OF A DISCOVERY OR DEVELOPMENT UNDER AN EXPLORATION PROJECT CONTRACT

To: Mt. Wheeler Mines, Inc., a Nevada corporation
218 Felt Building
Salt Lake City 1, Utah

Pursuant to the provisions of Amended Exploration Project Contract No. Idm-E248, dated May 11, 1953, as amended (Docket No. DMEA 2082), hereinafter called the "contract," between you and the United States of America, hereinafter called the "Government;" to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that a discovery or development from which production may be made has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

Tungsten, in the form of scheelite, occurs in quartz stringers and nearly horizontal pipe-like replacement lenses in zones within the favorable part of the Wheeler (EN) limestone. Drifting, crosscutting, and raising in these zones have indicated a substantial tonnage of tungsten ore.

THE UNITED STATES OF AMERICA

Dated: APR 7 - 1955

By O M Mendoza
Administrator, Defense Minerals
Exploration Administration

cc: Docket
Adm. Read. File
Oper. Committee
Code 400-Mr. Martin
Code 110-Mr. Johnson
Code 800-Mr. Chambers
J. H. Hedges, USBM
Robt. Holliday, USBM
Thor Kiilsgaard, USGS
FT, Region 2
Finance Officer
C. A. Fredell, Act. Dir., EPS, GSA
3 - lessors per attached letters

FARutledge/ls
3/30/55

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

MAR 23 1967

AIRMAIL

Mt. Wheeler Mines, Inc.
409 Felt Building
Salt Lake City, Utah 84111

Re: DMEA-2082 and DMEA-3428
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contracts Idm-E248 and Idm-E744

Gentlemen:

Reference is made to the cited Exploration Project Contracts, as amended, which were subject to the Government's percentage royalty as set forth in said contracts until March 15, 1967.

As the period during which production was subject to royalty has now expired, the Government according to its present records retains no claim or lien against the properties subject to the contracts or any future production therefrom. We, therefore, are closing our books and records on these contracts. Your attention, however, is called to the provisions of the contracts which require the Operator to keep and preserve certain records for the periods indicated.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Division File
Econ. Geol. File
DMEA-2082
DMEA-3428
OME Reading File
Br. of Budget & Finance
R-II w/cy incoming Form 63
120M

Copies to: Mr. and Mrs. R. E. Kaufman, Baker, Nev.
Mr. and Mrs. Bryan S. Robison, Ely, Nev.
Mr. and Mrs. Shirley G. Robison Ely, Nev.

MMerrithew/mm (3/23/67)

23263

400

DOCKET
SURNAME
Rutledge
Martin
Talbut
Holliday
Kennedy
Selfridge
Johnson

APR - 7 1955

Mr. Spangler Richer, Executive Officer
DMEA Field Team, Region II
1695 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler mine
White Pine County, Nevada
Contract No. Idm-Kh8

Dear Mr. Richer:

Enclosed are copies of a certification of discovery or development for the above-noted property and of related correspondence.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (JLB)

APPROVED:

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

Thor H. Kiilsgaard
Member, Geological Survey (JLB)

Enclosure

FARutledge:fcc
3-29-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II
Mr. Johnson - Code 110
Mr. Chambers - Code 800
Mr. Hedges, USBM
Mr. Holliday, USBM
Mr. Kiilsgaard, USGS

R.U.B.

DOCKET
SURNAME
400 Chapman
Martin
Chamberlin
Selfridge

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

MAY 24 1955

Mr. Clarence A. Fredell, Acting Director
Materials Division
Emergency Procurement Service
General Services Administration
Washington 25, D. C.

Re: Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract No. Idm-E248

Dear Mr. Fredell:

Reference is made to our letter of April 7, 1955, transmitting a copy of the certification of discovery or development for the above-noted project, and stating that further information would be furnished you when available. These data have been received.

Contract No. Idm-E248 for the exploration of the Mt. Wheeler mine tungsten ore deposits was executed January 20, 1952.

Expenditure authorized Amended Contract, executed May 11, 1953	$75,476.00
Additional expenditure authorized	65,600.00
Amendment No. 4 to Amended Contract, executed May 20, 1954	
Additional expenditures authorized	29,348.00
Total expenditures authorized	$170,424.00
Government participation 75 percent	$127,818.00

Total work authorized consisted of 3,250 feet of drifting and crosscutting, and 150 feet of raising in the Pole adit and North area.

2,547 feet of drifting and crosscutting, and 118 feet of raising were completed in the Pole adit area and 451 feet of drifting and crosscutting in the North zone. A request by the operator to

R.C.S.

transfer to the Pole adit area 149 feet of drifting or crosscutting remaining from the North zone was denied by the Government and the contract was terminated.

The total cost of the completed work was	$156,832.00
Equipment and supplies in which the Government had an interest were purchased by the operator for	16,000.00
Final cost of project	$140,832.00
Government participation 75 percent	$105,624.68

The object of the exploration was to explore at depth for ore bodies indicated by surface exposures and cuts. This work was accomplished by drifting, crosscutting and raising.

The Field Team estimated that 13,570 tons of ore averaging 0.8 percent WO_3 were indicated and inferred by the work.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

TLChapman:foc
5-16-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II
Messrs. Chambers - Code 800
Johnson - Code 110
Holliday - USBM
Hedges - USBM
Kiilsgaard, USGS

CODE 400

DOCKET
SURNAME
Rutledge
Martin
Gallant
Holliday
Newcomb
Kiilsgaard
Hedges
Helfrich
Johnson

APR - 7 1955

Mr. C. A. Fruehall, Acting Director
Materials Division,
Emergency Procurement Service
General Services Administration
Washington 25, D. C.

Re: Docket No. DMEA 2082 - Tungsten
Mr. Wheeler Mines, Inc.
Mr. Wheeler mine
White Pine County, Nevada
Contract No. [illegible]

Dear Mr. Fruehall:

Enclosed is a copy of a certification of discovery or development for the above-noted project.

When we receive the final reports, we shall supply such data as have accompanied the transmittal to the Materials Division, Emergency Procurement Service, of previous certifications.

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:fec
3-29-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II

Enclosure

Mr. Johnson - Code 110
Mr. Chambers - Code 800
Mr. Hedges, USBM
Mr. Holliday, USBM
Mr. Kiilsgaard, USGS

R.C.b.

2082 - Dahel rpt with
DMA.89 - Mr Selfridge
has the rpt now as of
2/2/55

DMEA 2082

DOCKET INDEX

ACTION DOCUMENTS

1	APPLICATION		DATE RECEIVED	11/24/50
2	CONTRACT		DATE	1/29/52
3	TERMINATION AGREEMENT		DATE	
4	CERTIFICATION		DATE	
5	AUDIT REPORT		DATE	
6	AMENDMENTS - NUMBERS	1	DATE	5/7/52
		2		11/13/52
		Amended contract		5/11/53
		Amend. #1 to amend. Cont.		10/15/53
		2		10/28/53
		3		11/24/53
		4		5/20/54
		5		6/9/54

Docket Copy

AMENDED EXPLORATION PROJECT CONTRACT
MT. WHEELER MINES, INC.
DOCKET NO. DMEA-2082

AMENDMENT NO. 5

It is agreed this 9th day of June, 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration (hereinafter called the "Government"), and Mt. Wheeler Mines, Inc., that Amended Exploration Project Contract Idm-E248 (Docket No. DMEA-2082), dated May 11, 1953, and effective January 29, 1952, as amended (hereinafter called the "Amended Contract"), is further amended, effective January 28, 1954, as follows:

In Article 3 of the Amended Contract form, delete the words "prior to January 29, 1954" and substitute the words "prior to January 29, 1955.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, the agreed unit cost of any item of work, or the amount of any item designated as "allowable maximum.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C O Mitteudorf
Administrator, Defense
Minerals Exploration
Administration

Robert Hoffman
Talbert

MT. WHEELER MINES, INC.

By James D. Williams
Pres.

AMENDMENT NO. 5

Docket No. DMEA-2082 Mineral Tungsten

Exploration Project Contract Idm-E248(Amended)

Date of Contract January 29, 1952

Date of Amendment June 9, 1954

Operator Mt. Wheeler Mines, Inc.

JUSTIFICATION

This amendment was made to extend the termination date of amended contract Idm-E248 to January 29, 1955. This extension of time is required to extend the pole audit so that the property may be gotten into production in order that the Government may recover some money on this contract.

H. C. Miller, Executive Officer
DMEA Field Team, Region III

Docket
Martin
Pulsky
Rubin

AMENDMENT NO. 5

Docket No. DMEA 2082 Mineral Tungsten

Exploration Project Contract Idm-E248 (Amended)

Date of Contract May 11, 1953

Date of Amendment June 9, 1954

Operator Mt. Wheeler Mines, Inc.

JUSTIFICATION

In preparing Amendment No. 4, the completion date for the new work authorized was inadvertently left as January 29, 1954. Since it was our intention to allow additional time for such new work, Amendment No. 5 was prepared.

Docket copy

AMENDED EXPLORATION PROJECT CONTRACT
MT. WHEELER MINES, INC.
DOCKET NO. DMEA-2082

AMENDMENT NO. 4

It is agreed this 20th day of May, 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Mt. Wheeler Mines, Inc., that Amended Exploration Project Contract Idm-2248 (Docket No. DMEA-2082), dated May 11, 1953, and effective January 29, 1952, as amended, is further amended, effective January 29, 1952, as follows:

A. In Exhibit "A," under "Description of the Work":

1. Delete the words "two stages" in the first sentence of the first paragraph, and substitute the words "three stages."

2. Add additional work as follows:

STAGE III

(a) Not to exceed 500 feet of drifting in the North Zone shall be performed. The drift shall be started approximately easterly as shown on the Map D-100-7 attached hereto and made a part hereof. The purpose of the work is to establish so far as practicable, the continuity and grade of mineralization along the intersection of the favorable horizon of the Mt. Wheeler limestone bed and the North fissure zone. The initial line of the drift shall follow the projected ore zone as closely as possible with due consideration to maintaining a practical grade. Thereafter, to the extent feasible, the drift shall follow the best mineralization that can be observed by lamping and/or determined by sampling. The drift shall be not less than 5 feet by 6½ feet in cross section in the clear of timber.

(b) Not to exceed 200 feet of crosscutting and/or raising shall be performed for the chief purpose of exploring laterally and vertically in order to obtain the information needed to keep the drift in the best mineralization possible; Provided, That if less than 500 feet of drifting is performed under this stage, the difference between the number of feet drifted and 500 feet shall be available for crosscutting and/or

raising, as approved in advance by the Government, in addition to the 200 feet provided herein. Any footage remaining for this work item after completion of the drift described in (a) above, shall be used to determine the height and/or width of ore at a point or points selected from the best showings of mineralization found in the drift.

(c) The drifts, crosscuts, and raises shall be timbered as necessary, but not to exceed 200 feet of timbering shall be performed in connection with items (a) and (b), above.

B. In Exhibit "A," under "Estimated Cost of the Project":

1. Under "Agreed Unit Costs," immediately after the work items under "Phase B," add the following:

STAGE III

500 feet of drifting @ $40.00/ft.	$20,000.00
200 feet of crosscutting and/or raising @ $40.00/ft.	8,000.00
200 feet of timbering @ $6.00/ft.	1,200.00

2. In the paragraph which precedes "(1) Independent Contracts," add "raising," before "drifting," on the second line of the paragraph.

3. Under "(7) Miscellaneous," add:

Assaying	$148.00

C. In Exhibit "A," under "Summary":

1. Add the following:

Total Estimated Cost of Stage III	$29,348.00

2. After "Total Estimated Cost of Project," delete "$141,076.00*" and substitute "$170,424.00*."

3. After "Government Participation @ 75%," delete "$105,807.00*" and substitute "$127,818.00*."

D. In Annex I to the Amended Contract, add the following:

Use of plant and equipment in which the Government has an equity. The Operator shall furnish to the Government complete tonnage, sampling, assaying, and settlement data for any ore produced or transported through the Pole Adit between the date of completion of Stage II and the time when all obligations of the Operator under the contract have been completed or terminated. In consideration of the Operator furnishing these data, the Operator shall be allowed to use any project plant and equipment in which the Government has an equity and that is not required for the work of Stage III for the work of production from the Pole Adit ore zone for so long as work under Stage III is in progress. All costs of said production shall be for the Operator's sole account without contribution by the Government. The agreed unit costs under Stage III of Exhibit "A" contemplate that the Operator be allowed to use without charge during Stage III of the contract all plant and equipment in which the Government has an interest.

The Operator agrees that the Government holds an equitable interest in each item of plant constructed and each item of equipment acquired by purchase or rental-purchase agreement to the cost of which the Government contributed. The extent of the Government's equity in each item of plant and equipment is the percentage contributed by the Government to the total cost of the item exclusive of carrying charges and interest.

E. In Article 2 of the Amended Contract form, add the Pole No. 5 and Pole Fraction No. 3 claims, as to which the Operator represents and undertakes that it is the owner, in possession and entitled to possession, and there are no liens or encumbrances against them.

F. Annex III, attached hereto and made a part hereof, is substituted for Article 9 of the Amended Contract form.

G. In Article 8 of the Amended Contract form, delete the sums "$105,807.00" and "$141,076.00," and substitute the sums "$127,818.00" and "$170,424.00," respectively.

H. That part of the second sentence of Article 10 of the Amended Contract form which begins with the word "Provided," is deleted.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C O Mitteedors
Administrator, Defense Minerals
Exploration Administration

Robert Chamberlin

MT. WHEELER MINES, INC.

By James D. Williams
Pres

AMENDED EXPLORATION PROJECT CONTRACT
MT. WHEELER MINES, INC.
DOCKET NO. DMEA-2032

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 7 1954

ANNEX III

The following provisions are in lieu of Article 9:

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

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

c. Basis for computation.--The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f.o.b. point); except, that charges of the buyer arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight paid by the buyer to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the

* The words "ten years from the date of the contract" are deleted and the words "fifteen years from the date of the 'Prior Contract' (Jan. 29, 1952)" are substituted therefor.

Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the raw ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

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

e. Percentages of royalty.--The percentages of the Government's royalty shall be as follows:

> One and one-half ($1\frac{1}{2}$) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half ($\frac{1}{2}$) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.
>
> (For instance: the royalty on an amount of five dollars ($5.00) per ton, would be one and one-half ($1\frac{1}{2}$) percent; on an amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) percent.)

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

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

h. No obligation to produce.--Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

i. Government not obligated to buy.--Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

58694

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN - 7 1954

AMENDMENT NO. 4

Docket No. DMEA-2082 Mineral Tungsten

Exploration Project Contract Idm-5248 (Amended)

Date of Contract January 29, 1952

Date of Amendment May 20, 1954

Operator Mt. Wheeler Mines, Inc.

JUSTIFICATION

Amendment was drawn to permit additional exploration in the North Zone which was explored only partly under the first two stages of the original contract.

H. C. Miller, Executive Officer
DMEA Field Team, Region III

MF-203
(Revised July 1, 1953) 3082

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Nevada, County of White Pine, described [redacted] [redacted]: 1/

in a Mining Lease and Option to Purchase Agreement, dated December 18, 1950, and recorded in Book 157, at Pages 29 to 34, Official Lease Records of White Pine County, Nevada

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

2/ Mt. Wheeler Mines, Inc., a Corporation
218 Felt Building
Salt Lake City 1, Utah

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (~~as set forth on the reverse side hereof~~) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of Amendment No. 4 to said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

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

2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or *(ten years have elapsed from the date of the contract)* "whichever occurs first,"

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

4. Changes and added provisions *"In paragraph 2, the words "fifteen years from the date of the Prior Contract (January 29, 1952) have elapsed" are substituted for the words "ten years have elapsed from the date of the contract."

Dated this 19th day of May, 1954.

R. E. Kaufman
Hedwig Kaufman [Seal]

Bryon S. Robison
Chloe E. Robison [Seal]

Shirley L. Robison
Marjorie M. Robison [Seal]

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

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

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

~~RELEVANT CONTRACT PROVISIONS~~

~~Repayment by Operator.--a. Certification.--If at any time the Government considers that~~ a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, as follows:

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

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

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

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

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

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation ~~on the Operator or the Operator's successor in interest to engage in any mining or production operations.~~

Sent by Dim.

Interior—Duplicating Section, Washington, D. C. 47318

Docket Copy

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MT WHEELER MINES, INC.
EXPLORATION PROJECT CONTRACT IDM-8248 (Amended)
DOCKET NO. DMEA-2082

AMENDMENT NO. 3

It is agreed this 24th day of November, 1953, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Mt. Wheeler Mines, Inc., each acting in consideration of the agreement of the other to the terms hereinafter set forth, that Exploration Project Contract Idm-8248 (Amended), Docket No. DMEA-2082, dated May 11, 1953, between the parties hereto, be further modified and amended as follows:

In carrying out the provisions of Amendment No. 2, dated October 28, 1953, no important E-W mineralized fissures were encountered in extending Lateral No. 5 for 200 feet north in Wheeler bed -(Item 2 (c) 5 (c)). Therefore, the phrase "drift a total of 45 feet on any ore encountered in extending the lateral" is, by this amendment, deleted from Item 2 (c) 5 (d) of Amendment No. 2.

The footage deducted from work allowed in Lateral No. 5, may, by this amendment, be used in driving No. 2 Lateral southerly in the productive portion of the Wheeler bed.

Maximum allowable footage, Phase B, remains 600 feet. As stipulated in the Contract (Amended), all drifts and/or crosscuts to be a minimum of 5 by 6-1/2 feet in cross section and timbered, not in excess of 36 feet where required. All work to be done at the agreed unit cost of $40 per foot for drifting and/or crosscutting, and $15 per foot for timbering.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate, total amount which the Government may be required to contribute, nor the amount of any item designated as allowable maximum.

Executed in sextuplicate the day and year first above written.

MT. WHEELER MINES, INC.

By James D. Williams

THE UNITED STATES OF AMERICA

By H. C. Miller
H. C. Miller, Executive Officer
DMEA Field Team, Region III

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
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AMENDMENT NO. 3

Docket No. [redacted] Mineral [redacted]

Exploration Project Contract [redacted]

Date of Contract [redacted]

Date of Amendment [redacted]

Operator [redacted]

JUSTIFICATION

Amendment No. 2 permitted operator to drift 45 feet on any ore encountered in extending Lateral No. 5 northward 200 feet. As no mineralization was encountered in that extension, operator requested permission to use the 45 feet in drifting south in the Chesler bed in Lateral No. 2 to encounter ore reserves to the south which are indicated by ore exposure in No. 1 Lateral which extends approximately 75 feet south of the Polo Adit.

H. C. Miller, Executive Officer
DMEA Field Team, Region III

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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MT. WHEELER MINES, INC.
EXPLORATION PROJECT CONTRACT IDR-8248 (AMENDED)
DOCKET NO. DMEA-2082

AMENDMENT NO. 2

Contract Idr-8248 (Amended), dated May 11, 1953, Docket No. DMEA-2082, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Mt. Wheeler Mines, Inc., is amended as follows:

1. Amendment No. 1 is cancelled. Mt. Wheeler Mines, Inc., is absorbing all footage allowed by that amendment on its own account.

2. Due to developments at the Mt. Wheeler Mine since "Approval to Proceed Under Phase B," dated July 22, 1953, was granted, certain work unforeseen at that time seems now to be desirable, and certain other work indicated at that time to be advisable is now determined impossible of being carried out or found unnecessary.

(a) By this amendment, Item 2, under "Approval to Proceed Under Phase B" is reworded in part as follows:

2. In Lateral No. 2, start at top of existing raise in No. 2 Lateral south and drift north 130 feet in the Wheeler bed; drift 25 feet east on the first ore body, and 10 feet east on the second ore body of Lateral No. 2 north.

Total footage 165 feet.

(b) Item 4, under "Approval to Proceed Under Phase B" by this amendment is reworded in part as follows:

4. In Lateral No. 4, (a) drift 9 feet on ore 40 feet northeast of adit, and (b) continue lateral north 57.5 feet in the Wheeler bed.

Total footage 66.5 feet.

(c) Item 5, under "Approval to Proceed Under Phase B" by this amendment is reworded in part as follows:

5. In Lateral No. 5, (a) drift 10 feet on ore 30 feet north of raise; (b) drift 35 feet on ore 110 feet north of raise; (c) extend lateral 200 feet north in Wheeler bed; (d) drift a total of 45 feet on any ore encountered in extending the lateral, and (e) drive a raise 3-1/2 feet in the back of the lateral at 157 feet for slusher station.

Total footage 293.5 feet.

(d) Items 1 and 3 of "Approval to Proceed Under Phase B" remain unchanged.

Maximum allowable footage, Phase B, 600 feet.

All drifts and/ crosscuts to be a minimum of 5 by 6-1/2 feet in cross section and timbered, not in excess of 36 feet where required. All work to be done at the agreed unit cost of $40 per foot for drifting and/ crosscutting, and $15 per foot for timbering.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, nor the amount of any item designated as allowable maximum.

Dated October 28, 1953

MT. WILLIAM MINES, INC.

By James D. Williams

THE UNITED STATES OF AMERICA

By H. L. Miller

H. L. Miller, Executive Officer
DMEA Field Team, Region III

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration

NOV - 6 1953

AMENDMENT NO. [illegible]

Docket No. [illegible] Mineral [illegible]

Exploration Project Contract [illegible]

Date of Contract [illegible]

Date of Amendment [illegible]

Operator [illegible]

JUSTIFICATION

Lateral No. 2: At end of the 155 foot north drift another ore zone was encountered. Good ore shows in the face, both and ribs. Amendment permits operator to drive through this ore zone; to drift on the ore and to drift on any other ore zone that might be encountered in drifting 25 feet north.

Lateral No. 4: In the present workings the entire bed is replaced with a wet sticky and white color clayey material and also harder caving. Also very little additional information will be obtained even if the heavy back is overcome. Thirty-three and one half feet of work remain to be done. Amendment approves abandoning of the work.

Lateral No. 5: Additional 10 feet of drifting allowed in east drift at 110 feet to further explore the ore in this zone; drifting to ore 30 feet from raise and back from 5 to 10 feet as 10 feet should be enough to determine the pitch of the ore; a 3-1/2 foot raise at 150 feet is approved to provide head room for a timber station needed to extend the lateral north.

Above work calls for a net additional footage of 85 feet which is taken from the 70 feet of drifting on ore in Lateral No. 5 allowed under "Approval to Proceed Under Phase 1."

Amendment No. 1 is cancelled as all work is to be which company can through its mill and will pay royalty on. Company will assume all costs.

H. C. Miller, Executive Officer
DMEA Field Team, Region III

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ae Kane 11/9/53

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Adm.
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MT. WHEELER MINES, INC.
EXPLORATION PROJECT CONTRACT IDM-B248 (AMENDED)
DOCKET NO. DMEA-2082

AMENDMENT NO. 1

Contract Idm-B248 (Amended), dated May 11, 1953, Docket No. DMEA-2082, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Mt. Wheeler Mines, Inc., is amended as follows:

1. Included in the work to be done under Phase B of Exhibit A, Description of the Work, is the following:

   a. Raising in Lateral No. 1 and Lateral No. 5 to expose the vertical limits of the bedded scheelite mineralization. This raising should be kept to the greatest extent feasible in the most productive zone of the Mt. Wheeler bed.

   b. Footage for raising is to be deducted from that provided in "Approval to Proceed under Phase B" dated July 22, 1953, for the northerly extension of Lateral No. 5.

This Amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, nor the amount of any item designated as allowable maximum.

Dated October 15, 1953

MT. WHEELER MINES, INC.

By James D. Williams
Pres.

THE UNITED STATES OF AMERICA

By H. C. Miller
H. C. Miller, Executive Officer
DMEA Field Team, Region III

[illegible]
[illegible]
[illegible]
[illegible]

AMENDMENT NO. 1

Docket No. [illegible]

Mineral Tungsten

Exploration Project Contract [illegible] (Amended)

Date of Contract May 11, 1951

Date of Amendment October 15, 1953

Operator Mt. Wheeler Mines, Inc.

JUSTIFICATION

Test raise out up to Lateral No. 1 opened some very good ore. To determine if the ore continues to the shale and above the Wheeler Pit and to prove whether or not the entire Mt. Wheeler Pit has been mineralized, raising from Laterals No. 1 and No. 5 is justified and allowed for by Amendment No. 1. Footage for raising is subtracted from the allowed monthly estimates of Lateral No. 5.

H. C. Miller, Executive Officer
DMEA Field Team, Region III

MF-200
(June 1951)
(Revised Feb. 1952)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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JUN 1 1953

DOCKET NO. DMEA 2-62

COMMODITY Tungsten

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

Docket Copy
Idm-E 248

AMENDED

EXPLORATION PROJECT CONTRACT[1]

IT IS AGREED this 11th day of May, 1953, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Mt. Wheeler Mines, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of Nevada, 213 Felt Building, Salt Lake City 1, Utah

hereinafter called the "Operator," as follows: and as set forth in Annexes I and II attached hereto

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

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Nevada, County of White Pine, described as follows:[3] The Mt. Wheeler Mine comprised of the unpatented mining claims Pole Cat and Pole Cat Nos. 2 to 5 inclusive, all in T. 12 N., R. 58 E., Mt. Diablo B & M, in the Mt. Washington Mining District

the Operator represents and undertakes:[4] of Pole Cat Nos. 3, 4, and 5

(*a*) That the Operator is the 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: None

of Pole Cat, Pole Cat No. 1 and 2

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

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

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

in or upon the described land; and shall bring the project to completion ~~within a period of~~ prior to January 23, 1954 ~~from the date of this contract.~~ The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided.

ARTICLE 4. *Performance of the work.*—(*a*) *Operator's responsibility.* The work shall be performed efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmens' compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. To the extent specified in Exhibit "A," attached hereto, the work may be performed by independent contractor or contractors; and work not specified in Exhibit "A" for performance by independent contractor may nevertheless be so performed upon amendment of Exhibit "A," as agreed to by the parties, to state the work to be so performed and the estimated unit costs thereof, as provided hereafter.

(*b*) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(*c*) *Government may inspect.*—The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

ARTICLE 6. *Allowable costs of the project.*—(*a*) The costs of the project in which the Government will participate are limited to the following: and as indicated in Article 15.

(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

(3) *Operating materials and supplies.*—Necessary materials and supplies including items of equipment costing less than $50.00 each, and power, water, and fuel, a schedule of which is included in the estimate of costs in Exhibit "A."

(4) *Operating equipment.*—Any operating equipment to be rented or purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or the allowable depreciation, as the case may be, a schedule of which is included in Exhibit "A." Any items listed as owned and to be furnished by the Operator, and related ~~initial~~ allowable depreciation, are allowable maximums.

(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

(7) *Miscellaneous.*—Repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance and payroll taxes.

(8) *Contingencies.*—Such other necessary, reasonable direct costs of performing the exploration work, within the limit of the total aggregate estimate of costs, whether or not included in any schedule of costs in Exhibit "A," as may be approved by the Government in the course of the work, as indicated by its approval and payment of invoices and vouchers.

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

(*b*) The Government's payments in all cases will be based on actual, necessary costs (including contract unit prices) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

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

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

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of 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. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay 75 percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $1[illegible]5,307.00, which is 75 percent of $1[illegible],[illegible]76.00, the agreed, estimated total cost of the project in which the Government will participate; *Provided*, that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

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

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

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

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

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

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

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

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* To the extent that costs are set forth in Exhibit A" as agreed unit costs", they are in lieu of the actual costs that would otherwise be allowable costs of the project as provided in Article [illegible](a) of the contract form

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By [signature]
Administrator, Defense Minerals Exploration Administration

MT. [illegible] MINES, INC.
(Operator)

By James D. Williams
President

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

[signature]
Secretary

[CORPORATE SEAL]

EXPLORATION PROJECT CONTRACT
MT. WHEELER MINES, INC.
DOCKET NO. DMA 2082

ANNEX I

Materials and Supplies. For the purpose of determining the Government's interest in materials or supplies remaining upon any termination of the work, they shall be considered in groups or categories (such as pipe, or explosives, or rails, or drill steel), and if the original cost of the remaining unexpended portion of any such group or category exceeded $50, the Government shall have an interest therein as provided in Article 11 of the contract form.

Equities in Equipment. Unless expressly permitted by provisions in Exhibit 'A,' the operator shall not procure equipment or any other item under a rental purchase agreement, an installment purchase agreement, any agreement which creates or builds up an equity or interest in the thing procured which can be converted to legal title only by further payment or some other consideration, or any agreement other than for straight rental or cash purchase and delivery.

Preservation of Property. Until the final disposal of any equipment or other property in which the Government has an interest or equity, the operator shall preserve and protect same for the mutual best interests of the parties, any reasonable and necessary cost thereof to be treated as an allowable cost of the exploration work to which the Government will contribute.

AMENDED EXPLORATION PROJECT CONTRACT
MT. WHEELER MINES, INC.
DOCKET NO. DMA-2082

ANNEX II

WHEREAS, the parties to this Amended Agreement are also parties to Contract Idm-E248, Docket No. DMA-2082, dated January 29, 1952, executed on Form MF-200 (June 1951), as amended, hereinafter called the "Prior Contract"; and

WHEREAS, all the exploration work provided for in Exhibit "A" of the Prior Contract has been completed but the parties desire to add to the work, and to change the basis for payment of some of the additional work to be done to a unit cost instead of an actual cost basis, and to restate their agreement on the new contract form, MF-200 (Feb. 1952);

NOW, THEREFORE, it is mutually agreed that:

1. Effective as of the date of its execution, the Prior Contract is hereby amended and superseded by this Amended Contract executed on Form-MF-200 (Feb. 1952) which shall govern the Government's claim and lien for percentage royalty, and in which the rights and obligations of both parties are fully merged, except that vouchers and claims for the Government's contribution to the work performed under the Prior Contract and payment thereof by the Government shall be as provided in the Prior Contract.

2. The Operator hereby releases and agrees to save harmless the Government from all claims and demands arising out of the Prior Contract, except as otherwise herein provided.

3. Exhibit "A" of the Prior Contract is amended and superseded by Exhibit "A" attached to this Amended Contract.

4. The equipment referred to in Amendment No. 2 of the Prior Contract under the heading "IV. Operating Equipment To be rented" was obtained by the Operator under rental purchase agreements to which the Government consents--but after the execution of this Amended Contract the terms of Annex I shall apply. The Operator may continue to use all equipment and/or installations heretofore purchased or rented by the Operator but there shall be no further contribution by the Government to the cost of equipment obtained under rental

purchase agreements and, the Government's present equity therein shall be maintained.[1] All remaining supplies purchased pursuant to the terms of the Prior Contract shall be immediately inventoried, the value of the Government's equity therein determined and credited to any monies the Government is required to pay the Operator hereunder.

1/ This applies also to all installations constructed by the Operator.

EXPLORATION PROJECT CONTRACT
MT. WHEELER MINES, INC.
DOCKET NO. DMA-2082

EXHIBIT "A"

Description of the Work

The work shall be done in two stages. Stage I shall consist of that work already completely performed, which is set forth in Exhibit "A" of the Prior Contract. Stage II will be divided into two phases -- A and B -- and is as hereinafter outlined. Phase A is indicated on the map attached hereto and entitled "Mt. Wheeler Mines, Inc., Stage II."

PHASE A

Time Schedule: 5 months

Construct a 12 by 12-foot powder magazine.

Drive not in excess of 600 feet of the drifts, crosscuts, and/or slusher drifts in cross section a minimum size of 5 by 6½ feet (timbered where required but not in excess of 100 feet) of the exploration workings shown from Laterals 1, 3, and 5. This drifting should be kept to the greatest extent feasible in the most productive zone of the Mt. Wheeler bed.

PHASE B

Time Schedule: 4 months

This phase is to be undertaken only after the completion of Phase A if, in the opinion of the Government, the sampling and assaying results of Phase A warrant it, and the Government so indicates in writing in advance.

Drive not in excess of 600 feet of drifts, crosscuts, and/or slusher drifts in cross section a minimum of 5 by 6½ feet (timbered where required but not in excess of 36 feet) at locations to be specified by the Government.

Estimated Cost of the Project
(*Indicates allowable maximum)

Agreed Unit Costs

STAGE II
Phase A

600 feet of drifts, crosscuts, and/or slusher drifts @ $40.00/ft.	$24,000.00	
100 feet of timbering @ $15.00/ft. 1/	1,500.00	$25,500.00

1/ This includes cost of holding the floor pillar between the slusher drifts and the back of the Pole Adit, or cementing the same, if necessary.

Phase B

600 feet of drifts, crosscuts and/or slusher drifts @ $40.00/ft.	$24,000.00	
36 feet of timbering @ $15.00/ft. 2/	540.00	$24,540.00
		$50,040.00

The Government will contribute to the cost of the above drifting, crosscutting, and/or driving slusher drifts and timbering on the basis of the above agreed estimated unit costs per foot as they accrue for units of work actually performed, in lieu of actual costs. This includes all costs 3/ of the work except assaying and those items of equipment hereinafter described which will be contributed to by the Government on the basis of the actual costs specified in Article 6(a) of the contract form, schedules of which are set forth below. Work to the costs of which the Government will contribute on the basis of agreed estimated unit costs may be performed by independent contractor without reference to the provisions relating to independent contracts and contractors in Articles 4(a) and (b) and 6(a)(1) of the contract form.

(1) Independent Contracts

None

(2) Labor, Supervision, Consultants

None

(3) Operating Materials and Supplies

None

(4) Operating Equipment

To be rented

None

2/ See footnote 1.

3/ This includes the powder magazine in Item 6.

To be purchased

10 - 27 cu. ft. side dump ore cars @ $506.50 ea.	$5,065.00	
1 - General purpose truck @ $6,040.00 complete	6,040.00	
1 - Joy Model AAF-212 double drum slusher, complete (or 3 air slushers Model S-211)	2,776.90	$13,881.90

To be furnished by the Operator

All other equipment necessary for the project is to be furnished by the Operator without cost.

(5) Rehabilitation and Repairs

None

(6) New Buildings, Improvements, Installations

1 - 12 by 12-foot powder magazine	1,109.10*

(7) Miscellaneous

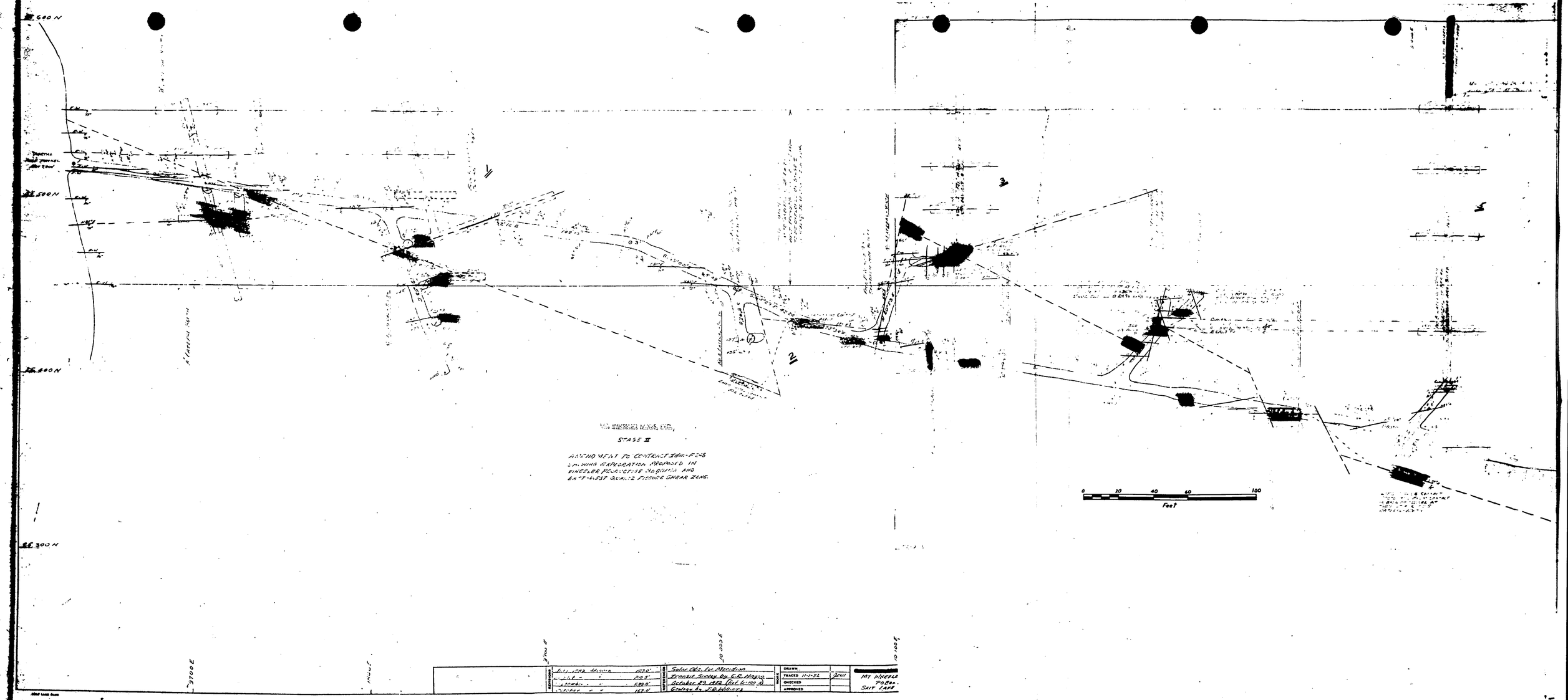
Assaying - Phase A	309.00
Assaying - Phase B	200.00

(8) Contingencies

None

S U M M A R Y

Total Estimated Cost of Stage I	$75,476.00*	
Total Estimated Cost of Stage II	65,600.00*	
Total Estimated Cost of Project		$141,076.00*
Government Participation @ 75%		$105,807.00*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MT WHEELER MINES, INC.
STAGE II
AMENDMENT TO CONTRACT Idm-F246
DRILLING EXPLORATION PROPOSED IN
WHEELER PROJECTIVE PROPERTIES AND
EAST-WEST QUARTZ FISSURE SHEAR ZONE.
DATE
REVISIONS
REFERENCE
Solar Obs. for Meridian
Transit Survey By C.R. Hayes
October 20, 1952 (Ref 1-100 a)
Geology by F.B. Williams
SCALE
DRAWN
TRACED 11-1-52
CHECKED
APPROVED
MT WHEELER
PROP.
SALT LAKE

MF-203

OWNER'S CONSENT TO LIEN

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

[illegible] to [illegible] contract, dated [illegible] 30, 195[illegible], and recorded [illegible] 257, [illegible] to 30, [illegible] of [illegible] County, Nevada.

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

2/ [illegible] Exploration Co., Inc., a Corporation
[illegible]
[illegible] City 8, Utah

hereinafter called the "Operator"; and

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

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

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

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ [illegible], or ten years have elapsed from the date of the contract. N.G.

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

Dated this 30 day of [illegible], 195 9.

Hedwig Kaufman
H. E. Kaufman [Seal]
Shirley Geo. Robison
Marjorie M. Robison [Seal]
Bogan S. Robison
Chan E. Robison [Seal]

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

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

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

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

RELEVANT CONTRACT PROVISIONS

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

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

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

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

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

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

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

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

Quinn
Hoffland

MT. WHEELER MINES, INC.
CONTRACT Idm-E248
DOCKET NO. DMEA-2082

AMENDMENT NO. 2

WHEREAS, it is desired that Operator carry out the intent and physical progress of his exploration program in a more efficient and effective manner than is possible on the basis of the original contract; NOW THEREFORE, it is agreed between the United States of America and Mt. Wheeler Mines, Inc. that Exhibit "A" of Contract No. Idm-E248, Docket DMEA-2082, (contract dated January 29, 1952), is amended, effective November 13, 1952, as follows:

I. Time of completion of contract extended three (3) months.

II. Statement of the Work -

Delete Item 2 and substitute the following:

2. Move and reconvert the present compressor building to a blacksmith shop and change room at an estimated cost of $1,400.00 for all necessary labor, materials and supplies. The building will be covered with sheet metal and floored with rough lumber.

III. Estimated Cost of the Project
Fixtures and Improvements

Delete:

1.	1—Air Receiver, 4' x 10', 150#/sq. in. W.P.	$ 250.00
2.	Prepare, by bulldozing, sites for above-mentioned buildings at $10.00/hour for 20 hours	200.00
3.	Excavate trench for pipe line and cover pipe at $10.00/hour for 60 hours	600.00
4.	Clear snow from road if necessary at $10.00/hour, 120 hours	1200.00

Substitute therefor:

1.	1—Air Receiver	$ 40.00
2.	Prepare, by bulldozing, sites for above-mentioned buildings at $10.00/hour for 19.2 hours	192.00
3.	Excavate trench for pipe line and cover pipe at $10.00/hour for 35.2 hours	352.00
4.	Clear snow from road if necessary at $10.00/hour, 64.6 hours	646.00

IV. <u>Operating Equipment</u>
<u>To be rented</u>

Delete:

1.	1—Diesel compressor, 315 cfm at $470.00/mo., 7 months	3290.00
2.	1—Eimco mucking machine, 12-B at $295.00/mo., 7 months	2065.00
3.	1—Willys "Jeep" 4-wheel drive, new at $100.00/mo., 7 months	700.00
4.	1—Electric trammer at $475.00/mo., 7 months	3325.00
5.	6—21-cubic foot ore cars at $25.00 each per month, 7 months (See Amendment No. 1)	1050.00

Substitute therefor:

1.	1—Diesel Compressor, 315 cfm at $470.00/mo., 10 months	4700.00
2.	1—Eimco mucking machine, 12-B at $295.00/mo., 9 months	2655.00
3.	1—Electric trammer at $475.00/mo., 9 months	4275.00

Add:

1. 1—Jib Jay Jumbo at $385.00/mo., 3 months — $1155.00

V. Operating Equipment
To be purchased

Delete:

1. 1—Fuel storage tank, 1100 gallons — 500.00

Substitute therefor:

1. 1—Fuel oil tank, 20 gallons — 89.17

Add:

1. 1—Air slusher — 800.00
2. 1—Jackleg, jackhammer, steel and hoses — 975.00

VI. Labor and Supervision

Delete:

1. 1—Cook at $300.00/mo., 7 months — 2100.00
2. 1—Superintendent-engineer at $500.00/mo., 7 months — 3500.00
3. 1—Engineer-geologist at $400.00/mo., 7 months — 2800.00

Substitute therefor:

1. 1—Cook at $250.00/mo., 8 months — 2000.00
   1-- Cook @ $300.00/mo., 8 months — 2400.00
2. 1—Superintendent-engineer at $500.00/mo., 10 months — 5000.00

VII. Materials and Supplies

Add:

1. 1—Aerial stereoscopic color photo reconnaissance of the area property, maximum cost $250.00

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

Dated November 13, 1952.

UNITED STATES OF AMERICA

By _____
H. C. Miller, Executive Officer
DMEA Field Team, Region III

MT. WHEELER MINES, INC.

By _____
James D. Williams, President

AMENDMENT NO. 2

Docket No. DMEA-/2082 Mineral Tungsten

Exploration Project Contract Idm-E-248

Date of Contract January 29, 1952

Date of Amendment November 13, 1952

Operator Mt. Wheeler Mines, Inc.

JUSTIFICATION

Amendment No. 2 has been drawn to permit the Operator to carry out the intent and physical progress of the exploration program more efficiently and effectively than is possible under the contract. The contract has been extended three months to compensate for loss of time during period of heavy snowfall last February, March, and April.

With the advent of cold weather, a warm change room is an absolute necessity, and Amendment No. 2 provides such facilities at minimum cost.

Further justifications for the amendment are given in letter, dated November 10, 1952, from Mr. James D. Williams, President, to Mr. H. C. Miller, copy of which has been sent to DMEA in Washington.

Amend II 2

Docket

AMENDMENT NO. 1

DEFENSE MINERALS EXPLORATION ADMINISTRATION

Exploration Project Contract Idm-E248

Docket DMEA-2082 Mt. Wheeler Mines, Inc.

"Exploration project contract Idm-E248, dated January 29, 1952, between the United States of America and Mt. Wheeler Mines, Inc., a corporation, 218 Felt Building, Salt Lake City 1, Utah, is hereby amended as follows:

"The schedule in Exhibit 'A' attached to the contract form under the title 'Operating Equipment to be Rented', is amended to provide for the rental of six 21-cubic feet ore cars at $25.00 each for seven months, or a total of $1,050.00.

"This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be obligated to pay, or the percentage of the costs which the Government may be obligated to pay, under the provisions of Article 13 of the contract form.

"Dated May 7, 1952.

"UNITED STATES OF AMERICA

"By N Weller
Executive Officer - DMEA

"MT. WHEELER MINES, INC.

"By James D. Williams"
Pres.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 27 1952

GCL

MF-200
(June 1951)

Docket No. DMA 2002
Commodity Tungsten

Idm-E248

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

DOCKET COPY

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JAN 29 PM 1:45
SAN FRANCISCO, CALIFORNIA

EXPLORATION PROJECT CONTRACT [1]

It is agreed this 29th day of January, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Mt. Wheeler Mines, Inc., a corporation
Kilo Felt Building
Salt Lake City 1, Utah

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 Nevada, County of White Pine described as follows: [3] The Mt. Wheeler Mine comprised of leased unpatented claims Pole Cat, Pole Cat No. 1 and Pole Cat No. 2, and the owned, unpatented claims Pole Cat No. 3 and Pole No. 4 and Pole No. 5, all in T. 12 N., R 66 E., Mt. Diablo B & M, in the Mt. Washington Mining District.

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: There are no encumbrances. Pole owner as to Pole Cat #3, Pole #4 and Pole #5. Lessee as to Pole Cat, Pole Cat #1 and Pole Cat #2.

(*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 thirty (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] ten (10) 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 $56,607.00, which is 75 percent of the agreed estimated total cost of this project, $75,476.00.

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.

St. Chesler Mines, Inc.
(Operator)

By James D. Williams
President

THE UNITED STATES OF AMERICA

ACTING By C O Mitteudorf
Administrator, Defense Minerals Exploration Administration

Kent Hollister (formerly)

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

EXPLORATION PROJECT CONTRACT
MT. WHEELER MINES, INC.
DOCKET NO. DMSA-2062

EXHIBIT "A"

Statement of the Work

1. Construct a 16' x 24' compressor and tool shed of rough lumber at an estimated cost of $2,100.00 for all necessary labor, materials and supplies.

2. Move and reconvert the present compressor building to a blacksmith shop at an estimated cost of $850.00 for all necessary labor, materials and supplies. The building will be covered with sheet metal and floored with rough lumber.

3. Lay 2,000 feet of buried water line from a spring to the adit portal at an estimated cost of $1,340.00 for all necessary labor, materials and supplies.

4. Advance the present face of the Pole adit 1,000 feet southeasterly in sections 200 feet in length. The direction and the advance of each section are to be contingent upon the results obtained in the preceding section and its auxiliary workings as provided for hereinafter. The present adit is to be turned southeastward at the face from its S 80° E direction and the proposed advance, to avoid excessive timbering, is to follow the ore zone now exposed in the two southward trending crosscuts off the adit (see map marked "Fig. 4" attached hereto) as closely as possible and preferably, if feasible, just below the limestone and just south of or in the footwall of the ore zone. This procedure should limit to a minimum the amount of crosscutting to the ore zone that must be done in order to explore the zone. Should faulting displace the ore zone, then the adit is to be turned so that the zone can be reached and closely followed. Should faulting drop the exposed ore zone below the level of the adit, thereby necessitating sinking to reach it, then the adit advance shall be terminated automatically until it is determined what type of program, if any, should follow. The adit is to be driven approximately 6' x 7' in the clear.

5. At approximately the center, when reached, of each 200-foot section, instead of at the ends as shown on the attached map marked D-100-3, crosscut to the ore zone or its projected position by following the strongest N-S cross fracture. The five crosscuts are to be approximately 5' x 7' in cross section and are not to exceed an aggregate distance of 125 feet. Advance in each section can continue after the crosscut is started but the ore zone is to be exposed as provided for in steps Nos. 6 and 7 before the adit advance reaches the end of the section.

6. At or near the end of each crosscut raise to the ore zone by following the intersection of the cross fracture exposed in the crosscut and the quartz stringer or stringers that mark the ore zone. The five raises are not to aggregate more than 75 feet in length.

7. In each raise drift 10 feet easterly and 10 feet westerly on the bottom of the ore. The drifts are to be approximately 5' x 7' in cross section and are not to exceed an aggregate length of 100 feet. The Operator at his discretion shall secure representative samples from each round in the ore zone either by channeling each new face or by selecting a reasonable amount of the broken ore for quartering to sample size.

8. Drive two drifts northward on the two best cross fractures, as indicated by the above work on the presently exposed ore zone, to explore their intersection with the ore-bearing quartz stringer approximately 50 feet to the north which is shown on the attached map marked "Fig. 4." The two drifts are to be approximately 5' x 7' in cross section and are not to exceed an aggregate length of 125 feet.

9. Drive two raises to explore in the limestone the intersections mentioned in section 8. The raises are to be approximately 4' x 7' in the clear and are not to aggregate more than 75 feet in length.

10. Drift 10 feet easterly and 10 feet westerly at the bottom of the ore in each raise. The two drifts are to be approximately 5' x 7' in cross section and are not to exceed an aggregate length of 40 feet. The ore zone, if present, is to be sampled as provided for in section 7 above.

Estimated Cost of the Project

Fixtures and Improvements

Construct 16' x 24' shed less cost of site preparation provided for below	$ 2,000.00	
3200'--Rail 20# @ $9.15/cwt, 220 cwt	2,013.00	
190--Pairs of splices @ $1.20/pair	228.00	
550--Ties 4" x 6" x 60" @ $1.00/each	550.00	
500#--Track spikes @ $0.15/lb.	75.00	
200#--Bolts and nuts @ $0.20/lb.	40.00	
7--Switches, double throw @ $125.00/each	875.00	
Freight on above	342.00	
1200'--Air line, 3" @ $0.70/ft.	840.00	
500'--Air line, 2" @ $0.35/ft.	175.00	
1700'--Water line, 1" @ $0.16/ft.	272.00	
2000'--Water line from spring to adit, 1½" @ $0.27/ft.	540.00	
1200'--Vent-tube 18" @ $1.50/ft.	1,800.00	
Fittings, valves, etc.	150.00	
1--Air Receiver, 4' x 10', 150#/sq. in. W.P.	250.00	
Freight on pipe and accessory material 20,000# @ $1.10/cwt	220.00	
Prepare, by bulldozing, sites for above-mentioned buildings @ $10.00/hour for 20 hours 1/	200.00	
Excavate trench for pipe line and cover pipe @ $10.00/hour for 60 hours 1/	600.00	
Clear snow from road if necessary @ $10.00 per hour, 120 hours 1/	1,200.00	$12,370.00

1/ The hourly costs include wages of operator, fuel, lubricants, transportation, repairs, etc.

Contract labor for 150 feet of raises @ $11.00/ft.3/	$ 1,650.00	
1--Superintendent-engineer @ $500.00/mo., 7 months4/	3,500.00	
1--Engineer-geologist @ $400.00/mo., 7 months4/	2,800.00	
Compensation insurance, payroll taxes OAB 15 percent of payroll	3,291.00	$36,201.00
Rehabilitation and Repairs		
Move and reconvert present compressor house to blacksmith shop less cost of site preparation provided for under Fixtures and Improvements.		750.00
Materials and Supplies		
Powder, fuse and caps	3,000.00	
Steel and Bits	1,375.00	
Fuel and lubrication	3,200.00	
Mine timber	1,500.00	
Miscellaneous expense including office and engineering supplies, transportation, assays, etc.	2,000.00	$11,075.00
Total estimated cost		$75,476.00

Underground maps or sketches showing the progress of the exploration with assays of samples taken concurrently with the advance, where warranted, are to be included in the monthly reports required under section 12 of the project contract. In case such maps or sketches are not submitted, the Government at its discretion may have the necessary work performed and charge the same to the contract.

3/ The $11.00 price, which will be the maximum, includes all labor costs for breaking, mucking, tramming and placing of pipe and blower line. Timbering will be paid at the rate of $5.00/ft.

4/ The superintendent-engineer and the engineer-geologist are to devote their entire time to the project. If, for any reason, their services are used elsewhere, then their salaries are to be charged to the project on a pro-rata basis.

MF-202

LANDLORD'S SUBORDINATION AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned is the owner in fee simple of that certain parcel of ground in the county of White Pine, State of Nevada, described in a certain Exploration Project Contract dated January 29, 1952, between MT. WHEELER MINES, INC., the Lessee of said property, and the United States of America;

NOW, THEREFORE, the undersigned, as Lessor of said property under lease dated December 18, 1950, does by these presents subordinate all of his right, title, and interest under the provisions of said lease to the right, title, and interest of the United States of America under the provisions of said Exploration Project Contract, and agrees that the lien and claim of the United States of America under the provisions of said contract shall be prior to the undersigned's rights to rentals or royalties under the terms of said lease; and

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

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

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

Dated this 17th day of October, 1951.

Shirley Geo. Robison
Marjorie M. Robison
Bryan S. Robison
Chloe E. Robison
Ralph E. Kaufman
Hedwig Kaufman

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

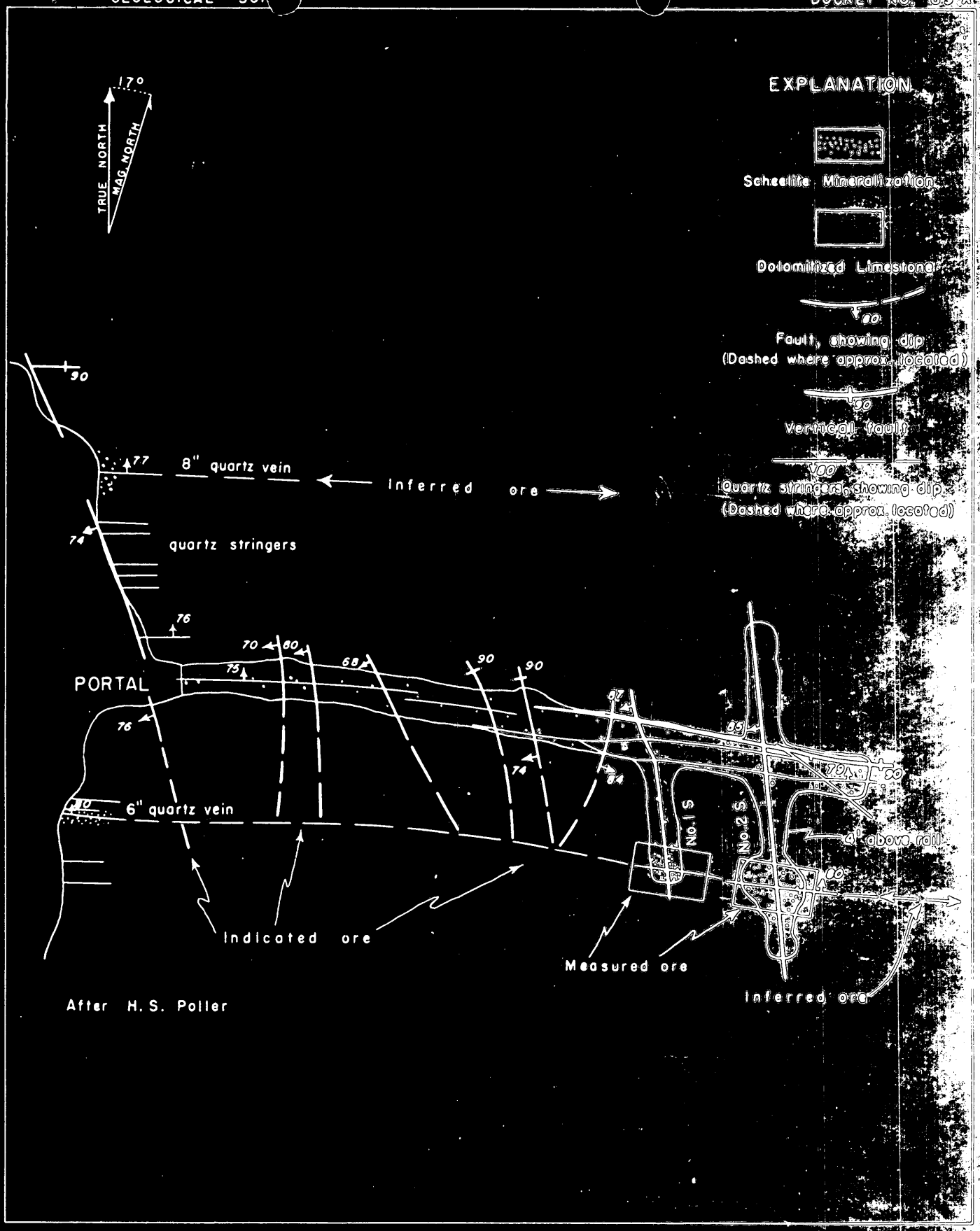

FIG. 4 GEOLOGIC MAP OF POLE TUNNEL
WHITE PINE COUNTY, NEVADA

0 20 40 FEET
Scale

2092

POLECAT NO 1
POLE NO 4
POLE NO 5
POLECAT
POLECAT NO 3
POLE CANYON
NORTH ARM
SOUTH ARM
Phase I of project to consist of advancing Pole Tunnel 1,000' on S 80°E course and, if justified, drive 6 x-cuts at strongest N-S cross fractures and 6 short raises through Wheeler Bed.
12 - N-S fractures cut in first 110' of Pole tunnel
110' Pole tunnel completed 6'x7' Section
High grade scheelite on surface in Shear zone
WHEELER BED
Wheeler Pit
Pole tunnel
Schelite float found in this area
Elev 7923'
Elev 7976'
Elev 8154'
Elev 8000'
Elev 8000'
Perjury Dike
No 1 Shear Zone
No 2 Shear Zone
No 3 Shear Zone
No 4 Shear Zone
11,000 E
10,000 E
22,000 N
26,000 N
32,000 N
EXHIBIT "A"
PROPOSED EXPLORATION
DRAWN 9/24/51 T.D.W.
TRACED ✓
CHECKED ✓
APPROVED
POLE-CANYON PROJECT
D.M.A. - 2082
TUNGSTEN
MT. WHEELER MINES, INC.
218 Felt Building
Salt Lake City 1, Utah
SCALE 1" = 100'
D-100-3
2082

5000 E
6000 E
7000 E
8000 E
9000 E
10000 E
11000 E
12000 E
13000 E
14000 E
15000 E
16000 E
17000 E
28000 N
27000 N
26000 N
25000 N
24000 N
23000 N
22000 N
21000 N
20000 N
KEY TO CLAIMS
OWNED IN FEE SIMPLE BY MT. WHEELER MINES, INC.
POSSESSORY OWNERSHIP BY MT. WHEELER MINES, INC.
PATENTED CLAIMS UNDER LEASE AND OPTION TO MT. WHEELER MINES, INC
BONANZA GROUP UNPATENTED CLAIMS UNDER LEASE & OPTION TO MT. WHEELER MINES, INC.
POLECAT GROUP UNPATENTED CLAIMS UNDER LEASE & OPTION TO MT. WHEELER MINES, INC.
NOTE: Elevations of triangulation system are based on barometer readings tied into USGS El by Paul Gemmill Nov 1950.
POLE No. 30
POLE No. 29
POLE No. 28
POLE No. 27
POLE No. 26
POLE No. 31
POLE No. 32
POLE No. 33
POLE No. 34
POLE No. 12
POLE No. 11
POLE No. 9
POLE No. 8
POLECAT No. 1
POLE No. 4
POLE No. 5
POLE No. 10
POLE No. 14
POLE No. 15
POLE No. 7
POLE No. 6
POLE No. 2
POLE No. 3
POLE No. 17
POLE No. 16
POLE No. 24
POLE No. 25
POLE No. 20
POLE No. 19
POLE No. 18
POLE No. 23
POLE No. 39
POLE No. 38
POLE No. 37
POLE No. 36
POLE No. 35
POLE No. 21
POLE No. 22
WHEELER BED
POLE FRACTION No. 5 300 x 600 ft.
POLE FRACTION No. 3 300 x 1500 ft.
POLE FRACTION No. 4 300 x 1500 ft.
POLE FRACTION No. 2
POLE FRACTION No. 1
POLE FRACTION No. 6
NORTH ARM
SOUTH ARM
POLE CANYON
POLECAT No. 2
POLECAT No. 3
WHEELER BLD
US 71 COMPLETED
SHEFFIELD LOT No. 40
SHEFFIELD
U.S. MINERAL MONUMENT No. 1, SUMMIT, MT. WASHINGTON, BEARS
WASHINGTON FISSURE
PROPOSED POLE CANYON TUNNEL S 86°E ~ 7200 FT.
YOUNG AMERICA LOT 38
GREENLAND No. 4289
PASS WORD No. 4289
ST. LAWRENCE FISSURE
RED OXIDE No. 4289
BLACK OXIDE No. 4289
OLD MOON No. 4289
BONANZA No. 2
BONANZA No. 3
BONANZA No. 4
BONANZA No. 5
BONANZA No. 6
BONANZA No. 7
BONANZA No. 8
BONANZA No. 9
BONANZA No. 10
CANAAN No. 1
CANAAN No. 2
CANAAN No. 3
CANAAN No. 4
CANAAN No. 5
CANAAN No. 6
CANAAN No. 7
CANAAN No. 8
CANAAN No. 9
CANAAN No. 10
CANAAN No. 11
CANAAN No. 12
CANAAN LOT No. 39
LINCOLN CANYON
PROPOSED LINCOLN TUNNEL N66 E ~ 2100 FT.
350 ft COMPLETED
FOLIATED ORE
CABINS
REVISIONS
Claims Devoted to Project DMA - 2082 - TUNGSTEN
REFERENCES
Revised 4/24/51 JDW.
DRAWN Harry Stolte 7-10-51
TRACED
CHECKED JDW 7/10/51
APPROVED
MT. WHEELER MINES INC.
216 FELT BUILDING
SALT LAKE, UTAH
POLE CANYON DEVELOPMENT
TUNGSTEN PROJECT
SCALE 1" = 400'
D-100-2
PEMBROKE CO. - 2166 PHOENIX

SAMPLE —

FOOTAGE CONTRACT AGREEMENT

Footage contract known as FC No. 1, Pole Canyon Project Plant, MT. WHEELER MINES, INC., is hereby approved and accepted under the following conditions:

1. (a) The contract consists of driving the Pole Tunnel on a course designated by the mine superintendent or foreman from a point 110 ft. East of portal

   (b) The contract starts on day shift 11/15/51, 2 shifts per day.

   (c) Dimensions shall be a minimum of 6' x 7' in clear (if timbered, inside sets).

2. A footage contract payment will be made as follows:

   (a) A contract price of $12.00 per linear foot of untimbered section plus an additional price of $3.00 per linear foot where timbering shall be necessary, (timber to be installed at the discretion of and as designated by the mine superintendent or foreman) will be paid for the following:

      1. All labor not exceeding 4 man shifts per day including drilling, blasting, mucking, tramming, and installation of track, air and water lines and installation of timber.

      2. Maintenance of all drilling equipment, servicing of pumping equipment, greasing of tram cars, maintenance of main level trackage, air and water lines and drainage ditches.

3. It is expressly agreed that a minimum of regular wages at prevailing hourly rates, including overtime at one and one-half times the hourly rate for time worked in excess of 40 hours per week, will be paid by the company for all work performed under this contract.

4. The company shall pay for compensation insurance, in addition to footage contract payments or regular wages as provided herein.

5. All footage advances under this contract shall be measured by the mine superintendent or foreman at the end of each pay period. The contractor shall be a witness thereto and shall thereupon sign such footage statement in acceptance thereof.

6. The manager of this contract shall be _____ John Doe _____.

7. All contractors working under this footage contract shall be employed and approved by the mine superintendent or foreman.

8. All work hereunder shall be done in a workman-like manner as approved by the mine superintendent or foreman.

9. This contract may be terminated on 24 hours notice at the election of the mine superintendent or foreman, or contract manager.

10. In case a contractor quits, or is discharged during any pay period, he shall be paid regular wages only and shall forfeit any footage contract payments.

Accepted:

_____
Footage Contract Manager

Approved:

MT. WHEELER MINES, INC.

By _____
Supt.-Foreman

Mt. Wheeler Times.

Notes on amendments

Would divide total contract price by total footage.

Fixtures & improvements. = $12,370 less 2562 = $9,808

To be purchased = 3,950 = 3,950

13,758

75,476 less 13,758 = $61,718 / 1540 = $40 ff.

SEE AMENDED APPLICATION May 23, 1951.

SEE REVISED APPLICATION September 26, 1951

BOTH OF ABOVE IN SEPARATE FOLDER.

MINING LEASE AND OPTION TO PURCHASE

THIS AGREEMENT, made and entered into as of the 18th day of December, 1950, by and between R. E. KAUFMAN and HEDWIG KAUFMAN, his wife, residing at Baker, Nevada, BRYAN S. ROBISON and CHLOE E. ROBISON, his wife, SHIRLEY G. ROBISON and MARJORIE M. ROBISON, his wife, residing at Ely, Nevada, parties of the first part, hereinafter for convenience referred to as "Owner", and James D. Williams, residing at Los Angeles, California, party of the second part, hereinafter for convenience referred to as "Operator".

WITNESSETH:

In consideration of the sum of Ten Dollars paid by Operator to Owner, receipt whereof is hereby acknowledged, and of the terms, conditions and covenants herein stated to be kept and performed by the parties respectively, it is mutually agreed —

1. Owner warrants and represents that it is the owner and holder of the following unpatented lode mining claims, located in the Mt. Washington Mining District, White Pine County, Nevada, to-wit:

Three (3) Unpatented Mining Claims as follows:

POLE CAT Lode Mining Claim, the Location Notice of which is recorded in Book 148, at page's 276 - 277, Mining Records of White Pine County, State of Nevada.

POLE CAT NO. 1. Lode Mining Claim, the Location Notice of which is recorded in Book 148, at page 285, of said records.

POLE CAT NO. 2. Lode Mining Claim, the Location Notice of which is recorded in Book ~~148~~ 158, at page 62, of said records.

Reference is made to the recorded Location Notices of said three (3) unpatented claims for more detailed description thereof.

Owner further warrants and represents that the title to each and all of the above described unpatented mining claims is free and clear of all liens and encumbrances of every kind and character, except the paramount title of the United States to said unpatented mining claims.

2. Owner does hereby demise, lease and let to Operator for a term of years commencing with the date hereof and ending on December 31, 1958, for the purpose of carrying on mining operations and of extracting and shipping ores and minerals therefrom, with privileges and options hereinafter expressed, the said three (3) unpatented mining claims hereinabove described, together with all water and water rights appertaining thereto, and all and singular the appurtenances and privileges belonging to or in anywise appertaining thereto.

3. During the term of this Agreement the Owner grants to the Operator the sole and exclusive continuing option to purchase the above described three (3) unpatented mining claims for the total sum of Twelve Thousand ($12,000.00) Dollars, current lawful money of the United States, payment to be made as follows: Operator shall pay to Owner a royalty equivalent to ten percent (10%) of the net returns from all ores and/or concentrates removed and sold from said mining claims. Said ten percent (10%) royalty shall be the only payment required on said purchase price during the term of this Agreement, except that Operator agrees that said royalty shall not be less than Fifteen Hundred ($1,500.00) for the period ending December 31, 1951. In the event that such royalty fails to equal the full Twelve Thousand ($12,000.00) Dollars during the term of this Agreement, Operator may, at his election, pay the remaining balance at any time before December 31, 1958, and Owner agrees to accept such payment in full satisfaction of the purchase price as hereinabove recited.

Said royalties shall be due and payable by Operator to Owner within twenty (20) days after full settlement shall have been received by Operator.

"Net returns", as used herein, shall mean the net proceeds realized by the Operator from the sale of ores and/or concentrates from said claims, to a smelter, mill, reduction works or any third party, after first deducting the smelter charges and deductions, or other treatment charges, transportation to rail head charges, railroad freight and demurrage charges, control and umpire assay charges, and independent sampling charges. In connection with this section it is mutually agreed that "Net returns" may be either a positive or negative amount, and in the event that it should be a negative amount, i.e., representing a net loss, the amount of that loss shall be balanced against subsequent positive returns before the calculation and payment of royalty, as provided herein, shall be made on such subsequent shipments. The Operator agrees to exercise reasonable diligence in selecting ore for shipment which will avoid any such negative "Net returns".

Provided, however, that all sales taxes upon the sale of ores and/or concentrates, and any severance taxes, mineral rights taxes, net proceeds taxes, occupation taxes, taxes upon ore mined, moved or blocked out, or other taxes of a similar nature, shall be paid by the Operator, and the amount thereof shall be taken into account as a deduction before calculating royalty payment to the Owner, under the provisions of this section.

The Operator shall permit the Owner to sample ore and/or concentrate shipment at the claims, or enroute or at the point of sale, but any expense connected therewith shall be borne solely by the Owner. Operator also agrees to furnish or cause to be furnished to Owner a duplicate set of all purchase settlements on all ore and/or concentrates shipped and sold from said claims.

4. Operator agrees to commence mining operations on said claims on or before May 31, 1951, and shall thereafter perform at least fifty (50) man shifts of work per month beneficial to said claims. Each man shift shall be the equivalent of a full day's work for one man, and shall consist of the number of hours current in the industry as constituting a day's work.

Provided, however, that all man shifts of work performed in excess of such monthly requirements shall be carried forward from month to month and from year to year as an accumulated credit of man shifts to be applied against the monthly minimum as above set forth. It is the express understanding of the parties hereto that the Operator, in the absence of forfeiture or other termination of this Agreement as hereafter provided, shall not be required to perform more than Forty Five Hundred Fifty (4,550) man shifts of work during the term of this Agreement, and that the provisions of this section shall be deemed to be fully satisfied when said Forty Five Hundred Fifty (4,550) man shifts of work shall have been performed.

Provided further, that the equivalent value of alterations, improvements, and/or surface and underground exploration and development which may be done, or caused to be done, by Operator on said claims, and all underground and surface engineering, geology, sampling, assaying, diamond drilling, road work and map making, (full reports of which shall be furnished by the Operator to Owner upon request) shall be accepted pro tanto in lieu of the equivalent value of said man shifts of work; said man shifts of work to be taken into account for the purpose of such calculation at the rate of Ten Dollars ($10,00) per day. All such beneficial work done, or caused to be done, on said claims by Operator after the date of this Agreement shall constitute man shifts of labor applicable under the provisions of this section.

5. Upon taking possession of such claims, Operator will keep and hold the same during the term hereof in behalf of the Owner and will each year do and perform all assessment work required by Federal statute to prevent forfeiture of said unpatented claims and will make timely filing of proofs of labor to show the performance of such work and will furnish copies thereof to Owner.

6. Operator shall be solely responsible for all labor, materials, supplies and equipment furnished for its operations, and shall keep the demised premises free and clear of encumbrances and mechanics' liens.

7. Operator will indemnify and save harmless Owner of all liability, cost and expense that may arise out of damage or injury to persons or property occurring in the operations of Operator under this Agreement, but Operator shall be notified of the commencement of any suit and shall have the right to defend the same.

8. Operator will keep posted in conspicuous places on said premises notices to inform all parties having interest therein, of the obligations of Operator under the two preceding paragraphs.

9. Owner or its agents may at all reasonable times enter upon and into the demised premises for the purpose of inspection, surveying and sampling.

10. The title to all improvements, (except timber placed underground) buildings, bins, tools, machinery, supplies and equipment of every kind and character placed upon, or used in connection with the operations hereunder, whether affixed to the real estate or not, shall remain in the Operator. Upon termination of this Agreement,

for any cause, prior to the time the final payment is made, Operator shall have sixty (60) days after receiving written notice from the Owner so to do, to commence the removal of all such improvements, buildings, bins, tools, machinery, and equipment of every kind and character, and thereafter the Operator shall prosecute said removal with reasonable diligence until all of his said property is so removed.

11. Upon any failure or default by the Operator in any of his obligations hereunder, (except the payment of money as herein provided) and his failure to commence rectification thereof within thirty (30) days after receipt of written notice from the Owner so to do and his further failure to carry out such rectification diligently and continuously thereafter until such default is remedied, then at the option of the Owner this Agreement shall forthwith cease and determine, and all rights of Operator in, to and upon the claims covered hereby shall be at an end. Upon failure or default by the Operator in the payment of royalties as provided herein, and the failure to remedy the same within twency (20) days after written notice from the Owner so to do, then at the option of the Owner this Agreement shall forthwith cease and determine, and all rights of Operator in, to and upon the claims covered hereby shall be at an end.

12. Nonperformance of this contract by Operator shall be excused so far as caused by Acts of God, war, accident, fire, unavailability of labor or materials, failure of water supply or transportation, shut down of treatment and refining plants, low price of metals, unprofitable operations or acts of the public authorities.

13. Operator may relinquish his rights under this Agreement without liability by serving upon Owner a thirty (30) day written notice of his intention so to do, returning the demised premises to Owner and paying to Owner any royalties then due.

14. In order to facilitate the carrying out of this Agreement, Owner shall, when requested by Operator, execute a proper deed covering the above described mining claims to Operator or his nominee, free and unencumbered and place the same together with a copy of this Agreement in an escrow to be opened by the parties hereto.

When payment of the full purchase price for the said mining claims is made to Owner, said deed shall be delivered to Operator or his nominee. In case of termination of this Agreement, however, such deed shall be returned to Owner. Cost of said escrow shall be borne equally by the parties hereto.

Contemporaneously with the execution of the Owner's deed, Operator, his successors or assigns, shall also execute a proper deed, or other conveyance for the purpose of clearing title, which shall also be placed in said escrow. Upon the termination of this contract before the payment of the full purchase price, such deed shall be delivered to the Owner. In case the purchase price is paid in full, said deed shall be returned to Operator.

15. All notices provided herein, and all statements to be given by either party to the other, shall be in writing, sent by registered mail, return receipt requested, addressed as follows:

<u>Owner:</u>

Messrs. Kaufman and Robison
c/o Shirley G. Robison
P. O. Box 364
Ely, Nevada

Operator:

James D. Williams
757 South Berendo #501
Los Angeles 5, California

Either party may change the address to which the notices shall be sent by giving written notice thereof to the other party as herein provided.

16. It is expressly agreed, understood and declared by the parties hereto that the relationship of the parties as herein contemplated is and shall continue to be that of lessor and lessee, and not that of employer and employee, partners or joint adventurers; that Operator is customarily engaged in the independent trade, profession, occupation and business of mining under lease for his own profit and benefit.

17. This Agreement shall be binding upon and inure to the benefit of the respective parties hereto, their heirs, legal representatives, successors and assigns. Owner expressly grants to Operator the right to assign this Agreement in whole or in part, to any third party or parties and Operator agrees to notify Owner promptly of such an assignment, giving the name and address of such third party or parties.

WITNESS THE DUE execution hereof the day and year first above written.

R. E. Kaufman
R. E. Kaufman

Hedwig Kaufman
Hedwig Kaufman

Bryan S. Robison
Bryan S. Robison

Chloe E. Robison
Chloe E. Robison

Shirley G. Robison
Shirley G. Robison

Marjorie M. Robison
Marjorie M. Robison

OWNER

James D. Williams
James D. Williams

OPERATOR

STATE OF NEVADA)
) ss.
County of White Pine)

Before me, the undersigned authority, a Notary Public in and for said county and state, on this 15th day of January, 1951, personally appeared R. E. KAUFMAN, HEDWIG KAUFMAN, BRYAN S. ROBISON, CHLOE E. ROBISON, SHIRLEY G. ROBISON, MARJORIE M. ROBISON and JAMES D. WILLIAMS, known to me to be the persons described in and who executed the foregoing Agreement, who each duly acknowledged to me that he or she executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal the day and year in this certificate first above written.

Robert R. Gill
Notary Public in and for said County and State

My Commission Expires:

Sept 21, 1951

Filed for record at request of
James D. Williams,
Mar. 29, 1951
at 47 min. past 2 o'clock
P. M. and recorded in
Book 157 Page 29-34
Lane Recorder
of White Pine Co., Nevada
By J. S. Rowe
Recorder
By Deputy
Fee $18

SUPPLEMENTAL AGREEMENT

THIS AGREEMENT made in triplicate this 30th day of April, 1951, between R. E. Kaufman and Hedwig Kaufman, his wife, of Baker, Nevada, Bryan S. Robison and Chloe E. Robison, his wife, of Ely, Nevada, Shirley G. Robison and Marjorie M. Robison, of Ely, Nevada, first parties, Victor Cottino and James Hulse, residing at Pioche, Nevada, second parties, and James D. Williams, residing at Los Angeles, California, third party,

WITNESSETH:

R E C I T A L S

On the 18th day of December, 1950, the above named first parties and third party entered into mining lease and option to purchase, copy of which, marked Exhibit "A", is annexed hereto. Subsequent to the making of said agreement second parties claimed to be the owners of the Polecat lode mining claim mentioned therein, by reason of prior location of a lode mining claim under the name of Gay #1. The first parties dispute the claim made by second parties and assert that the area covered was open to entry at the time the Polecat was located by first parties.

In consideration of the premises, of the terms and conditions herein stated to be kept and performed by the parties respectively, and to adjust, settle and compromise the existing dispute between first and second parties, this supplemental agreement is entered into and it is hereby agreed -

1. For the purpose of this agreement and for no other purpose, second parties admit that the location of the Polecat lode mining claim made by the first parties is a valid subsisting location.

2. In the event the $1500.00 payment required by Exhibit "A", to be made on or before December 31, 1951, be made, the third party herein is authorized to pay $500.00 of said amount to second parties and $1,000.00 of said amount to first parties.

3. Thereafter as payments required by Exhibit "A" are made, either out of royalty or because of exercise of the option, all payments shall be made and distributed as follows: Six-sevenths thereof to first parties, and one-seventh thereof to second parties.

4. The third party herein is hereby authorized to make all payments in behalf of first parties to Shirley G. Robison, P.O. Box 364, Ely, Nevada, and all payments in behalf of second parties to James G. Hulse, P.O. Box 77, Pioche, Nevada, and third party shall have no responsibility for the distribution thereof to the parties entitled thereto.

5. In the event third party relinquishes his rights under the agreement Exhibit "A", title to the said Polecat lode mining claim shall vest two-thirds undivided interest in said second parties and one-third undivided interest in R. E. Kaufman, one of the above named first parties.

6. In all respects, other than as provided herein, said agreement, Exhibit "A", is hereby by all the parties hereto, ratified, adopted and confirmed.

7. This agreement shall in all things be binding upon and inure to the benefit of the parties hereto and their respective successors, assigns and personal representatives.

IN WITNESS WHEREOF the said parties hereto have caused this instrument to be duly executed this the day and year first above written.

R. E. Kaufman

Hedwig Kaufman

Shirley G. Robison

Marjorie M. Robison

Bryan S. Robison

Chloe E. Robison

First Parties

James Hulse

Victor Collins

Second Parties

James R. Williams

Third Party

OK - A. J. Pratt

STATE OF NEVADA,)
) ss.
County of White Pine.)

On this 30th day of April, 1951, personally appeared before me, a Notary Public in and for said county and state, R. E. KAUFMAN, HEDWIG KAUFMAN, SHIRLEY G. ROBISON, MARJORIE M. ROBISON, BRYAN S. ROBISON and CHLOE E. ROBISON, known to me to be the persons described in and who executed the foregoing instrument, who each duly acknowledged to me that he or she executed the foregoing instrument freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my official seal the day and year in this certificate first above written.

Robert R. Gill

Notary Public in and for
said county and state

STATE OF NEVADA,)
) ss.
County of Lincoln.)

On this 2nd day of May, 1951, personally appeared before me, a Notary Public in and for said county and state, VICTOR COTTINO and JAMES HULSE, known to me to be the persons described in and who executed the foregoing instrument, who each duly acknowledged to me that he executed the foregoing instrument freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my official seal the day and year in this certificate first above written.

Mary Mezzano

Notary Public in and for
said county and state

STATE OF NEVADA,)
) ss.
County of White Pine.)

On this 30th day of April, 1951, personally appeared before me, a Notary Public in and for said county and state, JAMES D. WILLIAMS, known to me to be the person described in and who executed the foregoing instrument, who duly acknowledged to me that he executed the foregoing instrument freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my official seal the day and year in this certificate first above written.

Robert R. Gill

Notary Public in and for
said county and state

ASSIGNMENT

In consideration of the issuance and delivery to us by Mt. Wheeler Mines, Inc., a corporation under Nevada laws, of one million shares of its capital stock, five hundred thousand shares of which stock we will return to the Treasury of said corporation, undersigned hereby assign, transfer and set over unto said Mt. Wheeler Mines, Inc., all of our right, title and interest in and to that certain lease and bond agreement dated July 9, 1950, between Hulse, Cottino and Robison as lessors and optionors and James D. Williams as lessee and optionee, describing nine unpatented lode mining claims, namely, Bonanza Nos. 2-10 inclusive; also option from said Hulse, Cottino and Robison to said James D. Williams, dated July 9, 1950, to take over the interest of said Hulse, Cottino and Robison under their lease and option contract with St. Lawrence Mining Company, describing the following named patented lode mining claims: Black Oxide, Red Oxide, Pass Word, Green Land, Snow Bird, Old Moon and Cave, U.S.S. 4289; also all our right, title, claim and interest in, to and under agreement in quadruplicate dated November 25, 1950, by and between St. Lawrence Mining Company, a corporation under Nevada laws, party of the first part, Shirley G. Robison and Marjorie M. Robison, his wife, Victor Cottino and Agnes Cottino, his wife, and James G. Hulse and Berene C. Hulse, his wife, parties of the second part, and James D. Williams, party of the third part.

Together with all our right, title and interest in and to the properties in said agreements described; all of the said properties being situate in White Pine County, State of Nevada.

And for the consideration hereinabove stated we also agree that contemporaneously with the execution of this assignment we will convey to said Mt. Wheeler Mines, Inc., by good and sufficient deed, all our right, title and interest in and to the following named patented lode mining claims situate in White Pine County, Nevada, to-wit: Washington, U.S.S. 2590; Young America, U.S.S. 3040; Canaan, U.S.S. 2591 and Sheffield, U.S.S. 2592.

And said assignors further agree that any and all locations of mining claims hereafter made by them or either of them in the general vicinity of the above named claims, shall be made in the name of Mt. Wheeler Mines, Inc., or if made in our individual names shall be held by us in trust for said corporation; provided that this obligation shall be effective only so long as the said James D. Williams shall be connected with direction of the affairs of said corporation.

This assignment is made, however, upon the express condition that the said Mt. Wheeler Mines, Inc., shall assume and agree to do and perform all of the conditions, covenants and obligations of the foregoing agreements hereby assigned which on the part of said James D. Williams should be kept, done and performed except for this assignment.

WITNESS our hands and seals this 21st. day of December, 1950.

James D. Williams

Ruth T. Williams

STATE OF CALIFORNIA :
) ss
County of Los Angeles:

On this 2 day of Dec, 1950, before me Dalton Usman, a Notary Public in and for the said County and State, residing therein and duly commissioned and sworn, personally appeared James D. Williams and Ruth T. Williams, his wife, known to me to be the persons whose names are subscribed to the foregoing and within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF I have hereunto affixed my signature and official seal on the day and year in this certificate first above written.

Dalton Usman
Notary Public L.A. Co., Cal.
Residing at 3011 Scotland - L.A.

My Commission Expires:
2-5-52

In consideration of the foregoing assignment and agreement, Mt. Wheeler Mines, Inc., hereby assumes and agrees to perform all of the covenants, conditions and obligations undertaken by the above named assignors by virtue of the foregoing described agreements.

MT. WHEELER MINES, INC.
By L. J. T. Rogers
Vice President

Attest:
C. H. Newton
Secretary

Dated 1/2, 1951.

1201

Filed for record at request of
Mt. Wheeler Mines,
Feb 28, 1951
at 11 min. past 9 o'clock
A M. and recorded in
Book 163 Page
Misc Record
of White Pine Co., Nevada
[illegible]
Recorder

ASSIGNMENT

I, James D. Williams, for a valuable consideration, receipt of which is acknowledged, hereby assign to Mt. Wheeler Mines, Inc., a corporation under the laws of Nevada, the annexed Mining Lease and Option to Purchase, dated December 18, 1950, and Supplemental Agreement dated April 30, 1951; which agreements describe 3 unpatented mining claims, named Pole Cat and Pole Cat Nos. 1 and 2, in White Pine County, Nevada.

This assignment is made, however, upon the express condition that the said Mt. Wheeler Mines, Inc., shall assume and agree to do and perform all of the conditions, covenants and obligations of the said agreements hereby assigned which on the part of the said James D. Williams should be kept, done and performed except for this assignment.

WITNESS the due execution hereof this 21st day of May, 1951.

James D. Williams

James D. Williams

STATE OF UTAH :
) ss
County of Salt Lake:

Before me, the undersigned authority, a Notary Public in and for said County and State, on this 21st day of May, 1951, personally appeared James D. Williams, known to me to be the person described in and who executed the foregoing assignment, who duly acknowledged to me that he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF I have hereunto subscribed my name and affixed my notarial seal the day and year in this certificate first above written.

N. Dawson

Notary Public in and for said County and State.

My Commission Expires:
9/7/52

REVISED APPLICATION

FOR AID FOR AN EXPLORATION PROJECT

Pursuant to

MINERAL ORDER NO. 5 UNDER

DEFENSE PRODUCTION ACT OF 1950

ORIGINAL APPLICATION SUBMITTED

November 24, 1950

DOCKET NO. ASSIGNED - DMA-89

AMENDED APPLICATION SUBMITTED

May 23, 1951

DOCKET NO. ASSIGNED - DMA 2082 - TUNGSTEN

Submitted By

MT. WHEELER MINES, INC.
218 Felt Building
Salt Lake City 1, Utah

Applicant

September 26, 1951

MT. WHEELER MINES, INC.
P. O. BOX 150
SALT LAKE CITY 10, UTAH

September 26, 1951

Mr. George B. Holderer
Chief, Tungsten Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Re: Mt. Wheeler Mines, Inc.
DMA-2082 - Tungsten
Revised Project

Dear Mr. Holderer:

We are in receipt of your airmail letter of September 20th, regarding the above captioned subject and are agreeable to the revision suggested by you. Attached hereto are six copies of the exhibits setting forth the revised cost figures and other pertinent data consistent with the suggested project.

In making these revisions consideration had to be given to certain factors, such as increases in wage rates and cost of supplies, additional technical staff, (1 geologist) and purchase and rental of equipment; all of which increase the cost of the project somewhat beyond the suggested figure. I am certain that you will appreciate our problem in these matters. Also, since the amended application of May 23, 1951, we have constructed 4.6 miles of adequate road from the mouth of Pole Canyon to the portal of the Pole Tunnel, have graded an adequate camp site for five buildings and are now ready to pour the concrete walls and foundations. We should very much appreciate any consideration which you may properly give us in these matters.

To date we have expended $34,931.99 of our own funds on the Pole Canyon operations. Adequate funds are immediately available to cover our matching proportion of the revised project as herein submitted.

Thank you for your kind consideration in this matter.

Very truly yours,

MT. WHEELER MINES, INC.
By

James D. Williams

James D. Williams, President

II THE EXPLORATION

20. Proposed project will explore for tungsten (Scheelite).

21. The proposed work will consist of the following: (Please see Exhibit "A" hereto attached)

(a) The Work

1. Moving and installing equipment, preparing waste dump and other miscellaneous preliminary work.

2. Geologic mapping and surface trenching of area to be explored by Pole Tunnel. This work to be done concurrently with underground exploration but in advance of heading.

3. Extend Pole Tunnel an additional distance of 1,000 feet on a S. 80° E. course to explore favorable Wheeler bed.

4. Drive six crosscuts on strongest N-S cross fractures plus 20 feet of drifting E-W along shear zone intersections, if justified, for a total of 350 feet.

5. Drive six raises on strongest N-S cross fractures to explore full thickness of favorable Wheeler bed, if justified, for a total of 150 feet.

(b) Estimated Time

1.	Preliminary preparation	1/2	Month
2.	Geologic mapping and surface trenching. (Concurrent with tunnel drive)	-	
3.	Advance Pole Tunnel 1,000 feet	4	Months
4.	350 ft. laterals and drifts (additional)	1 1/2	"
5.	150 ft. raises (additional)	1	Month
	TOTAL ESTIMATED TIME	7	Months

III THE REQUIREMENTS AND COST

23. Itemized statement of costs

(a) Labor

(1) Day's Wages

1 Blacksmith	@ $13.20 14.50	$ 2,602.60	only 1/4 of it
1 Outside & compressor	13.20	2,602.60	
2 Men		$ 5,205.20	

(2) Footage contract labor

(a)	1,000 ft. tunnel	@ $12.00/Ft. 15	12,000.00	10'/day, 25 day month.
(b)	350 ft. laterals	10.00 12	3,500.00	
(c)	150 ft. raises	15.00 18 12	2,250.00	6'/day, 25 day month.
			$17,750.00	

TOTAL LABOR $22,955.20

(b) Supervision, engineering and geology

1 Superintendent-Engr.	@ $500.00/Mo.	$ 3,500.00	?
1 ~~Engineer~~ Foreman	400.00/Mo.	2,800.00	
1 Geologist	400.00/Mo.	2,800.00	
		$ 9,100.00	$ 9,100.00

32,055.20
9,830/0

(c) None

(d) Cost of additional facilities (See item (g) below)

1. Buildings (completely equipped)

(a) Camp facilities as follows:		
1 Messhall	$ 7,500.00	out anticipated
2-6 man bunk houses	10,000.00	
(b) Combination shop, warehouse and compressor house at tunnel site	1,750.00	
	$19,250.00	$19,250.00

(e) Cost of new equipment

1. 1100 gals. fuel storage tank	$ 500.00	
2. 2-3" drifters and accessories	1,750.00	
3. Ventilating equipment	1,250.00	
4. Miscellaneous tools, etc.	500.00	
	$ 4,000.00	$ 4,000.00

(f) Cost of equipment to be rented

1. Bulldozer for surface trenching	$ 1,920.00
2. 315 cu. ft. diesel compressor @ $470.00/month - 7 months	3,290.00
3. 6 - 21 cu. ft. ore cars @ $25.00/month - 7 months	1,050.00

4. 12-B Eimco mucking machine @ $295.00/month - 6 months	$ 1,770.00	
5. 15 KW diesel generator @ $250.00/month - 7 months	1,750.00	
6. 4 wheel drive Willys "Jeep" station wagon for engineering and geological crews - new @ $100.00/month - 7 months	700.00	
	$10,480.00	$10,480.00

(g) None

Note: In lieu of item (d) above, which applicant is now constructing with own funds, a fair rental on same would be @ $350.00/month $2,450.00

(h) Cost of materials and supplies

1. Powder, fuse and caps	$ 3,000.00	
2. Steel and bits	1,375.00	
3. Pipe and track	3,340.00	
4. Blower line and lights	950.00	
5. Air generation - fuel, etc.	3,200.00	
6. Mine timber	1,500.00	
7. Miscellaneous small tools, etc.	500.00	
	$13,865.00	$13,865.00

(i) Other costs

1. Compensation insurance and payroll taxes	$ 3,150.00	
2. Miscellaneous expense - office, transportation of supplies, assaying, travel, etc.	2,000.00	
3. Keeping mine road open during winter, if necessary	1,200.00	
	$ 6,350.00	$ 6,350.00

TOTAL ESTIMATED COST

(a) Including item (d) but not item (g) $86,000.00

(b) Excluding item (d) but including item (g) $69,200.00

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

May 16, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: General Summary of Contract and Results Obtained
Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract No. Idm-E248

Operator: Mt. Wheeler Mines, Inc.
218 Felt Building
Salt Lake City, Utah

Property Rights: The Pole Cat, Pole Cat No. 1 and Pole Cat No. 3 unpatented mining claims, are held by a lease dated October 17, 1950, from Shirley G. Robison, Marjorie M. Robison, Bryan S. Robison, Chloe E. Robison, Ralph E. Kaufman and Hedwig Kaufman of Ely, Nevada and Baker, Nevada. The Pole Cat No. 3, Pole Cat No. 4 and Pole Cat No. 5, unpatented mining claims are held by the operator.

Contract:

Dated January 20, 1952, for 1,350 feet of drifting and crosscutting, and 150 feet of raising, at a cost of	$75,476.00
Amended contract, dated May 11, 1953 for 1,200 feet of drifting and crosscutting at a cost of	65,600.00
Amendment No. 4 to Amended Contract, dated May 20, 1954, covered 700 feet of drifting and crosscutting in the North area at a cost of	29,348.00
Total cost for 3,250 feet of drifting and crosscutting, and 150 feet of raising	$170,424.00

Work Completed:

2,998 feet of drifting and crosscutting and 118 feet of raises were completed, (2,547 feet of drifting and crosscutting, and 118 feet of raising in the Pole adit area, and 451 feet of drifting and crosscutting in the North area), at a total cost of	$156,832.00
Upon completion of the work the equipment purchased for the project was sold to the operator for	16,000.00
Total cost of the project	$140,832.00

Government participation at 75 percent $105,624.68

Geology: The scheelite bearing ore zones are found in quartz veins and in beds of limestone, either in scattered lenses or, as the operator believes, in horizontal pipe-like replacements. Steep north striking faults and fractures cut ore zones with displacements up to 25 feet.

Audits: After completion of the primary contract a complete audit was made, followed by two reports of review, concluding with a final cost of $140,832.00, Government participation at 75 percent, $105,624.68.

Certification: A certification of discovery or development was recommended by the Field Team. A Certification of Development or Discovery was issued by this Division on April 7, 1955.

Comments: The project was established to explore quartz veins and possible replacements in limestone for tungsten ores. The work was composed of drifting, crosscutting and raising in the Pole adit area and drifting and crosscutting in the North area.

The Field Team, without undue conservatism, estimates 10,370 tons of indicated and inferred ore in the Pole adit area that will average 0.8 percent WO_3, and 3,200 tons of indicated and inferred ore of the same grade in the North zone, or a total of 13,570 tons of 0.8 percent WO_3.

W S Martin

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

DMEA Form 18
Feb. 58

DEFENSE MINERALS EXPLORATION ADMINISTRATION

ANALYSIS OF SEMIANNUAL REPORT OF CERTIFIED PROJECT

Prepare in duplicate. File original in Official Docket. Send copy

To: Statistics Branch (Code 210)

From: Division of **Iron and Ferro-Alloys**

Report Period **1.1-6.30.57**

DMEA No.	Operator	Contract No.
2082	**Mount Wheeler Mines, Inc.**	**Idm-E248**

ORE ESTIMATES

	Tons	Analysis
DMEA	**13,570 ***	**0.8 % WO_3 ***
Operator to date	**None**	
Total	**13,570**	**0.8 " "**
Production to date	**669 ****	**0.8 " " ****
Ore in ground	**12,901 ****	**0.8 " " ****

INVESTMENT

Type	Size		Feet	Cost
Shafts			**None**	
Winzes			**None**	
Drifts and Crosscuts			**None**	
Raises			**None**	
Drilling	Type		**None**	
Rehabilitation	Description **None**			

FACILITIES

Mine Plant	**Buildings and Equipment**	**$30,000.**
Mill	**None**	
Roads	**None**	

REMARKS

*** Official reserve tonnage and grade**
**** Reported production adjusted to "Official" grade.**

"Future mining operations will probably not be considered unless the market for tungsten justifies the necessary investment."

Prepared by Stephen P. Holt Date 2.5.58
(rev. 4.2.58)

Carbon copy to W. Chandler

31398

Docket 2082
Mount [illegible]

Distribution of 16,000 property credit, on advice of Talbert

On Moves Review, 4.25.55

Operating Equipment	2,776.90
	5,065.00
	6,040.00
	1,750.00
	518.63
	526.58
Total	16,677.11

Buildings	2,711.65
	1,391.41
	4,103.06

Supplies	3,255.13
	1,959.99
	880.85
	1,845.39
	7,941.36

Summary —	Equipment	16,677.11
	Buildings	4,103.06
	Supplies	7,941.36
		28,721.53
Total to be distributed		16,000.00
		= 55.707349%

= Equipment	9,290.87
Buildings	2,285.91
Supplies	4,423.92
	16,000.00

Equipment — Gross - 13,881.90
Equip. Credit 9290.37
Net 4,591.53

Buildings, gross 8,303.22
Credit 2,285.71
Net 6,017.51

Supplies, distribute (4423.92 - 880.85 ventable = 3543.07) between

	Gross	%	Credit	Net
Drafting + Drafting Actual	53,194.34	90.3889	3,202.55	See below
Rassing Actual	4,576.86	7.4952	265.56	" "
Surface Eqe. Actual	390.00	0.6386	22.63	367.37
Roads + Trails Actual	902.00	1.4771	52.33	849.67
	61,063.20	99.9998 %	3543.07	

Supplies, ventable, 880.85, distributed to buildings & equip.

		%	Credit	Net
Drafting + Drafting Actual cost.	53,194.34	92.3430	813.40	51,198.39
Rassing, Actual	4,576.86	7.6572	67.45	4,243.85
	59,771.20	100.0002	880.85	55,422.24

S.P.H.
2.20.56

☐ Audited **Inforce** W[redacted] ANALYSIS SHEET - DMEA PROJECT[redacted] ☒ Actual Cost

☐ Certified 3/30.55 Analysis as of ~~12-27-54~~ ☒ Agreed Unit Costs

Incl. Voucher for _____

Name **Mt. Wheeler Mines, Inc.** Copy Docket No. DMEA-2082

State **Nevada** Commodity **Tungsten** Idm-E No. 248

OPERATION		AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting	Actual cost	1,141'	55,194.34	1,141'	55,194.34	57,178.39 ⊗
	Unit	1,900'	74,389.46	1,700'	69,275.00	69,275.00
Raising	Actual cost	94'	4,576.86	94'	4,576.86	4,243.85 ⊗
	Unit					
Shafts						
Winzes						
Drilling (Specify)						
Surface Excavation			390.00		390.00	367.37
Underground Excavation						
Roads and Trails			902.00		902.00	849.67
Operating Equipment Purchased			18,089.04		13,881.90	4,591.53 ⊗ ~~16,000.00~~
Surface Rehabilitation & Repairs			2,472.30		1,101.52	1,101.52
Underground Rehabilitation						
New Building, Improvements, etc.			10,160.00		8,303.22	6,017.51 ⊗
Other (Specify)	Assays Administration Transportation		4,250.00		3,208.06	3,208.06
	Totals		$ 170,424.00		$ 156,832.90	$140,832.90
Amended Contract					Government 75%	$105,624.68

Increased from $75,476.00 to $141,076.00 changed to unit cost.
Amendment No. 4 increased contract from $141,076.00 to $170,424.00.

New Contract Written by Base Metals Division.

Prepared by T. L. C.
& S. P. H.

⊗ See Report of Review, 4.25.55 by George Mavor, Auditor
$16,000 credit for equipment and supplies distributed to categories

71626

Informal

☐ Audited W[redacted] ANALYSIS SHEET - DMEA PROJECT [redacted] ☒ Actual Cost

☐ Certified Analysis as of 12/22/54 ☒ Agreed Unit Costs

Incl. Voucher for

Name MT. WHEELER MINES, INC. Docket No. DMEA-2082

State NEVADA. Commodity TUNGSTEN. Idm-E No. 248

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting ACT. COST	1,141'	55,194.34	1,141'	55,194.34	
UNIT	1,900'	74,389.46	1,700'	69,275.00	
Raising ACTUAL. UNIT	94'	4,576.86	94	4,576.86	
Shafts					
Winzes					
Drilling [redacted]ify)					
Surface Excavation		390.00		390.00	
Underground Excavation					
Roads and Trails		902.00		902.00	
Operating Equipment Purchased		18,089.04		13,881.90	Credit 16,000.00 X
Surface Rehabilitation & Repairs		2,472.30		1,101.52	
Underground Rehabilitation					
New Building, Improvements, etc.		10,160.00		8,303.22	
Other (Specify) ASSAYS ADMINISTRATION TRANSPORTATION		4,250.00		3,208.00	
Totals		170,424.00		156,832.90	140,832.90

AMENDED CONTRACT INCREASED FROM 73,476.00 + $141,076.00, CHANGED TO UNIT COST

Govt. 75% 105,624.68

AMENDMENT No. 4. INCREASED CONTRACT FROM $141,076.00 TO 170,424.00

Prepared by DLC

NEW CONTRACT WRITTEN BY BASE METALS DIVISION

⊗ See Report of Review, 4.25.55 by George Mayer, Auditor

71626

Docket

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1953

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GENERAL SERVICES ADMIN.
PUBLIC BLDGS. SERVICE
GMD - COMMUNICATIONS

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SAN FRANCISCO CALIF 3-31-53 916A

GEORGE C SELFRIDGE CHAIRMAN

OPERATING COMMITTEE DMEA INTERIOR BLDG WA

SUBJECT DOCKET NO. DMEA-2082 MT. WHEELER MINES, INC. CONTRACT IDM-E248. REURTT SUBJECT REPORT AIRMAILED TO YOU YESTERDAY. I WILL NOT PHONE AS YOU SHOULD HAVE THE REPORT BY NOW. FOR YOUR INFORMATION WE ARE AIRMAILING ONE COPY OF NEW PENN MINES INC. REPORT, DOCKET DMEA-2885 TO YOU TODAY

Have told Cong Ellis about this W.S.M.

H C MILLER EXECUTIVE OFFICER DMEA FIELD TEAM REGION III

DMEA-2082 IDM-E248 DMEA-2885

VD 920A

Copy retained 400
W. S. Martin

FILE COPY
SURNAME:

Martin
Vidal
Hedges
Selfridge
H. Johnson

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

Defense Minerals Exploration
Administration
Interior Department

DAY LETTER

MARCH 30, 1953

JAMES D. WILLIAMS, PRESIDENT
MT. WHEELER MINES, INC.
218 FELT BUILDING
SALT LAKE CITY, UTAH

UNABLE REPLY YOUR REQUEST FOR AMENDMENT TO CONTRACT IDM-2248 PENDING OUR RECEIPT FIELD TEAM REPORT PROMISED IN SAN FRANCISCO TODAY. INSTALLATIONS AT CURRENT PROJECT SEEM MORE ELABORATE THAN REQUIRED FOR EXPLORATION ALONE. NEW ~~PROPOSAL~~ STAGE I ESTIMATED NEARLY NINETY DOLLARS PER FOOT AND INCLUDES ITEMS PRIMARILY PREPARATION FOR MINING AND NOT NECESSARY FOR EXPLORATION. CANNOT APPROVE NEW PROPOSAL UNLESS YOU CAN REVISE ON BASIS UNIT COST MORE IN LINE WITH OTHER COMPARABLE PROJECTS. ~~NINETY DOLLARS~~ COST PER FOOT ~~[illegible]~~ SHOULD BE ONLY FOR ESSENTIAL EXPLORATION FEATURES PROPOSED IN AMENDMENT.

C. O. Mittendorf

C. O. MITTENDORF
ADMINISTRATOR, DMEA

WSMartin/ls
3/30/53

cc: DOCKET
CONFIRMATION
CODE 400
ADMN. READ. FILE
OPER. COMMITTEE
AUDITS DIVN., BUR. OF MINES
D. M. LEMMON, USGS
R. W. GERMAN, USBM
Field Team, Reg. III

S.H.
3/31/53

Docket Copy

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 1 1953

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 3, Calif.

March 30, 1953

AIR MAIL

Memorandum

To: George C. Selfridge, Chairman, Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine, White Pine County, Nevada
Contract Idm-E248

Reference is made to my wire dated March 24, in which I informed you that the Field Team report on the Mt. Wheeler Mine was expected in this office on March 30. The report arrived this morning. As you are in a hurry to receive our engineer's and geologist's information and recommendation, there is being Air Mailed to you herewith one carbon copy of each of the following:

Memorandum from A. C. Johnson to H. C. Miller dated March 26, 1953.
Final report dated March 25, 1953.
Supplemental report by Glenn G. Gentry dated March 25, 1953.
Supplemental report by Glenn G. Gentry re: Stage II dated March 26, 1953.

Three additional copies of each of the above are going forward by regular mail today.

Mr. Bailey and I note from the reports that the geologists recommend starting of Stage II to be contingent upon Stage I revealing a block of mineable ore and subject to prior approval by the Government, and that Stage II may only be started before Stage I is completed if the requirement is met satisfactorily. Bureau engineers, on the other hand, recommend finishing all of Stage I before starting Stage II.

this 3/30 ltr only ~~not [illegible]~~
Copy retained 402.

Mr. Bailey and I discussed this matter with Mr. Williams when he was in this office recently and agreed that Stage II might be started after a block of commercial ore had been found as a result of work done under Stage I, even though all of the work under Stage I had not been completed.

We apologize for the make-up and arrangement of the attached reports. We have no way of knowing at this time why the engineer and geologist did not get together and prepare a joint report, thus avoiding a lot of duplication, but there was undoubtedly a good reason for it. Possibly shortness of time was the main cause. The information is there, however, though in some instances it will require more work on your part to dig it out.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachments

Copy to: DMEA, Washington, D. C. (Regular Mail with 3 copies of each attachment)

E. H. Bailey, USGS
A. C. Johnson, Reno
George Mavor

March 26, 1953

Memorandum

To: H. C. Miller, Executive Officer, DMEA Field Team, Region III

From: Chief, Mining Division, Region III

Subject: Final Report - DMEA-2082, Mt. Wheeler Tungsten Mine, White Pine County, Nevada - Idm-E248

Enclosed are six copies of the final report on the above mentioned property by Glenn G. Gantry of the Bureau of Mines and R. M. Smith and D. C. Laub of the U. S. Geological Survey.

The exploration work under contract Idm-E248 was completed on January 29, 1953. Final examination of the property was made from January 22 through the 28, inclusive, 1953 by an engineer of the Bureau of Mines and geologists of the U. S. Geological Survey. The examination was for the purpose of determining if sufficient mineralization had been found to certify a discovery and also to evaluate the property to determine if further exploration work was warranted, as the operator has asked for an amended application for further work.

The operator has proposed a two stage program to fully explore the Mt. Wheeler mine.

The engineer and geologist are in agreement that Stage I of the program is warranted to definitely appraise the value of the discovery that has been made to date. The exploration work proposed by the applicant in Stage I would be as follows:

(a) From the end of "A" Lateral South, drive a 5'x 7' drift within the ore bed 40.0 feet in a southerly direction (approximately S 15° E), to cut the south quartz fissure as indicated.

(b) From the end of the above drift drive a 5'x 7' side drift easterly and westerly on the south quartz fissure, 20.0 feet in each direction to explore the south quartz fissure ore zone.

(c) Extend "A" Lateral northerly 20.0 feet to cut the north quartz fissure as indicated on the map. Drive four side drifts easterly and westerly on ore showings opened for a total of 60.0 feet.

(d) From the end of the bedding drift in Raise No. 2, No. 1 Lateral South, drive a 5'x 7' drift within the ore bed 100.0 feet northerly (approximately N 15° W), to cut the north quartz fissure, and 20 feet easterly. From the North drift drive six short side drifts easterly and westerly in favorable ore showings opened, for a total of 90 feet.

(e) From the end of the bedding drift in Raise No. 1, No. 1 Lateral South, drive a 5'x 7' drift within the ore bed 70.0 feet northeasterly (approximately N 70° E), to determine the effect of this N 70° E fissuring upon ore deposition within the productive bed. ?

(f) From the end of the bedding drift in the raise in No. 5 Lateral North, drive a 5'x 7' drift within the ore bed 85.0 feet north to cut the north quartz fissure. Explore the favorable ore zones thus opened by driving six side drifts easterly and westerly for a total of 90.0 feet.

(g) From the same starting point in (f), above, drive a 5'x 7' drift within the ore bed 110.0 feet northeasterly (approximately N 70° E), to determine the nature of the mineralization within the productive bed in the area of these N 70° E quartz fissures.

(h) From the top of the raise in No. 5 Lateral North, drive a 5'x 7' drift within the ore bed 160.0 feet north to cut the north quartz fissure. Drive eight side drifts easterly and westerly to explore the ore zones opened up for a total of 120.0 feet.

(i) Other miscellaneous drifting within the productive zone, as may be reasonably indicated from the foregoing exploration, in the amount of 300 feet. This work to be approved by the Field Team before it is actually started.

The work that has been proposed under Stage I would fully delineate the ore bodies and I concur with the recommendations that have been made.

Stage II of the program would be for the extension of the Pole adit eastward and the No. 5 Lateral northward if Stage I reveals significant quantities of tungsten ore in or east of Lateral No. 5.

The engineer and geologist are in agreement that a discovery should be certified on this property.

For your information, Mr. Williams telephoned me on March 23 and informed me that Mr. Selfridge of the Washington Office had informed him that if the Field Team was favorable to the

exploration contemplated on his property, that he was to receive by telegram, an informal approval to allow him to start work by April 1.

The amendment to the contract is being returned herewith.

A. C. Johnson

Encls.

ACJ:gh
cc: Roberts, U.S.G.S., Salt Lake City, Utah.
Files

FILE COPY
SURNAME:

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

Martin
Selfridge
Pendell
Hedges
Mauertz

Defense Minerals Exploration Administration
W. S. Martin
5285 3538

March 30, 1953

H. C. Miller, DMEA Executive Officer, Region III, 1012 Flood Bldg.,
870 Market Street, San Francisco, California
Docket No. DMEA 2082 - Mt. Wheeler Mines, Inc. - Contract No. Idm-E248

Upon receipt Mt. Wheeler report promised in San Francisco March 30 per your teletype March 24, please telephone your recommendations.

G. C. Selfridge, Chairman
Operating Committee

S.H.
3/31/53

CC: FT, Reg. 3 - CONFIRMATION
Docket
CODE 400
ADMN. READ. FILE
OPER. COMMITTEE
AUDITS DIVN., BUR. OF MINES
D. M. LEMMON, USGS
R. W. GEHMAN, USBM

WSMartin/ls
3/30/53

COPY

Memorandum March 26, 1953

To: H. C. Miller, Executive Officer, DMEA Field Team, Region III

From: Chief, Mining Division, Region III

Subject: Final Report - DMEA-2082, Mt. Wheeler Tungsten Mine, White Pine County, Nevada - Idm-E248

Enclosed are six copies of the final report on the above mentioned property by Glenn G. Gentry of the Bureau of Mines and R. M. Smith and D. C. Laub of the U. S. Geological Survey.

The exploration work under contract Idm-E248 was completed on January 29, 1953. Final examination of the property was made from January 22 through the 28, inclusive, 1953 by an engineer of the Bureau of Mines and geologists of the U. S. Geological Survey. The examination was for the purpose of determining if sufficient mineralization had been found to certify a discovery and also to evaluate the property to determine if further exploration work was warranted, as the operator has asked for an amended application for further work.

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(c) Extend "A" Lateral northerly 20.0 feet to cut the north quartz fissure as indicated on the map. Drive four side drifts easterly and westerly on ore showings opened for a total of 60.0 feet.

4-8-53

(d) From the end of the bedding drift in Raise No. 2, No. 1 Lateral South, drive a 5' x 7' drift within the ore bed 100.0 feet northerly (approximately N 15° W), to cut the north quartz fissure, and 20 feet easterly. From the North drift drive six short side drifts easterly and westerly in favorable ore showings opened, for a total of 90 feet.

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(f) From the end of the bedding drift in the raise in No. 3 Lateral North, drive a 5' x 7' drift within the ore bed 85.0 feet north thus opened by driving six side drifts easterly and westerly for a total of 90.0 feet.

(g) From the same starting point in (f), above, drive a 5' x 7' drift within the ore bed 110.0 feet northeasterly (approximately N 70° E), to determine the nature of the mineralization within the productive bed in the area of these N 70° E quartz fissures.

(h) From the top of the raise in No. 5 Lateral North, drive a 5' x 7' drift within the ore bed 160.0 feet north to cut the north quartz fissure. Drive eight side drifts easterly and westerly to explore the ore zones opened up for a total of 120.0 feet.

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The work that has been proposed under Stage I would fully delineate the ore bodies and I concur with the recommendations that have been made.

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The engineer and geologist are in agreement that a discovery should be certified on this property.

For your information, Mr. Williams telephoned me on March 23 and informed me that Mr. Selfridge of the Washington Office had informed him that if the Field Team was favorable to the

exploration contemplated on his property, that he was to receive by telegram, an informal approval to allow him to start work by April 1.

The amendment to the contract is being returned herewith.

/s/ A. C. Johnson

Encls.

ACJ:gh
cc: Roberts, U.S.G.S., Salt Lake City, Utah.
Files

FILE COPY
SURNAME:

800

Tolbert
Chamberlin

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

MAR 2 6 1953

AIR MAIL

Mr. George Mayer
DMEA Auditor
1012 Flood Building
370 Market Street
San Francisco 2, California

Re: DMEA-2082, Idm-E248
Mt. Wheeler Mines, Inc.

Dear George:

Reference is made to your letter of March 23, 1953, requesting confirmation of your understanding relative to the proper method of settlement of the referenced project.

Article 5 of the contract provides that "The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof * * * * shall be charged as a cost of the project * * * *", and Article 6 provides that "As to equipment purchased * * * the difference between the cost and salvage value * * * shall be charged as a cost of the project * * * *. Article 13 states that "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 $56,607.00, which is 75 percent of the agreed estimated total cost of this project, $75,476.00."

Based upon these excerpts from the contract it is apparent that your understanding of Mr. Tolbert's instructions is correct, i.e., the Government is obligated to contribute 75% of the APPROVED costs (costs claimed by the Operator, minus audit disallowances and minus proceeds from property disposition) but such contribution shall not exceed the obligation of $56,607.00 established by the contract.

Your final Audit Certificate at this time, if the project is not extended and increased by amendment, should be stated in a manner similar to the following examples:

(a) The proceeds from the disposition of property ($5,000.00 for example) being less than the costs in excess of the contract amount:

"Total cost as billed by Operator		$82,809.41
Less: Proceeds from property disposition		5,000.00
Net claimed costs		77,809.41
Exceptions (see Audit Report for details):		
During this audit	$ -0-	
During prior audit	38.75	
Costs in excess of contract	2,294.66	2,333.41
Total accepted costs		$75,476.00"

(b) The proceeds from the disposition of property ($9,000.00 for example) being more than the costs in excess of the contract amount:

"Total cost as billed by Operator		$82,809.41
Less: Proceeds from property disposition		9,000.00
Net claimed costs		73,809.41
Exceptions (see Audit Report for details):		
During this audit	$ -0-	
During prior audit	38.75	38.75
Total accepted costs		$73,770.66"

Preparation of the final Audit Report and Certificate, of course, should be held in abeyance pending (1) the Administration's action on the Operator's application for an increase in the contract, (2) a determination of the Government's interest in the equipment acquired under the so-called "rental" agreements, and (3) final disposition of the equipment, new buildings and unexpended supplies. If the new application is approved, in whole or in part, an audit covering the January operations will not be required at this time, since the costs incurred during this one month may be covered by your next interim audit.

EDTalbert/ama
March 26, 1953

Sincerely yours,

SIGNED

Jay A. Chambers, Chief
Contract Administration
and Audit Division

J.A.C.
3/26/53

Copy to: Admr. Reading File
Mails and Files
Mr. Chambers Mr. Hull
Mr. Turner Mr. Brading
Mr. Finch Mr. Mavor

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

SUPPLEMENTAL REPORT

Amended application for further assistance - Stage II

Idm-E248

DMEA-2082, Mt. Wheeler Tungsten Mine

White Pine County, Nev.

Glenn G. Gentry, Mining Engineer
U. S. Bureau of Mines

March 26, 1953

F.T. Supple. Rept.

SUPPLEMENTAL REPORT

Amended application for further assistance

Stage II

RECOMMENDATIONS

The applicant has proposed starting exploration of Stage II immediately after completing the No. 5 lateral north, which has been recommended under Stage I, and considers this procedure will be necessary in order to complete Stage II within the allowable time limit of 16 months.

The examining engineer of the Bureau of Mines, recommends that all of Stage I be completed prior to starting work on Stage II.

The applicant has submitted a recap of costs, as follows:

A - Underground exploration - Direct		
Main bedding drive north	$48,521.50	
Pole tunnel drive easterly	102,720.00	$151,241.50
B - Underground facilities		
Main bedding drive north	5,325.23	
Pole tunnel drive easterly	6,775.83	12,101.06
C - Surface facilities	22,431.64	22,431.64
D - New equipment	34,482.59	34,482.59
E - Supervising & supporting labor	59,169.88	59,169.88
F - Other costs	27,488.55	27,488.55
	Total	$306,915.22

Total exploration 6,260 feet = $49.03 per foot.

The examining engineer considers that a considerable amount of the surface facilities and equipment estimated by the applicant are planned in the nature of a permanent mining operation program and

therefore could be eliminated for the exploration project.

Sufficient facilities and equipment, with the exception of a mucking machine and drill jumbo, will be on hand and available at the completion of Stage I, to begin Stage II and to complete the first north lateral drive up the bedding.

The mucking machine and drill jumbo are presently on hand, had been used on a rental basis, and according to the applicant could be purchased for the sum of $2,313.71.

There will certainly be no justification for the expenditure of additional funds, other than for necessary labor and supplies, until after evaluation of information obtained from scheelite mineralization exposed by this lateral exploration.

Should this lateral be successful in exposing sufficient commercial scheelite mineral, then the next 300 foot extension of the Pole adit would be started and another lateral driven up the bedding and north of the adit. This work would probably require additional equipment as follows:

1 Air compressor, 315 cubic foot capacity	$9,024.09
1 Air receiver (underground)	715.54
1 Fuel storage tank	533.54
	$10,273.17

Due to the speculative nature of the remainder of the Stage II exploration, it is recommended that the applicant provide only necessary facilities and equipment on a rental basis, as the results obtained show justification for the advance of the Pole adit.

The applicants estimated costs of $49.03 per foot appear reasonable and it is recommended that the exploration work under Stage II be considered on a footage or unit basis at this figure.

As the exploration work advances and additional equipment is necessary for economic progress, then the operator should provide such equipment on a rental basis to the extent that it does not increase the stipulated $49.03 cost per foot.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1953 MAR 27 PM 2:44

SAN FRANCISCO, CALIFORNIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

FINAL REPORT

Idm-E248

DMEA-2082, Mt. Wheeler Tungsten Mine

White Pine County, Nevada

F. T. Final Rpt.

Glenn G. Gentry, Mining Engineer
U. S. Bureau of Mines

R. M. Smith and D. C. Laub, Geologists
U. S. Geological Survey

March 25, 1953

Docket No.: DMEA-2082 (Tungsten)

Name and address of operator: Mt. Wheeler Mines, Inc.
218 Felt Bldg.
Salt Lake City, Utah

Name and location of property: Mt. Wheeler Mine,
White Pine County, Nev.

Contract No.: Idm-E248

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* * * * *

Final report - Mt. Wheeler Tungsten Mine, White Pine County, Nev. by Glenn G. Gentry, Mining Engineer of the U. S. Bureau of Mines and R. M. Smith and D. C. Laub, Geologists of the U. S. Geological Survey. 3/25/53

Supplemental Report - Amended application by Glenn G. Gentry 3/25/53

Supplemental Report, Stage II - Amended application by Glenn G. Gentry 3/26/53

Geological Report by R. M. Smith and D. C. Laub 3/16/53

ILLUSTRATIONS

Figure 1 - Index map of Nevada
Figure 2 - Geologic sketch map of Mt. Wheeler Tungsten Prospect
Figure 3 - Assay map of Mt. Wheeler Tungsten Prospect
Figure 4 - Plan map of Mt. Wheeler Tungsten Prospect
Figure 5 - Map showing proposed exploration, Mt. Wheeler Tungsten Prospect

FINAL REPORT

Docket No.: DMEA-2082 (Tungsten)

Name and address of operator: Mt. Wheeler Mines, Inc.
218 Felt Bldg.
Salt Lake City, Utah

Name and location of property: Mt. Wheeler Mine,
White Pine County, Nev.

Contract No.: Idm-E248

SUMMARY

A final examination was made of the Mt. Wheeler Mines, Inc. tungsten mine from January 22 to 28, inclusive, 1953, by geologists[1/] of the U. S. Geological Survey and an engineer[2/] of the U. S. Bureau of Mines, Region III.

The field team were shown through the mine workings by Mr. James D. Williams, president of the mining company and his mine foreman.

During the examination the field team made a thorough inspection of all mineralized areas with the use of a mineralight and cut 41 channel samples weighing a total of 1,454 pounds.

The exploration contract was completed and as the mine was to be closed down on January 29, 1953, the purpose of the examination was to evaluate the work performed under contract Idm-E248 and to secure sufficient information from which to formulate a definite conclusion relative to an amended application, submitted by the Mt. Wheeler Mines, Inc., for further exploration assistance from the Defense Minerals Exploration Administration.

1/ R. M. Smith and D. G. Laub.
2/ Glenn G. Gentry.

The funds allocated to the exploration contract were exhausted on or about January 1, 1953. However, in an effort to complete the amount of exploration stipulated in the contract, the mining company continued the work until the end of shift on January 29, 1953, at their own expense. According to the company's financial report (on Form MF-104) for the month of January 1953, the excess expenditure amounted to $7,333.41.

A total of 1,470 feet of exploration adit, crosscuts and raises were completed with the extension of the Pole Adit accounting for 66.21 percent of the work.

The mathematical average of the 41 samples taken by the examining engineer is 0.962% WO_3. Twelve of the samples, or nearly 30%, showed less than 0.01% WO_3. If these twelve low grade areas are eliminated, the mathematical average of the remaining 29 samples would be 1.356% WO_3.

The total production of tungsten ore produced from the exploration work, designated as the DMEA stockpile, was estimated to contain approximately 150 wet, short tons. A trench sample around this DMEA stockpile, taken by the examining engineer and amounting to 115 pounds, assayed 0.02% WO_3.

According to the operators monthly reports, 182 mine cars of ore were placed on this DMEA stockpile and were estimated to contain 143.43 units of WO_3, which would give an estimated weighted average of 0.9892% WO_3 per ton.

A grab sample of the DMEA stockpile, as produced by September 10, 1952, was taken by Mr. R. R. Trengove, Mining Engineer, U. S. Bureau of Mines, Region III, and this sample assayed 0.24% WO_3.

The exploration work conducted under the contract has been done in a satisfactory manner and has followed good mining practice.

RECOMMENDATIONS

The exploration work performed under contract Idm-E248 has disclosed scheelite mineralization in the Mt. Wheeler beds adjacent to the North-South trending fissures in five of the six laterals extended.

The results obtained are encouraging enough to justify further exploration but the evidence now available is still too limited to definitely appraise the value of the discovery.

The field team consider that additional exploration, with Government assistance, is justified.

The exploration work proposed by the applicant in Stage I, follows:

A Underground Exploration

1. Miscellaneous Bedding Exploration

(a) From the end of "A" Lateral South, drive a 5' x 7' drift within the ore bed 40.0 feet in a southerly direction (approximately S 15° E), to cut the south quartz fissure as indicated.

(b) From the end of the above drift drive a 5' x 7' side drift easterly and westerly on the south quartz fissure, 20.0 feet in each direction to explore the south quartz fissure ore zone.

(c) Extend "A" Lateral northerly 20.0 feet to cut the north quartz fissure as indicated on the map. Drive four side drifts easterly and westerly on ore showings opened for a total of 60.0 feet.

(d) From the end of the bedding drift in Raise No. 2, No. 1 Lateral South, drive a 5' x 7' drift within the ore bed 100.0 feet northerly (approximately N 15° W), to cut the north quartz fissure, and 20 feet easterly. From the North drift drive six short side drifts easterly and westerly in favorable ore showings opened, for a total of 90 feet.

(e) From the end of the bedding drift in Raise No. 1, No. 1 Lateral South, drive a 5' x 7' drift within the ore bed 70.0 feet northeasterly (approximately N 70° E), to determine the effect of this N 70° E fissuring upon ore deposition within the productive bed.

(f) From the end of the bedding drift in the raise in No. 3 Lateral North, drive a 5' x 7' drift within the ore bed 85.0 feet north to cut the north quartz fissure. Explore the favorable ore zones thus opened by driving six side drifts easterly and westerly for a total of 90.0 feet.

(g) From the same starting point in (f), above, drive a 5' x 7' drift within the ore bed 110.0 feet northeasterly (approximately N 70° E), to determine the nature of the mineralization within the productive bed in the area of these N 70° E quartz fissures.

(h) From the top of the raise in No. 5 Lateral North, drive a 5' x 7' drift within the ore bed 160.0 feet north to cut the north quartz fissure. Drive eight side drifts easterly and westerly to explore the ore zones opened up for a total of 120.0 feet.

(i) Other miscellaneous drifting within the productive zone, as may be reasonably indicated from the foregoing exploration, in the amount of 300 feet. This work to be approved by the Field Team before it is actually started.

B Additional Underground Facilities Required

1. Miscellaneous Bedding Exploration

(a) Build chutes and manways as follows -
   1. Slide chute at "A" Lateral South.
   2. Slide chute at "A" Lateral North.
   3. Chute and manway at Raise No. 1, No. 1 Lateral South.

4. Chute and manway at Raise in No. 3 Lateral North.
5. Chute and manway at Raise in No. 5 Lateral North.

(b) Timber for, and install slushers as follows -

1. Install present slusher equipment at No. 1 Lateral South area for bedding exploration.
2. When exploration in (1) above is completed move slusher equipment to No. 3 Lateral North area for bedding exploration.
3. Install new slusher equipment at No. 5 Lateral North for bedding exploration.

(c) Other Preparation

1. Run air, water and ventilation lines from main tunnel to working faces.

2. Install underground air receiver.

3. Place 12 drift sets in main adit from No. 1 Lateral South, 60 ft. easterly, where bedding drifts will cross overhead.

C Additional Surface Facilities Required

1. Bins for Bulk Mill Sampling

(a) Construct a 50 ton bin at the Pole tunnel, install necessary switches and trackage and grade truck road to bin. This facility is necessary to accomplish bulk sampling of the exploration within the productive zone. DMEA function?

(b) Construct a wing bin at the bottom of Pole canyon for storage of the bulk sampling product in lots of 250-500 tons and for transfer into larger trucking units for haul to the mill.

2. Other Facilities

(a) Under Amendment No. 2, to Contract Idm-E-248, authorization was given to add a change room to the blacksmith shop at a cost of $650.00. It is now requested that this change room be made into a small warehouse and a separate 16' x 20' change house, complete with all necessary facilities, be constructed at the Pole tunnel.

(b) Construct a 12' x 12' powder magazine in accordance with standard specifications of the U. S. Bureau of Mines. This facility has been ordered by the State Industrial Commission of Nevada.

(c) Prepare waste dump facilities for side dump operation.

(d) Make permanent installation of ventilating blower.

D Additional Equipment Required

1. Drilling Equipment as Follows

(a) 3 Jackhammers (2 3/4" machines)
(b) 3 Jackleg units (6 foot leg)
(c) 2 Stopers (2 5/8" machines)
(d) 3 Sets 50' x 3/4" Air hoses
(e) 3 Sets 50' x 1/2" Water hoses
(f) 1 Hitchcutter

2. Ten - 27 cubic foot capacity side dump mine cars. Amendment No. 1 to Contract Idm-E-248, provided for the rental of mine cars in the amount of $1050.00. This sum was not expended because 10 - 15 cubic foot cars were borrowed from another operation. These cars must now be returned.

3. A four-wheel drive truck of 5 ton capacity will be required for year around hauling in the canyon. This unit will be equipped with an oversize bed for also hauling supplies and a snowplow.

4. Eight underwriters approved fire extinguishers for the mine buildings; two to each.

5. One double drum slusher with necessary accessory equipment.

6. Purchase of present rental units.

The exploration requested by the applicant and designated as Stage II, is contingent upon exposures of scheelite ore of commercial grade in Stage I which are satisfactory to the Government. The details of exploration proposed in Stage II are as follows:

A Underground Exploration

1. Main Bedding Drive North

(a) Starting at the end of the bedding drift driven 160 ft. northerly from the raise in No. 5 Lateral North, as outlined in Stage I of this request, drive a 5' x 7' slusher drift, within the productive bed, up bedding dip, approximately 1050 feet to explore the intersections of additional E-W shear zones with the Wheeler bed and to cut the strong north quartz fissure shear zone as indicated.

(b) At appropriate intervals, as indicated from the advance, drive twelve short side drifts easterly and westerly, within the bed, on favorable E-W shear zones. While the exact location and extent of these side drifts will be dictated by conditions found at the time, their total footage shall not exceed 600 feet.

(c) At approximately the center of the drive, run two side drifts within the E-W shear zone, easterly and westerly, a distance of 100 feet each.

(d) Drive a side drift easterly and westerly within the north quartz fissure zone a distance of 100 feet each.

2. Pole Tunnel Drive Easterly

(a) Extend the Pole tunnel 1200 feet easterly (approximately S-80° E to E-W), following just under the lime-shale contact as heretofore, to cut the Sheffield fissure and accompanying north trending shear zone.

(b) Drive six short laterals northerly approximately 40 feet within the strongest N-S trending shear zones cut by the tunnel advance. If practical, these laterals should be driven near the center of each 200 foot section of advance.

(c) From the end of each lateral drive a short raise into the productive ore bed (approximately 25 ft.).

(d) From the top of each raise drive a 5' x 7' drift northerly within the ore bed to cut the productive E-W zone. These drifts will probably vary in length but their total is not to exceed 900 ft.

(e) From each of these drifts up bedding, at appropriate points of ore occurrence as indicated from the advance, drive six side drifts easterly and westerly to explore the E-W ore zone. The total of these six side drifts not to exceed 120 ft. in each area.

(f) Drive a 5' x 7' slusher drift 500 ft. northerly up bedding dip at the Sheffield fissure-Wheeler bed intersection, with 8 side drifts to explore favorable ore zones. These 8 side drifts not to exceed an aggregate of 200 ft.

(g) Drive a 5' x 7' drift southerly on the Sheffield fissure, with 4 side drifts to explore favorable ore zones. These 4 side drifts not to exceed an aggregate of 100 ft.

B Additional Underground Facilities Required

1. Main Bedding Drive North

(a) Install power line in Pole tunnel with necessary branch circuits.

(b) Replace air slusher with electric slusher at No. 5 Lateral North.

(c) Install permanent blower line in Pole tunnel with necessary takeoffs for laterals.

2. Pole Tunnel Drive Easterly

(a) Cut passing track at interval 1100-1150 ft. from portal (to be cut concurrently with advance by widening).

(b) "Cherry-Picker" for drive easterly.

(c) Install second underground air receiver.

(d) Install 6 chutes and manways in raises at end of short laterals.

C Additional Surface Facilities Required

1. Mine Water System

(a) Excavate a 4' x 4' cribbed well at North Pole Canyon Springs, approximately 25 ft. in depth, in order to collect sub-surface water flowing in wash.

(b) Install a 1 H.P., 25 g.p.m. pump to elevate water approximately 150 ft. vertically into mine storage tank. Length of this line will be approximately 250 feet; 1 1/2" pipe will be used. Construct a small shelter over well and pump.

(c) Install a 10,000 gal. capacity redwood water storage tank at north bulldozer cut. This will give an effective pressure head of 90 ft. at the portal of the Pole tunnel.

(d) Run a 2" supply line from this storage tank to the Pole tunnel. This line will be approximately 900 ft. in length and be buried 3 ft. to prevent freezing.

(e) Run a single phase 240 volt power line from the generator building to the pump for remote control operation.

2. Generator Building and Facilities

(a) Construct a 16' x 20' wood frame generator building with sheet metal outside covering, sheetrock inside finish and concrete floor. To contain the necessary windows, doors and heating equipment.

(b) Pour a 4'x 7'x 3' concrete foundation for the generator unit.

(c) Install switchboard containing the necessary meters and control equipment.

(d) Install a 2250 gal. fuel storage tank with necessary foundations, valves, fittings and piping. Run feed and return lines into generator building.

(e) Install 2- 5 KW., 480/240/110 volt single phase transformers; one for surface lights and water pump and one for the underground light circuit.

3. Other Facilities

(a) Construct a 28'x 36' bunkhouse to accommodate 6 additional men. This unit will be of frame construction, sheet metal covered outside, sheetrock inside finish and will contain the necessary wash, shower, toilet and heating facilities. With the completion of this unit a crew of 16 can be adequately housed and fed. The balance of camp has been constructed with company funds.

(b) Cooling Tower for Compressed Air.
Construct a 5'x 5'x 8' evaporation cooling tower with simple header heat exchanger to cool compressed air and remove excess moisture before entering underground lines. Water in the air lines has been a very serious problem during the past operations.

D Additional Equipment Required

1. One electric generator, 50 K.W., at 0.8 P.F., 480 volt, 60 cycle, 3 phase direct connected to a Cummins diesel engine, Model HGA-601 rated at 77 H.P. continuous at 1200 r.p.m. up to 10,000 ft. altitude. This unit to be equipped with Woodward Hydraulic Governor, Sylphone safety shut down, 24 volt starting system and a switchboard complete with automatic voltage regulator, circuit breaker, voltmeter ammeter and continuous KW demand meter.

2. One 315 cu. ft. diesel driven air compressor.

3. Ten - 27 cu. ft. capacity side dump ore cars. These additional cars will be used exclusively in the Pole heading.

4. Electric Slushers as Follows -

   (a) 1 - 15 H.P. and 2 - 7 1/2 H.P. slushers for main bedding drive north for tandem slusher setup. Complete with necessary accessory equipment.

   (b) 1- 15 H.P. slusher for drive up Sheffield-Wheeler bed intersection, complete with all necessary accessory equipment.

The field team consider that the exploration project has disclosed sufficient evidence of scheelite to recommend that the Government is entitled to Royalties from production.

The costs of mining and metallurgical treatment of ores are not definitely known, however the operator has submitted the following tentative schedule which he states is from a reliable milling company:

*Mining	$8.50	per ton
Hauling	4.00	" "
Milling	5.00	" "
	$17.50	" "

*Estimated by Mt. Wheeler Mines, Inc.

Estimated flotation plant recovery @ 85%

Concentrates to be paid for @ $40.00 per unit.

Crude ore production @ 37½ tons per day on 26-day month basis.

Based on the above costs, which are only tentative, ore assaying 0.5% WO_3 should return a profit.

The applicant has also considered the installation of a suitable milling plant adjacent to the mine. The construction of such a plant would alter the economics of operation and it is probable that 0.40% tungsten ore could be treated at a small profit. The costs of mining, hauling, treatment and profit are based upon todays costs and market price of the product.

Other metallurgical plants which might be available to receive and treat custom tungsten ore, are:

Baltimore-Camas mill at Ely, Nevada

Getchell Mines, Inc.

WORK COMPLETED

The exploration project was started in February 1952 and completed on January 29, 1953. Approximately two months time was lost during the Spring of 1952, due to unavoidable delays caused by snow blocked roads and severe weather conditions. During the contract period, the applicant drove 1,470 feet of adit, crosscuts and raises. Under Exhibit "A" the exploration called for the following work:

1. Construct a 16'x 24' compressor and tool shed of rough lumber at an estimated cost of $2,100.00 for all necessary labor, materials and supplies.

2. Move and reconvert the present compressor building to a blacksmith shop at an estimated cost of $850.00 for all necessary labor, materials and supplies. The building will be covered with sheetmetal and floored with rough lumber.

3. Lay 2,000 feet of buried water line from a spring to the adit portal at an estimated cost of $1,340.00 for all necessary labor, materials and supplies.

4. Advance the present face of the Pole adit 1,000 feet southeasterly in sections 200 feet in length. The direction and the advance of each section are to be contingent upon the results obtained in the preceding section and its auxiliary workings as provided for hereinafter. The present adit is to be turned southeastward at the face from its S 80° E direction and the proposed advance, to avoid excessive timbering, is to follow the ore zone now exposed in the two southward trending crosscuts off the adit (see map marked "Fig. 4" attached hereto) as closely as possible and preferably, if feasible, just below the limestone and just south of or in the footwall of the ore zone. This procedure should limit to a minimum the amount of crosscutting to the ore zone that must be done in order to explore the zone. Should faulting displace the ore zone, then the adit is to be turned so that the zone can be reached and closely followed. Should faulting drop the exposed ore zone below the level of the adit, thereby necessitating sinking to reach it, then the adit advance shall be terminated automatically until it is determined what type of program, if any, should follow. The adit is to be driven approximately 6'x 7' in the clear.

5. At approximately the center, when reached, of each 200-foot section, instead of at the ends as shown on the attached map marked D-100-3, crosscut to the ore zone or its projected position by following the strongest N-S cross fracture. The five crosscuts are to be approximately 5'x 7' in cross section and are not to exceed an aggregate distance of 125 feet. Advance in each section can continue after the crosscut is started but the ore zone is to be exposed as provided for in steps Nos. 6 and 7 before the adit advance reaches the end of the section.

6. At or near the end of each crosscut raise to the ore zone by following the intersection of the cross fracture exposed in the crosscut and the quartz stringer or stringers that mark the ore zone. The five raises are not to aggregate more than 75 feet in length.

7. In each raise drift 10 feet easterly and 10 feet westerly on the bottom of the ore. The drifts are to be approximately 5'x 7' in cross section and are not to exceed an aggregate length of 100 feet. The operator at his discretion shall secure representative samples from each round in the ore zone either by channeling each new face or by selecting a reasonable amount of the broken ore for quartering to sample size.

8. Drive two drifts northward on the two best cross fractures, as indicated by the above work on the presently exposed ore zone, to explore their intersection with the ore-bearing quartz stringer approximately 50 feet to the north which is shown on the attached map marked "Fig. 4". The two drifts are to be approximately 5'x 7' in cross section and are not to exceed an aggregate length of 125 feet.

9. Drive two raises to explore in the limestone the intersections mentioned in section 8. The raises are to be approximately 4'x 7' in the clear and are not to aggregate more than 75 feet in length.

10. Drift 10 feet easterly and 10 feet westerly at the bottom of the ore in each raise. The two drifts are to be approximately 5'x 7' in cross section and are not to exceed an aggregate length of 40 feet. The ore zone, if present, is to be sampled as provided for in section 7 above.

Estimated Cost of the Project

Fixtures and Improvements

	Construct 16'x 24' shed less cost of site preparation provided for below	$2,000.00
3200'	Rail 20# @ $9.15/cwt, 220 cwt	2,013.00
190	Pairs of splices @ $1.20/pair	228.00
550	Ties 4"x 6" @ $1.00/each	550.00
500#	Track spikes @ $0.15/lb.	75.00
200#	Bolts and nuts @ $0.20/lb.	40.00
7	Switches, double throw @ $125.00/each	875.00
	Freight on above	342.00

1200'	Air line, 3" @ $0.70/ft.	$ 840.00	
500'	Air line, 2" @ $0.35/ft.	175.00	
1700'	Water line, 1" @ $0.16/ft.	272.00	
2000'	Water line from spring to adit, 1½" @ $0.27/ft.	540.00	
1200'	Vent-tube 18" @ $1.50/ft.	1,800.00	
	Fittings, valves, etc.	150.00	
1	Air receiver, 4'x 10', 150#/sq. in., W.P.	250.00	
	Freight on pipe and accessory material 20,000# @ $1.10/cwt	220.00	
	Prepare, by bulldozing, sites for above-mentioned buildings @ $10.00/hour for 20 hours*	200.00	
	Excavate trench for pipe line and cover pipe @ $10.00/hour for 60 hours*	600.00	
	Clear snow from road if necessary @ $10.00 per hour, 120 hours*	1,200.00	$12,370.00

* The hourly costs include wages of operator, fuel, lubricants, transportation, repairs, etc.

Operating Equipment

To be rented

1	Diesel compressor, 315 cfm @ $470.00/mo., 7 months	$3,290.00	
1	Eimco mucking machine, 12-B @ $295.00/mo., 7 months	2,065.00	
1	Diesel generator, 15 KW @ $250.00/mo., 7 months	1,750.00	
1	Willys "Jeep", 4-wheel drive, new @ $100.00/mo., 7 months	700.00	
1	Electric trammer @ $475.00/mo., 7 months	3,325.00	$11,130.00

To be purchased

1	Fuel storage tank, 1100 gallons	$ 500.00	
3	Fans, one 5 H.P. and two 3 H.P.	1,200.00	
2	Drifters, 3" and accessories	1,750.00	
	Miscellaneous tools	500.00	$ 3,950.00

To be furnished by the Operator

Not applicable

Labor and Supervision

2	Blacksmiths-compressor men, 350 shifts @ $14.50/shift plus sixth day overtime $435.00	5,510.00	
1	Cook @ $300.00/mo., 7 months	2,100.00	
	Contract labor for 1,000 feet of adit @ $13.50/ft. **	13,500.00	
	Contract labor for 350 feet of drifts and crosscuts @ $11.00/ft. **	3,850.00	
	Contract labor for 150 feet of raises @ $11.00/ft. ***	1,650.00	
1	Superintendent-engineer @ $500.00/mo., 7 months ****	3,500.00	
1	Engineer-geologist @ $400.00/mo., 7 months ****	2,800.00	
	Compensation insurance, payroll taxes OAB 15 percent of payroll	3,291.00	$36,201.00

why 2

** The $13.50 and $11.00 prices, which are to be the maximum, include all labor costs for breaking, mucking, tramming and placing of pipe, track and blower line. Timbering, where necessary, will be paid at the rate of $3.00/ft.

*** The $11.00 price, which will be the maximum, includes all labor costs for breaking, mucking, tramming and placing of pipe and blower line. Timbering will be paid at the rate of $5.00/ft.

**** The superintendent-engineer and the engineer-geologist are to devote their entire time to the project. If, for any reason, their services are used elsewhere, then their salaries are to be charged to the project on a pro-rata basis.

Rehabilitation and Repairs

Move and reconvert present compressor house to blacksmith shop less cost of site preparation provided for under Fixtures and Improvements		$ 750.00

Materials and Supplies

Powder, fuse and caps	$3,000.00	
Steel and Bits	1,375.00	
Fuel and lubrication	3,200.00	
Mine timber	1,500.00	
Miscellaneous expense including office and engineering supplies, transportation, assays, etc.	2,000.00	$11,075.00
Total estimated cost		$75,476.00

Underground maps or sketches showing the progress of the exploration with assays of samples taken concurrently with the advance, where warranted, are to be included in the monthly reports required under section 12 of the project contract. In case such maps or sketches are not submitted, the Government at its discretion may have the necessary work performed and charge the same to the contract.

Status of Completed Project under Exhibit "A"

Item 1: Compressor and tool shed . . . . . Completed

" 2: Blacksmith shop . . . . . "

" 3: Installation of water line . . . . . "

" 4: Pole adit (contract 1,000 ft.) . . . . Completed 970 feet = 97%
A study of the accompanying mine maps will show that the crosscuts are not driven exactly in the center of each 200 foot block. However, the crosscuts have been driven to explore the most favorable indications of scheelite; have followed good exploration judgement; and are recommended as being acceptable.

" 5: Contract allowance: 5 crosscuts for total distance of 125 feet. 6 crosscuts have been driven for an aggregate distance of 335 feet.

Item 6: Contract allowance: 5 raises.

7 raises have been driven, plus 2 5-foot rounds blasted in the extreme eastern corsscut.

" 7: Contract drifting allowed: 100 feet.

Total drifting off raises has amounted to 64 feet.

" 8: Drive two drifts northward, not to exceed 125 feet.

Two drifts were driven off raises in Laterals Nos. 3 and 4 north. Total distance driven amounted to 60 feet.

" 9: Two raises completed.

" 10: Drifting to the west not completed off raise in Lateral No. 3 north.

Statement of Underground Work Completed

Pole Adit	970	feet
No. 1 Lateral South, with 3 raises	175	"
No. 2 " " , " 1 "	46	"
No. 3 " North, " 1 "	113	"
No. 4 " " , " 1 "	76	"
No. 5 " " , " 1 "	44	"
No. 6 " " , " 1 "	46	"
Total	1,470	"

According to the applicants final statement, the costs of 1,465 feet of adit, crosscuts, and raises were detailed as follows:

			Cost/ft.
a.	Direct underground costs	$ 3,896.89	$2.659
b.	Pipe and vent lines	3,435.51	2.345
c.	Equipment rental	14,335.46	9.785
d.	Labor and supervision	38,674.75	26.399
e.	Supplies	9,923.50	6.775
f.	Other costs	5,697.58	3.890
g.	New facilities & equipment	3,922.45	2.677
h.	New equipment	3,516.18	2.400
		$83,402.32	56.930
	Less suspension by 12/31/52 audit	592.91	0.405
		$82,809.41	56.525

1540'

Based on the contract authorization of $75,476.00 and the 1,465-foot advance, the costs would have amounted to $51.52 per foot.

what was the authorized advance?

DESCRIPTION OF GEOLOGY

A summary of the exploration contract, together with a detailed Geological report, Ore Reserves and values and including recommendations for further exploration in Stages I and II, have been prepared by Mr. R. M. Smith and Mr. D. C. Laub, geologists of the U. S. Geological Survey. The report of the geologists follows:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

Idm-E248

DMEA-2082, Mt. Wheeler Mines, Inc.

White Pine County, Nev.

(Tungsten)

R. M. Smith and D. C. Laub, Geologists
U. S. Geological Survey

March 16, 1953

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The Mt. Wheeler tungsten prospect, Pole Canyon, White Pine County, Nevada, owned by Mt. Wheeler Mines, Inc., 218 Felt Building, Salt Lake City, Utah, was explored under DMEA contract Idm-E 248 between January 29, 1952 and January 30, 1953.

All the funds provided under the contract have been expended, and an examination of the property to sample and evaluate the completed project was made January 21-28, 1953 by Glenn G. Gentry, U. S. Bureau of Mines, and R. M. Smith and D. C. Laub, U. S. Geological Survey.

Mr. J. D. Williams, president of the company, has advised the examining engineers that he is applying for an amendment to Contract Idm-E248 to provide additional funds for a larger project. A conference to discuss the applicant's proposed exploration was held February 19, 1953 at the Bureau of Mines office in Reno, Nevada, and was attended by Messrs. Williams, A. C. Johnson, G. G. Gentry, and R. M. Smith.

Three conclusions are drawn from study of the tungsten showings exposed by the project: (1) the exploratory work has revealed significant amounts of tungsten ore in laterals No. 1, 3, and 4, and a few scattered crystals of scheelite in laterals 2, 5, and 6; (2) the projected position of the ore zone is about 115 feet north of lateral No. 6, and has not been reached by laterals 5 and 6; (3) exploratory work in the ore zone thus far is not sufficient to delineate the size, shape, grade, and continuity of the ore bodies.

It is recommended that additional work be done in the Wheeler bed in the area north of the Pole adit (Phase 1 of Proposed Exploration) to obtain information for a reliable ore reserve estimate. It is further recommended that the deposit be further explored by extending the Pole adit eastward and the No. 5 lateral northward (Phase 2 of Proposed Exploration) if Phase 1 reveals significant quantities of tungsten ore in or east of lateral No. 5.

The total cost of the program is estimated by the applicant to be $423,614.04; the government's share of the cost would be $317,710.53.

COMPLETED EXPLORATION

Work comprised the construction of a compressor building and a shop; laying of 2,000 feet of buried water line; advancing the Pole adit 965.0 feet southeasterly; driving six crosscuts, aggregating 299.5 feet, from the adit to the ore zone; driving eight raises, aggregating 90.0 feet, from the crosscuts through the ore bed; drifting, aggregating 110.5 feet, from the raises, in six locations in the ore bed; sampling the ore by car samples; obtaining aerial color photographs of the mine area.

Of the total exploratory footage in the Wheeler bed, (including work on company account) 177 feet was in the productive zone (fig. 2). This part of the work yielded about 516 tons of rock of which 251 tons (49 percent) was ore averaging 1.43 percent WO_3. The results of the total exploratory work are summarized as follows: ?

Location	Linear feet (horizontal)	Cars ore (1,750 lbs.)	Tons ore	Percent WO_3 (car samples)
Laterals A & B	109	103	90	2.25
1	41	125	109	0.62
2	12	40	(to waste)	0.12*
3	27	35 20	33 17	1.08 2.96
4	40	2	2	24.00*
5	8	0	-	-
6	5	0	-	-
Total	242	325	251	1.43
			159	0.97

Gentry says 150 tons @ 0.02 % for DME A

*Omitted from average - lateral 2 is outside the ore zone; lateral 4 assays would raise the average to an unrealistic figure.

The Pole adit is nearly parallel to the strike of the Wheeler limestone bed and is driven in the Pioche shale, which underlies and overlies ? the Wheeler bed. As the strike of the contact between the limestone and the shale is about ~~S~~ N. 80° ~~E~~ W., lateral No. 6 is about 115 feet south of the projected position of the ore zone. Contract Idm-E248 did not provide enough footage to drive laterals this distance from the adit. Non seq.!

GEOLOGY

The rocks in the Pole Canyon area are all of Cambrian age, and include the Prospect Mountain quartzite, which is overlain successively by the Pioche shale, the St. Lawrence limestone and the Lincoln limestone. The beds strike S. 80° E. and dip 6°-10° south.

In Pole Canyon the Pioche shale is 350 feet thick and about 45 feet above its base it contains a 22 foot limestone member which has been named the Wheeler bed. The tungsten ore bodies are in the lower half of the Wheeler bed.

The "Mt Wheeler" quartz monzonite stock crops out about 2 miles northeast of Pole Canyon. A few quartz porphyry dikes, which strike northeast and probably dip steeply northwest, crop out near the top of the range east of the mine area.

Three sets of faults cut the sedimentary rocks: (1) north-striking fractures; (2) east-striking shear zones; and, (3) bedding shears. The north-striking fractures dip steeply either east or west. As the faults are normal and the greatest movements are along those that dip east, the area is step-faulted with the east side down. The largest fault cut by the adit is near lateral No. 6 and has a dip slip of about 25 feet, but movement along north-striking fractures generally has been less than 6 inches. In the shale these fractures are tight and inconspicuous, whereas in the limestone they are prominent, open or mud-filled fissures as much as 2 feet wide because of formation of solution cavities along the fractures subsequent to the scheelite mineralization. Some of the north-striking fractures contain calcite veins and stringers. The east-striking shear zones contain quartz stringers and veins generally less than 8 inches wide, but ranging from 1 inch to 5 feet in width. These shear zones generally dip steeply north and cut all the sedimentary rocks in the mine area. Some of the stringers contain scheelite, fluorite, and galena. Three shear zones have been exposed in the

mine area, and in two of these, the Pole adit zone and the North zone (fig. 5), scheelite-bearing stringers have been observed. The bedding shears locally contain quartz and calcite stringers.

ORE DEPOSITS

The ore bodies are irregular, nearly horizontal pipes--or a series of disconnected pods resembling a string of beads--as much as 10 feet in diameter and of unknown length. The tungsten deposits are in the basal 10 feet of the Wheeler limestone bed along east-striking quartz stringers. The best ore lies between 4 feet and 10 feet above the contact with the underlying shale. The ore bodies pinch and swell along their length: At intersections of the quartz stringers with north-striking fractures the pipes are of maximum size; between fractures the ore pinches or is absent. Around most of these intersections the limestone is brecciated in a zone of minor fractures. Scheelite occurs in the quartz stringers, in the minor fractures, and is disseminated in the limestone adjacent to the minor fractures. Evidence?

In laterals A and B (fig. 2) scheelite is disseminated fairly uniformly in limestone over widths as much as 7 feet and heights as much as 6 feet; it occurs sporadically throughout the entire lateral. An 8 inch layer of dolomitized limestone, parallel to the bedding near the top of the ore zone, covers an area of about 30 square feet; it contains about 15 percent WO_3 as disseminated crystals of scheelite one-eighth to one-half inch in diameter.

In laterals 1 to 6, scheelite occurs sporadically in quartz stringers and is also disseminated in limestone in bodies as much as

10 feet high and 10 feet wide. Scheelite in commercial quantities is exposed in laterals No. 1, 3, and 4 where, in addition to being in the quartz stringers, it occurs in minor fractures near intersections and replaces limestone adjacent to the minor fractures. Unlike the occurrence in laterals A and B, the scheelite in laterals 1 to 6 replaces limestone only a few inches from the minor fractures. Where these fractures are closely spaced, as they are in the brecciated zones at intersections, the mineralized limestone constitutes ore.

Not all intersections of quartz stringers with north-striking fractures yield scheelite ore. The best showings are within an east-striking zone about 100 feet wide composed of three or more mineralized quartz stringers (fig. 2).

Sampling

The sampling procedure followed by the operator has been to take car samples as the work progressed. In order to check the car samples, 41 samples were cut by the examining engineer. The car samples are of a higher average than the channel samples, due partly to the spotty distribution of scheelite which is principally along the near fractures, partly to the extreme difficulty of cutting a channel sample in the limestone which is both dense and tough, and partly to the small size of the ore pods; much of each pod is removed by the exploratory work, leaving lower grade ore in the walls. Comparative average assays are summarized as follows:

who was analyst?

Location	Car Samples Percent WO_3	Channel Samples Feet	Channel Samples Percent WO_3	
Laterals A & B	2.25	3.5	1.78	Dump 1.80
1	0.62	4.0	0.45	Dump 0.02
3	1.76	3.6	0.35	

Sample No.	Lateral No.	Direction of cut	Length feet	Percent WO_3	Percent Mo.	Description
BM 441	A	vertical	3.0	2.29	0.01	Sample from 5' to 8' above limestone shale contact taken 3' from quartz vein.
442	A	vertical	4.0	0.01	0.01	From 6' to 10' above contact, along face of N-S fracture.
443	A	vertical	2.1	0,01	0.01	From 4' to 6' above contact, downward continuation of BM-442 along N-S fracture.
444	A	horizontal	3.0	0.01	0.01	8' above contact, across N-S fracture.
445	A	vertical	3.0	3.73	0.01	4' to 7' above contact, 1.5' high grade rest barren.
446	A	vertical	3.0	1.44	0.01	6' to 9' above contact along N-S fracture and near east striking quartz vein. Three small high grade seams.
447	B	vertical	3.9	0.86	0.01	4' to 8' above contact, along N-S fracture, $CaWO_4$ in fracture planes.
448	B	horizontal	2.8	1.42	0.01	5' to 8' above contact, across four one-half inch quartz stringers and along face of NS fracture.
449	B	vertical	3.5	1.12	0.01	5.5' to 9' above contact, along face of N-S fracture near E-W quartz vein.
450	C	vertical	3.3	0.31	0.01	7' to 10' above contact, along E-W quartz stringer, $CaWO_4$ along fracture planes.
451	C	vertical	3.0	0.16	0.01	7' to 10' above contact along E-W vertical quartz stringer and on face of N-S fracture.
451A		vertical	3.0	0.01	0.01	7' to 10' above contact 3' south of BM-451, along quartz stringer.

Sample No.	Lateral No.	Direction of cut	Length feet	Percent WO_3	Percent Mo	Description
BM 452	1	horizontal	2.6	0.44	0.01	10' above contact, across quartz stringer in top of No. 1 raise.
453	1	vertical	5.3	0.11	0.01	5' to 10' above contact, along same quartz stringer as BM-452.
454	1	vertical	5.7	0.15	0.01	6' to 10' above contact, and near N-S fracture.
455	1	vertical	3.7	0.16	0.01	5' to 9' above contact, in N-S fracture.
456	1	vertical	3.1	1.30	0.01	2' to 5' above contact, along fracture parallel to bedding. Top 1.2' highgrade, rest barren.
457	1	vertical	5.0	0.29	0.01	2' to 7' above contact, along 1/2 inch quartz stringer on face of N-S fracture.
458	1	vertical	4.0	0.42	0.01	3' to 7' above contact, along face of E-W quartz stringer.
459	1	vertical	3.6	0.16	0.01	4.5' to 8' above contact, two 1/2 inch quartz stringers through sample.
460	1	vertical	4	0.57	0.01	4' to 8' above contact, taken along a N-S fracture and across E-W quartz stringer.
461	2	horizontal	5.3	0.01	0.01	6' above contact, across a limestone wedge between two N-S fractures.
462	3	horizontal	A2	1.99	0.01	10' above contact across 1/2 inch quartz stringer and N-S fracture. Some disseminated $CaWO_4$.
463	3	horizontal	3.6	0.01	0.01	10' above contact, continuation of BM-462 along face of N-S fracture in mud and across barren quartz stringer.
464	3	horizontal	3.3	0.05	0.01	10' above contact, continuation of BM-463 along N-S fracture in mud and across 1/2 inch quartz stringer.
465	3	vertical	3.6	0.01	0.01	5.5' to 9' above contact, near calcite vein on N-S fracture.

Sample No.	Lateral No.	Direction of cut	Length feet	Percent WO_3	Percent Mo	Description
BM 466	3	vertical	3.6	0.01	0.01	4.5' to 8' above contact, along 1/2 inch quartz stringer.
467	3	vertical	3.8	0.06	0.01	5' to 9' above contact, in mud along N-S fracture and along 1/4 inch quartz stringer.
468	3	horizontal	3.4	0.01	0.01	8' above contact, across three 1/4 inch quartz stringers and along face of N-S fracture.
469	4	vertical	5	0.04	0.01	1' to 6' above contact, in gouge from N-S fault. $CaWO_4$ comes from quartz stringer above sample.
469A	4	Grab		7.61	0.01	High grade grab sample from E-W quartz stringer directly above BM-469.
470	4	horizontal	5.0	0.02	0.01	6' above contact, across N-S fault and one 1' quartz vein.
471	4	horizontal	18	0.01	0.01	1' to 3' above contact, across 1 inch quartz stringer.
472	4	vertical	Chip	0.01	0.01	9' above contact, along face of N-S fault.
473	5	horizontal	1.0	1.89	0.01	2' to 3' above contact, across N-S fracture near quartz stringer. Scheelite in seams and fractures.
474	5	horizontal	1.8	0.01	0.01	2' to 4' above contact, across N-S fracture.
475	B	vertical	2.0	6.90	0.01	6' to 8' above contact, scheelite disseminated in limestone (top 8" estimated 15% WO_3).
476	Stockpile		Trench	0.02	0.01	From DMEA stockpile estimated 0.6 WO_3.
477	Stockpile		Grab	1.80	0.01	Mt. Wheeler stockpile from laterals A and B.
478	Main drift		Chip	0.02	0.01	Near the face in the main drift along E-W quartz stringer.
479	1	Chip	2.0	3.99	0.01	At intersection of N-S fracture and E-W quartz vein. No. 1 lateral, south.

ORE RESERVES

Exploratory work in the ore bed is not extensive enough to permit accurate calculations of the ore reserves or to define the average size and grade of the ore bodies. The ore bodies near the portal of the Pole adit have been sufficiently explored, however, to permit estimation of measured reserves, and the ore bodies can be inferred to extend along east-striking fractures to the Sheffield fissure.

The thickness of the ore bodies is variable, but seems to be controlled by the favorable basal unit of the Wheeler limestone. The car samples taken by the operator were presumably representative of the full drift height which is about 7 feet. The samples cut by the examining engineer averaged 3.8 feet thick -- the thickness that showed notable amounts of scheelite. It is probable that in mining it will be necessary to maintain a stope height of 5 feet, so the ore reserves will be calculated on this basis, allowing for dilution of the ore body with barren material from above or below the ore layer.

The ore reserves of the block between laterals A and B were calculated as follows: The block 5 feet high, 7 feet wide, and 46 feet long contains 160 tons; a high grade stockpile of 90 tons mined from this block is piled near the portal and averages about 2.0 percent WO_3. This leaves a total of 70 tons of ore in place averaging about 2.0 percent WO_3.

Ore probably extends along the three mineralized quartz stringers, shown in figure 2, as far east as lateral No. 3. The stringers have a total length of 1,000 feet; one half of this length is thought to contain ore bodies 5 feet high and 7 feet wide. The indicated ore re-

serves in the block total 1,450 tons that are estimated to average about 1 percent WO_3.

In addition, ore is inferred to extend along the three quartz stringers eastward from lateral No. 3 to the Sheffield fissure. The three stringers have a total length of 5,390 feet, one half of which is referred to be in ore 7 feet wide and 5 feet high. The inferred reserves in this block total 7,860 tons estimated to average 1 percent WO_3. Ore is also inferred along two quartz stringers in the North ore zone (fig. 5); the two stringers have a total length of 4,400 feet, one half of which may contain ore bodies averaging 5 feet high and 7 feet wide. The inferred tonnage in this block totals 6,400 tons averaging 1 percent WO_3.

The reserves are summarized as follows:

Class	Tons	Percent WO_3
Measured	160	2.0
Indicated	1,450	1.0
Inferred (Pole adit)	7,860	1.0
Inferred (North zone)	6,400	1.0
Total	15,870	1.0

No ore can now be inferred between the Pole adit zone and the North zone, but this area contains all of the structural and lithologic controls necessary for ore deposition.

PROPOSED EXPLORATION

The exploratory program outlined in the application consists of two phases, which total 6,260 linear feet of work:

Phase 1: Drifting and raising in the Wheeler bed a total of 1,305 linear feet. This work is considered to be the minimum amount necessary to delineate the size and shape and determine the grade of the ore bodies indicated by the previous exploratory work. The proposed work is spaced at intervals along the Pole adit to obtain information on several of the ore bodies. Ore produced from the Wheeler bed in Phase 1 is to be bulk sampled, by milling a reasonable amount of the ore in a commercial mill. Not less than 100 tons should be milled and not less than 45 tons from any single lateral should make up a shipment. A record of advance, cars of ore, cars of waste, and car samples should be kept for all of Phase 1.

if this is done cost should be deducted prior to payments or Gov. should get all of payment.

The starting of Phase 2 will be contingent upon work done in Phase 1 revealing a block of minable ore and shall be subject to the prior approval of the Government. Phase 2 may be started before Phase 1 is completed, providing this requirement is satisfactorily met.

No

Phase 2, part 1: Raising 1,050 feet up dip (10°) on the Wheeler bed, and drifting 1,000 feet along favorable showings found, a total of 2,050 feet. This work is designed to test the east-striking North shear zone which is exposed 900 feet north of the portal of the Pole adit, and also to test the intervening ground for other productive shear zones. Inferred reserves of 6,400 tons containing 1 percent WO_3 are estimated to be in the North shear zone. This work will increase the area from which

royalty payments to the Government may be obtained. Half of the raise is to be driven as the first stage of Phase 1; if ore bodies of minable size are found, the raise will then be completed.

Phase 2, part 2: To extend the Pole adit 1,200 feet eastward to the Sheffield fissure, with 3,010 feet of laterals in the Wheeler bed, a total of 4,210 feet. This work is a continuation of the original DMEA project. Laterals should be spaced at about 300 feet, and adequate work should be provided in the bed to demonstrate the presence or absence of ore bodies. This phase of the work should be contingent upon finding ore in commercial quantities in or east of lateral No. 5. In this part of Phase 2, the course of the Pole adit should be determined by the geologic conditions revealed as the work progresses. In general there are three choices of location: (1) along the ore bodies; (2) along the Wheeler bed; and, (3) along the strike of the ore zone but under the Wheeler bed.

The first choice, location along the ore bodies, would result in a series of flat raises, as steep as five degrees, connected by steep winzes at each faulted offset. This choice is not desirable because it would greatly increase the cost of exploration. The second choice, along the Wheeler bed, is the one that was adopted for the previous work. Although the limestone-shale contact was not kept at a constant altitude in the adit, its general course was followed closely, so that the adit is nowhere more than 4 feet above or below the contact. This choice

has resulted in the adit being south of the projected position of the ore zone, but requires longer crosscuts, and is, therefore, costly. The third choice, location under the Wheeler bed, would result in a fairly straight adit, driven on a one-half percent grade; raises into the ore bed would be required at intervals. Thus at lateral No. 6 a 15-foot raise would have been required; this would have provided desirable storage space for broken rock. Probably some compromise between choice 2 and choice 3 will be necessary, because the adit must be kept above the underlying quartzite in order to maintain reasonable drilling costs. Apparently the best compromise will be to keep the adit in the shale under the ore zone, or as near the ore zone as the quartzite permits. For example, the next work in the adit might well be to extend lateral No. 6 (fig. 2) straight ahead (N. 45° E.) until the ore zone is reached, then turn eastward and drive the adit along the strike of the ore zone under the Wheeler bed.

After this phase is started, its continuation should be contingent upon finding ore in commercial quantities as the work progresses; if two successive laterals are driven without discovering ore, then the Pole adit work should be terminated. The discovery of ore along the Sheffield fissure in quantities sufficient to certify a discovery should be justification for terminating the drive along the fissure.

* * * * *

SAMPLING

Prior to sampling, a careful examination was made by means of a mineralight and the location of the samples carefully marked with aluminum paint. The areas sampled were considered to be representative of the scheelite mineralization exposed on the walls.

The wall rock could not be washed with water as no water was available and the use of compressed air for this purpose did not obtain satisfactory results. Therefore, all sample locations were carefully cleaned by means of a sample pick prior to cutting the sample. All sampling was done in the usual standard manner of channel cuts at right angle to the bedding.

Large samples were cut by means of a jackhammer and moils and single jack and moils. The entire sample was caught on a large canvas sheet and all of the sample was sacked and brought to the Hydrometallurgical and Ore-Dressing Branch at Reno, Nevada for analysis. The details of the sample analysis follows:

Sample No.	Feet/ Width	%, WO_3	%, Mo	Location
BM-441	3.0	2.29	*0.01	North side of crosscut between A and B south laterals; vertical cut.
442	4.0	*0.01	*0.01	Upper section of west wall in "A" drift; vertical cut across limestone bedding.
443	2.1	*0.01	*0.01	Vertical cut on west wall of "A" drift under sample 442 and across limestone bedding.
444	3.0	*0.01	*0.01	N-S fissure at south end of "A" drift.
445	3.0	3.73	*0.01	North wall of south crosscut in "A" drift; vertical cut across limestone bedding.
446	3.0	1.44	*0.01	West wall of crosscut south of "A" drift; vertical cut across limestone bedding.
447	3.9	0.86	*0.01	West wall of "B" fissure, south side of Pole adit. Limestone shows scheelite.

Sample No.	Width/ Feet	%, WO_3	%, Mo.	Location
BM-448	2.8	1.42	*0.01	Horizontal cut along limestone bedding at top and south side of sample 447.
449	3.5	1.12	*0.01	Limestone on north side of "B" fissure.
450	3.3	0.31	*0.01	West wall of "B" fissure. North side of Pole adit; vertical cut across limestone bedding.
451	3.0	0.16	*0.01	East wall of "B" fissure. North side of Pole adit; 12 inches north of E-W quartz stringer.
451-A	3.0	*0.01	*0.01	12 inches south of sample 451. East wall of "B" fissure and along E-W quartz vein.
452	2.6	0.44	*0.01	No. 1 lateral south; No. 1 raise. North side; taken along the bedding at top of bed.
453	5.3	0.11	*0.01	No. 1 lateral south; north wall of No. 1 raise; vertical cut across bedding at top of raise.
454	5.7	0.15	*0.01	No. 1 lateral south; No. 1 raise; south wall at top of raise; vertical cut across bedding.
455	3.7	0.16	*0.01	No. 1 lateral south; north wall of No. 1 raise; vertical cut across top part of bedding.
456	3.1	1.30	*0.01	No. 1 lateral south; No. 2 raise; north wall of raise.
457	5.0	0.29	*0.01	No. 1 lateral south; No. 2 raise; east face of raise; vertical cut across bedding.
458	4.0	0.42	*0.01	No. 1 lateral south; No. 2 raise; south wall of raise; vertical cut across bedding.
459	3.6	0.16	*0.01	No. 1 lateral south; No. 3 raise; east face of raise; vertical cut across quartzite bedding.
460	4.0	0.57	*0.01	No. 1 lateral south; No. 3 raise; south wall of raise; vertical cut across bedding.
461	5.3	*0.01	*0.01	No. 2 lateral south; north wall of raise and across N-E and S-W fissure. Small occurrence of lead sulfides and pyrite.
462	4.2	1.99	*0.01	No. 3 lateral north; horizontal cut along bedding and across fissured zone at north side of raise.
463	3.6	*0.01	*0.01	No. 3 lateral north; center of east face of raise; horizontal cut along bedding and across small quartz seams.
464	3.3	0.05	*0.01	No. 3 lateral north; northeast corner of East face of raise; horizontal cut along bedding.

Sample No.	Width/ Feet	%,WO_3	%,Mo.	Location
BM-465	3.6	*0.01	*0.01	No. 3 lateral north; north wall of raise; bottom section of drift; vertical cut across bedding.
466	3.6	*0.01	*0.01	No. 3 lateral north; north wall of raise; vertical cut across bedding.
467	3.8	0.06	*0.01	No. 3 lateral north; east face of raise; below sample 464; vertical cut across bedding.
468	3.4	*0.01	*0.01	No. 3 lateral north; horizontal cut 2 feet above floor of raise drift and across E-W quartz stringers.
469	5.0	0.04	*0.01	No. 4 lateral north; west wall of raise; vertical cut across black shale.
469-A	chip	7.61	*0.01	No. 4 lateral north; 6 inches south of sample 469. High grade stringers. (Sampled for information only).
470	5.0	0.02	*0.01	No. 4 lateral north; across face of N 15° W drift off top of raise; vertical cut across mostly black shale.
471	1.8	*0.01	*0.01	No. 4 lateral north; east drift off top of raise; E-W quartz stringers at bottom of face of drift.
472	chip	*0.01	*0.01	No. 4 lateral north; across 3 feet of back at top of raise; quartz and calcite too hard to cut with jackhammer.
473	1.0	1.89	*0.01	No. 5 lateral north; east wall at top of raise; across a N 75° E fracture.
474	1.8	*0.01	*0.01	No. 5 lateral north; north face of top of raise; across N-S fissure.
475	chip	6.90	*0.01	In crosscut between A and B drifts; 6 feet east of sample 441 and on north wall of crosscut. Typical high grade ore. Bedding has width of about 2 feet.
476	shovel	0.02	*0.01	DMEA stockpile of ore at portal of Pole adit; shovel sample from trench at about midway of height of stockpile.
477	grab	1.80	*0.01	Stockpile of ore. Property of Mt. Wheeler Mines, Inc. and alongside DMEA stockpile. Grab sample; ore produced from A and B drifts prior to contract.
478	chip	0.02	*0.01	Face of Pole adit on 1/28/53; 51.5 feet east of center line of No. 6 lateral north; small showing of scheelite in limestone.
479	chip	3.99	*0.01	No. 1 lateral south; No. 3 raise; high grade ore in back of raise; 3 feet west of sample 460.

*Less than.

Sample No.	%,Mn	%,Pb	%,Zn	Ounces/Ton Au	Ounces/Ton Ag
BM-469	4.2	0.1	1.0	Trace	Trace
470	2.6	0.1	0.7	"	"

Further consideration of the economic metallurgy included concentrating and flotation tests on the composite of 25 samples. The results of these tests are compiled in the attached report from the Hydrometallurgical & Ore Dressing Branch of the U. S. Bureau of Mines:

Mt. Wheeler Mines, Inc. White Pine County, Nevada
DMEA-2082, Idm E-248
Re-O-2.90 Scheelite Ore

A composite was prepared from the following samples submitted for analyses: 441, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 67, 69-A, 73, 75, 77, and 79.

The ore was a compact calcite, partly iron-stained with inclusions of fine-grained scheelite. Accessory minerals were limonite, quartz, garnet, mica, and pyrite. The limonite occurred in very fine grains, which slimed easily when the ore was ground to a fine-size range. Analysis of the composite sample showed 0.79 percent WO_3.

Gravity concentration

The ore was crushed to minus 20-mesh and hydraulically classified into three sand portions and slimes. Each portion was concentrated separately on the laboratory Wilfley table. The coarser concentrates were ground to minus 48-mesh and re-tabled. The several concentrates, middlings, and tailings were combined for analysis. The final concentrates contained very little magnetic material and cleaning with the high intensity magnetic separator was ineffectual. A recovery of 66 percent of the total tungsten was obtained in concentrates containing 60 percent WO_3, 1.0 percent S, and less than 0.01 percent Mo. Details of the gravity concentration test are shown in the following tabulation:

Product	Weight, percent	WO_3 percent	Distribution, percent
Concentrates	0.85	60.20	66.4
Middlings	16.15	1.10	23.0
Tailings	69.50	0.04	3.6
Slimes	13.50	0.40	7.0
Composite	100.00	0.77	100.0

Microscopic examination of the concentrates showed inclusions of calcite and some quartz in the scheelite grains. Scheelite left in the middlings was extremely fine grained.

Flotation

Flotation tests were made on the ore to determine the possibility of increasing the recovery obtained by gravity concentration. It was necessary to grind the flotation feed to minus 200-mesh for satisfactory liberation of scheelite.

Considerable difficulty was encountered in establishing good flotation conditions, apparently due to the formation of colloidal iron oxide particles during grinding and agitation of the ore.

The best flotation results were obtained by use of the following reagents in pounds per ton of ore:

Soda ash	8.0	(pH 12)
Quebracho	1.0	
Oleic acid	0.4	

Thorough deflocculation and dispersion was obtained without the use of sodium silicate, which seemed to have no beneficial effect on this ore.

Recovery of 89 percent of the tungsten was obtained in concentrates containing 9 percent WO_3. Details of the work are shown in the following tabulation:

Product	Weight, percent	WO_3 percent	Distribution, percent
Concentrates	8.0	9.00	89.33
Cleaner tailings	17.4	0.28	6.04
Rougher tailings	74.6	0.05	4.63
Composite	100.0	0.81	100.00

Additional testing would probably show improvement in the grade of concentrates by stage-cleaning. The data reported indicate that flotation treatment can be used, and this preliminary work could serve as a point of departure for future investigation of this ore. It was desired to avoid further delay in reporting this investigation and the flotation work was therefore terminated.

* * * *

EXPENDITURES

Contract dated Jan. 29, 1952

Contract amount: $75,476.00

Government participation: 75% = $56,607.00

Total expenditures reported by applicant, Jan. 31, 1953 . .	$82,809.41
Contract authorization	$75,476.00
Excess over contract allowance	$ 7,333.41

An audit of the books of the Mt. Wheeler Mines, Inc. for the period Jan. 29, 1952 to Dec. 31, 1952, was made by Mr. George Mavor, auditor representing the DMEA. The results of this audit as reported by Mr. Mavor under date of Feb. 20, 1953, disclosed the following financial status of the exploration project:

"Total cost as billed by contractor		$75,383.37
"Exceptions: Prior audit report	$349.23	
This audit report	$282.43	631.66
"Total accepted cost		$74,751.71

"The contract calls for a 75 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of $56,063.78 is valid and proper.

"This certificate is issued on the provision that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract."

VALUE OF PRODUCTION

The exact value and assay content of the tungsten ore as stockpiled and reported by the applicant cannot be ascertained until this tonnage is milled and an automatic head sample secured.

The usual method of trenching the stockpile has apparently given erratic results inasmuch as samples taken by the examining engineers do not approximate the analysis reported by the applicant.

0.02
0.24
against
0.98

Based upon the applicant's reports, this stockpile of tungsten ore would amount to approximately 150 wet, short tons and estimated to contain approximately 143 units of WO_3. Assuming that 85% of the scheelite would be recovered, the gross value @ $63.00 per unit, would amount to $7,657.65. From this figure, it will be necessary to deduct the loading, hauling, milling and marketing charges, before the Government's royalty may be computed.

why?

EFFICIENCY OF OPERATIONS

The exploration work has followed good mining methods and the operator is considered to be efficient and competent.

EQUIPMENT PURCHASED FOR THE PROJECT

	Cost	Condition		Estimated Salvage Value
1 Air receiver, 4'x 10', used	$ 40.00	good	70%	$ 28.00
1 Fuel tank	89.17	"	50%	44.58
1 Axivane fan, 4700 c.f.m., Model 1-21-Joy Mfg. Co.	518.63	"	70%	363.00
1 Slusher, cables, scraper	591.80	"	50%	295.90
1 Jackleg and drill	526.58	"	70%	368.60
2 Thor drifter drills, 48 shell	1,750.00	"	60%	1,050.00
20 lb. mine rail, rail splices, track bolts and switches, 4"x 6" crossties	3,554.89	"	50%	1,777.45

	Cost	Condition		Estimated Salvage Value
Pipe lines, water line, valves and fittings, ventilation tubing	$3,215.51	good	70%	$2,250.85
Misc. small tools	820.94	"	50%	410.47
Aerial phots	250.00	"	25%	62.50 ?
New facilities constructed:				
1 compressor building, 16'x 24' frame, covered roof and sides with aluminum sheets concrete foundation, cement floor	1,996.03	"	40%	798.41
1 Blacksmith shop and warehouse, 14'x 16', frame, covered with tar paper	1,382.42	"	30%	414.73
	$14,735.97			$7,864.49

The estimated salvage value of the equipment and facilities will depend entirely upon the market for second hand equipment at the time it might be offered for sale.

It is recommended that the equipment, facilities and supplies on hand be retained in their present locations at the mine, in the protective custody of the applicant, pending a decision relative to a new application which has been submitted by the mining company for additional exploration work.

Should the new application be denied, then all equipment, facilities and supplies should be disposed of as prescribed by the Executive Officer, DMEA Field Team, Region III or other authorized Government agent.

DEPARTMENT OF INTERIOR
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SAN FRANCISCO, CALIFORNIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

SUPPLEMENTAL REPORT

Amended application for further assistance

Idm-E248

DMEA-2082, Mt. Wheeler Tungsten Mine

White Pine County, Nev.

Glenn G. Gentry, Mining Engineer
U. S. Bureau of Mines

March 25, 1953

SUPPLEMENTAL REPORT

Amended application for further assistance

DMEA-2082 (tungsten)

Name and address of applicant: Mt. Wheeler Mines, Inc.,
218 Felt Bldg.
Salt Lake City, Utah.

Name and location of property: Mt. Wheeler Tungsten Mine,
White Pine County, Nev.

Contract: Idm-E248

SUMMARY

After completing the exploration in the Mt. Wheeler Tungsten Mine, authorized under contract Idm-E248 dated Jan. 29, 1952, the Mt. Wheeler Mines, Inc., through its president, Mr. James D. Williams, have submitted another application for additional exploration work which they consider justified from the results obtained under contract Idm-E248.

The new application, copy of which is enclosed herewith, proposes to conduct the exploration in two stages, and the continuance of the exploration and expenditures is to be contingent upon the exposure of scheelite mineralization of commercial grade in the areas within the limits of the proposed program, that is, the applicant must expose scheelite mineralization of commercial grade in the areas represented by Nos. 4 and 5 laterals North of the Pole adit, Stage I, to the satisfaction of the Government, prior to starting work on Stage II. If the scheelite mineralization in the above mentioned areas is negative or below a possible commercial grade,

then Stage II is to be automatically cancelled.

The details of exploration and the costs of Stages I and II have been detailed by the applicant.

Stage I: This phase of the proposal entails a total of 1,305 linear feet of crosscutting and drifting to further explore for the occurrence of scheelite ore along the North-South fissures at their intersections with the East-West quartz veins and within the bedding of the Wheeler limestone (see fig. 4).

The cost of Stage I has been estimated by the applicant, in the amount of $116,698.82 and will require a period of 8 months to complete. (For details of Stage I, see pages 3, 4, 5, and 6 FINAL REPORT dated March 25, 1953).

Stage II: This phase of the proposal entails a total of 6,260 linear feet of adit, drifting and crosscutting to extend the Pole adit to the Sheffield fissure and to explore the Wheeler limestone beds for the occurrence of scheelite ore and in the same manner as set forth in Stage I (see fig. 5).

The cost of Stage II has been estimated by the applicant, in the amount of $306,915.22 and will require a period of 16 months to complete. (For details of Stage II, see pages 6, 7, 8, 9, and 10 FINAL REPORT dated March 25, 1953).

CONCLUSIONS

Stage I:

The field team consider the amount of footage submitted for further exploration in Stage I is justified by the exposures of scheelite mineralization observed and sampled in laterals No. 1 to 5,

inclusive driven under contract Idm-E248 and the North-South laterals Nos. A and B (see fig. 4) located 75 feet east of the portal of the adit and driven by the mining company prior to the execution of said contract Idm-E248.

Stage II:

The field team consider the amount of footage submitted for further exploration in Stage II is entirely an unknown factor at this time and will only be justified by exposing scheelite ore of commercial grade in areas limiting the advance of the Pole adit in sections not to exceed 300 feet, that is, at a location to be mutually agreed upon, a crosscut is to be driven up the bedding in a northerly direction, from the Pole adit and if a satisfactory exposure of scheelite ore is obtained then the Pole adit may be advanced an additional 300 feet and the crosscutting exploration again repeated. If no satisfactory exposure of scheelite ore is observed in said crosscuts and drifts off the crosscut, then the further advance of the Pole adit is automatically cancelled and Stage II terminated.

Resume: Applicant's estimate -

Total exploration, Stages I and II	7,565 feet
Total cost	$423,614.04
Total time required:	24 months
Cost per foot, Stage I	$89.42
Cost per foot, Stage II	$49.03

RECOMMENDATIONS

Stage I:

The field team consider that exploration work conducted under contract Idm-E248 was successful in exposing scheelite ore in the various laterals off the Pole adit, from Lateral No. 1 South to Lateral No. 5 North. However, the exploration work within the Wheeler limestone beds was too limited by the contract and while the results obtained were encouraging, the information available is not sufficient to definitely appraise the extent and value of the discovery. It is therefore recommended that an exploration contract be approved in the amount of 1,305 linear feet from "A" lateral south to No. 5 lateral north, inclusive, as indicated on the enclosed drawing marked figure 4, as follows:

"A" lateral, south:	crosscut	40 feet	
	E-W drifting	40 "	80 feet
"A" lateral, north:	crosscut	20 "	
	E-W drifting	60 "	80 "
No. 1 lateral, south:	East drift	20 "	
	N.W. crosscut	100 "	
	E-W drifting	90 "	
	N.E. drift	70 "	280 "
No. 3 lateral, north:	N.E. drift	110 "	
	crosscut	85 "	
	E-W drifting	90 "	285 "
No. 5 lateral, north:	crosscut	160 "	
	E-W drifting	120 "	280 "
Allow misc. drifting and cross-cutting where considered necessary or advisable		300 "	300 "
		Total	1,305 "

Personnel required:

	Per day
1 Supt.-engineer & geologist @ $600.00/mo.	$20.00
1 Mine foreman @ $500.00/mo.	16.66
1 Cook @ $300.00/mo.	10.00
4 Miners @ $15.40 each	61.60
2 Slusher operators @ $14.50 each	29.00
2 Slusher helpers @ $14.00 each	28.00
1 Motorman @ $14.50 each	14.50
1 Outside man @ $14.50 each	14.50
13	$194.26
Add 15% insurance	29.14
	$223.40

$223.40 per day - 26 day month = $5,808.40 @
8 months = $46,467.20 = $35.61 per foot.

$46,467.20

Operating material and supplies:

Misc. operating supplies	$ 939.60		
Timber and lumber	600.30		
Explosives	3,523.50		
Pipe and ventilation	2,676.75		
Fuel and lube	1,787.85		
Steel and bits	1,996.65		
Misc. small tools	450.00		
Freight	1,311.00	12,785.65	$9.79/ft.
Accounting and blueprinting	1,240.00		
Repairs to equipment	459.36		
Assaying	600.00		
Administrative (jeep mileage)	768.00	3,067.36	$2.35/ft.
		$62,320.21	

Equipment:

1 Air compressor	$5,494.22 (rental) 1/60 per month $91.57/month - 8 months	732.56
1 Generator	$459.14 (rental) 1/60 per month $7.65/month - 8 months	61.20
1 Trammer	$3,926.73 (rental) 1/60 per month $65.44/month - 8 months	523.52
3 Jackleg units complete @ $535.00		1,605.00
1 Jackhammer @ $535.00		535.00
1 Stoper @ $550.00		550.00
3 Sets air and water hoses $180.00		180.00
10 Mine cars (rental @ $26.00/mo. each)		2,080.00
1 Double drum slusher and attachments		2,776.90

Underground air receiver	715.54	
$1\frac{1}{2}$ ton pick up truck for mine use (extra low gear)	2,000.00	
Truck rental hauling ore (200 tons @ $2.50 ton) mine to lower stockpile	500.00	
Truck haulage charge 200 tons ore to mill @ $5.00/ ton	1,000.00	
Rental of shovel loader total of 24 hours @ $10.00/ hour	240.00	
Change house at mine (use building under construction)	1,500.00	
Powder magazine	1,109.17	
Permanent blower installation	215.03	
8 Fire extinguishers	480.00	
	$16,803.92	= $12.86/ft.
Total	$79,124.13	
Add 10% contingencies	7,912.41	
	$87,036.54	= $66.69/ft.

Total requested by applicant: $116,698.82 = $89.42 per foot.

Due to the apparent difficulty of securing reliable data from channel sampling or grab samples from muck cars, the field team recommend that a maximum of 100 tons of the tungsten ore be treated by accepted concentration methods in a reliable custom milling plant. This treatment to include accurate weighing and an automatic sample of the heads and tailings.

The supervising engineer-geologist is to devote his entire time to the project and will prepare all necessary maps and reports and supervise all sampling.

It is further recommended that any contract for the 1,305 feet of exploration work be considered on a footage or unit basis.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1953 MAR 27 PM 2:44

SAN FRANCISCO, CALIFORNIA

WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Dmea-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
Contract Adm-E-248

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS ADMINISTRATION
DOCKET NO. 2082

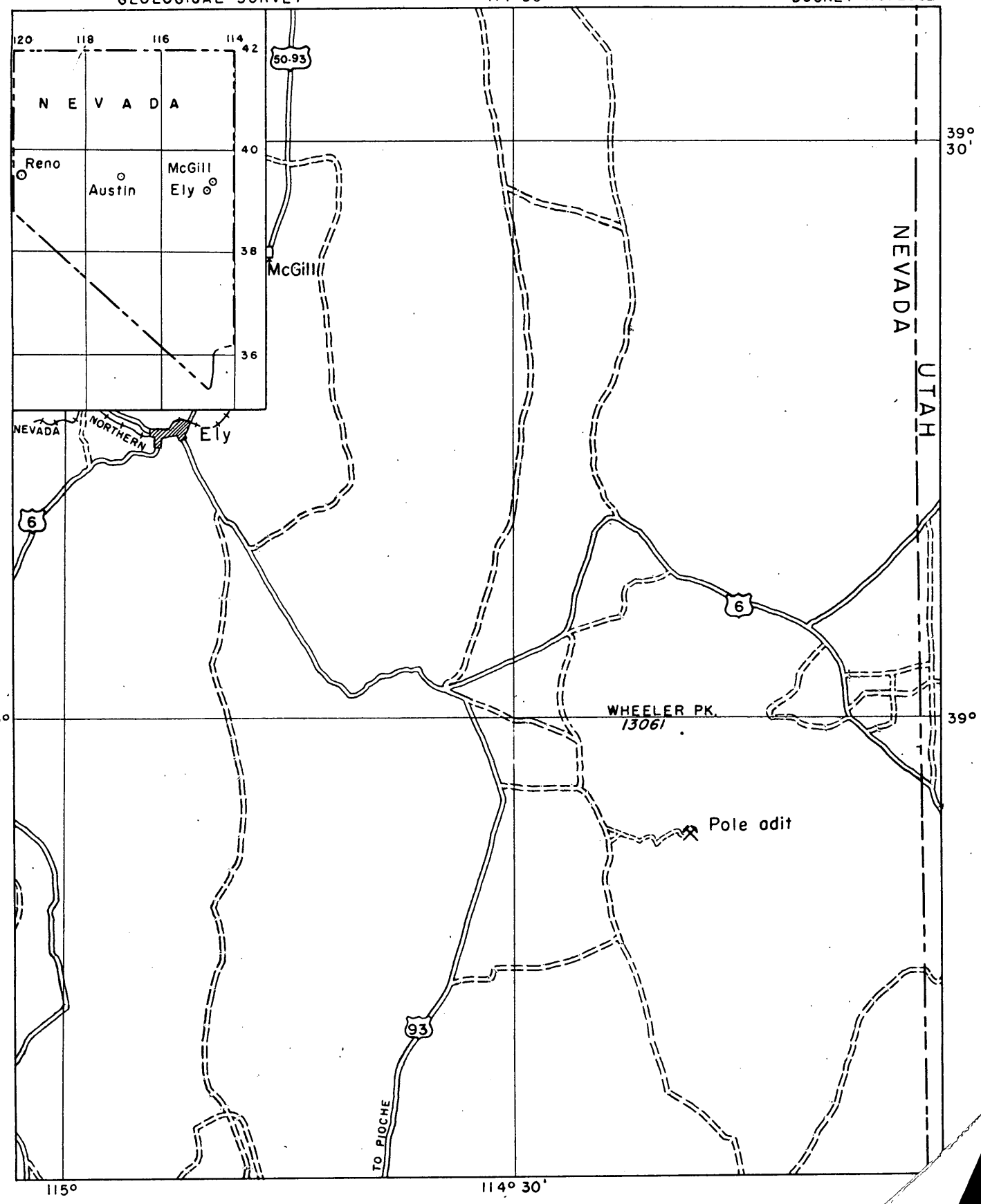

FIG. 1

INDEX MAP OF NEVADA

0 5 10 MILES
Scale

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 25 1953

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MAR 24 2 24 PM '53
GENERAL SERVICES ADMIN.
PUBLIC BLDGS. SERVICE
BMD - COMMUNICATIONS

XAO

10 WA SFS /I-BOM/

SAN FRANCISCO CALIF 3-24-53 1105A

G C SELFRIDGE CHAIRMAN

OPERATING COMMITTEE DEFENSE MINERALS EXPLORATION ADMINISTRATION

INTERIOR BLDG WA

REURTT MARCH 23 SUBJECT DOCKET DMEA 2082 /TUNGSTEN/, MT. WHEELER MINES, CONTRACT IDM-E248. A. C. JOHNSON WIRES THAT REPORT IS IN FINAL STAGES OF PREPARATION AND SHOULD REACH THIS OFFICE MARCH 30.

H C MILLER EXECUTIVE OFFICER DMEA FIELD TEAM REGION III

23 DMEA 2082 IDM-E248 30

VD 1107A

No reply necessary
WSM

MAR 25 8 41 AM '53
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

FILE COPY
Surname:
Rutledge
Martin
Selfridge.

Defense Minerals Exploration Administration
F. A. Rutledge
5285 3538

March 23, 1953

H. C. Miller, DMEA Executive Officer, Region 3, 1012 Flood Building,
870 Market Street, San Francisco, California
Docket No. DMA 2082X, Mt. Wheeler Mines, Inc., Contract Idm-X248

When may we expect Field Team report on Mt. Wheeler Mine with comments and recommendations on the new application? Your attention is called to our wire of January 7, 1953, and our letter of January 9, 1953, requesting check sampling by Government.

G. C. Selfridge, Chairman
Operating Committee

FARutledge/ls
3/23/53

cc: Docket
Admn. Read. File
Code 400
Oper. Committee
Confirmation - FT, Reg. 3
Audits, Bureau of Mines

A.H.
3/23/53

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

March 23, 1953

Memorandum

To: The Docket

From: G. C. Selfridge

Subject: Docket No. DMEA-2082
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract No. Idm-E248

Mr. James D. Williams telephoned today to ask if his recent application for additional exploration assistance under the subject contract had been received in Washington. He was informed that it had been received approximately a week ago. He also asked if it would be at all possible to notify him by telephone, not later than the end of this month, that the Administration would allow him to proceed with at least Stage I of the newly proposed exploration. He mentioned that all parties concerned in the West were in agreement with at least this Stage of the work.

The writer explained to him that everything would be done to expedite the amendment to the contract as soon as the Field Team report and comments were received, and that it had not been the policy of the Administration to commit itself to proposed work under a contract prior to receipt of field information and approval by all concerned in Washington.

Mr. Williams stated that he had been in touch with the Reno and San Francisco offices and that he understood that the field report was ready to be mailed to Washington. He again expressed his desire to have some word from Washington by the end of the month in order that he could proceed with the same crew that has been working at the property during the last year.

He was again informed that while it would be impossible to have a contract prepared and approved and in the West by the end of the month, the Administration would do everything it could toward committing itself as soon as possible and within the delegation of its authority.

Mr. Williams telephone number in Salt Lake City is 220531, Ext. 20.

George C. Selfridge

DMA 2082X Mt. Wheeler Mines E-248

150 Feet Raises

Month	Advance Feet	Feet to Date	Costs: Equipment Rental	Equipment Purchased	Timber	Explosives	Pipe	Track	Drill steel & Bits	Power (Fuel + lube)	Other	Labor & Supervision	Totals	Totals to Date	Cost/foot	Cost/Foot to Date
June	0.0	0.0	480.57	255.21	—	—	188.03	242.11	119.84	88.95	—	—	1379.71	1379.71		
July																
August	5.0	5.0	33.54	—	—	—	—	—	4.75	0.48	14.48	89.20	142.45	1517.16	28.49	303.72
Sept.	32.0	37.0	189.24	39.80	—	—	—	—	49.13	37.70	155.79	597.06	1063.72	2580.88	33.24	69.75
Oct.	19.0	56.0	164.61	15.05	6.66	189.41	18.97	63.32	55.47	35.45	85.66	458.62	1093.22	3674.10	57.54	65.61
Nov.	6.0	62.0	45.83	28.82		5.24					29.13	66.77	175.49	3849.59	29.25	62.09
DEC.	32.0	94.0	217.83	—	42.49	13.80	—	43.49	—	53.17	117.10	301.00	788.88	4638.47	24.65	49.35

DMA 2082X MT. Wheeler Mines E-248

1000 Feet of Adit

Month	Advance Feet	Feet to Date	Costs: Equipment Rental	Equipment Purchased	Timber	Explosives	Pipe	Track	Drill steel & Bits	Power (Fuel-Lube)	Other	Labor + Supervi. //	Total	Total to Date	Cost/Foot	Cost/Foot To Date
June	0.00	0.00	3203.53	1701.30	—	—	1253.46	1613.97	798.90	592.98	—	—	9164.14			
July	123.0	123.0	1412.27	381.00	—	2102.66	—	—	148.56	164.52	336.34	2640.76	7269.11	16433.25	59.09	133.60
August	158.0	281.0	1060.06	—	—	—	—	—	150.12	15.16	457.51	2819.12	4501.97	20935.22	28.49	74.50
Sept.	82.0	363.0	484.41	101.90	—	—	—	20.59	112.97	96.49	398.77	1528.29	2743.42	23678.64	33.46	65.23
Oct.	78.5	441.5	680.15	62.21	27.53	782.60	78.38	261.63	229.22	146.47	353.95	1894.91	4517.05	28195.69	57.54	63.86
Nov	1910	612.5	1305.00	812.06		1492.8					829.43	3642.23	6738.00	34933.69	39.40	57.03
Dec.	196.5	809.0	1337.73	—	260.93	84.78	—	267.05		326.49	719.18	3931.41	6927.54	41861.23	35.25	51.74

// Includes contract labor.

Nov. 1952 New Buildings & Improvements. 1273.37

DMA 2082X Mt. Wheeler Mine

390 Feet Drifts & X-cuts

E-248

Month	Advance: Feet	Advance: Feet to Date	Costs: Equipment Rental	Equipment Purchased	Timber	Explosives	Pipe	Track	Drill steel & Bits	Power (Fuel & lube)	Other	Labor & Supervision	Total	Totals to Date	Cost/Foot	Cost/Foot To Date
June	0.0	0.0	1249.34	663.49	—	—	488.84	629.43	311.56	231.26	—	—	3573.92	3573.92		
July																
August	47.5	47.5	318.67	—	—	—	—	—	45.13	4.56	137.53	847.48	1353.37	4927.29	28.49	103.73
Sept.	125.0	172.5	738.62	155.37	—	—	—	30.88	172.26	147.13	608.03	2330.30	4182.59	9109.88	33.46	52.81
Oct.	65.5	238.0	567.51	51.91	22.97	652.99	65.41	218.30	191.26	122.21	295.33	1581.09	3768.98	12878.86	57.54	54.11
Nov.	58.5	296.5	446.44	27.80		51.07					283.75	1054.75	2113.81	14992.67	36.13	50.57
Dec.	33.5	330	241.74	—	47.15	15.32	—	48.26	—	59.00	129.95	709.26	1250.68	16243.35	35.23	48.93

2082
Docket

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

Office of
Executive Officer
DMEA Field Team
Region III

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 13 1953

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

March 9, 1953

WSM

Memorandum

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

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2082 (Tungsten), Mt. Wheeler Mines, Inc., Mt. Wheeler Mine, White Pine County, Nevada, Contract Idm-E248

There are being sent to you under separate cover three copies of a request for an amendment to the subject contract. These copies are three of the four copies submitted personally to this office by Mr. James D. Williams, President, Mt. Wheeler Mines, Inc., when he called on March 5.

Edgar H. Bailey and Roscoe Smith, of the U. S. Geological Survey, and I discussed the proposed work for six hours or more with Mr. Williams on March 5 and though we did not reach one hundred percent agreement on all items proposed, the general proposal seemed to warrant consideration on the part of DMEA.

Glenn G. Gentry, Bureau of Mines' engineer and Roscoe Smith have recently completed an examination of the Mt. Wheeler Mine and a joint Mines-Survey report is in preparation and will be completed shortly. Copies will be sent to you as soon as received. The report will discuss many of the controversial items and will contain our recommendations. You should, therefore, await the report before going too far in making up your mind what to do, despite Mr. Williams' desire to "close the deal" almost immediately, in order to keep his crew and maintain the mine in shape for resumption of exploration.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy retained 400

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

FILE COPY
SURNAME:
800

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

BW

MAR 3 1953

Mr. George Mavor
DMEA Auditor
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Contract Idm-E248
Docket DMEA-2082
Mt. Wheeler Mines, Inc.

Dear Mr. Mavor:

Receipt is acknowledged of your Audit Certificate and Audit Report on the above-cited contract. As a whole the report appears to be all right and you are authorized to make the proper distribution. J. C. 3/3/53

It is suggested that in the future the word "interim" be written as a part of the heading of an interim audit certificate. It is noted that you did state in the report itself that you had made an interim audit.

I believe Mr. Talbert participated in the audit of this contract. Acknowledgment should be made in your report of any assistance given by other employees of this Division. Whenever assistance is given by an engineer of DMEA, acknowledgment of such should also be given in the introductory statement of the report.

Reference is made to the division of the report headed New Buildings, Improvements, etc. It is very clear that some of the expenses listed under this heading probably should have been charged to other divisions of the contract. However, Mr. Talbert states that such distribution could not be made from the records maintained by the Company. I believe the distribution which you did make will be of interest to the Operating Committee of the DMEA, since the Chairman of that Committee has raised a number of questions on the project.

The report as a whole is very good and clarified a lot of questions which I had on this contract.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb
March 3, 1953

Copy to: Mails & Files
Admr. Reading File
Mr. Chambers

APPLICATION FOR AMENDMENT & MORE MONEY

made by W. P. Williams on

FEBRUARY 28, 1953.

See: Special Black Folder containing index, Stage I, Exhibits, etc., in special lay-out.

REQUEST FOR AN AMENDMENT
TO EXPLORATION PROJECT D.M.E.A. 2082- TUNGSTEN
CONTRACT Idm-E 248

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 16 1953

For the Purpose of

1. Exploring the Productive East-West Shear Zone Opened by the Pole Tunnel.

2. Exploring Other Productive East-West Shear Zones Northward from the Pole Tunnel, and

3. Extending the Pole Tunnel Eastward to the Sheffield Fissure Shear Zone.

Submitted To

MR. H. C. MILLER, EXECUTIVE OFFICER
D.M.E.A. FIELD TEAM
DEFENSE MINERALS EXPLORATION ADMINISTRATION
DEPARTMENT OF THE INTERIOR
1012 FLOOD BUILDING, 870 MARKET STREET
SAN FRANCISCO 2, CALIFORNIA

By

MT. WHEELER MINES, INC.
P.O. Box 150
SALT LAKE CITY 10, UTAH

February 28, 1953

MT. WHEELER MINES, INC.

P. O. BOX 150

SALT LAKE CITY 10, UTAH

February 28, 1953

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Contract Idm-E 248
Docket DMEA-2082-Tungsten
Mt. Wheeler Mines, Inc.
Amendment to Contract

Dear Mr. Miller:

In accordance with our several conferences and discussions, we are submitting four copies of a requested amendment to Contract Idm-E 248 to provide for additional exploration under the above captioned docket.

This amendment has been under consideration for the past three months, during which time numerous conferences were held between the Operator and Messrs. Johnson and Gentry of the Reno office, Mr. Roscoe Smith of the U.S.G.S., Salt Lake office, yourself and Mr. Bailey, and has evolved into its present scope as a cooperative effort. We are authorized to state that Messrs. Johnson, Gentry and Smith are in complete accord with the exploration program as outlined herein. At the same time we wish to thank all these gentlemen for the extraordinary efforts expended in their examination, analysis and reporting of this project.

The Abstract of Amendment, which follows this letter, will serve to give you a concise summary of the scope of the proposed work. We should also like to call your attention to the brief "Explanations of Items" which follows at the end of Stage I and Stage II "Statement of the Proposed Work". This explanatory narrative has been designed to clarify the items in the body of the amendment. Your attention is also called to Exhibit "E" which gives a complete analysis of unit costs of the program just completed, and to Exhibits "B" and "D", the work sheets showing the conversion of project costs to the various MF-104 classifications under which they will be reported monthly.

Thank you for your very kind consideration.

Very truly yours,

MT. WHEELER MINES, INC.
By

James D. Williams
President

ABSTRACT OF AMENDMENT

1. Property

Situated in Section 15, Township 12 North, Range 68 East, Mt. Diablo Base and Meridian, White Pine County, Nevada.

2. Geology and Ore

Mine is in sedimentary rocks of lower Cambrian age consisting of quartzites, shales and limestones. Productive ore zone open by present exploration in 22 foot Wheeler limestone bedding within Pioche shale series 45 feet above Basal Prospect Mountain Quartzite. The scheelite ore occurs in the lower 10 foot section of this Wheeler bed where cut by East-West trending quartz fissure shear zones having widths of 100 feet plus. Three such E-W shear zones are known to exist over a distance of 900 feet north from the Pole adit. Concentrations of scheelite usually occur where these intersections are cut by N-S fissuring.

3. Preliminary Production

(a) The initial work done by the Company in "A" and "B" Laterals South produced approximately 90 tons of ore. Grab samples taken from the cars as dumped into the stockpile averaged 2.25% WO_3.

(b) Exploration drifting, ≈ 50' of 5'x7' drift within the bedding, just completed, produced approximately 150 tons of ore. Grab samples taken from the cars as dumped into the stockpile averaged 0.85% WO_3. Since this came from exploration as broken, it contained considerable waste which would ordinarily not be mined.

Gentry 0.02 1-28-53
Tungsten 0.24 9-10-52

4. Proposed Exploration

(a) Stage I

1305 feet of exploration within the Wheeler productive bedding where cut by the E-W shear zone. This work to be done from faces opened in the bedding by exploration just completed.

(b) Stage II

1. Main Bedding Drive North

2050 feet of exploration within the Wheeler productive bedding, north up bedding dip, from No. 5 Lateral North, 800 feet east of portal in Pole adit.

2. Pole Adit Drive Easterly

4210 feet of exploration to the east of the present face of the Pole adit; 1200 feet of which will advance the adit to the important Sheffield fissure area and the balance of 3010 feet will be exploration within the Wheeler bedding north from the adit at appropriate intervals.

5. Cost and Time Estimates (As per MF-104 Items)

(a) Estimated Cost

1. Stage I

Labor and Supervision	$ 39,458.70	1300
Operating Materials and Supplies	13,764.65	
Operating Equipment	31,761.95	
Initial Reh. and Repairs	None	
New Buildings and Improvements	18,710.40	
Miscellaneous	8,252.44	
Contingencies	4,860.68	= 89 42/100
Total - Stage I	116,698.82	$116,698.82

2. Stage II

Labor and Supervision	$137,777.60	
Operating Materials and Supplies	70,092.51	
Operating Equipment	36,591.34	
Initial Reh. and Repairs	None	
New Buildings and Improvements	34,532.70	
Miscellaneous	23,079.60	
Contingencies	4,841.47	= 49 03/100
Total - Stage II	306,915.22	306,915.22
Total - Amendment		$423,614.04

(b) Estimated Time to Complete

1. Stage I

Surface Facilities	2 Months	
Underground Facilities	1	
Underground Exploration	5	
Total - Stage I	8 Months	8 Months

2. Stage II

Surface Facilities	1 Month	
Underground Facilities	1	
Underground Exploration	14	
Total - Stage II	16 Months	16
Total - Amendment		24 Months

INDEX TO AMENDMENT

I	Amendment to Contract Idm-E 248	Amendment
	(a) Stage I	Stage I
	1. Map Showing Proposed Exploration	Exhibit "A"
	2. Work Sheets Showing Conversion of Estimated Costs to MF-104 Items	Exhibit "B"
	(b) Stage II	Stage II
	1. Map Showing Proposed Exploration	Exhibit "C"
	2. Work Sheets Showing Conversion of Estimated Costs to MF-104 Items	Exhibit "D"
II	Resume of Exploration Completed	Resume
	(a) Cost Analysis	Exhibit "E"
	(b) Geological Reports	
	1. By Staff of Combined Metals	Exhibit "F"
	2. By Earl B. Young, Chief Geologist	Exhibit "G"

160 } 440
280
285
280
1005
300
1305
1200

1. Statement of the Proposed Work (See Maps - Exhibit "A")

A Underground Exploration

1. Miscellaneous Bedding Exploration

(a) From the end of "A" Lateral South, drive a 5' x 7' drift within the ore bed 40.0 feet in a southerly direction (approximately S 15° E), to cut the south quartz fissure as indicated. 40.0

(b) From the end of the above drift drive a 5' x 7' side drift easterly and westerly on the south quartz fissure, 20.0 feet in each direction to explore the south quartz fissure ore zone. 40.0

(c) Extend "A" Lateral northerly 20.0 feet to cut the north quartz fissure as indicated on the map. Drive four side drifts easterly and westerly on ore showings opened for a total of 60.0 feet. 80.0

A = 160

(d) From the end of the bedding drift in Raise No. 2, No. 1 Lateral South, drive a 5' x 7' drift within the ore bed 100.0 feet northerly (approximately N 15° W), to cut the north quartz fissure, and 20 feet easterly. From the North drift drive six short side drifts easterly and westerly in favorable ore showings opened, for a total of 90 feet. 210.0

(e) From the end of the bedding drift in Raise No. 1, No. 1 Lateral South, drive a 5' x 7' drift within the ore bed 70.0 feet northeasterly (approximately N 70° E), to determine the effect of this N 70° E fissuring upon ore deposition within the productive bed. 70.0

No 1 = 280

(f) From the end of the bedding drift in the raise in No. 3 Lateral North, drive a 5' x 7' drift within the ore bed 85.0 feet north to cut the north quartz fissure. Explore the favorable ore zones thus opened by driving six side drifts easterly and westerly for a total of 90.0 feet. 175.0

(g) From the same starting point in (f), above, drive a 5' x 7' drift within the ore bed 110.0 feet northeasterly (approximately N 70° E), to determine the nature of the mineralization within the productive bed in the area of these N 70° E quartz fissures. 110.0

No 3 = 285

(h) From the top of the raise in No. 5 Lateral North, drive a 5' x 7' drift within the ore bed 160.0 feet north to cut the north quartz fissure. Drive eight side drifts easterly and westerly to explore the ore zones opened up for a total of 120.0 feet. 280.0

(i) Other miscellaneous drifting within the productive zone, as may be reasonably indicated from the foregoing exploration, in the amount of 300 feet. This work to be approved by the Field Team before it is actually started. 300.0

B Additional Underground Facilities Required

1. Miscellaneous Bedding Exploration

(a) Build chutes and manways as follows -

1. Slide chute at "A" Lateral South.
2. Slide chute at "A" Lateral North.
3. Chute and manway at Raise No. 1, No. 1 Lateral South.
4. Chute and manway at Raise in No. 3 Lateral North.
5. Chute and manway at Raise in No. 5 Lateral North.

(b) Timber for, and install slushers as follows -

1. Install present slusher equipment at No. 1 Lateral South area for bedding exploration.
2. When exploration in (1) above is completed move slusher equipment to No. 3 Lateral North area for bedding exploration.
3. Install new slusher equipment at No. 5 Lateral North for bedding exploration.

(c) Other Preparation

1. Run air, water and ventilation lines from main tunnel to working faces.

2. Install underground air receiver.

3. Place 12 drift sets in main adit from No. 1 Lateral South, 60 ft. easterly, where bedding drifts will cross overhead.

C Additional Surface Facilities Required

1. Bins for Bulk Mill Sampling

(a) Construct a 50 ton bin at the Pole tunnel, install necessary switches and trackage and grade truck road to bin. This facility is necessary to accomplish bulk sampling of the exploration within the productive zone.

(b) Construct a wing bin at the bottom of Pole canyon for storage of the bulk sampling product in lots of 250-500 tons and for transfer into larger trucking units for haul to the mill.

2. Other Facilities

(a) Under Amendment No. 2, to Contract Idm-E-248, authorization was given to add a change room to the blacksmith shop at a

cost of $650.00. It is now requested that this change room be made into a small warehouse and a separate 16' x 20' change house, complete with all necessary facilities, be constructed at the Pole tunnel.

(b) Construct a 12' x 12' powder magazine in accordance with standard specifications of the U.S. Bureau of Mines. This facility has been ordered by the State Industrial Commission of Nevada.

(c) Prepare waste dump facilities for side dump operation.

(d) Make permanent installation of ventilating blower.

D Additional Equipment Required

1. Drilling Equipment as Follows

(a) 3 Jackhammers (2 3/4" machines)
(b) 3 Jackleg units (6 foot leg)
(c) 2 Stopers (2 5/8" machines)
(d) 3 Sets 50' x 3/4" Air hoses
(e) 3 Sets 50' x 1/2" Water hoses
(f) 1 Hitchcutter

2. Ten - 27 cubic foot capacity side dump mine cars. Amendment No. 1 to Contract Idm-E-248, provided for the rental of mine cars in the amount of $1050.00. This sum was not expended because 10 - 15 cubic foot cars were borrowed from another operation. These cars must now be returned.

3. A four-wheel drive truck of 5 ton capacity will be required for year around hauling in the canyon. This unit will be equipped with an oversize bed for also hauling supplies and a snowplow.

4. Eight underwriters approved fire extinguishers for the mine buildings; two to each.

5. One double drum slusher with necessary accessory equipment.

6. Purchase of present rental units.

2. Estimated Cost of Proposed Work (See Exhibit "E" - Past Costs)

A Underground Exploration

1. Miscellaneous Bedding Exploration - 1305 Feet

(a) "A" Lateral North and South Area - 160 Feet

1.	Contract labor	@	$13.50/Ft.	$2160.00	
2.	Pipe & ventilation		1.63	260.80	
3.	Powder, fuse & caps		2.70	432.00	
4.	Steel & bits		1.53	244.80	
5.	Timber		0.46	73.60	
6.	Fuel & Lube Air generation		1.37	219.20	
7.	Misc. small tools		0.55	88.00	
8.	Comp. Insurance		0.95	152.00	
9.	Payroll taxes		0.61	97.60	
	Total 160 Feet	@	23.30/Ft.	$3728.00	$3728.00

(b) No. 1 Lateral South Area - 280 Feet

1.	Contract labor	@	$13.50/Ft.	$3780.00	
2.	Pipe & ventilation		2.11	590.80	
3.	Powder, fuse & caps		2.70	756.00	
4.	Steel & bits		1.53	428.40	
5.	Timber		0.46	128.80	
6.	Fuel & Lube Air generation		1.37	383.60	
7.	Misc. small tools		0.55	154.00	
8.	Slusher cable		0.25	70.00	
9.	Comp. Insurance		0.95	266.00	
10.	Payroll taxes		0.61	170.80	
	Total 280 Feet	@	24.03/Ft.	$6728.40	6728.40

(c) No. 3 Lateral North Area - 285 Feet

1.	Contract labor	@	$13.50/Ft.	$3847.50	
2.	Pipe & ventilation		2.11	601.35	
3.	Powder, fuse & caps		2.70	769.50	
4.	Steel & bits		1.53	436.05	
5.	Timber		0.46	131.10	
6.	Fuel & Lube Air generation		1.37	390.45	
7.	Misc. small tools		0.55	156.75	
8.	Slusher cable		0.25	71.25	
9.	Comp. Insurance		0.95	270.75	
10.	Payroll taxes		0.61	173.85	
	Total 285 Feet	@	24.03/Ft.	$6848.55	6848.55

(d) No. 5 Lateral North Area - 280 Feet

1.	Contract Labor	@ $13.50/Ft.	$3780.00	
2.	Pipe-Ventilation	2.11	590.80	
3.	Powder-fuse-caps	2.70	756.00	
4.	Steel and bits	1.53	428.40	
5.	Timber	0.46	128.80	
6.	Fuel & Lube Air Generator	1.37	383.60	
7.	Misc. small tools	0.55	154.00	
8.	Slusher cable	0.25	70.00	
9.	Comp. Insurance	0.95	266.00	
10.	Payroll taxes	0.61	170.80	
	Total 280 Feet @	24.03/Ft.	$6728.40	6,728.40

(e) Other Miscellaneous Bedding Exploration 300 Feet

1.	Contract Labor	@ $13.50/Ft.	$4050.00	
2.	Pipe-Ventilation	2.11	633.00	
3.	Powder-fuse-caps	2.70	810.00	
4.	Steel and bits	1.53	459.00	
5.	Timber	0.46	138.00	
6.	Fuel & Lube	1.37	411.00	
7.	Misc. small tools	0.55	165.00	
8.	Comp. Insurance	0.95	285.00	
9.	Payroll taxes	0.61	183.00	
	Total 300 Feet @	23.78/Ft.	$7134.00	7,134.00
	Total Underground Exploration-Direct Costs			$31,167.35 $31,167.35

B Underground Facilities

1. Miscellaneous Bedding Exploration

a Chutes and Manways, as follows-

1. Slide chute at "A" Lateral South

(a)	Timber and supplies		$ 127.00	
(b)	Labor 4 Man-shifts @ $15.70		62.80	
(c)	Comp. Insurance	7.01%	4.40	
(d)	Payroll taxes	4.5 %	2.82	
			$ 197.02	$ 197.02

2. Slide chute at "A" Lateral North

(a)	Timber and supplies		$ 127.00	
(b)	Labor 4 shifts	@ $15.70	62.80	
(c)	Comp. Insurance	7.01%	4.40	
(d)	Payroll taxes	4.5 %	2.82	
			$ 197.02	$ 197.02

3. Chute and Manway at No. 1 Lateral South

(a)	Mining supplies		$117.20	
(b)	Timber and supplies		246.00	
(c)	Fuel and Lube			
	Air Generation		33.40	
(d)	Labor- 20 shifts	@ $15.70	314.00	
(e)	Comp. Insurance	7.01%	22.01	
(f)	Payroll taxes	4.5 %	14.13	?
			$746.74	$ 746.74

4. Chute and Manway at No. 3 Later North

(a)	Mining supplies		$117.20	
(b)	Timber and supplies		246.00	
(c)	Fuel and Lube			
	Air Generation		33.40	
(d)	Labor- 20 shifts	@ $15.70	314.00	
(e)	Comp. Insurance	7.01%	22.01	
(f)	Payroll taxes	4.5 %	14.13	?
			$746.74	746.74

5. Chute and Manway at No. 5 Lateral North

(a)	Mining supplies		$117.20	
(b)	Timber and supplies		246.00	
(c)	Fuel and Lube			
	Air Generation		33.40	
(d)	Labor- 20 shifts	@ $15.70	314.00	
(e)	Comp. Insurance	7.01%	22.01	
(f)	Payroll taxes	4.5 %	14.13	?
			$746.74	746.74

b Install 3 slushers as follows-
(Cost of each setup will be about the same - below is an example)

1. In No. 1 Lateral South

(a)	Mining supplies		$ 87.10	
(b)	Timber and misc.		79.00	
(c)	Fuel and Lube			high
	Air Generation		24.71	
(d)	Switches, bolts, etc.		90.00	
(e)	Labor- 12 shifts	@ $15.70	188.40	
(f)	Comp. Insurance	7.01%	13.21	
(g)	Payroll taxes	4.5 %	8.48	
	Total 3	@	$490.90	1472.70

c Other Preparation

1. Air, Water & Vent Lines to Working Faces

(a)	250 Ft. 2" air line		$ 87.50	
(b)	250 Ft. 1" water line		50.00	
(c)	250 Ft. 8" vent tube		190.00	
(d)	Misc fittings & valves		75.00	
(e)	Labor- 10 shifts @ $15.70		157.00	
(f)	Comp. Insurance	7.01%	11.01	
(g)	Payroll taxes	4.5 %	7.07	
			$577.58	$ 577.58

2. Install Underground Air Receiver

(a)	4' x 8' Welded tank		$564.00	
(b)	Fittings, valves, etc.		46.50	
(c)	Labor- 6 shifts @ $15.70		94.20	
(d)	Comp. Insurance	7.01%	6.60	
(e)	Payroll taxes	4.5 %	4.24	
			$715.54	715.54

3. Drift Sets for 2 feet in Adit No. 1 Lateral South Area

(a)	Timber and supplies		$738.00	
(b)	Labor-18 shifts @ $15.70		282.60	
(c)	Comp. Insurance	7.01%	19.81	
(d)	Payroll taxes	4.5 %	12.72	
			$1053.13	1053.13

4. Electric Light line in Pole Tunnel and Laterals

(a)	2000' #10/2 Conc B-x		$ 235.00	
(b)	Switches and fuses		42.00	
(c)	Insulators-junction boxes		38.00	
(d)	Lights and sockets		23.00	
(e)	Labor- 6 shifts @ $15.70		94.20	
(f)	Comp. Insurance	7.01%	6.60	
(g)	Payroll taxes	4.5 %	4.24	
			$ 443.04	443.04

Total Underground Facilities	$6896.25	$6896.25

C Additional Surface Facilities Required

1. Bins for Bulk Mill Sampling

a Mine Bin

1.	Timber and materials		$1355.00	
2.	Grading for site & road		240.00	
3.	Foundations		250.00	
4.	Trackage and switches		510.00	
5.	Labor- 74 shifts @ $15.70		1161.80	
6.	Comp. Insurance	7.01%	81.44	
7.	Payroll taxes	4.5 %	52.28	
			$3650.52	3650.52

b Wing Bin for Transfer

1.	Timber and materials		$984.00	
2.	Grading		260.00	
3.	Foundations		275.00	
4.	Labor- 52 shifts @ $15.70		816.40	
5.	Comp. Insurance	7.01%	57.23	
6.	Payroll taxes	4.5 %	36.74	
			$2429.27	$2429.27

2. Other Facilities

a Change House at Mine - 16'x20'

1.	Materials and supplies		$1383.00	
2.	Showers and toilets		570.00	
3.	Hot water & heating eqt.		425.00	
4.	Labor- 60 shifts @ $15.70		942.00	
5.	Comp. Insurance	7.01%	66.03	
6.	Payroll taxes	4.5 %	42.39	
			$3428.42	3428.42

b Powder Magazine - 12'x12'

1.	Timber and supplies		$ 529.00	
2.	Grading and excavation		160.00	
3.	Labor- 24 shifts @ $15.70		376.80	
4.	Comp. Insurance	7.01%	26.41	
5.	Payroll taxes	4.5 %	16.96	
			$1109.17	1109.17

c Waste Dump Preparation

1.	Timber and supplies		$ 316.00	
2.	Trackage and switches		315.60	
3.	Labor- 20 shifts @ $15.70		314.00	
4.	Comp. Insurance	7.01%	22.01	
5.	Payroll taxes	4.5 %	14.13	
			$ 981.74	981.74

d Permanent Blower Installation

1.	Timber and supplies		$ 55.00	
2.	Electrical supplies		90.00	
3.	Labor- 4 shifts @ $15.70		62.80	
4.	Comp. Insurance	7.01%	4.40	
5.	Payroll taxes	4.5 %	2.83	
			$ 215.03	215.03

Total Surface Facilities	$11814.15	$11,814.15

D Additional Equipment Required

1. Drilling Equipment

(a)	3 Jackhammer & jackleg units complete @ $535.00	$2675.00	
(b)	2 Stopers 550.00	1100.00	
(c)	3 Sets air & water hose	180.00	
(d)	1 Hitchcutter	125.00	
		$4080.00	$4080.00

2. Mine Cars

(a)	10-27 Cu. Ft. side dump ore cars @ $506.50	$5065.00	5065.00

3. General Purpose Truck

(a)	1 1/2 Ton Ford chasis	$2700.00	
(b)	4-Wheel drive conversion	1390.00	
(c)	Hydraulic dump bed	1200.00	
(d)	Snowplow	750.00	
		$6040.00	6040.00

4. Fire Extinguishers

(a)	8 Model 60 CO_2 Units	$ 480.00	480.00

5. Double Drum Slusher

(a)	1 Joy Model AAF-212 15 H.P.?	$2125.00	
(b)	1 30" Scraper	282.00	
(c)	3 8" Sheave blocks	129.00	
(d)	2 Eyes and wedges	28.40	
(e)	Cable for slusher	212.50	
		$2776.90	2776.90

6. Purchase of Present Rental Units

Note: Under the original Contract Idm-E-248 and Amendment No. 2, monthly rental was authorized on five pieces of equipment. A "Gentlemen's" agreement has been worked out with our suppliers granting an option to apply these rentals 100% on the purchase of these units if the transactions are completed by the payment of the cash balances plus interest by February 28, 1953. It is requested this be done.

Purchase price, rental credit and cash balances as of February 28, 1953, will be as follows -

Rental Item	Purchase Price Plus Interest	DMEA Rent Payment	Cash Balance		
Compressor	$ 9,724.22	$ 4,230.00	$ 5,494.22		
Generator	2,009.60	1,550.46	459.14		
Trammer	7,726.73	3,800.00	3,926.73		
Mucker	3,104.85	2,360.00	744.85		
Jumbo	2,338.86	770.00	1,568.86		
	$24,904.26	$12,710.46	$12,193.80	12,193.80	
		Total Additional Equipment Required		$30,635.70	$30,635.79

does not check - 12,541.54 should be

E Supervisory and Supporting Labor

1. Supervisory and Technical

(a)	Supt., Engineer and Geologist 8 Mo @ $650/Mo		$ 5,200.00	
(b)	Working Foreman 8 Mo.	500	4,000.00	
			$ 9,200.00	9,200.00

2. Supporting Labor (Mine Operations Only)

(a)	Timekeeper, warehouseman & compressorman 8 Mo @ $450/Mo		$ 3,600.00	
(b)	Cook 8 Mo	300	2,400.00	
(c)	Combination underground and surface maintenance man -2 shifts $14.50/day & O.T. 8 Mo	408.20	6,531.20	
			$12,531.20	12,531.20

3. Comp. Insurance & Payroll Taxes

(a)	Comp. Insurance	@ 7.01%	$ 1,523.38	
(b)	Payroll taxes	4.5 %	977.90	
			$ 2,501.28	2,501.28
		Total Supervisory and Supporting		$24,232.48	24,232.48

F Other Costs

1. Freight on Supplies (Salt Lake to Mine)

(a)	Pipe & vent lines 5200# @ $0.75/Cwt.	$ 390.00	
(b)	Timber and lumber 105300# 0.75/Cwt.	789.75	
(c)	Miscellaneous supplies 17500# 0.75/Cwt.	131.25	
		$ 1,311.00	1,311.00

2.	Freight on Equipment			
	(a) Factory to Salt Lake	$ 712.50		
	(b) Salt Lake to mine - 116,200#	413.75		
		$ 1126.25	1,126.25	
3.	Truck Operation			
	(a) 2392 miles per month @ 10¢/ mile operation and maintenance 7 months	$ 1674.40		
	(b) Operator's wages @ $14.50/ shift & O.T.-7 Mo 408.20	2857.40		
	(c) Comp. Insurance @ 7.01	200.30		
	(d) Payroll taxes 4.5 %	128.58		
		$ 4860.68	4,860.68	?
4.	Accounting and Blueprinting			
	(a) Project accounting 8 Mo @ $100/Mo	$ 800.00		
	(b) Report printing and copy 8 Mo @ 55/Mo	440.00		
		$ 1240.00	1,240.00	
5.	Jeep Mileage (Rental)			
	(a) Allowance for actual mileage required for reasonable and necessary project travel-Est. 1200 M/Mo @ $.08/Mile - 8 Mo.	$ 768.00	768.00	?
6.	Assaying			
	(a) Est. 78 samples per month @ $2.00/Sample - 8 Mo.	$ 1248.00	1,248.00	
7.	Equipment Repairs (Incl. Freight)			
	(a) On basis of past experience 1305 Ft. @ $0.352/Ft.	$ 459.36	459.36	
8.	Misc. Operating Supplies (Purchased Locally)			
	(a) On basis of past experience 1305 Ft. @ $0.72/Ft.	$ 939.60	939.60	
	Total Other Costs		$11,952.89	11,952.89
	Total Estimated Cost of Project			$116,698.82

RECAP OF COSTS - STAGE I

A	Underground Exploration - Direct		$ 31,167.35
B	Underground Facilities		6,896.25
C	Surface Facilities		11,814.15
D	Additional Equipment		
	1. New Equipment	$18,441.90	
	2. Purchase Present Rental Units	12,193.80	
		$30,635.70	30,635.70
E	Supervisory & Supporting Labor		24,232.48
F	Other Costs		11,952.89
		Total Estimated Cost of Project	$116,698.82

RECAP OF ESTIMATED COSTS - STAGE I

Amendment to Contract Idm- E-248
Conforming to MF-104 Classification of Items
(See Worksheet - Exhibit "B" For Conversion)

		Unit Detail	Unit Total
1.	Independent Contracts	$ None	$ None
2.	Labor and Supervision		
	(a) Labor	30,148.70	
	(b) Supervision	9,200.00	
	(c) Technical	None	
		$39,348.70	39,348.70
3.	Operating Materials and Supplies		
	(a) Misc. Operating Supplies	$ 939.60	
	(b) Timber	600.30	
	(c) Explosives	3,523.50	
	(d) Pipe and Ventilation	2,676.75	
	(e) Track	None	
	(f) Fuel and Lube	1,787.85	
	(g) Steel and Bits	1,996.65	
	(h) Misc. Small Tools	929.00	
	(i) Freight	1,311.00	
		$13,764.65	13,764.65
4.	Operating Equipment		
	(a) Purchase and Freight	$31,761.95	31,761.95
5.	Initial Rehabilitation and Repairs	None	None
6.	New Buildings and Improvements		
	(a) Materials and Labor	$18,710.40	18,710.40
7.	Miscellaneous		
	(a) Accounting and Blueprinting	$ 1,240.00	
	(b) Repairs to Equipment	459.36	
	(c) Assaying	1,248.00	
	(d) Payroll Taxes	1,773.95	
	(e) Compensation Insurance	2,763.13	
	(f) Administrative (Jeep Mileage)	768.00	
		$ 8,252.44	8,252.44
8.	Contingencies		
	(a) Truck Operation	$ 4,860.68	4,860.68
		Total Estimated Project Cost	$116,698.82

EXPLANATION OF STAGE I ITEMS

A Basis of the Exploration (Please refer to Exhibit "A")

The work, as set forth in items (a) to (h) on page 1, has been designed for the specific purpose of securing the necessary information regarding the nature and extent of scheelite mineralization in the area where the Wheeler bed and the East-West trending quartz fissure shear zone intersect. We do not know the North-South extent of this shear zone, but for the purpose of Stage I we have set an arbitrary width of 100 feet as indicated on Exhibit "A". The lateral drives in the bed, as indicated, will serve to explore this ore zone sufficiently to establish known limits, nature and extent of the ore and probable mining grade. This geological information is necessary in order to plan properly the Exploration requested in Stage II.

Item (h) on page 1, provides for 300 feet of miscellaneous work in the bed as may reasonably be indicated from the other exploration. This footage has been requested on the theory that some additional work may become a necessity. For example, in the drives northerly within the bed it may be that the arbitrary north limit of the East-West trending shear zone can be moved north by adding footage to the drive. This would certainly be true if, at the end of the authorized footage, ore were still in the face. Or, as another example, if the short East-West drives in the bed should show some unusual or different condition it may be that some additional footage might be required. Or, as yet another example, we may wish to drive in the bed from the top of the raise in No. 6 Lateral North to determine the effect of the fault just ahead. There may be many such reasons for this contingent footage.

B Additional Underground Facilities

These are self-explanatory. The chutes and manways are required for muck storage and subsequent loading into cars for tramming either to the waste dump or the ore bin. The slushers, of course, keep the labor cost down and provide a rapid means of removing the muck from the face so that the drilling cycle may have maximum time. The air receiver serves to maintain more constant air pressure and to remove moisture from the lines. The drift sets in the Pole adit in the vicinity of No. 1 Lateral South are necessary because the ground in this area is quite broken and the bottom of the bedding drifts will pass overhead at not more than five feet. This timber will keep the bedding drifts from breaking thru into the Pole adit.

C Additional Surface Facilities

where

The bins are required as a part of the bulk sampling of the bedded ore produced by this exploration. This program was originally suggested by Mr. Glen Gentry of the U.S.B.M., Reno office, and Mr. Roscoe Smith of the U.S.G.S., Salt Lake office, and concurred in fully by the operator. It is clearly recognized that this method of collecting large tonnages (250-500 tons) of the ore as mined, and milling this ore in one batch will provide the only practical means by which acceptable assay values may be obtained.

The 1305 feet of 5' x 7' exploration in the bed will produce approximately 4500

tons of muck. We have no definite basis upon which to estimate the proportion which will be ore but experience indicates that it may be considerable. In the main, the waste and ore fractions will be selected by estimation under the ultra violet light on each muck pile broken each day.

Under other facilities we have requested a change house by itself. During the past operation the need for a small warehouse was clearly demonstrated. We have no storage space for supplies; as a result they get scattered, lost, damaged by weather, etc. Shortages develop which holds up work because there is no control over inventory. By constructing a change house we can then use the space previously given to it for a small warehouse. This is really a must.

The powder magazine is also a must. We purchase our explosives in half carload lots to gain the advantage of price and free delivery to the mine. State law requires that we provide a U.S. Bureau of Mines approved storage magazine. Heretofore we have stored this powder underground.

The waste dump preparation and permanent blower installation are items that will facilitate the operation materially. They were deferred from the original project in the interests of time.

D. Additional Equipment Required

The drilling equipment is necessary to the performance of the exploration. Under the original contract no provision was made for the purchase of stopers or jackhammers for the raise and bedding drift work. Five such units were borrowed from another operation, at no cost to this project, but must now be returned. The item of ten mine cars is on this same basis.

A 4-wheel drive truck unit is a necessity because of the steep grades, switchbacks, and snow and ice conditions during the winter months. A snowplow attachment will solve the road maintenance problem during the snow season.

The balance of the items is self-explanatory.

E. Project Costs

These are based upon past experience and are considered very representative of what we may actually expect. The contract labor rate of $13.50 per foot allows a little leeway over past costs of $10.81 per foot but the drives in the bed with manual setup, double handling of the muck and numerous side drifts will probably add at least $2.00 per foot over past costs. This $13.50 represents maximum cost to be allowed; if it can be done for less it will be so done.

On other item which may require analysis is that of Supervisory and Supporting Labor. In this amendment an effort has been made to be more realistic than in the prior contract, as regards supervision, technical and clerical services. This is a very isolated operation at 8000 foot altitude. It is difficult to get good men to stay, especially those with families. In the past we failed to provide adequate supervision for the night shift with the result that in two sections of the adit grades became too steep and the tunnel section became

undersize. Considerable time and expense was involved in correcting these conditions. Salaries have been set to conform to those offered for similar work at Pioche and Ely where city living prevails.

A clerical office must be provided for; this for time card use in properly distributing costs of the project, purchasing and warehouse withdrawals, and for payroll at the mine. This latter item is of greatest importance as our mail delivery is but twice per week and we must drive 18 miles to get it. This results in late arrival of the payroll at the Salt Lake office and no matter how quickly the checks are mailed back, pay day is usually 3-5 days late and the men raise hell about it.

The other supporting labor is self-explanatory. A cook is as much a necessity as the compressor or powder. One man on each shift for maintenance, repair and equipment operation is an absolute minimum requirement.

F Time Estimate

The time required to complete Stage I of this amendment is estimated as follows -

1.	Construction of bins, Change House, Powder Magazine and other surface facilities	2 Months
2.	Installing chutes, manways, slushers and other underground facilities	1
3.	Underground exploration, 1305 feet @ 260 feet per month	5
	Total Estimated Time	8 Months

FOREWORD TO STAGE II

In discussing this program with Mr. Roscoe Smith of the U.S.G.S., Salt Lake Office, and Messrs. A. C. Johnson and Glen Gentry, U.S.B.M., Reno Office, agreement was reached that the commencement of Stage II should be contingent upon certain results of Stage I. Briefly, these conditions are as follows -

1. The Pole adit drive easterly shall not be started until the bedding exploration from No. 5 Lateral North, as outlined in paragraph (h) on page 1 of the Statement of the Work for Stage I, shall have demonstrated commercial tungsten ore within the East-West shear zone as indicated in Exhibit "A". In the event this bedding exploration is negative, then part of the 300 feet of miscellaneous drifting in the bed, as provided for in paragraph (i) on page 1 of the Statement of the Work for Stage I, shall be used to drive a bedding drift northerly in the region of No. 6 Lateral North, and if this exploration shall find commercial tungsten ore in the East-West shear zone, then the Pole adit drive easterly may be started.

2. The Main Bedding Drive North, cannot, of course, be started until the exploration of Stage I is completed northerly from No. 5 Lateral North. While this drive is not to be contingent upon positive results from Stage I work, nevertheless the Main North Bedding Drive is to proceed only in 525 foot sections with the second, or last, 525 foot section contingent upon the results of the first section. How could the field have agreed to this?

The operator is in full accord with these limitations. It is suggested that authority to proceed, under the conditions above outlined be secured by request to the Executive Officer, DMEA Field Team, San Francisco, California.

1. Statement of the Proposed Work (See Map - Exhibit "C")

A Underground Exploration

1. Main Bedding Drive North

a Starting at the end of the bedding drift driven 160 ft. northerly from the raise in No. 5 Lateral North, as outlined in Stage I of this request, drive a 5'x 7' slusher drift, within the productive bed, up bedding dip, approximately 1050 feet to explore the intersections of additional E-W shear zones with the Wheeler bed and to cut the strong north quartz fissure shear zone as indicated ?

b At appropriate intervals, as indicated from the advance, drive twelve short side drifts easterly and westerly, within the bed, on favorable E-W shear zones. While the exact location and extent of these side drifts will be dictated by conditions found at the time, their total footage shall not exceed 600 feet.

c At approximately the center of the drive, run two side drifts within the E-W shear zone, easterly and westerly, a distance of 100 feet each.

d Drive a side drift easterly and westerly within the north quartz fissure zone a distance of 100 feet each.

2. Pole Tunnel Drive Easterly

a Extend the Pole tunnel 1200 feet easterly (approximately S-80° E to E-W), following just under the lime-shale contact as heretofore, to cut the Sheffield fissure and accompanying north trending shear zone.

b Drive six short laterals northerly approximately 40 feet within the strongest N-S trending shear zones cut by the tunnel advance. If practical, these laterals should be driven near the center of each 200 foot section of advance.

c From the end of each lateral drive a short raise into the productive ore bed (approximately 25 ft.).

d From the top of each raise drive a 5' x 7' drift northerly within the ore bed to cut the productive E-W zone. These drifts will probably vary in length but their total is not to exceed 900 ft.

e From each of these drifts up bedding, at appropriate points of ore occurrence as indicated from the advance, drive six side drifts easterly and westerly to explore the E-W ore zone. The total of these six side drifts not to exceed 120 ft. in each area.

f Drive a 5'x 7' slusher drift 500 ft. northerly up bedding dip at the Sheffield fissure-Wheeler bed intersection, with 8 side drifts to explore favorable ore zones. These 8 side drifts not to exceed an aggregate of 200 ft. ?

(g) Drive a 5'x 7' drift southerly on the Sheffield fissure, with 4 side drifts to explore favorable ore zones. These 4 side drifts not to exceed an aggregate of 100 ft.

B Additional Underground Facilities Required

1. Main Bedding Drive North

(a) Install power line in Pole tunnel with necessary branch circuits.

(b) Replace air slusher with electric slusher at No. 5 Lateral North.

(c) Install permanent blower line in Pole tunnel with necessary take-offs for laterals.

2. Pole Tunnel Drive Easterly

(a) Cut passing track at interval 1100-1150 ft. from portal (to be cut concurrently with advance by widening).

(b) "Cherry-Picker" for drive easterly.

(c) Install second underground air receiver.

(d) Install 6 chutes and manways in raises at end of short laterals.

C Additional Surface Facilities Required

1. Mine Water System

(a) Excavate a 4'x 4' cribbed well at North Pole Canyon Springs, approximately 25 ft. in depth, in order to collect sub-surface water flowing in wash.

(b) Install a 1 H.P., 25 g.p.m. pump to elevate water approximately 150 ft. vertically into mine storage tank. Length of this line will be approximately 250 feet; 1 1/2" pipe will be used. Construct a small shelter over well and pump.

(c) Install a 10,000 gal. capacity redwood water storage tank at north bulldozer cut. This will give an effective pressure head of 90 ft. at the portal of the Pole tunnel.

(d) Run a 2" supply line from this storage tank to the Pole tunnel. This line will be approximately 900 ft. in length and be buried 3 ft. to prevent freezing.

(e) Run a single phase 240 volt power line from the generator building to the pump for remote control operation.

2. Generator Building and Facilities

(a) Construct a 16'x 20' wood frame generator building with sheet metal

outside covering, sheetrock inside finish and concrete floor. To contain the necessary windows, doors and heating equipment.

(b) Pour a 4'x 7'x 3' concrete foundation for the generator unit.

(c) Install switchboard containing the necessary meters and control equipment.

(d) Install a 2250 gal. fuel storage tank with necessary foundations, valves, fittings and piping. Run feed and return lines into generator building.

(e) Install 2- 5 KW., 480/240/110 volt single phase transformers; one for surface lights and water pump and one for the underground light circuit.

3. Other Facilities

(a) Construct a 28'x 36' bunkhouse to accommodate 6 additional men. This unit will be of frame construction, sheet metal covered outside, sheetrock inside finish and will contain the necessary wash, shower, toilet and heating facilities. With the completion of this unit a crew of 16 can be adequately housed and fed. The balance of camp has been constructed with company funds.

(b) Cooling Tower for Compressed Air.
Construct a 5'x 5'x 8' evaporation cooling tower with simple header heat exchanger to cool compressed air and remove excess moisture before entering underground lines. Water in the air lines has been a very serious problem during the past operations.

D Additional Equipment Required

1. One electric generator, 50 K.W., at 0.8 P.F., 480 volt, 60 cycle, 3 phase direct connected to a Cummins diesel engine, Model HGA-601 rated at 77 H.P. continuous at 1200 r.p.m. up to 10,000 ft. altitude. This unit to be equipped with Woodward Hydraulic Governor, Sylphone safety shut down, 24 volt starting system and a switchboard complete with automatic voltage regulator, circuit breaker, voltmeter ammeter and continuous KW demand meter.

2. One 315 cu. ft. diesel driven air compressor.

3. Ten - 27 cu. ft. capacity side dump ore cars. These additional cars will be used exclusively in the Pole heading.

4. Electric Slushers as Follows -

(a) 1 - 15 H.P. and 2 - 7 1/2 H.P. slushers for main bedding drive north for tandem slusher setup. Complete with necessary accessory equipment.

(b) 1- 15 H.P. slusher for drive up Sheffield-Wheeler bed intersection, complete with all necessary accessory equipment.

2. Estimated Cost of the Proposed Work

A Underground Exploration

1. Main Bedding Drive North - 2050 Feet

a Main Drift - 1050 Feet 5'x 7' Section

(1)	Contract labor	@ $13.50/Ft.	$14,175.00	
(2)	Pipe-Ventilation	2.11	2,215.50	
(3)	Powder-fuse-caps	2.70	2,835.00	
(4)	Steel and bits	1.53	1,606.50	
(5)	Timber	0.46	483.00	
(6)	Fuel and Lube Air Generation	1.37	1,438.50	
(7)	Misc. small tools	0.55	577.50	
(8)	Slusher cable	0.25	262.50	
(9)	Power cable	1.00	1,050.00	
(10)	Comp. Insurance	0.95	997.50	
(11)	Payroll taxes	.61	640.50	
	Total - 1050 Ft.	@ $25.03/Ft.	$26,281.50	$26,281.50

b Side Drifts- 1000 Ft. 5'x 7' Section

(1)	Contract labor	@ $13.50/Ft.	$13,500.00	
(2)	Pipe-Ventilation	1.03	1,030.00	
(3)	Powder-fuse-caps	2.70	2,700.00	
(4)	Steel and bits	1.53	1,530.00	
(5)	Fuel and Lube Air Generation	1.37	1,370.00	
(6)	Misc. small tools	0.55	550.00	
(7)	Comp. Insurance	0.95	950.00	
(8)	Payroll taxes	0.61	610.00	
	Total - 1000 Ft.	@ $22.24/Ft.	$22,240.00	22,240.00

2. Pole Tunnel Drive Easterly - 4210 Feet

a Main Adit - 1200 Feet

(1)	Contract labor	@ $13.50/Ft.	$16,200.00
(2)	Trackage	2.60	3,120.00
(3)	Pipe-Ventilation	2.11	2,532.00
(4)	Powder-fuse-caps	2.70	3,240.00
(5)	Steel and bits	1.53	1,836.00
(6)	Timber	0.46	552.00

(7)	Fuel and Lube Air Generation	@ $ 1.37/Ft.	$ 1,644.00	
(8)	Mis. small tools	0.55	660.00	
(9)	Comp. Insurance	0.95	1,140.00	
(10)	Payroll taxes	0.61	732.00	
	Total - 1200 Ft.	@ $26.38/Ft.	$31,656.00	$31,656.00

b Laterals and South Sheffield Drift - 540 Feet

(1)	Contract labor	@ $13.50/Ft.	$ 7,290.00	
(2)	Installing switch. 7 @ $29 - $203	0.38	205.20	
(3)	Trackage	2.60	1,404.00	
(4)	Powder-fuse-caps	2.70	1,458.00	
(5)	Steel and bits	1.53	826.20	
(6)	Timber	0.46	248.40	
(7)	Fuel and Lube Air Generation	1.37	739.80	
(8)	Misc. small tools	0.55	297.00	
(9)	Comp. Insurance	0.98	529.20	
(10)	Payroll taxes	0.63	340.20	
	Total - 540 Ft.	@ $24.70/Ft.	$13,338.00	13,338.00

c Raises and Bedding Drifts - 1770 Feet

(1)	Contract labor	@ $13.50/Ft.	$23,895.00	
(2)	Pipe-Ventilation	1.63	2,885.10	
(3)	Powder-fuse-caps	2.70	4,779.00	
(4)	Steel and bits	1.53	2,708.10	
(5)	Timber	0.46	814.20	
(6)	Fuel and Lube Air Generation	1.37	2,424.90	
(7)	Mis. small tools	0.55	973.50	
(8)	Comp. Insurance	0.95	1,681.50	
(9)	Payroll taxes	0.61	1,079.70	
	Total - 1770 Ft.	@ $23.30/Ft.	$41,241.00	41,241.00

d Drift up Intersection of Sheffield Fissure-Wheeler Bed - 700 Feet

(1)	Contract labor	@ $13.50/Ft.	$ 9,450.00	
(2)	Pipe-Ventilation	1.63	1,141.00	
(3)	Powder-fuse-caps	2.70	1,890.00	
(4)	Steel and bits	1.53	1,071.00	
(5)	Timber	0.46	322.00	
(6)	Fuel and Lube Air Generation	1.37	959.00	
(7)	Misc. small tools	0.55	385.00	
(8)	Slusher cable	0.25	175.00	
(9)	Comp. Insurance	0.95	665.00	
(10)	Payroll taxes	0.61	427.00	
	Total - 700 Ft.	@ $23.55/Ft.	$16,485.00	16,485.00
	Total Underground Exploration - Stage II			151,241.50 $151,241.50

B Additional Underground Facilities Required

1. Main Bedding Drive North

a Power Line in Pole Tunnel

(1)	1200 Ft. #4/3 cond. cable (used if possible)		$ 1,980.00	
(2)	Switches, fuses, etc.		125.00	
(3)	Hangers, wire, etc.		75.00	
(4)	Labor- 8 shifts @	$15.70	125.60	
(5)	Comp. Insurance	7.01%	8.80	
(6)	Payroll taxes	4.5 %	5.65	
			$2,320.05	$2,320.05

b Replace Air Slusher at No. 5 North with Electric Slusher

(1)	Switches, fuses, etc.		$ 75.00	
(2)	Materials and supplies		25.00	
(3)	Labor-10 shifts @	$15.70	157.00	
(4)	Comp. Insurance	7.01%	11.00	
(5)	Payroll taxes	4.5 %	7.07	
			$ 275.07	275.07

c Install Permanent Ventilation Line in Pole Tunnel

(1)	1200 Ft. 18"x 24 gauge galv. line @ $1.75/Ft.		$2,100.00	
(2)	Fittings-gates-hangers		275.00	
(3)	Tape-tar-tie wire, etc.		75.00	
(4)	Labor-16 shifts @	$15.70	251.20	
(5)	Comp. Insurance	7.01%	17.61	
(6)	Payroll taxes	4.5 %	11.30	
			$2,730.11	2,730.11

2. Pole Tunnel Drive Easterly

a Passing Track

(1)	Extra footage allowance for enlarged section 75 Ft. @	$ 5.00	$ 375.00	
(2)	Installing switches		58.00	
(3)	Extra powder, steel bits, etc.		150.00	
(4)	Switches, rail, ties		412.00	
(5)	Comp. Insurance @	7.01%	30.35	
(6)	Payroll taxes	4.5 %	19.49	
			$1,044.84	1,044.84

b "Cherry Picker"

(1)	Lifting mechanism		$ 250.00		
(2)	Beam-rollers & chain		175.00		
(3)	Valves-piping-hose		75.00		
(4)	Labor- 2 shifts @	$15.70	31.40		
(5)	Comp. Insurance	7.01%	2.20		
(6)	Payroll taxes	4.5 %	1.41		
			$ 535.01	$ 535.01	

c Air Receiver

(1)	4'x 8' Welded tank		$ 564.00		
(2)	Fittings-valves, etc.		46.50		
(3)	Labor- 6 shifts @	$15.70	94.20		
(4)	Comp. Insurance	7.01%	6.60		
(5)	Payroll taxes	4.5 %	4.24		
			$ 715.54	715.54	

d Chutes and Manways in Laterals

(1)	Mining supplies		$ 117.20		
(2)	Timber and supplies		246.00		
(3)	Fuel and Lube Air Generation		33.40		
(4)	Labor-20 shifts @	$15.70	314.00		
(5)	Comp. Insurance	7.01%	22.01		
(6)	Payroll taxes	4.5 %	14.13		
	6 Units @		$ 746.74	4,480.44	
		Total			
	Underground Facilities - Stage II			12,101.06	$12,101.06

C Additional Surface Facilities Required

1. Mine Water System

a Cribbed Well

(1)	Timber		$ 190.50		
(2)	Small building		250.00		
(3)	Labor-20 shifts @	$15.70	314.00		
(4)	Comp. Insurance	7.01%	22.01		
(5)	Payroll taxes	4.5 %	14.13		
			$ 790.64	$ 790.64	

b Pump and Pump Line

(1)	1 H.P. Pump		$ 225.00		
(2)	Electric eqt.-supplies		90.00		
(3)	Pipe-fittings-valves		137.50		
(4)	Labor-12 shifts @	$15.70	188.40		
(5)	Comp. Insurance	7.01%	13.21		
(6)	Payroll taxes	4.5 %	8.48		
			$ 662.59	662.59	

c Water Storage Tank

(1)	10,000 Gal. tank		$ 900.00	
(2)	Foundations		150.00	
(3)	Labor-20 shifts @	$15.70	314.00	
(4)	Comp. Insurance	7.01%	22.01	
(5)	Payroll taxes	4.5 %	14.13	
			$1,400.14	$ 1,400.14

d Water Supply Line to Pole Tunnel

(1)	950 Ft. 2" Pipe		$ 332.50	
(2)	Labor - laying pipe		94.20	
(3)	Labor - trenching		471.00	
(4)	Comp. Insurance @	7.01%	39.62	
(5)	Payroll taxes	4.5 %	25.43	
			$ 962.75	962.75

e Power Line to Pump

(1)	Poles and hardware		$ 350.00	
(2)	Wire & insulators		475.00	
(3)	Control equipment		75.00	
(4)	Labor-20 shifts @	$15.70	314.00	
(5)	Comp. Insurance	7.01%	22.01	
(6)	Payroll taxes	4.5 %	14.13	
			$1,250.14	1,250.14

2. <u>Generator Building and Facilities</u>

a & b Building - 16'x 20' and Foundations

(1)	Materials-supplies		$1,383.00	
(2)	Foundations-materials		265.00	
(3)	Labor-56 shifts @	$15.70	879.20	
(4)	Comp. Insurance	7.01%	61.63	
(5)	Payroll taxes	4.5 %	39.56	
			$2,628.39	2,628.39

c Switchboard

(1)	All switchboard equipment is included in the price of the generator unit quoted in Section D below.			
(2)	Materials and supplies		$ 106.40	
(3)	Labor- 6 shifts @	$15.70	94.20	
(4)	Comp. Insurance	7.01%	6.60	
(5)	Payroll taxes	4.5%	4.24	
			$ 211.44	211.44

d Fuel Storage Tank

(1)	2250 Gal. steel tank		$ 318.50	
(2)	Foundations		75.00	
(3)	Pipes-valves-fittings		35.00	
(4)	Labor- 6 shifts @	$15.70	94.20	
(5)	Comp. Insurance	7.01%	6.60	
(6)	Payroll taxes	4.5 %	4.24	
			$ 533.54	$ 533.54

e Transformers

(1)	2- 5 K.W. 480/240/110 V.		$ 240.00	
(2)	Switches and wiring		62.50	
(3)	Labor- 4 shifts @	$15.70	62.80	
(4)	Comp. Insurance	7.01%	4.40	
(5)	Payroll taxes	4.5 %	2.83	
			$ 372.53	372.53

3. Other Facilities

a Bunkhouse for Added Crew

(1)	Materials-supplies		$ 6,915.00	
(2)	Shower-toilet facilities		790.00	
(3)	Room furnishings		652.75	
(4)	Hot water & heating		565.00	
(5)	Labor-234 shifts @	$15.70	3,673.80	
(6)	Comp. Insurance	7.01%	257.53	
(7)	Payroll taxes	4.5 %	165.32	
(8)	Site preparation		160.00	
			$13,179.40	13,179.40

b Cooling Tower

(1)	Lumber-supplies		$ 90.00	
(2)	Heat exch. and trap		175.00	
(3)	Labor-10 shifts @	$15.70	157.00	
(4)	Comp. Insurance	7.01%	11.01	
(5)	Payroll taxes	4.5 %	7.07	
			$ 440.08	440.08
	Total Surface Facilities - Stage II			22,431.64 $22,431.64

D Additional Equipment Required

1. Diesel - Electric Generator

(a)	1- Model HGA-601, 50 K.W. @ 0.8 P.F., 480 V., 60 cycle, 3 phase generator unit complete with switchboard and control	$ 7,880.25
(b)	Installation- 8 shifts @ $15.70	125.60

D Additional Equipment Required - (Cont.)

(c)	Comp. Insurance	@	7.01%	$ 8.80	
(d)	Payroll taxes		4.5 %	5.65	
				$ 8,020.30	$ 8,020.00

2. Air Compressor

(a)	1- 315 Cu. Ft. Joy Model WK-80 skid mounted diesel unit			$ 8,514.00	
(b)	Foundation			225.00	
(c)	Piping-valves-etc.			75.00	
(d)	Installation 12- shifts	@	$15.70	188.40	
(e)	Comp. Insurance		7.01%	13.21	
(f)	Payroll taxes		4.5%	8.48	
				$ 9,024.09	9,024.09

3. Mine Cars

(a)	10- 27 Cu. Ft. side dump ore cars	@	$506.50	$ 5,065.00	5,065.00

4. Electric Slushers

(a)	1- 15 H.P. Mod. B-2F-211			$ 2,900.00	
	2- 7 1/2 H.P. Mod. AAF-212			4,250.00	
(b)	1- 15 H.P. Mod. B-2F-211			2,900.00	
(c)	2- Welded scrapers - 36"			630.00	
(d)	6- 8" Sheave blocks			258.00	
(e)	6- Eyes and wedges			85.20	
(f)	Cable for above units			1,350.00	
				$12,373.20	12,373.20

Total New Equipment - Phase II	34,482.59	$34,482.59

E Supervisory and Supporting Labor

1. Supervisory and Technical

(a)	Gen. Supt. 16 Mo.	@	$650/Mo	$10,400.00	
(b)	Engineer-Geologist 16 Mo.		550	8,800.00	
(c)	Working Foreman 16 Mo.		500	8,000.00	
				$27,200.00	27,200.00

2. Supporting Labor (Mine Operations Only)

(a)	Timekeeper, warehouseman and compressorman - 16 Mo.	@ $450/Mo	$ 7,200.00	
(b)	Cook - 16 Mo.	350	5,600.00	
(c)	2 Combination underground & surface maintenance men - @ $14.70 Day- 2 @ $408.20/Mo. 16 Mo.		13,062.40	
			$25,862.40	$25,862.40

3. Comp. Insurance & P.R. Taxes

(a)	Comp. Insurance	@ 7.01%	$ 3,719.67	
(b)	Payroll taxes	4.5%	2,387.81	
			$ 6,107.48	6,107.48
	Total Supervisory and Supporting - Stage II			59,169.88 $59,169.88

F Other Costs

1. Freight on Supplies (Salt Lake to Mine)

(a)	Trackage-45,160#	@ $ 0.75/Cwt	$ 338.70	
(b)	Pipe lines-42,450#	0.75	318.38	
(c)	Timber & lumber-195,300#	0.75	1,464.75	
(d)	Mine supplies-27,500#	0.75	385.00	
			$2,506.83	2,506.83

2. Freight on Equipment

(a)	Factory to Salt Lake 47,500#	$1,662.50	
(b)	Salt Lake to Mine 59,500#	446.25	
		$2,108.75	2,108.75

3. Truck Operation

(a)	750 Miles per mo. @ 10¢ per mile operation & maintenance 16 mo.		$1,200.00	
(b)	Wages of operator-1/2 shift @ $14.50 + O.T. $204.10 - 16 mo.		3,265.60	
(c)	Comp. Insurance	@ 7.01%	228.92	
(d)	Payroll taxes	4.5%	146.95	
			$ 4,841.47	4,841.47

4. Electric Power Generation (Basis 3/4 Load)

(a)	Fuel- 3.26 gal/hr. (3.26)(24)(26)(16)(.178)		$ 5,793.52	
(b)	Lubrication-390 gal @	$ 0.80	312.00	
(c)	Filters & misc. repairs		239.26	
			$ 6,344.78	$6,344.78

5. Accounting and Blueprinting

(a)	Project accounting @ 16 Mo.	$100	$ 1,600.00	
(b)	Reporting printing & copy- 16 Mo.	55	880.00	
			$ 2,480.00	2,480.00

6. Jeep Mileage (Rental)

(a)	Allowance for actual mileage required for all reasonable & necessary project trans. Est. 1200 miles/mo. @	0.08	$ 1,536.00	1,536.00

7. Assaying

(a)	Estimated 30 samples per mo. @ $2.00/sample - 16 Mo.		$ 960.00	960.00

8. Equipment Repairs (Inc. Freight)

(a)	On basis of past experience 6260 Ft. @ $0.352/Ft.		$ 2,203.52	2,203.52

9. Misc. Operating Supplies (Purchased Locally)

(a)	On basis of past experience 6260 Ft. @ $0.72/Ft.		$ 4,507.20	4,507.20
	Total Other Costs - Stage II			27,488.55
	Total Estimated Cost - Stage II			$306,915.22

RECAP OF COSTS - STAGE II

A	Underground Exploration - Direct		
	1. Main Bedding Drive North	$ 48,521.50	
	2. Pole Tunnel Drive Easterly	102,720.00	
		$151,241.50	$151,241.50
B	Underground Facilities		
	1. Main Bedding Drive North	$ 5,325.23	
	2. Pole Tunnel Drive Easterly	6,775.83	
		$ 12,101.06	12,101.06
C	Surface Facilities	$ 22,431.64	22,431.64
D	New Equipment	$ 34,482.59	34,482.59
E	Supervisory & Supporting Labor	$ 59,169.88	59,169.88
F	Other Costs	$ 27,488.55	27,488.55
	Total Estimatec Cost - Stage II		$306,915.22

RECAP ESTIMATED COSTS - STAGE II

Amendment to Contract Idm- E-248
Conversion to Classification of MF-104 Items
(See Worksheet - Exhibit "D" for Conversion)

		Unit Detail	Unit Total
1.	Independent Contracts	$ None	$ None
2.	Labor and Supervision		
	(a) Labor	110,577.60	
	(b) Supervision	18,400.00	
	(c) Technical	8,800.00	
		137,777.60	137,777.60
3.	Operating Materials & Supplies		
	(a) Misc. Operating Supplies	4,507.20	
	(b) Timber	2,419.60	
	(c) Explosives	16,902.00	
	(d) Pipe and Ventilation	9,803.60	
	(e) Track	4,524.00	
	(f) Fuel and Lube	14,920.98	
	(g) Steel and Bits	9,577.80	
	(h) Misc. Small Tools	4,930.50	
	(i) Freight	2,506.83	
		70,092.51	70,092.51
4.	Operating Equipment		
	(a) Equipment & Freight	36,591.34	36,591.34
5.	Initial Rehabilitation & Repairs	None	None
6.	New Buildings & Improvements		
	(a) Materials and Labor	34,532.70	34,532.70
7.	Miscellaneous		
	(a) Accounting and Blueprinting	2,480.00	
	(b) Repair to Equipment	2,203.52	
	(c) Assaying	960.00	
	(d) Payroll Taxes	6,217.21	
	(e) Comp. Insurance	9,682.87	
	(f) Administrative (Jeep Mileage)	1,536.00	
		23,079.60	23,079.60
8.	Contingencies		
	(a) Truck Operation	4,841.47	4,841.47

Total
Estimated Project Cost - Stage II $306,915.22

EXPLANATION OF STAGE II ITEMS

A Basis of Exploration (Please refer to Exhibit "C")

1. Main Bedding Drive North

The work, as outlined in items (a) to (d) on page 1, has been designed to crosscut the Wheeler bed in a North-South direction by driving a 5' x 7' drift, within the bed, up bedding dip 1050 feet (approximately +6°-9°). It is based upon studies made on the surface which show the definite existence of two other major East-West trending quartz fissure shear zones, both of which have a significant scheelite showings where opened by surface cuts. Other E-W shear zones may exist and this drive should expose them also. The northernmost exposure, designated as the North Quartz fissure shear zone, actually has greater surface expression and scheelite mineralization than the zone of Stage I.

The many side drifts from the main drift north, as provided for, will allow ample footage to explore the favorable ore showings exposed within the bed, and provides extra footage for east-west exploration of the two major shear zones already exposed.

2. Pole Adit Drive Easterly

The objective of this work is to reach the Sheffield fissure shear zone. This is, by far, the most important north-south trending shear zone area in the Pole Canyon amphitheater. It is comprised of a series of N 15° E fissures, dipping 75° westerly, covering an east-west distance of 500 feet on the surface, and the limestone within this shear zone shows heavy alteration and dolomitization. The fissures are highly mineralized and can be traced for more than 5000 feet on the surface. The colored aerial photography of this area gives a splendid exposition of the importance of this exploration.

The adit will be advanced on much the same basis as heretofore, viz., driving on, or just under the line-shale contact insofar as it is practical. Calculations indicate that the first 600 feet can be driven on an east course since the start will be in the extreme top portion of the down faulted Wheeler bed. This is particularly advantageous because the first two, and possibly three, laterals can be driven north from the adit into the productive portion of the bed without the necessity of raising and subsequent sub-level drifting.

The bedding exploration from the laterals has been designed to avoid the deficiencies which were inherent in the first contract, insofar as it will provide what is believed to be sufficient exploration in the east-west shear zone and within the productive portion of the Wheeler bed.

The work provided in exploration up bedding on the main Sheffield fissure (500 feet) is believed adequate to define the limits of the east-west trending shear zone and possibly reach the second zone north. Also, the 200 foot drift southerly on the Sheffield fissure would explore the suggested E-W shear zone to the south. Ample side drifts from both drives will permit a sufficient exploration east and west of ore exposures opened.

B Additional Underground Facilities

In Stage II all slushing will be done electrically because of the greater speed and efficiency. This, of course, calls for a 3-phase underground power cable. It is believed that sufficient No. 4, 3-conductor used cable can be obtained for this installation. This would reduce the cost by about $1000.00.

A permanent metal ventilating line will be required for the drives in Stage II in order that sufficient volume will be available for both drives. The fabric line now being used will be utilized from the end of the metal line as the drives advance.

A passing track at 1100 feet in the adit will provide for switching and storage of loaded cars and facilitate the movement of muck from the adit face. By providing this convenience we eliminate the need of a separate motorman as each crew will haul and dump its own muck on a staggered schedule after the face is clear and the drilling cycle starts. For example, the bedding drive north crew will tram in the afternoon and the Pole adit crew in the morning. This rotation will follow on both shifts.

The remainder of the items is self-explanatory.

C Additional Surface Facilities

The drilling water must now be hauled from the end of the pipeline approximately three-fourths mile to the Pole adit. The elevation of the North Pole Canyon springs does not permit a direct flow to the mine. This haul is not much trouble when only one or two machines are operating underground; however, under Stage II there may be as many as five machines per shift. In addition to this factor there is the need of additional water for shower and toilet facilities in the change house. These make the hauling of water prohibitive in money as well as time and tie-up of truck equipment.

The water system, as outlined on page 2, is designed to provide an adequate water supply for all mine requirements during the exploration program.

The generator building, foundations and auxiliary fixtures are necessary to the installation of a diesel-electric generator for slushing operations underground.

The additional bunkhouse will be necessary to accommodate the increased crew needed during Stage II of this exploration. The Company has provided, at its own expense, a fully equipped messhall, bunkhouse and staff house, which now accommodates 10 men, at a cost of $26,000.00 plus.

The cooling tower is definitely needed to remove moisture from the compressed air before entering the mine lines. Very serious trouble resulted from this condition all through the current winter. The air lines froze, the machines froze and considerable time was lost.

D Additional Equipment

It is believed that one 50 KW diesel-electric unit will be sufficient to provide the necessary electric power for the slushers. The cost of providing this same slusher capacity and the air compressor capacity to operate it would be prohibitive because of the extremely low efficiency of air power conversion and transmission.

The increased air requirements of Stage II makes an additional compressor necessary. This new unit will be the same as the present unit and will be mounted in the same building. This will give us a total of 630 cubic feet of air per minute which should take care of all demands during this stage of exploration.

The additional 10 mine cars will be required for the adit advance so that adequate car capacity is available during the mucking cycle.

The three electric slushers to be used in the main Bedding Drive North will be set approximately 450-350-350 feet apart. This is about the maximum efficient slushing distance. They will be operated in tandem. The other slusher will be needed for the 500 foot drive up bedding at the Sheffield fissure.

E Project Costs

Labor, supervision and supporting labor has been fully discussed under "Explanation" of Stage I. No change is anticipated in Stage II operations. However, a Geologist-Engineer has been added for Stage II because the volume of underground sampling, mapping and surveying will be greatly increased. In addition to this, much greater time and effort will be required for the monthly detailed MF-104 reports. Most of this work will be done on the job by the staff.

The other costs are based upon experience in past operations and should be fairly close to actual costs. The past footage contract labor cost of $10.81 per foot will probably have to be increased by about $2.50 per foot for the main Bedding Drive North because of the number of times the muck must be handled. Also, it is estimated that we will have to increase the footage payment in the Pole adit by $1.50 per foot because of the longer tram. However, the $13.50 figure should be ample to cover these drives. The balance of the cost items are self-explanatory.

F Estimated Time

The time required to complete Stage II of the exploration is estimated as follows -

1.	Surface Preparation	1	Month
2.	Underground Preparation	1	
3.	Underground Exploration	14	
	Total	16	Months

RESUME OF EXPLORATION COMPLETED TO DATE

The following is a brief resume of exploration work completed under Contract Idm-E-248 for the 12 month period February 1, 1952, to January 29, 1953, inclusive. Approximately two months were lost because of heavy snowfall in February and March, 1952, leaving a net operating period of 10 months.

1. Surface Facilities and Preparation

A 16' x 24' compressor building with concrete floor and concrete foundations for the compressor, generator and battery charging set was constructed. Necessary fuel and water tanks and air receiver were installed. A 3" air and 1" water line were run to the portal of the Pole adit.

A 18' x 30' combination blacksmith shop and change room was started. The concrete foundation and outside frame have been completed. The balance of the structure is now being finished on Company account.

The portal of the Pole adit was enlarged, straightened and timbered. Trackage and switches were installed from the portal to the compressor house, waste dump and ore stockpile.

A water supply line, approximately 4000 feet in length, was layed from the North Pole Canyon springs and a 2500 gallon storage tank installed.

Floodlights were installed on the mine dump for night operations.

Approximately 78 tons of equipment, materials and supplies were transferred by hand and hauled from the bottom of Pole Canyon to the mine dump in a smaller truck unit rented locally.

Trackage, air and water lines and ventilating line were installed in the Pole adit. A 5 HP blower was installed just south of the portal.

2. Underground Exploration

Mining started on July 6, 1952, on a one shift basis. A second shift was added on August 6, 1952, and thereafter operations were maintained on a two shift per day basis. Exploration advance was as follows -

(a)	Pole Adit		965.0 Ft.
(b)	No. 1 Lateral South Area		
	No. 1 Lateral	99.0 Ft.	
	Nos. 1-2-3 Raises	25.5	
	Nos. 1-2-3 Bedding Drifts	37.5	
		162.0	162.0

(c) No. 2 Lateral South Area

No. 2 Lateral	36.0 Ft.	
Raise	17.5	
Bedding Drift	9.0	
	62.5	62.5 Ft.

(d) No. 3 Lateral North Area

No. 3 Lateral	61.0	
Raise	19.0	
Bedding Drifts	22.0	
	102.0	102.0

(e) No. 4 Lateral North Area

No. 4 Lateral	36.0	
Raise	4.0	
Bedding Drifts	42.0	
	82.0	82.0

(f) No. 5 Lateral North Area

No. 5 Lateral	35.5	
Raise	9.0	
	44.5	44.5

(g) No. 6 Lateral North Area

No. 6 Lateral	32.0	
Raise	15.0	
	47.0	47.0
Total Advance		1465.0 Ft.

3. Project Costs

Total project expenditures amounted to $82,809.41 as follows (basis MF-104 reports) -

A Labor and Supervision

1. Labor	$23,790.62	
2. Supervision	3,500.00	
	$27,290.62	$27,290.62

B Operating Materials and Supplies		
1. Misc. Operating Supplies	$ 744.08	
2. Timber	407.73	
3. Explosives	4,047.15	
4. Pipe	1,962.75	
5. Track	3,271.20	
6. Fuel and Lube	2,621.99	
7. Steel and Bits	2,367.18	
8. Vent Tube	1,151.60	
9. Freight	937.70	
	17,511.38	$17,511.38
C Operating Equipment		
1. Rental	$14,335.46	
2. Purchase and Freight	4,207.14	
	18,542.60	18,542.60
D Initial Rehabilitation and Repairs		2,472.30
E New Buildings and Improvements		8,866.06
F Miscellaneous		
1. Repairs to Equipment	$ 720.77	
2. Sample and Analysis	39.00	
3. Payroll Taxes	1,439.77	
4. Liability Insurance	2,586.66	
5. Administrative (Project Only)	2,537.16	
6. Truck Rental	500.00	
7. Aerial Maps	250.00	
	8,073.36	8,073.36
G Contingencies		
1. Bulldozer-Snow Removal	$ 646.00	646.00
		83,402.32
Less Suspension by Audit of 12-31-52		592.91
Total Project Cost		$82,809.41

The total project expenditure of $82,809.41 was $7,333.41 in excess of the contract authorization of $75,476.00. This excess was expended on Company account in order that the full program of underground exploration might be completed in accordance with the original program. Various analysis of unit costs are given in Exhibit "E" attached hereto.

4. Geology and Ore

A Summary

The results of this initial 1465 feet of exploration were most encouraging. It is our opinion that tungsten (scheelite) mineralization has been reasonably demonstrated within the entire block opened by this exploration, viz., some 1100 feet East-West and 125-150 feet North-South. However, it is recognized that insufficient exploration, within the productive Wheeler bed, was provided for in the original contract, and, therefore, no basis has been developed upon which an accurate estimate of tonnage and mining grade can be made. However, an attempt was made to arrive at some reasonably indicated ore basis and this resulted in the suggestion of some 15,000 tons of 1% WO_3. This analysis is presented in Exhibits "F" and "G", reports by the Geological Staff of Combined Metals Reduction Company and Earl B. Young, Chief Geologist, attached hereto. The need for additional work within the productive bedding, to be executed from present workings in the bed, forms the basis of Stage I of this requested amendment. This added exploration within the Wheeler bed, as shown in Exhibit "A", has been designed to accomplish this objective.

B Detail of Exploration

1. Pole Adit

Total advance was 965.0 feet. Start was at portal plus 108.0 feet; finish at portal plus 1073.0 feet. At start, the lime-shale contact was breast high (rail plus 5.0 ft.). This rose slowly as the adit advanced on a S 82° E course and passed over the back at 75 feet. (All distances will be given from start of DMEA project.) The adit was continued on this course to 214 feet at which point it was turned to S 66° E in order to bring the contact down. This turn, coupled with a N 10° W reverse fault at 322 feet, dropped the contact to the breast high position at that point. Between 75 and 322 feet the adit was entirely in shale, which proved to be very stable ground. The N-S fracturing showed up quite well in the shale but required close observation because of tightness.

At 322 feet the course of the adit was turned to S 73° E and at 365 feet further changed to S 80° E. At 598 feet a N 20° W normal fault raised the contact to the breast high position and at 628 feet a N 30° W normal fault raised the contact above the back of the adit. The adit was continued to 692 feet where the course was changed to S 73° E. The adit then continued in shale to 935 feet where a strong N 10° W normal fault dropped the contact 27 feet. Beyond this fault the adit was in the blue mottled lime in the extreme top portion of the Wheeler bed. The course was changed to S 83° E for the balance of the advance. On the last round the "burn cut" broke a small hole, in the center of the face, into an open cave of considerable size.

Map D-100$_5$, Exhibit "A" of Stage I, clearly shows the progress of the Pole adit and the geological shifting resulting from faulting. Most faults encountered were reverse ones having very small throws (many less than 1 foot; a few 3 to 5 feet); the only normal fault of significance was the one at 935 feet which had a vertical movement of 27 feet.

2. No. 1 Lateral South

This lateral was started at 72 feet and driven 99.0 feet on a S 20° E course. Numerous E-W trending quartz filled fissures carrying scheelite were cut over the entire 99 feet. Three raises were driven into the productive bedding at 25 foot intervals. From these raises drifts were driven easterly within the ore bed. The entire product from these raises and bedding drifts (an estimated 125 tons), grab sampled 0.62% WO_3. These samples were taken from the mine cars as they were dumped into the stockpile. It is estimated that all three bedding faces, as they would be mined, will run plus 1% WO_3.

The important result of the exploration in this area is that the bedded ore has been demonstrated in No. 3 Raise which is 70 feet south of the Pole adit. It also suggests a continuity of bedded ore between the three raises thus opened into the ore bed.

3. No. 2 Lateral South

This lateral was started at 279 feet and driven 36.0 feet on a S 8° E course. This was entirely in the shale and only one important E-W quartz filled fissure was cut. A raise was driven on this to cut the ore bed, but cut a strong N 10° W fault which dropped the bed. Only scattered scheelite mineralization was observed and 40 cars from this work grab sampled 0.12% WO_3. No further exploration was done in this area because of the difficulty and expense involved in reaching the bed in this fault area. It was also thought that the position of this raise was somewhat south of the East-West shear zone upon which this exploration program was suggested.

why no work from main drift

4. No. 3 Lateral North

This lateral was started at 366 feet and driven 61.0 feet on a N 20° E course. Important scheelite mineralization was cut in the bed just off the adit. Several strong E-W trending quartz filled fissures showing scheelite were cut in the advance. At 50 feet a raise was driven easterly into the ore bed and 22 feet of drift was driven easterly within the bed. The first 14 feet produced 35 cars of ore which grab sampled 1.08% WO_3. The last 8 feet, driven on a series of N 70° E quartz fissures, produced 20 cars of ore which grab sampled 2.96% WO_3. These were all placed in the stockpile.

The exploration in this area has produced the best showing of bedded ore (other than the original work done by the Company in "A" and "B" laterals south) so far observed in the project. This occurs at the south boundary of the East-West shear zone previously mentioned.

5. No. 4 Lateral North

This lateral was started at 509 feet and driven 36.0 feet on a N 40° E course. At the end an inclined raise was driven into the bedding and 42.0 feet of drifting was done in a general NE direction. Two very strong E-W quartz filled fissures were cut just off the raise. Two mine cars of ore, selected from these fissures, grab sampled 24.3% WO_3 and were stockpiled.

Two strong faults cut this area and complicated the exploration considerably. To the east the bed had dropped while to the north the drift followed a fault. The bed in this zone was entirely replaced by an ankerite mud. However, on the west side good scheelite mineralization was observed in the unaltered bedding.

6. No. 5 Lateral North

This lateral was started at 681 feet and driven 35.5 feet on a N 40° E course. At the end a vertical raise was driven 9.0 feet into the Wheeler bed on a series of E-W quartz fissures. The scheelite mineralization in this area was somewhat scattered, but none the less, considerable. There is definite replacement in the limestone. However, this face is about 60 feet south of the E-W shear zone and this may account for the lesser showing of ore.

7. No. 6 Lateral North

This lateral was started at 894 feet and driven 32.0 feet on a N 50° E course. At the end a vertical raise was driven 15.0 feet into the bottom of the Wheeler bed. At this point only scattered scheelite mineralization was observed. This face is approximately 125 feet south of the E-W shear zone and this may again account for the limited ore showings in the bedding.

5. Conclusions

From this completed exploration, the following conclusions are suggested -

1. The 22 foot Wheeler productive limestone bedding is a continuous structure, well prepared structurally by numerous N-S and E-W trending fractures.

2. Numerous faults, striking from N 10° W to N 30° W and in the main dipping rather steeply to the west, have been cut by the Pole adit. In most instances the vertical displacement has been very small (less than one foot); in a few it has been up to 3 feet; and in one approximately 27 feet.

3. It would be difficult to drive an adit within this ore zone since small vertical displacements produce a rather large horizontal shift because of the low angle of dip of the beds (6°-9° southerly), combined with the almost easterly strike of the bed (S 73° E to S 85° E).

4. The scheelite mineralization occurs as a definite replacement of the limestone in the lower 8 to 10 feet of the Wheeler bed immediately above the shale. It is also true, however, that high grade "hot spots" of scheelite occur within E-W trending quartz fissures where they intersect the lower portion of the Wheeler bed. In several instances this same concentration was observed in N-S trending fissures, but it is not a general situation.

5. An East-West trending shear zone, at least 100-125 feet wide, is rather definitely suggested. It has been observed that apparently the best ore occurrence is within this zone. This zone may be considerably wider than 100 feet but we have no underground exploration extending beyond this width.

6. Additional exploration within the Wheeler bed and the E-W trending shear zone, as requested in Stage I, and shown in detail in Exhibit "A", is firmly indicated at this time.

7. At least 2 other such E-W trending shear zones containing scheelite are indicated to the north of the Pole adit by surface cuts. A 1000 foot drive to the north, up bedding dip from the Pole tunnel, as requested in Stage II, and shown in detail in Exhibit "C", would explore these and others which may exist.

8. There is every reason to assume this pattern of scheelite mineralization within the Wheeler bed will continue easterly to the important Sheffield fissure N-S trending shear zone. This exploration is also requested in Stage II and shown in detail in Exhibit "C".

9. The initial project has shown that commercial scheelite occurs within the Wheeler productive bedding over a large area. The program requested in Stages I and II of this amendment represents the logical next step necessary to demonstrate the existence of a new domestic tungsten producing area of significant national importance.

EXHIBITS "F" and "G"

GEOLOGICAL REPORTS

COMBINED METALS REDUCTION COMPANY
P. O. BOX 150
SALT LAKE CITY 10, UTAH

October 24, 1952

REPORT ON THE GEOLOGICAL DEVELOPMENTS AT MT. WHEELER MINES, INC.

Prospecting work at the Mt. Wheeler Mines, Inc., having reached the stage where tungsten ore is known to occur in the Wheeler bed in significant quantities, the management requested an independent appraisal of the ore possibilities. Consequently Requa, Thomas and Hagen visited the property for the desired examination. Mr. Young, being unable to accompany them, has reviewed the report in the light of his previous observations.

This examination was for the particular purpose of investigating the scheelite ore occurrence and of evaluating the adequacy of the present program of exploration. A transit survey of the workings was made by Mr. Hagen, with adjustment to the true meridian.

The country rock at the mine consists of a series of sediments in the Lower Cambrian formation, which occur in a broad, flat-lying dome that pitches at a low angle to the south. Erosion has developed a striking amphitheatre, which drains into Pole Canyon. This type of erosion naturally suggests the presence of numerous cross fractures which have made the formation of the amphitheatre possible.

A large exposure of granitic material, a mile or more to the northeast, suggests that the doming may be associated with this intrusion and that the multiple fracturing in Pole Canyon may be the result of gradual settling due to the cooling of the magma below this area. Thus many channels have been provided for the entry of hydrothermal solutions and gases into the favorable beds.

The total thickness of the Wheeler limestone bed is about 22 feet. This bed lies only a few feet above the contact with the underlying Prospect Mountain quartzite. The Wheeler bed is part of the Pioche shale formation. The middle portion of the Wheeler bed has been found favorable for replacement by scheelite and has been highly altered by hydrothermal solutions. The favorable portion is usually four to five feet thick. In the exposed faces the ore has been found to be a combination of scheelite bearing quartz and replaced limestone.

This bed has been highly fractured, but not greatly displaced, over quite a wide area, which is at least 1000 feet in a north-south direction by about 600 feet in an east-west direction as evidenced by surface exposures and recent development work.

Quartz has been deposited on most of these fractures, as well as ankerite and scheelite. This is best developed at fracture intersections where limestone replacement ore occurs.

The development program, under the present DMEA project, has been confined to driving a tunnel under the productive bed, which has a flat dip to the south and by raising into this bed at selected places. This program has demonstrated ore, but fails to give sufficient information on the extent of such ore.

As exposed to date the ore shoots have been assumed to constitute a tabular body of ore four to five feet thick, twenty or more feet wide and of unknown length. The long dimension of the ore evidently follows east-west fracturing.

This zone does not contain all of the ore possibilities of the Mt. Wheeler property. Fracturing of the Wheeler bed is sufficiently widespread in the Pole Canyon area to provide other loci of ore deposition and these should eventually be investigated.

The known ore zone has been referred to as a shear zone, which is probably a misnomer. It is our belief that this structure should be called a fracture pattern, which would provide a much wider area for ore deposition than the zone now under consideration.

Knowledge of the continuity of the ore shoots is now vital and the present program fails to provide this information. The raises, now in ore, fail to give sufficient information for the calculation of an ore reserve.

To get some adequate idea of the tonnage we suggest that a certain portion of the prospecting footage be allocated to driving in the ore bed. What portion of the total footage should be devoted to this purpose will be a matter that experience will dictate, but for an initial effort in this direction and for footage that can be allocated from the remaining footage in the present DMEA contract, we suggest the following -

Slusher drifts should be run from the following raises:

1. From the #1 South Lateral, Raise #2, in a N 20° W direction, up dip in the bed for a distance of 70 feet.

2. From the #2 South Lateral, Raise #1, in a N 10° W direction, up dip in the bed for a distance of 105 feet.

3. From the #3 North Lateral, Raise #1, in a northerly direction for 60 feet up dip in the bed and, from this same raise, a drive in an easterly direction for 40 feet in the bed.

This is a total footage of 275 feet and in order that this work may be permissible under the DMEA contract it is suggested that it be deducted from the 1000 feet which has been allowed for the main adit.

Any future extension of the DMEA project should allow amply for such prospecting work in the Wheeler bed.

In all drives on ore we suggest that continuous samples be taken. We consider cut samples unreliable in the irregular mineralization pattern usually found in most tungsten mines. We, therefore, suggest systematic muck samples be taken from the cars of ore, or waste, removed from each heading in the ore bed.

For the above reason we cut no samples on this examination but did carefully examine each ore face with the tungsten light. The management advised us that the stock pile muck samples taken from the ore removed from all DMEA exploration faces averaged 0.62% WO_3 and that these faces by selective mining, or with sorting, should produce plus 1% ore.

It should be noted that no faults having any significant displacement have been encountered so far. As the main tunnel advances some faults will be found, also some quartz veins. Our examination did not include the consideration of these possibilities, but we believe such structures should be studied in more detail. A real dislocation of the Wheeler bed, along a strong mineralizer, could result in a very significant deposition of tungsten ore.

The Sheffield fissure is the first strong quartz vein known to exist immediately ahead of the main tunnel. This vein runs about north and south and should be cut in another 1000 feet, more or less, of advance by the main tunnel. Where the Sheffield fissure has been explored it consists of a five foot quartz filled fissure containing high temperature lead ore.

In general we can say that the Mt. Wheeler development is very encouraging. It is a type of replacement deposit that is not well known to the tungsten industry. If successfully developed, and we believe that it has such possibilities, it should open up a new field for tungsten exploration.

While our inspection was not a general mine examination we would like to comment on the neat and orderly condition of the camp and the mine. It was a pleasure to see such efficiency and organization at such an early stage of this operation. We also wish to thank Mr. Williams, president and general manager of this company, for his complete cooperation and kind hospitality during the course of this examination.

L. K. Requa

L. K. Requa

Earl B. Young

Earl B. Young

L. G. Thomas

L. G. Thomas

C. R. Hagen

C. R. Hagen

K

COMBINED METALS REDUCTION COMPANY

P. O. BOX 150

SALT LAKE CITY 10, UTAH

Subject: Tungsten Ore Reserve at Mt. Wheeler Mine
To : Mr. E. H. Snyder

From : Earl B. Young
Date : December 16, 1952

Sufficient development has been completed at the Mt. Wheeler Mine in its Pole Canyon tunnel to justify a restatement of the geological conditions that exist and to make a "guesstomate" of probable ore reserves as of this date. "Probable" as used in this letter includes "positive" and "probable" as ordinarily used.

The tunnel has advanced past the 900 foot mark and with its side crosscuts, raises and subdrifts, it has revealed a very interesting pattern of ore occurrence. We have dubbed this the waffle-iron, and an explanation may be necessary. The first work in the tunnel was based on the belief that there were several shear zones trending easterly across the area which would serve as guides for mineralizing solutions and gases. This conception must now be expanded to include another series of fracture zones which extend in a north-south direction across the amphitheatre. To date five of these N-S zones have been identified and designated A, B, C, D and E.

Zone "A" is cut in the tunnel from 24 feet to 95 feet from the portal. About 80 feet of sub-level work in the orebed produced 105 cars which assayed 3.68 WO_3 and a considerable amount of low grade. We feel justified in assigning a width to the zone at this point of 72 feet, extend it for 100 feet in a north-south direction and consider the ore thickness as 5 feet, although in some places it is up to 7 feet. Allowing 12 cubic feet to the ton, we obtain an estimated probable reserve of 3000 tons.

Zone "B" is cut from 142 to 216 feet from the portal and is also considered as 72 feet wide. The bed has been exposed by three raises from the No. 1 Lateral-South and by short drifts in the bed. Replacement by scheelite again occurs over a thickness which in places is six to seven feet. Again allowing 100 feet north and south with an average thickness of five feet, we have an additional probable reserve indicated of 3000 tons. The average assay from 125 cars from this zone was 0.62% WO_3.

Zone "C" is cut from 355 feet to 434 feet from the portal and is considered as 60 feet wide. The bed was entered by one raise from which 40 cars averaged 0.12% WO_3. While this raise was driven on an east-west fracture, it seems to be in a lean part of the zone and is outside of our estimated block. Here, we assume a block 60 feet wide by 100 feet north and south and 5 feet thick. This gives 2500 tons. Grade is unknown, but as the zone is strong further work into the block is indicated.

Zone "D" is cut from 471 feet to 520 feet from the portal and is considered as 60 feet wide. The zone has been developed by No. 3 Lateral-North with a raise and 20 feet of sub-level. Strong mineralization shows along both the north-south and the east-west fractures and as replacement in the bed. The first 35 cars from the sub-level assayed 1.08% WO_3. Specimen ore occurs in the east-west fractures.

The very conservative estimate of 60 feet by 100 feet north-south by a thickness of five feet adds another 2500 tons to the probable reserve.

Zone "E" is cut from 582 to 682 feet from the portal and is considered as 90 feet wide. It is developed by No. 4 Lateral-North and a short incline up the beds parallel to the north-south fracturing. No assays are yet available but specimen ore was seen in the muck pile. We wish to estimate a block here 90 feet wide by 100 feet north-south by five feet thick, to contain 3750 tons of ore over 1% WO_3.

The total probable reserve from the five blocks outlined above totals 14,750 tons. This is enough to supply a 25-ton mill for nearly two years.

The possible reserve runs into such fantastic figures that they would probably only provoke doubt. Hence we content ourselves with a brief statement concerning the north-south zones which were not given due significance in our first studies, even though we did emphasize the long-range objectives offered by the Shefield, the Washington and the St. Lawrence fissures, all of which trend north-south. Now we find that these north-south fracture zones, separated by relatively tight areas are an important part of the fracture pattern. They are plainly seen in the quartzite walls of Pole Canyon about 1200 feet north of the portal of the tunnel. Also of special significance is the new series of colored air-photos taken by Phillip A. Laylander which show definite north-south alteration zones on the surface of the area being crossed by Pole tunnel.

In view of the recent developments we are now forced to expand our conception of the ore possibilities of Pole Canyon to include both east-west and north-south zones. The areas of intersection will be of better grade while the areas between the zones will be low grade or possibly waste. In general, the east-west fractures are frequently filled with quartz, sometimes carrying scheelite, while the north-south fractures tend to be open or filled with aragonite, mud and pebbles. The displacement on the fractures is usually a matter of inches, but is obviously sufficient to have prepared the zones for the entry of tungsten bearing solutions and gases. With such impressive mineralization in the north-south zones already encountered, we eagerly look forward to the intersection with the Shefield, now only about 1200 feet to go.

Respectfully submitted,

Earl B. Young

Earl B. Young

K

Area 2082

Mt. Wheeler

	ft	shifts	ft/shift	rounds	ft/round
July 1952	123.0	22 47	5.59	26	4.73
Aug	210.5	49 51	4.30	47	4.48
Sept	239.0	51 36	4.69	51	4.69
Oct.	163.0 735.5	42 56	3.88	36 160	4.53
Nov.	235.5	57	4.13	?	?
Sub-total	971.0	221*	4.39		4.6

* Includes 9 shifts lost because of delays due to equipment breakdown and not finishing the round on the shift.

Dec.	264	63 63			
Total	1235	283	4.36		

Filed 2/24/53

COPY

400 copy

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
1012 Flood Building
870 Market Street
San Francisco 2, California

February 13, 1953

Mr. Jay L. Chambers, Chief
Contract Administration and
Audit Division
Defense Minerals Exploration
Administration
Washington 25, D. C.

Re: Mr. Wheeler Mines, Inc.
Docket DMEA-2082
Contract Idm-E-248

Dear Mr. Chambers:

Reference is made to your letter of February 10, 1953, relative to subject contract and the information requested is set forth below, based on the audit performed for the period January 29, 1952, to December 31, 1952.

(1) Administration

Accounting 9 mos. at $100.00		$900.00
Mileage, J. D. Williams' Jeep	$846.36	
Less: Audit disallowances	139.50	
Adjusted to 7¢ per mile, 8 mos. to 12/31/52		706.86
Other Office & Misc. Expense		452.70
Adjusted Cost to 12/31/52		$2,059.56

(2) Equipment Rentals

		Rental $	Purchase Option Value
(a) Air Compressor	9 mos. at $470.00	$4,230.00	$9,119.00
(b) Jumbo (Nov. & Dec.)	2 mos. at 385.00	770.00	2,310.00
(c) Trammer	8 mos. at 475.00	3,800.00	7,496.25
(d) Rockershovel	8 mos. at 295.00	2,360.00	2,957.00
(e) Generator	9 mos. at 172.27	1,550.46	1,895.00
(f) Bulldozing (Feb. & June)	2 mos. - - - - -	1,190.00	
Total Rental to 12/31/52		$13,900.46	

Items marked (a), (b), (c), (d), are rental purchase agreements entered into during, and to be completed after, period of DMEA contract.

Item marked (e) covers rental purchase agreement entered into and completed during period of DMEA contract with costs shared as follows:

	Gov't	Operator	Total
Feb.	$ 129.20	$ 43.07	$ 172.27
Mar. - Apr.	-0-	344.54	344.54
May - Dec.	1,033.64	344.54	1,378.19
	$ 1,262.84	$732.16	$1,895.00
Equity	66.64%	33.36%	100.00%

In connection with above items, (a) to (e) inclusive, see your letter dated February 4, 1953, to E. D. Talbert expressing your opinion on rental-purchase plans.

Item (f) covers rental of bulldozer, for which rental charges were made for the following work:

Snow removal	$646.00
16 x 24 Compressor Bldg.	100.00
Move Blacksmith Shop	92.00
Water Lines	352.00
Total	$1,190.00

Interest has been paid directly by the operator on all Purchase agreements with the exception of item (d), Rockershovel, whereby a disallowance has been made as of December 31, 1952, for $168.92, covering a handling charge which was shown in the agreement as "Plus, for Rental Terms."

(3) New Buildings, Improvements, etc.,

The amount shown on the December 31, 1952, MF-104 was $9,652.93 and this was reduced by audit adjustments to $8,866.06; made up as follows:

Total MF-104	$9,652.93
Add: Tfr from Rental	452.00
	$10,104.93
Deduct: Tfr to Rehab. & Repairs	1,238.87
Adjusted Amt. 12/31/52	$ 8,866.06

The distribution of the above adjusted amount applicable to New Buildings, Improvements, etc., is comprised of the following items:

	Labor	Cook	Superv'n.	Mat'l	Bulldzg.	Total
Compressor Bldg.,	$1,392.48	$ 50.00	$ 350.00	$1,084.83	$100.00	$2,977.31
Hauling Supplies	494.30	27.78	83.34			605.42
Hauling Equipment	329.53	41.67	125.01			496.21
Forms for Equipment	988.60	83.33	249.99			1,321.92
Installing Equipment	1,631.75	147.22	391.66			2,170.63
Installing Water Line	717.57	75.00	150.00		352.00	1,294.57
	$5,554.23	$425.00	$1,350.00	$1,084.83	$452.00	$8,866.06

Attached hereto is copy of letter dated November 17, 1952 from Mr. J. D. Williams to Mr. H. C. Miller, which gives the reasons for the above expenditures. Two copies of this letter were forwarded November 21, 1952, to Mr. Frank E. Johnson by Mr. H. C. Miller.

Trusting the above furnishes you with the desired information, and should you require any further details, please let me know.

Sincerely yours,

Signed: George Mavor

George Mavor, Auditor

Enclosure

COPY

November 17, 1952

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
Room 1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA-2082-Tungsten
Mt. Wheeler Mines, Inc.
Exploration Contract Idm-E 248
Analysis of Charges to Items (5) and (6) MF-104 Report. (New Form)

Dear Mr. Miller:

In accordance with our discussion of the above matter regarding the apparent over-expenditures of funds for Item (5), Initial Rehabilitation and Repairs and Item (6), New Buildings, Improvements, etc., as shown on our June and July, 1952, MF-104 Statement, we furnish you the following -

Contract Idm-E 248 allows the following expenditures for these items, as per Exhibit A:

1.	Construct 16'x24' building	$2,000.00	
	Site preparation-Bulldozer rental	100.00	$2,100.00
2.	Move blacksmith shop	750.00	
	Site preparation-Bulldozer rental	$ 100.00	850.00
3.	Install water line		
	Pipe	$ 540.00	
	Labor	200.00	
	Evacuation of trench-Bulldozer rental	600.00	1,340.00
4.	Bulldozer rental-snow removal	$1,200.00	1,200.00
			$5,490.00

As of May 31, 1952, actual expenditures for these four items were as follows -

1.	Construction 16'x24' building		
	Materials	$1,027.01	
	Labor	914.10	
	Supervision	250.00	$2,191.11
2.	Move blacksmith shop		
	Materials	$ 60.54	60.54
3.	Install pipe line		
	Pipe	593.69	593.69
4.	Bulldozer rental-snow removal	$ 390.00	390.00
			$3,235.34

During June, 1952, the following additional expenditures were made on these four items.

1.	Construct 16'x24' building		
	Materials	$ 23.32	
	Labor	628.38	
	Site preparation Bulldozer rental	100.00	$751.70
2.	Move blacksmith shop		
	Site preparation-Bulldozer rental	$ 92.00	92.00
3.	Install pipe line		
	Labor	$942.57	
	Bulldozer rental	352.00	1,294.57
			256.00
4.	Bulldozer rental-snow removal	$256.00	$2,394.27

During July, 1952, the only expenditure made was -

2.	Move blacksmith shop	
	Materials	$ 83.00

Thus, the total actual expenditure made for these four items was as follows-

Up to May 31, 1952	$3,235.34
June, 1952	2,394.27
July, 1952	83.00
	$5,712.61

This represents an excess of only $222.61 over that allowed by the contract. However, the MF-104 totals for these items as of July 31, 1952, are -

Item (5) Initial Rehab. and Repairs	$1,141.43
Item (6) New Buildings- Improvements, etc.	8,379.56
	$9,520.99

The difference between actual expenditures of $5,712.61 and MF-104 reported expenditures of $9,520.99, amounting to $3,808.38, would appear at first instance to represent excess expenditures for these items because of the method used for reporting when we changed from MF-104 (old form) to MF-104 - (new form) in June, 1952. Actually, this difference of $3,808.38 is made up of labor dedicated to the following preliminary preparations -

1. Hauling supplies from bottom Pole canyon to mine.

2. Hauling equipment from bottom Pole canyon to mine.

3. Building forms and concrete work for mine equipment.

4. Install mine equipment, underground air and water lines, underground and surface trackage, etc.

5. Enlarging portal Pole tunnel and timbering to allow entrance of trammer and mucking machine.

6. Cook and Superintendent, April (1/2), May and June, 1952.

This preparation was absolutely necessary to effectuate the exploration program as provided for in the contract but we failed to set up specific items covering them. However, upon discussion with the Reno office we were sent a form containing suggested conversions from the old form to new form MF-104. (A copy of this is attached hereto.) In following this it was our opinion that such expenses of preparation as outlined above would be properly chargeable to Items (5) and (6) on the new form. However, it would now appear that the proper conversion would probably have been to the contingency account since these certainly were contingent items which had to be accomplished before the exploration could be started.

I trust the foregoing analysis, as shown in our accounting records, explains your inquiry.

Very truly yours,

MT. WHEELER MINES, INC.
By

James D. Williams
President

JDW-K

Enc.

FILE COPY
SURNAME:

Selfridge

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

February 11, 1953

Memorandum

To: Administrator

From: George C. Selfridge
Special Assistant

Subject: Cost Analyses
DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract Idm-E248

Tabulated below are summaries of costs, with comments, relating to the subject contract. The contract was written at the end of January, 1952. Work was started in February and then recessed because of snow. Funds were expended by the end of December. Costs, which were reported on both the August 1951 and April 1952-104 forms, were not accompanied by either pay roll or material lists and therefore not as much information could be gleaned from the reports as from those of the Ima mine project. Costs seem relatively high and in some cases they will be compared to those of the Ima mine. Work was done both on a contract basis and on a days-pay basis. The Company completed 1,235.0 feet of the drifting, crosscutting, and raising of the 1,500 feet provided for in the contract at an average cost of $48.69 a foot including rental and depreciation of equipment but not the purchase of equipment. In addition, the Company expended $4,451.81 for equipment, $1,141.43 for rehabilitation, and $9,652.93 for improvements, a total of $15,246.17

The exploration primarily involved the driving of a haulage adit (809') in indurated shale and laterals therefrom, with raises and intermediate drifts in shale, limestone and silicified limestone. The initial tram was approximately 100 feet. Practically no timber was used except for chutes. Thus, costs will be compared with the Ima No. 2 project in quartzite, the initial tram of which was 400 feet.

Tabulated below is a summary of the overall cost of $48.69 a foot distributed on an item basis:

Table I.

Item	Amount	Cost/ft.
Contract	$12,179.15	$9.86
Labor	7,824.01	6.34
Supervision	3,000.00	2.43
Tech. service	250.00	0.20
Timber	407.73	0.33
Explosives	4,047.15	3.28
Pipe	1,962.75	1.59
Track	3,271.20	2.65
Steel & bits	2,301.10	1.86
Fuel-Lub'tion	2,060.36	1.67
Ventube	880.85	0.71
Equip. rental	13,900.46	11.26
repairs	653.75	0.53
Payroll taxes	1,246.86	1.01
Compen. Insur.	2,286.11	1.85
Off. sup.-assay	226.53	0.18
Administration	2,199.06	1.78
Freight-equip.	270.44	0.22
" -sup.	719.69	0.58
Truck rent	450.00	0.36
Sub-total---	60,137.20	48.69
Equip. purchase	4,451.81	3.61
Sub-total---	64,589.01	52.30
Rehabilitation	1,141.43	0.92
Improvements	9,652.93	7.82
Total------	$75,383.37	$61.04

The $48.69 cost/foot figure will probably be little changed by an audit. The Company erected permanent buildings which accounts for the high cost of rehabilitation and improvements, at least in part. It is not known at present if the item of $2,199.06 includes more than accounting and travel charges. It is high. Equipment rental is high because equipment was rented with an option to purchase. As some of it was contracted for prior to the signing of the exploration contract, and although the Government has contributed to rental, it is questionable whether the Government has any equity in this equipment.

Advance averaged 4.35 feet a shift. Nine shifts of lost time due to equipment failure or poor cycling were included in the calculation. This compares with 3.55 feet for the Ima No. 2 project. Advance averaged 4.60 feet a round for the first 735.5 feet.

Maximum track cost at the Ima projects was $0.97 a foot compared to $2.65 at Mt. Wheeler, the footage of which included raises and intermediates without track ($2.87 a foot without raises.) The former cost may be 25¢ a foot low as no item for ties was specifically mentioned. Differencial in purchase cost of rail is approximately 41 percent. Based on Ima cost of $0.97, the track cost at Mt. Wheeler should be $1.37 a foot. Freight would increase the cost $0.04 a foot to $1.41 . The differential cost of fish plates, bolts and spikes was not considered but the percentage difference shouldn't vary appreciably from the 41 percent. No information is available concerning switches which would affect the overall cost.

In calculating the Ima costs for project No. 2, labor, supervision and payroll taxes, etc., amounted to $10.06 a foot. Only part time supervision was charged. Under the Mt. Wheeler contract the same items averaged $21.49 a foot. Supervision amounted to $2.43 a foot compared to $1.14 a foot under the Ima contract.

Table I shows what information the new 104 form gives if the operator writes in a number of items in the blank spaces provided in the form. When both contract and days-pay labor are reported, the amount of each is noted and the former can be pro-rated under (1). However, the latter cannot be pro-rated unless the operator submits a separate report. Under this contract the operator reported on 104-A the average cost of three different types of headings as a single cost. Even had he reported each separately as some operators do, one would not know what percentages were used for pro-rating. To break down costs, unless detail can be secured from the operator, the Administration will have to assume an arbitrary ratio based on footage driven or labor cost. The method to be used should be determined before too many calculations are made for other contracts. This would insure uniformity of procedure.

The question also arises -- when should the analyzing start? If it starts with the first voucher, which it should for obvious reasons, certain adjustments must be made for deletions and mistakes. If it is done at the end of an audit, it serves only for statistical purposes.

Some audit reports mention the transposing of items into different catagories. It will probably be necessary to instruct all auditors concerning this once a definite analyzing policy is undertaken.

GCSelfridge/pa

George C. Selfridge

Copy to: Docket
Admin. Reading File, Mails & Files G. C. Selfridge

FILE COPY
SURNAME:

[redacted]

Chamberlin

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

FEB 1 0 1953

AIR MAIL

Mr. George Mayer
DMEA Auditor
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Mt. Wheeler Mines, Inc.
Docket DMEA-[illegible]
Contract [illegible]

J.C. 2/10/53

Dear Mr. Mayer:

A number of questions have been raised on the above-cited contract, such as:

(1) What items of Administration compose the total amount billed - $1,966.91 - November, and $348.54 billed for the month of November?

(2) The equipment rentals appear to be high. Were these equipment items on a purchase-rental contract or were they straight rentals?

(3) Why did Buildings, Improvements, etc., run to some $10,000 in addition to initial repairs and rehabilitation?

I realize that these questions are largely a matter for the engineers and Executive Field Team to decide. I thought, however, that if, in the course of your audit, you run across information that will throw some additional light on the cost of this project it would be well to have it when the Washington Office gives consideration to extending the scope of the present contract.

I shall appreciate an early reply.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb
February 10, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers

FILE COPY
SURNAME:

Selfridge

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

SW.

Dmen 2082

D. M. E. A.

J. L. Chambers
3719 2612

1.1X3923.970 Working Fund, DMEA
February 6, 1953

Mr. E. D. Talbert, c/o Mr. H. C. Miller, DMEA Field Team, Region III,
1012 Flood Building, 870 Market Street, San Francisco 2, California

REurtel 2-5-53. Washington offers no objection to paying December MF-104 to Mt. Wheeler Mines, E248, but such payment does not constitute an implied approval of any application for amendment or extension of the contract. The approval of such application will be based entirely upon the facts presented and the recommendation of the Field Team.

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb
February 6, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers
Bu Mines Audit

S.H.
2-6-53

400

DMA 2082

EXCERPT OF A LETTER FROM E. D. TALBERT TO JAY L. CHAMBERS

San Francisco, Calif.
February 5, 1953

Dear Mr. Chambers,

WSM

Arrived here this morning after uneventful trip from Salt Lake City with stop-over of one day at Reno for visit to Bu Mines office. Johnson and one of his DMEA employees are also here, having driven from Reno yesterday afternoon.

The only mail I had awaiting me was your letter of February 3 in re Northfield Mines E323. Apparently I was one step ahead of you in this case! I had already made arrangements for Bob and George to make a concurrent audit of the two projects, the records for both of which are located in Eureka, Nev. Bob's will be an interim and George's a final audit. They will make arrangements to meet in Reno sometime after I finish the Spokane visit. Johnson promised me that he would make a Reno automobile available for their use, since transportation from Reno to Eureka is somewhat on the "impossible" side.

While in Salt Lake we made audits of Mt. Wheeler and Grand Deposit. At both places they were most courteous to us. Williams was away at the mine during our actual audit, which probably facilitated our work, but we saw him the day we left Salt Lake City. The books were not too hot and we wasted some time trying to audit from them. They could be reconciled in total with the MF-104, but the accounting distribution was rather poor and exceedingly difficult to follow. When we changed to auditing from the MF-104 through Williams' work sheets to the voucher checks, invoices, payrolls and cancelled checks, we really moved along. Everything was in perfect order and we could

only take a few minor exceptions. Williams' personal work is exceedingly meticulous and he has computed and kept track of unit costs to the "n" th degree -- and I feel sure he would be agreeable to furnishing any cost data that might be requested of him.

All of his "rented" equipment was or will be acquired under rental-purchase agreements, which to all intents and purposes appear to be instalment purchases. He's making a clean breast of this in his new application and asking that the Government pay its full 75% of the cost and thereby acquired an undisputed equity. If we had to liquidate at the present time there appear to be numerous problems on this so-called rented equipment as well as on the salvage value of the buildings and other improvements (installations of trackage, pipes, etc.).

I've never met a man who impressed me as being so much of a gentleman as Paul Lyons of Grand Deposit. He is very soft-spoken and apparently lacks in the aggressiveness so common to most mining people. Both he and his son, who supervised the DMEA project, apparently feel that the Government has wasted its funds, as well as the company's, by stopping work at the present stage instead of extending the contract to cover a bit of additional work. Apparently the Reno office does not look favorably on any additional work, but the Lyons felt so strongly that there is a discovery just "around-the-corner" that I suggested that they put in another application and, further, that if they believed that Reno and San Francisco would ignore it to submit it directly to Washington.

Docket Copy

BW.

January 16, 1953

Memorandum

To: Miss Lanahan, Statistics and Control Division, DMEA

From: Hazel Berry, Operating Committee, DMEA (HB)

Subject: Amendment to contract.

Attached is the docket copy of an amendment to a contract, which has been reviewed and approved by the commodity division, the Contract Administration and Audit Division, and the Legal Division:

Mt. Wheeler Mines, Inc., DMEA-2082, Idm-E248, Amendment No. 2 and justification.

Enclosure

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

Office of
Executive Officer
DMEA Field Team
Region III

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 19 1953

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

January 14, 1953

AIR MAIL

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2082 (Tungsten), Mt. Wheeler Mines, Inc., Contract Idm-E248, White Pine County, Nevada

We acknowledge your subject teletype, dated January 7, informing us that Mr. J. D. Williams, President, Mt. Wheeler Mines, Inc., has discussed additional work under his contract with you over the phone.

By the time this memorandum reaches your office, you should have received the December MF-104 and 104A, report forms, requested by you in your teletype of January 8, together with the company's narrative report directly from A. C. Johnson in Reno.

The reports accompanying the MF-104 forms provide considerable data which may be enough for your purpose. We are, however, favorably inclined towards sending Paul Bateman to the property as you suggest and have written Mr. Williams, with a copy to DMEA, to find out what his proposal for additional work consists of. Until we know what Mr. Williams has requested, we cannot offer any comments.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 16 1953

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

January 14, 1953

Mr. James B. Williams, President
Mt. Wheeler Mines, Inc.
P. O. Box 150
Salt Lake City 10, Utah

Re: Contract Idm-2348
Docket DMEA-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
White Pine County, Nevada

Dear Mr. Williams:

We have been advised by the Washington office of the Defense Minerals Exploration Administration that discussions with you for additional work under your present contract have been held. We have been asked to do some check sampling and to comment on your proposal.

We are considering sending Paul Bateman of the U. S. Geological Survey to visit your property, but before doing so we not only would like to know what additional work is being requested by you, but also if one can get to the mine at this time of the year. Mr. Bateman being a geologist may want to make some surface examinations in connection with his underground studies, so information on snow conditions will be welcomed.

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to: DMEA, Interior Building, Washington
E. H. Bailey, USGS
A. C. Johnson, Reno

HCMiller:mpp
Files
Chron.

Mt. Wheeler

	Feet	Shifts*	Ft/shift	Rounds	Ft/round
July	123.0	22	5.59	26	4.73
Aug.	210.5	49 47	4.30	47	4.48
Sept.	239.0	51	4.69	51	4.69
Oct.	163.0 735	42 36	3.88	36 160	4.53
Nov.	235.5	57 56	4.13	?	?
Dec.	264.0	63	4.19	?	?
	1235.0	284	4.35		4.60

* Includes 9 shifts lost for equipment failure and inability to complete drilling and marking cycle.

Track $0.78/lb = $0.57/ft + freight.
Track Jma = 0.37/ft ? = 1.41/o

Freight .04¢ ton-mile × 292 = $11.68/ton = $0.039¢/ft

3000 [illegible] gals. [illegible] ft

300 / 11.68

1039

300) 11.68

DOCKET NO. 2082 IDM-E-248

MT. WHEELER MINES

DRIFTING + CROSSCUTTING		1141
RAISING		94
TOTAL		1235'
	COST	COST PER FOOT
1 CONTRACT	$12,179.15	9.86
1 LABOR	7,824.01	6.34
1 SUPERVISION	3,000.00	2.43
TECH. SERVICE	250.00	.20
2 TIMBER	407.73	.33
3 EXPLOSIVES	4,047.15	3.28
6 PIPE	1,962.75	1.59
4 TRACK	3,271.20	2.65 = $2.87 without raises
5 STEEL & BITS	2,301.10	1.86
FUEL - LUBE	2,060.36	1.67
VENT TUBE	880.85	.71
EQUIP. RENTAL	13,900.46	11.26
PURCHASE	4,451.81	3.61
REPAIRS	653.75	.53
1 PAYROLL TAXES	1,246.86	1.01
1 COMP. INS.	2,286.11	1.85
OFF. SUPPLIES & ASSAY	226.53	.18
ADMINISTRATION	2,199.06	1.78
FREIGHT SUP.	719.69	.58
FREIGHT EQUIP.	270.44	.22
TRUCK RENT - HAULING	450.00	.36
	$64,589.01	52.30

1 =	26,536.13	21.49
2 =	407.73	.33
3 =	4,047.15	3.28
4 =	3,271.20	2.65
5 =	2,301.10	1.86
6 =	1,962.75	1.59
	38,526.06	31.20

REHABILITATION	1,141.43	.92
NEW BLDGS & IMPROV.	9,632.93	7.82
	$75,383.37	61.04

AIR MAIL

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
P. O. BOX 1551
RENO, NEVADA

400

W59

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED

January 12, 1953. JAN 14 1953

dmea 2082
Dec. MF-104

Memorandum

To: Mr. Frank E. Johnson, Chairman, Operating Committee, DMEA

From: Chief, Mining Division, Region III

Subject: Docket DMEA-2082 (Tungsten) - Contract Idm-E248
Mt. Wheeler Mines, Inc., Salt Lake City, Utah
Mt. Wheeler Mine, White Pine County, Nevada

Reference is made to Mr. H. C. Miller's memorandum of January 8, 1953, under the above captioned subject, requesting that you be furnished with copies of MF-104 report forms for the month of December as soon as received.

December report was received this date and copies of all documents received have been made and are enclosed for your information.

You will note from the enclosed copy of MF-104 form, that the total amount of the contract is $75,476.00 - total disbursements to date reported thereon, $75,383.37, which leaves a balance of only $92.63 as of December 31.

A. C. Johnson

A. C. Johnson

Encls.

MT. WHEELER MINES, INC.
P. O. BOX 150
SALT LAKE CITY 10, UTAH

January 10, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 14 1953

Mr. A. C. Johnson, Chief
Mining Division, Region III
United States Bureau of Mines
P.O. Box 1551
Reno, Nevada

Re: Mt. Wheeler Mines, Inc.
DMEA-2082-Tungsten; Idm-E 248
MF-104 Statement - December, 1952

Dear Mr. Johnson:

Attached are the original and four copies of our MF-104 statement of the expenditures for the above captioned Exploration Project for the month of December, 1952. Also included are the following -

1. Narrative Report of Progress
2. Monthly Progress Maps
3. Copies of Assay Sheets
4. Copy of Geological Report by Mr. Earl B. Young, Chief Geologist, Combined Metals Reduction Company

Very truly yours,

MT. WHEELER MINES, INC.
By

James D. Williams
President

JDW-K
Enc.

FILE COPY
SURNAME:

Selfridge
Chandler

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

JAN 9 1953 BW

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract No. Idm-2-248

Dear Mr. Miller:

Enclosed herewith are two copies of a memorandum prepared by the Iron and Ferro-Alloy Division based on Mr. William's letter of November 17, copies of which you kindly forwarded with your letter of November 21, 1952.

As we do not have all of the necessary detail here, we have to accept his explanations--however, with reservations. It is unfortunate that Mr. Williams was not required to continue submitting his invoices supplemented by the detail shown in the February one. In that one it is shown that the company purchased 188 8-feet pieces of 2 x 4 studding, 42 18-foot pieces of 2 x 4, and 62 16-foot pieces of 2 x 6 for the building which has a concrete floor. In addition, it purchased 4 doors, including an automatic garage door. All of this material supposedly went into the 16' x 24' building. It doesn't appear logical to us; does it to you?

If one uses $16.00 a day for a carpenter and only the amount of labor shown as of May 31 and for June for the building as detailed in William's letter, it calculates to 96 man shifts. In other words, it took two men two 24-day months to erect the building. That is pretty slow and expensive for an exploration job. Thirty-nine of the shifts wer charged to the building after the Operator reported that the external structure of the building was completed and the foundations poured for the equipment bases.

Has the examining engineer ever checked the item of $2,526.19 for miscellaneous tools as reported for June? Seemingly this sum would have provided tools in excess of those ordinarily necessary to carry on the work.

As of November 1 the cost of drifting, crosscutting, and raising amounted to $58.82 a foot, not including purchase of equipment. Under the contract a maximum of $13.50 a foot for labor is allowed for driving the adit, $11.00 a foot for the drifts, crosscuts, and raises. Where timbering is required, the Operator may pay an additional $3.00 per foot for labor for drifting and $5.00 a foot for raising. This was explained to Mr. Williams previously when he wanted to add an additional man on a split shift basis to his crew. He is now paying contract labor $10.25 a foot. Little timbering has been done in the mine. Footage costs, not including the cook's salary, supervision, or payroll taxes for the months of July, September, and October, were $13.80, $13.72, and $16.94 for labor, respectively. Had timber been needed, the labor costs would have been increased at least $3.00 a foot. Apparently the costs jumped considerably with the addition of a foreman. Do the examining engineers have any suggestions as to how the overall high cost of the project might be lowered?

In the interim report, dated December 5, 1952, the engineers, Trengrove and Gentry, mention that the mineralization appears to be of a "spotty nature" and is not uniformly disseminated throughout the limestone and ankerite. As of November 1 the Operator had spent $56,115.60 or approximately 75 percent of the contract fund. Of this only $9.00 was for assays. To date we have not received one assay of a sample taken by a Government engineer. The Operator has mentioned only one assay, a composite one of 0.62 percent WO_3. On November 25 and December 1 we wrote you regarding the sampling of this project. Before the project is completed it should be sampled systematically either by the Operator or by the examining engineers. The Government should do a certain amount of sampling on which to base its certification. Should further aid be requested for development from other Government agencies, you know that they will not accept just the applicant's say-so that metal contents average "x" percent. Will you please inform us what steps have been taken to secure samples of the mineralized ground opened to date?

S.H.
1-9-53

Sincerely yours,

Frank E. Johnson

GHB

Chairman, Operating Committee

Enclosures

APPROVED:

J. H. Hedges GHB

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

Copy to: DOCKET
ADMN. READING FILE
FIELD TEAM, REGION III
CODE 400
CODE 800
OPER. COMMITTEE
D. M. Lemmon, USGS
R. W. Geehan, USBM

GCSelfridge/ls 1/2/53

Docket gcl 1/9/53

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 9 1953

RECEIVED
JAN 8 6 20 PM '53
GENERAL SERVICES ADMIN.
PUBLIC BLDGS. SERVICE
BMD - COMMUNICATIONS

MM

265 WA SFS /I-BOM/

SAN FRANCISCO CALIF 1-8-53 235P

FRANK E. JOHNSON, OPERATING COMMITTEE

DMEA, INTERIOR BLDG, WA

REURTT JANUARY 8, DMA-2082, CONTRACT E248. NOVEMBER REPORT SENT TO YOUR OFFICE ON DECEMBER 19. REPORT FOR DECEMBER NOT YET RECEIVED HERE. ARE NOTIFYING A. C. JOHNSON AT RENO TO SEND COPIES OF DECEMBER REPORT DIRECTLY TO YOU IF HE HAS RECEIVED IT FROM MT. WHEELER MINES.

H C MILLER, EXEC OFCR DMEA FLD TEAM REGN III

8 DMA-2082 E248 19

JC 236P

FILE COPY
SURNAME:

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

Selfridge - F.E. Johnson

DEFENSE MINERALS EXPLORATION ADMINISTRATION
G. C. Selfridge
5284 3530

January 8, 1953

H. O. Miller, Executive Officer, DMEA Region 3, 1012 Flood Building,
870 Market Street, San Francisco, California
Docket No. DMA 2082, Mt. Wheeler Mines, Inc.

Please send us immediately copies of Operator's MF-104's for November and December even though they may not be approved as yet.

FRANK E. JOHNSON

Frank E. Johnson
Chairman, Operating Committee

1-8-53

GCSelfridge/ls

cc: Docket
Admn. Read. File
Code 400
Audits
Confirmation

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

January 7, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 14 1953

Memorandum

To: The Docket

From: G. C. Selfridge
Special Assistant

Subject: Re Docket No. DMEA-2082 (Tungsten)
Mount Wheeler Mines
Mt. Wheeler Mine, White Pine County, Nevada
Contract No. Idm-E248

Mr. Williams telephoned today to advise Washington that all of the moneys under the subject contract had been expended as of December 31, 1952, and to inquire regarding the best procedure to obtain additional funds for added work in the shortest possible time.

He stated that the Company would like to do 1200 feet more work in the main adit and 1000 feet of work in the ore bed already exposed by the work originally provided for in the contract. He proposed one shift in the adit for each two shifts in the ore bed.

He was advised that Washington would probably not be opposed to the footage, but that Washington might prefer a certain amount of work be done in the ore bed prior to extending the adit further.

Mr. Williams was told that Washington had been perturbed because of lack of assays and the seemingly high unit costs.

Mr. Williams mentioned that Mr. Johnson at Reno had also spoken to him concerning the lack of assays and that he had recently submitted a number of assays to the Region III office.

Mr. Williams further inquired concerning prorating of services and costs. He wished to know that if the Company should mill ore from only the exploration headings, would any of the costs be prorated.

He was told that none of the direct costs would be prorated but supervision might if the superintendent divided his activities between the mine and the mill.

Mr. Williams was asked what he planned to do with the ore. At present it will be hauled down the hill to a point approximately five miles distant in the valley. He thought by summer Combined Metals might have a mill to beneficiate custom tungsten ore.

Mr. Young of the Combined Metals Company estimated that the work at Mount Wheeler had indicated 15,000 tons of ore.

With regard to Mr. Williams request for additional funds, he was told to submit the same type of information as he would for an application and it would be treated as an amendment to the contract.

Mr. Williams stated that all of the work carried on by the Company during January would be at its expense. He expressed his desire to have the additional funds apply as of February 1, 1953.

Mr. Williams discussed the possibility of driving northward on the ore bearing bed a distance of 900 feet or to the north fracture zone. He was told that for the present Washington would probably prefer not to do so, but to confine the exploration to the present shear zone.

Mr. Williams stated that he was very satisfied with the DMEA program; that he had had good relations with the examining engineers and that it seemed to be a general consensus of opinion that the DMEA program was generally thought well of by the mining fraternity.

George Selfridge.

FILE COPY
SURNAME:

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

GCSelfridge/la
5284 3578

Selfridge
Kimball
Hedges
Johnson

January 7, 1953

H. G. Miller, Executive Officer, DMEA Region 3, 1012 Flood Building,
870 Market Street, San Francisco, California
Docket No. DMA 2082, Mt. Wheeler Mines, Inc., Contract Idm-X248

Williams telephoned us discussing additional work under present contract. Before approving additional work and increase in contract, we must have some check sampling and comments by examining engineers to substantiate Williams' request. Possibly Bateman should visit property.

Frank E. Johnson (GHO)
Frank E. Johnson
Chairman, Operating Committee

DI-117
JSW

GCSelfridge/la 1/7/53
cc: Docket
Admn. Read. File
Code 400
Confirmation
Audits
Oper. Com.

Docket 2082

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

December 24, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration
DEC 26 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, DMEA, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Amendment No. 3, Docket DMEA-2082 (Tungsten), Mt. Wheeler Mines, Inc., White Pine County, Nevada, Contract Idm-E248

After all the work done by your office in preparing Amendment No. 3 to the contract, Mr. James D. Williams, President, Mt. Wheeler Mines, Inc., has returned the six copies unsigned with a letter stating that it has been decided that the best interest of the project will be served by completing the contract on its original basis.

For your information, I am inclosing two copies of Mr. Williams' letter, dated December 20, 1952, covering the return of the unsigned amendment to this office.

H. C. Miller
Executive Officer, DMEA Field Team
Region III

Attachments

Copy retained 400

coe 12-29

C O P Y

MT. WHEELER MINES, INC.
P.O.BOX 150
SALT LAKE CITY 10, UTAH

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DEC 1952

December 20, 1952

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
Room 1012, Flood Building
870 Market Street
San Francisco 2, California

Re: Contract Idm-E248
Docket DMEA-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
White Pine County, Nevada

Dear Mr. Miller:

We are returning unsigned the six copies of Amendment No. 3, relating to the above captioned Exploration Contract. The Amendment satisfies our request fully but upon re-examination of the exploration program as it is now developing, we have decided that the best interests of the project will be served by completing the contract on its original basis. We wish to thank you and the Washington office for your most prompt response in this matter and trust that you will appreciate our position at this time.

In the matter of the rental of the single jib Jumbo at $385.00 per month, I wish to advise you that our supplier did not wish to purchase this piece of equipment for a straight rental deal where the guaranteed rental was limited to only three months for the reason that very few calls are had for a rental Jumbo, and that it should have at least 50% of the cost returned in the form of rental in the event the Jumbo was returned at the end of three months. Under the time limit of our DMEA contract and Amendment No. 2 we were able to assure a rental of only three months certain. However, we do have a gentleman's agreement that should we continue beyond the three month period the full amount of rental then paid, viz., $1155.00, would be applied upon the purchase price of $2310.00 and the then remaining balance could be paid at the rate of $385.00 per month for an additional three months. We wish to assure you that in the event of such a continuance of our DMEA Exploration Project at Mt. Wheeler, resulting in full payment and acquisition of the Jumbo, we will convey a 75% equity to DMEA by whatever means you may request at that time.

In passing I wish to inform you that it now appears that Wheeler will become a major tungsten producer in the very near future. We are most pleased and encouraged by the quantity as well as the quality of scheelite exposed in the Wheeler bed wherever the laterals and raises have opened it up. To date we have reasonably delineated a productive zone approximately 700 feet East and West by 100 feet North and South with an average productive thickness of 5 to 7 feet. The muck pile assays indicate an average WO_3 content of approximately 0.8% to 1.2%, with an appreciable tonnage suggested.

We plan upon submitting an application early in January for the continuance of the Pole tunnel an additional 1200 feet easterly to cut the big Sheffield shear zone and also to provide for approximately 1100 feet of exploration up bedding dip from the Pole tunnel to the north shear zone. This work in the bed should truly show the magnitude of the Wheeler tungsten deposit. Just as soon as I have completed the application I shall discuss it fully with Messrs. Roberts and Smith of the U.S.G.S. and Messrs. Johnson, Trengove and Gentry of your Reno office. Upon agreement with these gentlemen I shall present the program to you and Mr. Bailey at San Francisco.

Kindest regards and best wishes for a Very Merry Christmas.

Sincerely yours,

/s/ James D. Williams
President

JDW-K

MT. WHITTIER MINE
THROUGH NOVEMBER 1952
909. FEET DRIVING & CONTRACTING
62' " RAISING
TOTAL 971 FEET WORK

	COST.	COST PER FOOT	
CONTRACT.	9,721.03	10.01	
LABOR	5,840.46	6.01	
SUPERVISION	2,500.00	2.57	
TECH. SERVICE	250.00	.26	
TIMBER	57.16	.06	
EXPLOSIVES	3,933.25	4.05	HIGH
PIPE	1,962.75	2.02	HIGH
TRACK	2,912.40	3.00	HIGH
STEEL & BITS.	2,301.10	2.37	HIGH
FUEL & LUBE	1,621.70	1.67	
VENT TUBE	880.85	.91	
RENTAL	12,103.16	12.46	HIGH
PURCHASE	4,451.81	4.58	
REPAIRS	614.31	.64	
PAYROLL TAXES	1,028.16	1.06	
COMP. INS.	1,968.00	2.03	
ADMINISTRATION	1,966.91	2.03	
OFF. SUP. + ASSAYING	181.28	.19	
FREIGHT,	920.79	.95	
TRUCKING	400.00	.41	
	55,621.91	57.28	
REHABILITATION	1,141.43	1.18	
NEW BLDGS + IMP	9,652.93	9.94	
	66,416.27	68.40	

Mt. Wheeler Mines

Direct Labor costs / ft

	Feet Exploration	Contract Payment	Cost/ft	Labor (amount paid on 300.00 for cook)	Cost/ft	Total	Cost/ft
July	123.0	$1,235.00	10.04				
July	123	$1,235.00	10.04	462.35	3.76	1697.35	13.80
Aug.	210.5	2276.20	10.81	334.25	1.59	2610.45	12.40
Sept.	239.0	2451.48	10.26	827.25	3.46	3278.73	13.72
Oct.	163.0	1613.10	9.88	1148.11	7.04	2761.21	16.94

These unit costs do not include either supervision, cook's salary of $300.00, or Workmen's Comp. and payroll taxes.

Amendment #2 allowed one extra man in addition to cook as long as labor costs per foot were less than $13.50 per foot for adit and $11.00 per foot for cross cuts, drifts, and raises. In addition, timbering will be paid for at the rate of $3.00 per foot for adit, crosscuts, and drifts and $5.00 per foot for the raise. under the contract

Our letter of July 24, 1952 to Field Team was in error when the price of timbering was stated to be included in $13.50 and $11.00 estimates.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 19 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

Date: Dec. 12, 1952

Memorandum

To: Operating Committee, DMEA, Interior Bldg., Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Interim Inspection Report

Attached are four copies of Interim Report on -

Docket DMEA 2082

Contract Idm-E 248

Commodity Tungsten

Operator - Mt. Wheeler Mines, Inc.

Property - Mt. Wheeler Mine, Lincoln County, Nev.

By Russell R. Trengove & Glenn G. Gentry

Dated Dec. 5, 1952

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to: Finance Officer, Region III (With one copy of report)

E. H. Bailey, USGS (With one copy of report)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DEC 1952

GCL
12/22/52

INTERIM REPORT

Docket No.: DMEA-2082 (tungsten) Dec. 5, 1952

Name and address of operator: Mt. Wheeler Mines, Inc.,
P. O. Box 150,
Salt Lake City 10, Utah.

Name and location of property: Mt. Wheeler Mine, Lincoln Co., Nev.

Contract No.: Idm-E248

SUMMARY

This property was visited on Nov. 21, 1952 for the purpose of inspecting the work being performed under the exploration contract. The inspecting engineers were shown through the underground workings by Mr. James Williams, President of Mt. Wheeler Mines, Inc. and Mr. Jepson, Mine Foreman.

Two shifts totaling eight men are employed in the work which has been done in a satisfactory manner.

Drilling in the headings is accomplished by means of one drill mounted on a Joy Manufacturing Co. drill carriage. Mucking is by means of an Eimco No. 12 B mucking machine.

The broken rock is hauled to the dump, adjacent to the portal of the Pole adit by means of a Mancha storage battery locomotive.

The mine crew seem to be energetic and the tunnel and the area at the portal are maintained in very good condition. The operating equipment reflects careful attention and is operating efficiently.

CONCLUSIONS

The continuance of the work during the coming winter months will probably depend upon weather and road conditions. Mr. Williams expects

to discontinue active mine operations whenever snow conditions and road maintenance make it too difficult and expensive for the amount of exploration work that could be done. The work, of course, would be resumed as soon as possible in the spring of 1953.

RECOMMENDATIONS

None.

STATEMENT OF WORK COMPLETED

Period: 9/10/52 to 11/21/52

Location	Advance/feet	Total Advance/feet
No. 1 lateral, south	44	100
No. 2 lateral, south	36	36
No. 3 lateral, north	60	60
Pole Adit	286	588
No. 3 raise in No. 1 lateral, south	13	13
No. 1 raise in No. 2 lateral, south	26.5	26.5
No. 1 raise in No. 3 lateral, north	18	18
Total	483.5	841.5

Contract: Dated Jan. 29, 1952
Time allowed to begin work: 30 days (Feb. 29, 1952)
Date of completing contract: 10 months (Dec. 29, 1952)
Amendment No. 2, effective No. 13, 1952: Extends contract time 3 months - to March 29, 1953.

Note: In the event that it is necessary to discontinue operations during months of severe weather conditions, the applicant will be unable to complete the contract by March 29, 1953 and he should request sufficient extension of time, dependent upon the date of discontinuing operations this winter.

Total cost of project:	$75,476.00	
Government participation 75% - $56,607.00		
Total costs as of Oct. 31, 1952	56,115.60	= 74.35% of total.
Unexpended Balance	$19,360.40	

Pole Adit -	Authorized	1,000	feet -	completed	588	feet = 58.8%
Crosscuts -	"	125	" -	"	196	" = Excess 71 feet.
Raises -	"	75	" -	"	57.5	" = 76.7%
					841.5	

The overall cost per foot, covering all expenditures = $66.68 The operating expenses for the past three months, August, September, and October, have averaged $7,788.93 per month and at this rate the unexpended funds will be exhausted in 2.5 months.

GEOLOGY

The scheelite mineral has been observed principally along the north-south trending fissures or fractures and the concentrations appear to be near the intersection of these fractures and the east-west fissure followed by the Pole adit. The mineralization appears to be of a "spotty nature" and is not uniformly disseminated throughout the limestone and ankerite.

At the face of the Pole adit on Nov. 21, 1952, the applicant had encountered a zone of heavy gouge material which appeared to be an altered or crushed ankerite showing some scheelite crystals. Above the hanging wall a layer of yellow colored sandstone is noted.

The Pole adit is probably nearing a larger zone of faulting or a large open water course which would account for the gouge material in the face.

SAMPLING

No samples were taken as it appeared that only large bulk samples would be of definite value.

Russell R. Trengove

Russell R. Trengove
Mining Engineer

Glenn G. Gentry

Glenn G. Gentry
Mining Engineer

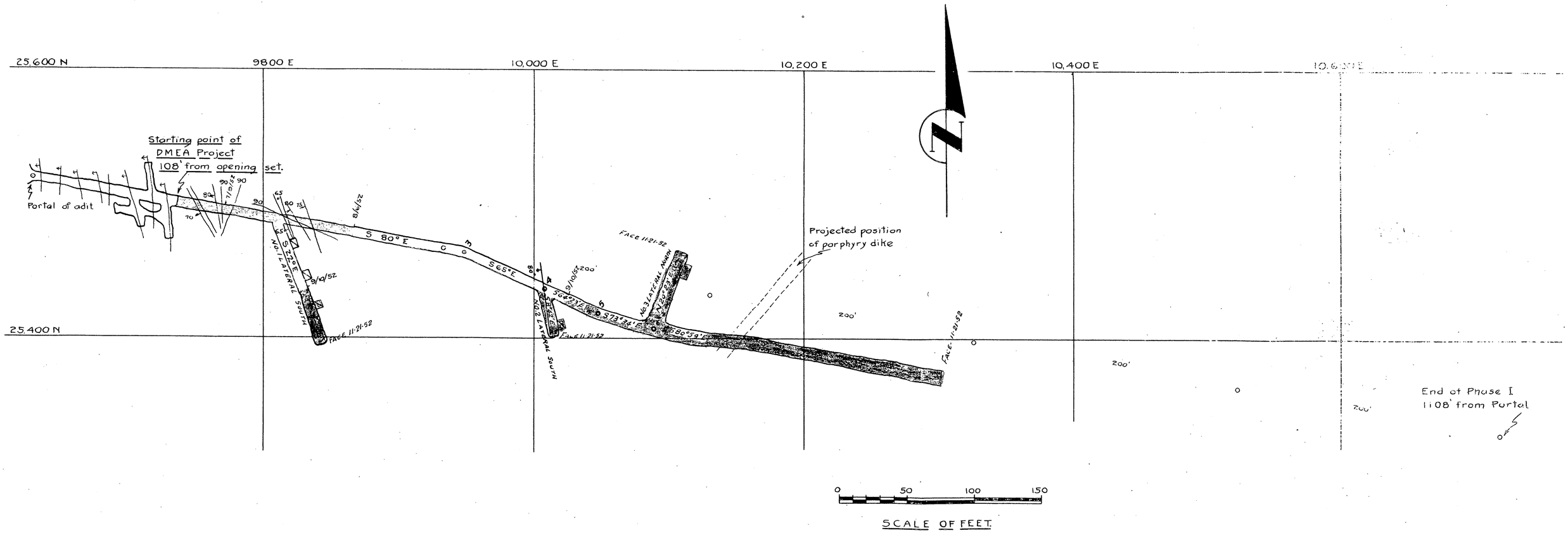

FIGURE 1. PROGRESS MAP OF MOUNT WHEELER MINES, INC TUNGSTEN MINE. WHITE PINE COUNTY, NEVADA

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DEC 8 1952

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Bldg.
870 Market St.
San Francisco 2, Calif.

December 5, 1952

Mr. James B. Williams, President
Mt. Wheeler Mines, Inc.
P. O. Box 150
Salt Lake City 10, Utah

Contract Idm-E248
Docket DMEA-2082 (Tungsten)
Mt. Wheeler Mine
White Pine County, Nevada

Dear Mr. Williams:

Attached are six copies of Amendment No. 3, relating to the subject contract, which was prepared in the Washington Office of the Defense Minerals Exploration Administration to satisfy requested items 7 and 8 of your November 10, 1952 letter to me. If this amendment meets with your approval, will you kindly sign all six copies and return the original and four copies to this office, retaining the "Operator's Copy" for your files.

The Washington Office calls my attention to an error in your November 10 letter. In the third sentence under Item 1, Extension of Time, you requested a three months' extension from October 29, 1952. As your contract is dated January 29, 1952, and runs for 10 months, the expiration date is November 29 instead of October 29. Thus, the three months' extension requested by you and granted by Amendment No. 2 makes the new completion date February 29 (March 1), 1953.

The Washington Office questions the rental of a jib Joy Jumbo at $385.00, or $15.40 a working day. This, they write, seems high as current quotations for the jumbo and chain feed shell are $2,940. On this basis, the purchase price would be amortized within approximately 7.6 months, depending upon the freight differential. Kindly let me have your justification for the high rental charge.

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer, DMEA Field Team
Region III

Copy to: DMEA, Washington, D.C.
W.H.Bailey, USGS
A.C.Johnson, Reno
Geo. Mavor

HCMiller:am
Files
Chrono

Enclosure

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Docket No. DMEA 2082 - Tungsten DATE: December 3, 1952

FROM : Iron and Ferro-Alloy Division, DMEA

SUBJECT: Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Exploration Contract Idm-E248
Review of Mr. Williams' letter of November 17, 1952, explaining reasons for apparent over-expenditures of funds for Item (5), Initial Rehabilitation and Repairs and Item (6), New Buildings, Improvements, etc.

It is impossible to check Mr. Williams' figures since all of the over-expenditures have been charged to labor costs and we do not have either the payroll data or the distribution of labor.

However, attention is called to the following:

1. The cost of construction of the 16' x 24' building as of May 31, 1952. An item of $914.10 was shown for labor and $250.00 was shown for supervision. In checking back to the copy of the payroll for this period, the only one submitted, it was noted that the total payroll including supervision was $914.10. Therefore, the distribution shown must be in error.

2. Though a labor cost of $628.38 is shown on the construction of 16' x 24' building during June, no supervision is included.

3. No labor or supervision is shown for the moving or conversion of the blacksmith shop though the other following charges are shown:

<u>May</u>	
Materials	$60.54
<u>June</u>	
Site preparation	92.00
<u>July</u>	
Materials	83.00

4. Though a labor cost of $942.57 is shown for the installation of the pipe line for June, no supervision is included.

5. The cook's salary has not been prorated to the different activities, but since a cook was allowed in the contract, this is being approved.

6. The cost of transportation of the supplies charged to contract items 5 and 6 should also have been charged against these items.

7. A compilation of the materials from MF-104 forms used for Contract items 5 and 6 through May do not check with Williams new breakdown. See following.

MF-104, February

Pipe, invoice #24487	$ 593.69
Building materials, invoice #5417	527.01
Building materials, invoice #5418	203.38
Building materials, invoice #5416	52.44
	$1,376. 52

MF-104, April-May

Building supplies	237.59
	$1,614.11

However, a total of $1,681.24 is shown by Williams.

Materials

16' x 24' building	$1,027.01
Blacksmith shop	60.54
Pipe	593.69
	$1,681.24

8. Part of the $3,808.38 difference is assigned by Williams to transportation of supplies and equipment from Pole Canyon to mine. The major portion of this was purchased in February and amounted to 62,000 pounds. The freight haul to Pole Canyon amounted to only $374.18 divided as follows:

62,000#, 292 miles, @ $0.04/ton mile	$363.28
Tax	10.90
	$374.18

9. Only five sets of timber were replaced at the portal of the Pole tunnel though this is included by Williams as one of the major reasons for difference in costs.

Docket Copy

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 8 1952

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Bldg.
870 Market St.
San Francisco 2, Calif.

December 3, 1952

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2082 (Tungsten) - Mt. Wheeler Mines, Inc.
White Pine County, Nevada
Contract Idm-E248 - Amendment No. 2

Attached are the original and two copies of Amendment No. 2, dated November 13, 1952, executed in connection with subject contract. Routine distribution has been made of the remaining copies. A justification sheet is attached to each copy of the amendment.

This amendment covers Items 1 to 6 inclusive, mentioned in Mr. Williams' letter of November 10, 1952, a copy of which was sent to your office with my memorandum dated November 17. We shall await your recommendations for taking care of Items 7 and 8 also mentioned in Mr. Williams' letter of November 10.

cor 12-8

H. C. Miller
Executive Officer, DMEA Field Team
Region III

Attachment

Copy to: E. H. Bailey, USGS
George Mavor, DMEA
A. C. Johnson, Reno (With copy of amendment)
Finance Officer, Region III (With copy of amendment)

RECEIVED
JAN 13 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

FILE COPY
SURNAME:

Selfridge
Mattendorf

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

DEC 1 1952

Mr. H.C. Miller
Executive Officer, DMEA Region 3
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Amendment No. 3
Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract No. Idm-E248

Dear Mr. Miller:

Attached hereto are six copies of Amendment No. 3 relating to the subject contract. If the amendment meets with your approval and that of the Operator, please have it executed and make the usual distribution.

We note in the Combined Metals Reduction Company report that it is the middle portion of the Mt. Wheeler bed that has been found more favorable for replacement by scheelite rather than the bottom portion as formerly thought. Correspondence in general suggests that possibly more weight is now being given to the North-South fracture system than to the East-West one. Should not the extension date of the contract have been from November 29 rather than October 29, 1952, as mentioned by Mr. Williams?

The rental of the single jib Joy jumbo at $385.00 per month, or $15.40 a working day, seems high. Current quotations for the jumbo and a chain feed shell are $2,940. On this basis, the purchase price would be amortized within approximately 7.6 months, depending on the freight differential. It is hard to believe that it takes from 2½ to 3 hours per shift to set up and tear down. With proper instruction such a situation should be corrected within a very short time. Possibly part of Mr. Williams' trouble is that he was driving his drifts oversize. The backs of the drifts seemed especially high at the time of Mr. Selfridge's visit to the mine.

The slusher drifts will not give us all the information that one would desire. Over-all ore values will not be reported because the drifts follow the best mineralized zones as indicated to date. We believe that it would be worthwhile to investigate the area between the B and C zones, if feasible, after learning more about the deposit. There is a 160' section between these zones about which we will know nothing and one

cannot project the results obtained from the slusher drifts too far into this area with confidence. Possibly a northeast-southwest trending diagonal drift across the reticulated fracture system might be feasible from a geologic and mining viewpoint. Such a drift would cut both systems of fractures and would indicate the incidence of favorable junctions.

We believe that it would be to the best interests of the Government that the slusher drifts be chip sampled over a channel width of from six to eight inches and at waist height. While such sampling may not yield a truly representative figure for the WO_3 content, at least it will indicate an order of magnitude. It can serve as a check against the Operator's statements relating to the grade of mineralization. In addition, it should be more accurate than taking a sample off the surface of the dump once a month where material representing only the last few rounds is available.

One cannot set a fixed standard upon which to base a certification of discovery or development. The best possible estimate of potential tonnages of mineralized ground should be made based upon available data. Prevailing prices definitely do not enter into the picture as such. After all of the necessary data have been gathered, evaluated, and studied, keeping in mind that production might result from the property within the next ten-year period, then the Field Team should make its recommendation either favorably or unfavorably for a certification. The recommendation is to aid the DMEA Administrator in reaching a final decision.

Sincerely yours,

(signed) FRANK E. JOHNSON

(JHB)

Chairman, Operating Committee

F.N. 12-1-52

Enclosures

GCSelfridge:ls 11/25/52

Approved:

J. H. Hedges (JHB)

Member, Bureau of Mines

A.R. Finkel, Jr. (JHB)

Member, Geological Survey

Copy to: Docket
Admn. Read. File
Field Team, Reg. 3
Operating Committee
G. C. Selfridge
D. M. Lemmon, USGS
R. W. Geehan, USBM

FILE COPY
SURNAME:

Selfridge
Mathews

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

NOV 25 1952

Mr. H. C. Miller
Executive Officer, DMEA Region 3
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: September voucher
Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract No. Idm-E248

Dear Mr. Miller:

We have reviewed the subject voucher and accompanying narrative report. Although a Map D-100-4 is mentioned, one was not received.

Mr. Williams states that during Mr. Selfridge's visit to the property it was decided to continue the first lateral to a point 100 feet south of the main crosscut. His recollection is that the matter was discussed but the only conclusion reached was that the 125 feet of crosscut allowed at the adit level might not necessarily be limited to exact 25-foot sections. In addition, Mr. Williams stated that he would do nothing under oral agreement but would have to have it in writing because of previous difficulties he had experienced on other exploration contracts. However, Washington has no objection to this crosscutting so long as it was in ore. It has always been Washington's opinion that the work should have been done in ore, at least at first, before driving any crosscut in barren shale.

It was also noted that 36 feet of drift had been driven in lateral No. 2. These two laterals have now exceeded the allotted crosscut footage under the contract. Additional footage for crosscuts should be obtained from the 1,000 feet allotted to the main adit. We want to be sure that Mr. Williams does not drive several hundred feet of main adit in waste without doing the auxiliary work in the ore zone called for in the contract. In fact, it would be well that the last work done under this particular contract be done as near the face as possible, if feasible, as he has already stated that he will apply for another contract. Any new work he proposes will probably be for extending the main adit.

The No. 1 raise that was started in the No. 2 lateral is 11½ feet back from the face. It is not known how much work Mr. Williams does before putting in a chute but the work suggests that he is going to drive these crosscuts as far as he thinks is possible and then raise on the best fissures. The work he has done to date has been done under such conditions.

Mr. Williams states that all faces sample plus 1.0% WO_3; a continuous grab sample has assayed 0.62% WO_3; and he believes that ore production from the area should average plus 1.0% WO_3. The MF-104 form shows only a $6.00 item for assaying. We would be interested to know what the samples assayed which Mr. Trengrove took during Mr. Selfridge's visit in September. We would also like to know how much additional sampling has been done by the field engineers as a check against Mr. Williams' statements relating to ore grade.

The Operator's Unit Cost and Progress Report, Form MF-104A, is constructed to show unit cost for drifting, crosscutting, raising, etc. Mr. Williams is reporting all advance at a unit cost. Under the contract the adit was to be driven approximately 6' X 7' in the clear; the crosscuts, 5' X 7'; and the drifts in the raises, 5' X 7'. Thus, the unit costs should vary for each type of opening. Will you please call this matter to Mr. Williams' attention?

Sincerely yours,

(signed) FRANK E. JOHNSON (NB)

Chairman, Operating Committee

Approved:

J. H. Hedges (NB)

Member, Bureau of Mines

A. R. Kinkel, Jr. (NB)

Member, Geological Survey

GCSelfridge:ls
11/21/52

BJ 11-25

Copy to: Docket
Admn. Read. File
Operating Committee
Field Team, Region 3
G. C. Selfridge
D. M. Lemmon, USGS
R. W. Geehan, USBM

400

Chief Counsel, DMEA

November 25, 1952

Iron and Ferro-Alloy Division, DMEA

Proposed Amendment No. 3
Docket No. DMA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract No. Idm-E-248

Attached hereto is a rough draft of an amendment relating to the subject contract. Will you please prepare a final draft for transmitting to the field at your earliest convenience as operations at the mine are on a curtailed basis pending receipt of this amendment. The amendment has been discussed with Mr. Kane.

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

Attachment

GCSelfridge:ls
11/25/52

Draft proposed

Exploration Project Contract

Mt. Wheeler Mines, Inc.

Docket No. DMA 2082

Amendment No. 3

It is agreed this _____ day of _____, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Mt. Wheeler Mines, Inc., each acting in consideration of the agreement of the other to the terms hereinafter set forth, that effective _____, 1952, the Exploration Project Contract Idm-E248, dated January 29, 1952, between the parties hereto, as amended, be further modified and amended as follows:

In Exhibit "A" under "Statement of Work" paragraph 4, delete the figure 1000 feet and substitute therefor the figure 725 feet. The 275 feet deducted from the allowable adit advance shall be used for driving within the favorable ore horizon as now exposed, four slusher drifts, each not to exceed 5' X 7' in the clear, as described below and indicated on the Company map marked D-100-5, traced 11-1-52, attached hereto and made a part hereof:

1. From raise No. 2 in lateral No. 1, which trends S 19°-53' E, drift approximately 70 feet up the bedding dip in a general N 20° W direction.

2. From raise No. 1 in lateral No. 2, which trends S 8°-42' E, drift approximately 105 feet up the bedding dip in a general N 10° W direction.

3. From raise No. 1 in later No. 3, which trends N 20°-23' E, drift approximately 60 feet up the bedding dip in a general north direction and also drift 40 feet in a general east direction.

With reference to paragraph 8 in Exhibit "A" under "Statement of Work" the Operator may at sites to be yet selected and with Government approval elect to drive the balance of the lateral drifting provided for on the adit level from raises driven just off the adit instead of from raises driven off of laterals as originally provided for in the contract. Total footages for the auxiliary drifting shall not exceed those set forth in paragraphs 7, 8 and 10.

This amendment shall not be construed to increase the estimated cost of the project, the aggregate total amount which the Government may be obligated to pay, or the percentage of costs which the Government may be obligated to pay under the provisions of Article 13 of the contract form.

EXPLORATION PROJECT CONTRACT
MT. WHEELER MINES, INC.
DOCKET NO. DMEA-2082

AMENDMENT NO. 3

It is agreed this _____ day of _____, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Mt. Wheeler Mines, Inc., each acting in consideration of the agreement of the other to the terms hereinafter set forth, that effective _____, 1952, the Exploration Project Contract Idm-R268, dated January 29, 1952, between the parties hereto, as amended, be further modified and amended as follows:

In Exhibit "A" under "Statement of Work", make the following changes:

1. In paragraph 4, delete the first sentence and substitute therefor the following: "Advance the present face of the Pole adit 725 feet southeasterly."

Add to paragraph 4, the following: "The 275 feet deducted from the adit advance originally allowed above shall be used for driving within the favorable ore horizon as now exposed, four slusher drifts, each not to exceed 5' x 7' in the clear, as described below and indicated on the Company map marked D-100-5, traced 11-1-52, attached hereto and made a part hereof:

a. From raise No. 2 in lateral No. 1, which trends S 19°-53' E, drift approximately 70 feet up the bedding dip in a general N 20° W direction.

b. From raise No. 1 in lateral No. 2, which trends S 8°-42' E, drift approximately 105 feet up the bedding dip in a general N 10° W direction.

c. From raise No. 1 in lateral No. 3, which trends N 20°-23' E, drift approximately 60 feet up the bedding dip in a general north direction and also drift 40 feet in a general east direction.

2. Add a paragraph 11 as follows: "In addition to the lateral drifting from the top of the raises provided for in paragraphs 7, and 10, the Operator, at sites still to be selected with Government approval, may elect to do further lateral drifting (using footage provided for in paragraph 8 and not already used for the purposes set forth therein) from raises driven just off the adit rather than off the laterals as provided for in said paragraph 8."

This amendment shall not be construed to increase the estimated cost of the project, the aggregate total amount which the Government may be obligated to pay, or the percentage of costs which the Government may be obligated to pay under the provisions of Article 13 of the contract form.

Dated _____, 1952.

UNITED STATES OF AMERICA

By _____
Administrator, Defense
Minerals Exploration
Administration

MR. [illegible] MINES, INC.

By _____
President

How does this explanation fit in with first 104 forms.

It doesn't

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

November 21, 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2082 (Tungsten), Mt. Wheeler Mines, Inc., Mt. Wheeler Mine, White Pine County, Nevada, Contract Idm-E248

Reference is made to your subject letter, dated October 2, requesting a breakdown on the items covered under the cost for "Initial Rehabilitation and Repairs" and "New Buildings, Improvements, etc." with comments on their seemingly high cost.

When Mr. James D. Williams, President of Mt. Wheeler Mines, Inc. was in the office recently, I discussed your letter with him and he promised to mail to me an itemized statement of the expenditures. At the same time he told me that the reason for the apparent over expenditures was due to early efforts to distribute costs, which later proved misleading after monthly reporting was converted to the new MF-104 forms.

Two copies of Mr. Williams' November 17, 1952 letter to me are attached, which I trust will answer your questions adequately.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to: E. H. Bailey, USGS

Copy retained 400

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
NOV 25 1952

COPY

MT. WHEELER MINES, INC.
P. O. Box 150
Salt Lake City 10, Utah

COPY

November 17, 1952

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
Room 1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA-2082-Tungsten
Mt. Wheeler Mines, Inc.
Exploration Project Contract Idm-E248
Analysis of Charges to Items (5) and (6) MF-104 Report. (New Form)

Dear Mr. Miller:

In accordance with our discussion of the above matter regarding the apparent over-expenditures of funds for Item (5), Initial Rehabilitation and Repairs and Item (6), New Buildings, Improvements, etc., as shown on our June and July, 1952, MF-104 Statement, we furnish you the following -

Contract Idm-E248 allows the following expenditures for these items, as per Exhibit A:

1.	Construct 16'x24' building	$2,000.00	
	Site preparation-Bulldozer rental	100.00	$2100.00
2.	Move blacksmith shop	$ 750.00	
	Site preparation-Bulldozer rental	100.00	850.00
3.	Install water line		
	Pipe	$ 540.00	
	Labor	200.00	
	Excavation of trench-Bulldozer rental	600.00	1340.00
4.	Bulldozer rental-snow removal	$ 1200.00	1200.00
			$5490.00

As of May 31, 1952, actual expenditures for these four items were as follows -

1.	Construction 16'x24' building		
	Materials	$1,027.01	
	Labor	914.10	
	Supervision	250.00	$2191.11
2.	Move blacksmith shop		
	Materials	$ 60.54	60.54

	Brought Fwd.		$2251.65
3.	Install pipe line Pipe	$ 593.69	593.69
4.	Bulldozer rental-snow removal	390.00	390.00
			$3235.34

During June, 1952, the following additional expenditures were made on these four items.

1.	Construct 16'x24' building	$	$
	Materials	23.32	
	Labor	628.38	
	Site preparation-Bulldozer rental	100.00	
			751.70
2.	Move blacksmith shop Site preparation-Bulldozer rental	$ 92.00	92.00
3.	Install pipe line		
	Labor	$ 942.57	
	Bulldozer rental	352.00	1294.57
4.	Bulldozer rental-snow removal	$ 256.00	256.00
			$2394.27

During July, 1952, the only expenditure made was -

2.	Move blacksmith shop Materials	$ 83.00

Thus, the total actual expenditure made for these four items was as follows -

Up to May 31, 1952	$3235.34
June, 1952	2394.27
July, 1952	83.00
	$5712.61

This represents an excess of only $222.61 over that allowed by the contract. However, the MF-104 totals for these items as of July 31, 1952, are -

Item (5) Initial Rehab. and Repairs	$1141.43
Item (6) New Buildings-Improvements, etc.	8379.56
	$9520.99

The difference between actual expenditures of $5712.61 and MF-104 reported expenditures of $9520.99, amounting to $3808.38, would

appear at first instance to represent excess expenditures for these items because of the method used for reporting when we changed from MF-104 (old form) to MF-104 - (new form) in June, 1952. Actually, this difference of $3808.38 is made up of labor dedicated to the following preliminary preparations -

1. Hauling supplies from bottom Pole canyon to mine.

2. Hauling equipment from bottom Pole canyon to mine.

3. Building forms and concrete work for mine equipment.

4. Installing mine equipment, underground air and water lines, underground and surface trackage, etc.

5. Enlarging portal Pole tunnel and timbering to allow entrance of trammer and mucking machine.

6. Cook and Superintendent, April (1/2), May and June, 1952.

This preparation was absolutely necessary to effectuate the exploration program as provided for in the contract but we failed to set up specific items covering them. However, upon discussion with the Reno office we were sent a form containing suggested conversions from the old form to new form MF-104. (A copy of this is attached hereto.) In following this it was our opinion that such expenses of preparation as outlined above would be properly chargeable to Items (5) and (6) on the new form. However, it would now appear that the proper conversion would probably have been to the contingency account since these certainly were contingent items which had to be accomplished before the exploration could be started.

I trust the foregoing analysis, as shown in our accounting records, explains your inquiry.

Very truly yours,

MT. WHEELER MINES, INC.

By James D. Williams (Signed)
President

JDW-K

Enc.

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
1012 Flood Building
870 Market Street
San Francisco 2, California

February 13, 1953

Mr. Jay L. Chambers, Chief
Contract Administration and
Audit Division
Defense Minerals Exploration
Administration
Washington 25, D. C.

Re: Mr. Wheeler Mines, Inc.
Docket DMEA-2082
Contract Idm-E-248

Dear Mr. Chambers:

Reference is made to your letter of February 10, 1953, relative to subject contract and the information requested is set forth below, based on the audit performed for the period January 29, 1952, to December 31, 1952.

(1) Administration

Accounting 9 mos. at $100.00		$900.00
Mileage, J. D. Williams' Jeep	$846.36	
Less: Audit disallowances	139.50	
Adjusted to 7¢ per mile, 8 mos. to 12/31/52		706.86
Other Office & Misc. Expense		452.70
Adjusted Cost to 12/31/52		$2,059.56

(2) Equipment Rentals

		Rental	Purchase Option Value
		$	
(a) Air Compressor	9 mos. at $470.00	$4,230.00	$9,119.00
(b) Jumbo (Nov. & Dec.)	2 mos. at 385.00	770.00	2,310.00
(c) Trammer	8 mos. at 475.00	3,800.00	7,496.25
(d) Rockershovel	8 mos. at 295.00	2,360.00	2,957.00
(e) Generator	9 mos. at 172.27	1,550.46	1,895.00
(f) Bulldozing (Feb. & June)	2 mos. - - - - -	1,190.00	
Total Rental to 12/31/52		$13,900.46	

Items marked (a), (b), (c), (d), are rental purchase agreements entered into during, and to be completed after, period of DMEA contract.

Item marked (e) covers rental purchase agreement entered into and completed during period of DMEA contract with costs shared as follows:

	Gov't	Operator	Total
Feb.	$ 129.20	$ 43.07	$ 172.27
Mar. - Apr.	-0-	344.54	344.54
May - Dec.	1,033.64	344.54	1,378.19
	$ 1,262.84	$732.16	$1,895.00
Equity	66.64%	33.36%	100.00%

In connection with above items, (a) to (e) inclusive, see your letter dated February 4, 1953, to E. D. Talbert expressing your opinion on rental-purchase plans.

Item (f) covers rental of bulldozer, for which rental charges were made for the following work:

Snow removal	$646.00
16 x 24 Compressor Bldg.	100.00
Move Blacksmith Shop	92.00
Water Lines	352.00
Total	$1,190.00

Interest has been paid directly by the operator on all Purchase agreements with the exception of item (d), Rockershovel, whereby a disallowance has been made as of December 31, 1952, for $168.92, covering a handling charge which was shown in the agreement as "Plus, for Rental Terms."

(3) New Buildings, Improvements, etc.,

The amount shown on the December 31, 1952, MF-104 was $9,652.93 and this was reduced by audit adjustments to $8,866.06; made up as follows:

Total MF-104	$9,652.93
Add: Tfr from Rental	452.00
	$10,104.93
Deduct: Tfr to Rehab. & Repairs	1,238.87
Adjusted Amt. 12/31/52	$ 8,866.06

The distribution of the above adjusted amount applicable to New Buildings, Improvements, etc., is comprised of the following items:

	Labor	Cook	Superv'n.	Mat'l	Bulldg.	Total
Compressor Bldg.,	$1,392.48	$ 50.00	$ 350.00	$1,084.83	$100.00	$2,977.31
Hauling Supplies	494.30	27.78	83.34			605.42
Hauling Equipment	329.53	41.67	125.01			496.21
Forms for Equipment	988.60	83.33	249.99			1,321.92
Installing Equipment	1,631.75	147.22	391.66			2,170.63
Installing Water Line	717.57	75.00	150.00		352.00	1,294.57
	$5,554.23	$425.00	$1,350.00	$1,084.83	$452.00	$8,866.06

Attached hereto is copy of letter dated November 17, 1952 from Mr. J. D. Williams to Mr. H. C. Miller, which gives the reasons for the above expenditures. Two copies of this letter were forwarded November 21, 1952, to Mr. Frank E. Johnson by Mr. H. C. Miller.

Trusting the above furnishes you with the desired information, and should you require any further details, please let me know.

Sincerely yours,

Signed: George Mavor

George Mavor, Auditor

Enclosure

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

November 21, 1952

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P. O. Box 150
Salt Lake City 10, Utah

Re: Docket DMEA-2082 (Tungsten)
Contract Idm-E248
Mt. Wheeler Mines, Inc.
White Pine County, Nevada

Dear Mr. Williams:

In reply to your letter of November 10, 1952, requesting an amendment to your exploration contract in order that the intent and physical progress of your exploration program might be carried out most effectively and efficiently, an amendment has been prepared in this office, covering requests 1 through 6. Six copies of this Amendment No. 2 are attached. If you approve of the amendment, kindly sign all six copies and return the original and four copies to this office. If the amendment is not satisfactory in all respects, kindly return all six copies, unsigned with your reason for not signing them.

In regard to requests 7 and 8, the matter of amending your contract to take care of them has been referred to the Washington Office of the Defense Minerals Exploration Administration with instructions to consider your request at an early date.

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Enclosure

Copy to: DMEA, Interior Bldg., Washington 25, D. C.
E. H. Bailey, USGS
G. Mavor, San Francisco
A. C. Johnson, Reno, Nevada

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
NOV 28 1952

Docket

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 18 1952

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

11/21/52

Air Mail

November 17, 1952

Memorandum

To: DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2082 (Tungsten), Mt. Wheeler Mines, Inc., Contract Idm-E248

Mr. James D. Williams, President, Mt. Wheeler Mines, Inc., has requested an amendment to the subject contract.

A copy of Mr. Williams' letter to me, dated November 10, 1952, is attached, to which are attached his request for amendments, a copy of a Report on the Geological Developments at Mt. Wheeler Mines, Inc., and a copy of a detail map of the Pole tunnel.

Of the requested items, I am preparing Amendment No. 2, to cover his items 1 to 6, inclusive, as my authority covers meeting these requests.

The matter of taking care of Mr. Williams' requests No. 7 and 8, is, however, a matter for Washington Office action.

Mr. Williams spent some time with Mr. A. C. Johnson last week in going over with him the proposed changes in his contract. Mr. Williams also spent several hours with Mr. Bailey and me on November 13, explaining to us his reasons for desiring the requested amendments.

Mr. Johnson wrote me in a memorandum of November 12 that he recommends that requests 1 through 6 be allowed. Mr. Bailey and I agree also that these requests should be allowed in order to permit the exploration program being carried out more efficiently and effectively than is possible under the present contract.

cue
11-21

We calculate that requests 1 through 6 will call for an additional expenditures of $2,199.17 after allowance has been made for expenditure listed in Exhibit "A" which will not be made. This difference Mr. Williams says will be made up from savings made in carrying out the underground drifting and crosscutting. ?

Requests number 7 and 8 embody a radical change in work and it will be appreciated if the Washington Office will prepare Amendment No. 3 to cover the newly proposed work.

In regard to request No. 7, Mr. A. C. Johnson writes as follows:

> "Under amendment No. 7, a radical change is made from the terms of the original contract. The original contract called for the advance of the Pole adit 1,000 feet southeasterly in sections 200 feet in length. The adit was to follow as closely as possible the limestone shale contact in the shale just below the limestone and just south of it, or in the footwall of the ore zone. This procedure would limit the minimum amount of crosscutting to the ore zone. In the event that faulting should displace the ore zone, then the adit was to be turned so that the zone could be reached and followed.
>
> "After reviewing the work that has been done to date by the operator, several north-south trending fracture zones have been encountered that are mineralized.
>
> "In the first crosscut, under the DMEA project, in zone B, three raises were driven into the mineralized Wheeler bed. In this zone, the operator wants to follow the ore at approximately N. 20° W. to determine its extent. In zone C, crosscut No. 2, the same procedure is to be followed except that the direction will be N. 10° W. In zone D, the north fracture will be followed 60 feet north and the mineralization on the bedding will be followed 40 feet east. This work is to determine the possible extent of the mineralization in this area. It is recommended that this work be done.
>
> "To follow out this program, it will probably be necessary to reduce the footage on the Pole adit approximately 250 feet. After the completion of the work in the mineralized areas in zones B, C, and D and if there are any funds remaining, it is recommended that the operator continue the Pole adit until funds are exhausted.

Last work should be on Pole

"In our exploratory projects, nothing has been definitely stated from the Washington Office as to what they consider a "discovery." It is my opinion that before the DMEA Team can certify a "discovery," they must have sufficient openings in ore to be able to estimate potential tonnages of ore that might be mined at prevailing prices. no

"The work, as proposed in the Mt. Wheeler, will follow the ore for certain distances in zones B, C, and D, and in all likelihood, this will give us a picture as to the possible mineralization and upon which an ore estimate can be made."

In regard to request No. 8, Mr. Williams stated that this is merely to give him permission to drive the remaining laterals from the tops of the raises rather than drift off from the main tunnel and then raise. keep adit just to south of ore if feasible

The additional equipment required - air slusher and jackhammer, costing $1,775 - is taken care of in Amendment No. 2 being prepared in this office.

In order to maintain uninterrupted operation at the mine, Mr. Williams requests that immediate consideration be given to requests 7 and 8, and that Amendment No. 3 be issued as quickly as possible.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachments

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno, Nevada
G. Mavor, San Francisco

MT. WHEELER MINES, INC.
P. O. BOX 150
SALT LAKE CITY 10, UTAH

November 10, 1952

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
Room 1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA-2082-Tungsten
Mt. Wheeler Mines, Inc.
Exploration Contract Idm-E 248
Request for Amendments

Dear Mr. Miller:

In the course of our operations to date under the above captioned Exploration Project, a number of problems have come into being which indicate that certain amendments to our contract should be requested at this time in order that the intent and physical progress of the exploration program be carried out most efficiently and effectively.

The attached exhibit covers these requested amendments in detail and we respectfully urge that they be approved at an early date in order that we may commence immediately upon them. We have discussed these amendments fully with Mr. Roscoe Smith of the U.S.G.S., Salt Lake City, and Messrs. Johnson and Trengrove of the U.S.B.M., Reno (as each may affect their respective agencies), and have been authorized to state to the DMEA Field Team their complete concurrence in our requested amendments.

Thank you for your kind consideration.

Very truly yours,

MT. WHEELER MINES, INC.
By

James D. Williams
President

JDW-K

Enc. (2)

REQUEST FOR AMENDMENTS
Docket No. DMEA-2082- Tungsten
Contract Idm-E 248
MT. WHEELER MINES, INC.

1. Extension of Time

Heavy snowfall during the months of February, March and April, 1952, made operations impossible at the mine. As a result, very little was accomplished during that period. Based upon progress to date, it is estimated that it will require an extension of three months from October 29, 1952, to complete the work requirements of the contract. Request is therefore made to amend Section 3, line 4, of said contract to a completion period of thirteen (13) months.

poor judgment!

OK

November 29?

2. Change Room Facilities at Mine

our letter Oct 2, 1952

Section 2 of Exhibit "A" attached to Contract Idm-E 248 provides for the expenditure of $850.00 to move and reconvert the old compressor building into a blacksmith shop. One Hundred Dollars of this has been expended for preparation of the site, leaving a balance of $750.00. With the advent of the cold weather the need of a warm change room at the mine for the mine crew has been forcefully brought to our attention. The men come from underground in wet clothes and must have a warm place in which to change.

Adequate facilities can be constructed and equipped as an addition to the blacksmith shop by an additional expenditure of not to exceed $650.00, making the total cost of the blacksmith shop and change room not to exceed $1400.00. This facility must be provided immediately if we are to keep an underground crew on the job. Request is therefore made to amend Exhibit "A", Section 2, line 3, to $1500.00 to provide the additional facility above outlined. (One Hundred Dollars has previously been expended on site preparation.)

3. Extended Equipment Rental

As of November 1, 1952, the seven months' allowed rental on the compressor at $470.00 per month has been fully used; one month's rental remains on the mucking machine and battery trammer; and three months' rental remains on the generator. Request is made to amend the section on equipment rental to authorize these rentals to continue for the duration of the extended term of the contract. There are sufficient funds available from the authorized contract amount to cover these additional rentals.

4. Additional Equipment to be Rented

Experience gained during the first half of the contract footage has clearly demonstrated the fact that time lost in the face of the adit in setting up and tearing down the drill column, mounting the machine and moving the arm, clamp and saddle,

amounting to approximately 2 1/2 to 3 hours per shift, has resulted in many lost rounds, much overtime and a loss of at least 1 to 1 1/2 feet advance per round. In order to correct this situation we request that we be authorized to rent a single jib Joy Jumbo at the rate of $385.00 per month. It is obvious that the additional footage gained will more than justify this expenditure.
cost 2,310 + chain feed shell 630 = $\frac{2940}{385}$ = 7.6 months to amortize.

5. Payroll

Contract allowance of $3500.00 for Superintendent was exhausted as of October 31, 1952; the cook's allowance has two months to go. No use of the $2800.00 allowance for a geologist has been made. The balance in the Comp. Ins. and Payroll tax amount will last about two months. Request is made that Labor and Supervision Section be amended to authorize us to use the $2800.00 Geologist salary to meet the above expenses during the extended term of three months, and in addition allow $250.00 for aerial stereoscopic color photo reconnaisance of this area.

6. Materials and Supplies

We have used just about twice as much powder, fuse and caps as estimated; about twice as much steel and bits; and more than double the miscellaneous expense. This has been brought about mainly by the extremely hard ground encountered in the Pole tunnel. Nothing can be done about it and this situation must be accepted 'as is'. However, a very considerable saving has been made on fuel and lube and on the contract footage price of the underground work. We therefore request that we be authorized to make all necessary purchases of explosives, bits, steel, working tools, etc., reasonably necessary for the proper execution of the work without regard to the specific item classification. Ample funds remain to complete the contract but we cannot do it on the basis specified in the Exhibit by items.

7. Additional Exploration in the Productive Bed

Careful studies of the exploration work completed in the Pole tunnel to date show that the original conception of the probable ore occurrence must be modified and expanded. The first work was based on the belief that there are several shear zones trending easterly across the area which would serve to guide mineralizing solutions and gases. This concept must now be expanded to include another series of fracture zones which trend in a north-south direction across the amphitheater. To date, four of these N-S zones have been identified underground which we will designate as A, B, C and D. (Please refer to Map D-100-5 attached.) not news

Zone "A" is cut in the tunnel at a position extending from 60 to 95 feet from the portal. It was partially developed by work in the productive (Wheeler) bed prior to DMEA. Replacement by scheelite occurs over a thickness of about 8 feet in places.

Zone "B" is cut from 180 to 215 feet from the portal. It has been exposed by three raises into the productive bed from No. 1 Lateral South and short drifts easterly in the bed from the top of these raises. Replacement by scheelite again occurs over a thickness which in places reaches six to seven feet.

Zone "C" is cut from 370 to 400 feet approximately from the portal. Scheelite in the raise from No. 2 Lateral South, occurs over a bedding thickness of five to six feet.

Zone "D" is cut from 500 to 525 feet from the portal and is entered by the raise at the end of No. 3 Lateral North. Scheelite is exposed in the bed but is heavily masked by mud from the N-S fissure cut.

It appears that a fifth such N-S shear zone has been entered by the Pole tunnel within the last few days because a number of closely spaced N-S fractures containing scheelite have been cut. This probable zone, which is designated "E" starts about 70 feet east of "D".

This similar occurrence of N-S fracture zones, separated by relatively tight areas was observed in the quartzite walls of North Pole canyon about 1000 feet north of the portal. Hence, it logically follows that the N-S fracture zones become an important part of the Pole canyon fracture pattern. Also of especial significance are the recent air photos taken by Philip A. Laylander which show definite north-south alteration zones on the surface of the area being crossed by the Pole tunnel.

In view of this information we are now forced to expand our conception of the ore possibilities of the Pole canyon area to include both the east-west and north-south fracture zones. It is obvious this increases the attractiveness of the Project and emphasizes the need for a revision of the prospecting program. Such a revision has been suggested by the recent joint report of the members of the Combined Metals Reduction Company Geological Department attached hereto.

We therefore request that the "Statement of Work", Exhibit "A", be amended to authorize us to drive exploratory drifts within the productive bed as follows (See Map D-100$_5$ attached) -

1. From #1 Lateral South, Raise #2, in a N 20° W general direction approximately 70 feet up bedding dip.

2. From #2 Lateral South, Raise #1, in a N 10° W general direction approximately 105 feet up bedding dip.

3. From #3 Lateral North, Raise #1, in a northerly direction 60 feet up bedding dip, and in an easterly direction 40 feet in the bed.

This is a total footage in the bed of approximately 275 feet and it is further requested that such footage be deducted from the authorized advance of the Pole adit of 1000 feet as shown in Section 4 of Exhibit "A".

8. <u>Balance of Laterals</u>

We also request that we be authorized to drive the remaining laterals in the ore bed from raises driven upward and just off from the main tunnel. This will permit greater exploration of the ore zone and should minimize the work done in waste. This program has been endorsed by Mr. George C. Selfridge, Chief of the Tungsten Branch, DMEA, on his recent visit to the mine.

9. Additional Equipment Required

In order to execute this 275 feet of lateral work in the productive bed, we request authorization to purchase the following equipment, material and supplies -

1.	Air slusher ~~complete with scraper, sheave blocks, anchor pins, cable, hose and fittings~~	~~$1,300.00~~	800.00 HLM
2.	Jackleg, jackhammer, steel and hoses	975.00	
~~3.~~	~~Timber for chutes and manways~~	out ~~750.00~~	
		~~$3,025.00~~	1775.00 HLM

COMBINED METALS REDUCTION COMPANY
P. O. BOX 150
SALT LAKE CITY 10, UTAH

November 4, 1952

REPORT ON THE GEOLOGICAL DEVELOPMENTS AT MT. WHEELER MINES, INC.

Prospecting work at the Mt. Wheeler Mines, Inc., having reached the stage where tungsten ore is known to occur in the Wheeler bed in significant quantities, the management requested an independent appraisal of the ore possibilities. Consequently Requa, Thomas and Hagen visited the property for the desired examination. Mr. Young, being unable to accompany them, has reviewed the report in the light of his previous observations.

This examination was for the particular purpose of investigating the scheelite ore occurrence and of evaluating the adequacy of the present program of exploration. A transit survey of the workings was made by Mr. Hagen, with adjustment to the true meridian.

The country rock at the mine consists of a series of sediments in the Lower Cambrian formation, which occur in a broad, flat-lying dome that pitches at a low angle to the south. Erosion has developed a striking amphitheatre, which drains into Pole Canyon. This type of erosion naturally suggests the presence of numerous cross fractures which have made the formation of the amphitheatre possible.

A large exposure of granitic material, a mile or more to the northeast, suggests that the doming may be associated with this intrusion and that the multiple fracturing in Pole Canyon may be the result of gradual settling due to the cooling of the magma below this area. Thus many channels have been provided for the entry of hydrothermal solutions and gases into the favorable beds.

The total thickness of the Wheeler limestone bed is about 22 feet. This bed lies only a few feet above the contact with the underlying Prospect Mountain quartzite. The Wheeler bed is part of the Pioche shale formation. The middle portion of the Wheeler bed has been found favorable for replacement by scheelite and has been highly altered by hydrothermal solutions. The favorable portion is usually four to five feet thick. In the exposed faces the ore has been found to be a combination of scheelite bearing quartz and replaced limestone.

This bed has been highly fractured, but not greatly displaced, over quite a wide area, which is at least 1000 feet in a north-south direction by about 600 feet in an east-west direction as evidenced by surface exposures and recent development work.

Quartz has been deposited on most of these fractures, as well as ankerite and scheelite. This is best developed at fracture intersections where limestone replacement ore occurs.

The development program, under the present DMEA project, has been confined to driving a tunnel under the productive bed, which has a flat dip to the south and by raising into this bed at selected places. This program has demonstrated ore, but fails to give sufficient information on the extent of such ore.

As exposed to date the ore shoots have been assumed to constitute a tabular body of ore four to five feet thick, twenty or more feet wide and of unknown length. The long dimension of the ore evidently follows east-west fracturing.

This zone does not contain all of the ore possibilities of the Mt. Wheeler property. Fracturing of the Wheeler bed is sufficiently widespread in the Pole Canyon area to provide other loci of ore deposition and these should eventually be investigated.

The known ore zone has been referred to as a shear zone, which is probably a misnomer. It is our belief that this structure should be called a fracture pattern, which would provide a much wider area for ore deposition than the zone now under consideration.

Knowledge of the continuity of the ore shoots is now vital and the present program fails to provide this information. The raises, now in ore, fail to give sufficient information for the calculation of an ore reserve.

To get some adequate idea of the tonnage we suggest that a certain portion of the prospecting footage be allocated to driving in the ore bed. What portion of the total footage should be devoted to this purpose will be a matter that experience will dictate, but for an initial effort in this direction and for footage that can be allocated from the remaining footage in the present DMEA contract, we suggest the following -

Slusher drifts should be run from the following raises:

1. From the #1 South Lateral, Raise #2, in a N 20° W direction, up dip in the bed for a distance of 70 feet.

2. From the #2 South Lateral, Raise #1, in a N 10° W direction, up dip in the bed for a distance of 105 feet.

3. From the #3 North Lateral, Raise #1, in a northerly direction for 60 feet up dip in the bed and, from this same raise, a drive in an easterly direction for 40 feet in the bed.

This is a total footage of 275 feet and in order that this work may be permissible under the DMEA contract it is suggested that it be deducted from the 1000 feet which has been allowed for the main adit. OK.

Any future extension of the DMEA project should allow amply for such prospecting work in the Wheeler bed.

? In all drives on ore we suggest that continuous samples be taken. We consider cut samples unreliable in the irregular mineralization pattern usually found in most tungsten mines. We, therefore, suggest systematic muck samples be taken from the cars of ore, or waste, removed from each heading in the ore bed. OK

For the above reason we cut no samples on this examination but did carefully examine each ore face with the tungsten light. The management advised us that the stock pile muck samples taken from the ore removed from all DMEA exploration faces averaged 0.62% WO_3 and that these faces by selective mining, or with sorting, should produce plus 1% ore. No opinion by examiners.

It should be noted that no faults having any significant displacement have been encountered so far. As the main tunnel advances some faults will be found, also some quartz veins. Our examination did not include the consideration of these possibilities, but we believe such structures should be studied in more detail. A real dislocation of the Wheeler bed, along a strong mineralizer, could result in a very significant deposition of tungsten ore.

The Sheffield fissure is the first strong quartz vein known to exist immediately ahead of the main tunnel. This vein runs about north and south and should be cut in another 1000 feet, more or less, of advance by the main tunnel. Where the Sheffield fissure has been explored it consists of a five foot quartz filled fissure containing high temperature lead ore.

In general we can say that the Mt. Wheeler development is very encouraging. It is a type of replacement deposit that is not well known to the tungsten industry. If successfully developed, and we believe that it has such possibilities, it should open up a new field for tungsten exploration.

While our inspection was not a general mine examination we would like to comment on the neat and orderly condition of the camp and the mine. It was a pleasure to see such efficiency and organization at such an early stage of this operation. We also wish to thank Mr. Williams, president and general manager of this company, for his complete cooperation and kind hospitality during the course of this examination.

L. K. Requa

L. K. Requa

Earl B. Young

Earl B. Young

L. G. Thomas

L. G. Thomas

C. R. Hagen

C. R. Hagen

K

FILE COPY
SURNAME:
800

Chambers

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

OCT 24 1952

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

Re: Docket No. DMEA-2082
Contract No. Idm-E248
Mt. Wheeler Mines, Inc.

Dear Mr. Finch:

Reference is made to your letter of October 20, 1952, in regard to the above-cited project.

Your explanations in regard to the buildings are satisfactory. In regard to Mr. Williams' salary, I believe you should write him a letter asking him whether or not he devoted full time to the project for the half months of February and April and the entire months of May and July for which he has billed us the maximum amount allowed in the contract. As you know the contract provides that he is to devote full time to the project.

Reference is also made to the 10 cent charge per mile for Mr. Williams' transportation. It is consistent policy of the Government to allow not in excess of 7 cents unless the contract specifically designates a higher basis.

I am returning the Audit Reports for necessary corrections. After necessary corrections as you see fit in regard to the salaries and the disallowance for the excess mileage, normal distribution of the Report may be effected.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration and
Audit Division

Enclosure

JLChambers/wb 10-24-52

Copy to: Docket
Admr. Reading File
Mr. Mavor
Mr. Chambers

FILE COPY
SURNAME:

800

Talbert
Chandler

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

OCT 9 1952

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

Subj: Docket No. DMEA-2062
Contract No. Idm-E248
Mt. Wheeler Mines, Inc.

Dear Mr. Finch:

Reference is made to your Audit Report, and your letter of October 1, 1952, transmitting all copies thereof, relative to the subject project. Several items therein appear to require additional clarification.

The contract provides for one superintendent - engineer @ $500.00/month to devote his entire time to the project and for proration of his salary if, for any reason, his services are used elsewhere. The fact that Mr. Williams' salary on the Harrington Mines project was disallowed is irrelevant insofar as the audit of Mt. Wheeler Mines is concerned. The question to be answered is did Mr. Williams, or did he not, devote his entire time to the Mt. Wheeler project. There are several indications, among them Mr. Williams' claims for salary under the Harrington project, that he did not devote his entire time to the project. The charges of $250.00 for each of the months of February and April might indicate a proration of the salary, but there is for consideration the fact that the project was recessed from approximately February 15 to April 14. The charges of $500.00 for each of the months of May and July would indicate devotion of full time.

It appears to me that this item of salary should be given further consideration. Possibly, Mr. Williams should be requested to furnish a statement by months of the estimated time devoted to the supervision of the Mt. Wheeler project.

This salary question is one of several items questioned by Mr. Talbert in a letter dated August 7, 1952, from San Francisco. A copy of his notes and questions on this project was forwarded to Mr. Bruding with my letter of August 14, 1952, relative to the Salt Lake City audit program. Other questions raised in those notes have not been answered by either the Audit Report or your letter.

For instance, the contract calls for construction of one shed and the rehabilitation of another shed with sheet metal and rough lumber. There were purchases of finish lumber and glazed doors (You.

300, Check 288) in February and trim lumber and 8 Fenestra steel sash (Vou. 351, Check 338) in April. The propriety of contribution to these costs remains in doubt.

The propriety of allowing $.10 per mile for transportation is also questioned. As a general policy, unless the contract provides otherwise, we do not allow in excess of $.07 a mile for personal transportation. An explanation of the several one-way trips from the project to Salt Lake City is desirable. Also, the statement in your Audit Report that Mr. Williams claimed mileage in lieu of the monthly rental of $100.00 for a jeep is contradicted by his claim for both in the February MF-104.

I would appreciate your comments on these various questions. It may be necessary for you to revise certain portions of the Audit Report; therefore, I will withhold distribution until I hear further from you.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration and
Audit Division

B.H.
10-9-52

EDTalbert/wb
October 9, 1952

Copy to: Docket File
Admr. Reading File
Mr. Mavor
Mr. Chambers

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 13 1952

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

October 7, 1952

Memorandum

To: A. C. Johnson, Bureau of Mines, Reno, Nevada

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2082, (Tungsten), Mt. Wheeler Mines, Inc., Contract Idm-E248

Reference is made to your memorandum to me, dated September 23 - Subject: MF-104 Form - Mt. Wheeler Mines, Inc., Idm-E248; and to R. R. Trengove's Interim Report on the subject contract, dated September 16, 1952.

To date no request for an amendment to the Mt. Wheeler contract has been received and if it had I doubt if we would draw up one to cover the work done, which is not in accordance with the contract.

It is Mr. Bailey's and my thought that too many operators, seemingly, do not take their contracts seriously and after once having received a contract, they go ahead and do about as they please. It should be instilled in all operators that they are to adhere to the conditions of their contracts and that amendments will be granted only in rare instances where sufficient justification can be shown.

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to DMEA, Interior Building, Washington 25, D. C.
E. H. Bailey, USGS

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 13 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Washington 25, D. C.

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

October 7, 1952

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P O Box 150
Salt Lake City 10, Utah

Re: Docket DMEA-2082 (Tungsten)
Contract Idm-E248
Mt. Wheeler Mines, Inc.
White Pine County, Nevada

Dear Mr. Williams:

An examination of your contract indicates the impracticability of requiring complete documentation of the costs incurred as reported on Form MF-104 (Rev.) and 104A, Monthly Progress Reports. Therefore, consistent with authority delegated the Executive Officer, DMEA Field Team, Region III, we hereby waive the requirement for you to provide documentary support of the monthly report, except for support of equipment purchases.

In lieu of documentary support of the monthly report, G. Mavor, Auditor, Contract Administration and Audit Division, DMEA, will make interim audits of your records, and will make a final audit on completion or termination of the contract before the final report is processed for payment.

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to: DMEA, Interior Bldg., Washington 25, D. C.
Jay L. Chambers, DMEA, Interior Bldg., Washington 25, D. C.
E. H. Bailey, USGS
G. Mavor, DMEA, San Francisco, Cal.
A. C. Johnson, Reno, Nevada

DMA 2082

Mt. Wheeler Mines — Tungsten

1. Compressor and tool shed $2,100.00

2. Move and reconvert blacksmith shop $850.00

3. Lay 2000 feet water line $1,340.00

4. 1,000 feet of adit 6'x7'

5. 125 feet crosscut (5) 5'x7'

6. 75 feet raise (5) 4'x7'

7. 100 feet drift from raise (5) 5'x7'

8. 125 feet drift southward (2) 5'x7'

9. 75 feet raise from 8 above (2) 4'x7'

10. 40 feet drift from raise in 9 (2) 5'x7'

1,000 feet adit

390 feet drift & crosscut

150 feet raise

Equipment Rented

Feb.	Compressor	470.00
	Generator	172.27
	Bulldozer	390.00
		1032.27
April-May	Jammer	475.00
	Generator	172.27
	Mucker	295.00
	Compressor	470.00
		1412.27
June	Jammer	475.00
	Generator	172.27
	Mucker	295.00
	Compressor	470.00
	6 ore cars	150.00
	Bulldozer (3)	650.00
		2212.27
July	Jammer	475.00
	Generator	172.27
	Mucker	295.00
	Compressor	470.00
		1412.27

Equipment Purchased

2	Thor Drifters	48" shell	1,750.00
1	Axivane fan, Model 1-21, Joy		137.63

Initial Rehabilitation & Repairs

Taken from June report	$1,058.43
+ taxes & adm. charges	210.71
	$1,269.14
+ truck rent	16.82
	$1,285.96
July	83.00
	$1,368.96

New Buildings, Improvements

Taken from June report	$8,379.56
+ taxes & adm. charges	1668.25
	$10,047.81
+ truck rent	133.18
	$10,180.99
July	—
	$10,180.99

Payroll taxes	372.25
Workmen's Comp.	909.90
Administration	596.81
	$1878.96

to be distributed against above

1,058.43	11.214	$210.71	16.82
8,379.56	88.786	1668.25	133.18
9,437.99		1878.96	150.00

From June Report

Distribution of Freight on $ basis

Supplies		%	Freight	Total
Pipe	1,799.99	29.428	130.34	$1930.33
Track	2,317.68	37.892	167.83	2485.51
Steel & bits	1,147.23	18.756	83.07	1230.30
Fuel & lube	851.53	13.922	61.66	913.19
	6,116.43	100.000	442.90	6,559.33
Equipment				
Rental	4,756.81	65.313	176.63	$4,933.44
Purchased	2,526.19	34.687	93.81	2,620.00
	7,283.00	100.000	270.44	7,553.44

Distribution of above on footage basis

	feet	%
adit	1,000	64.935
drift & X-cut	390	25.324
raise	150	9.741
	1,540	100.000

	Adit	Drift & X-cuts	raises	
Supplies				
Pipe	1253.46	488.84	188.03	1930.33
Track	1613.97	629.43	242.11	2485.51
Steel & bits	798.90	311.56	119.84	1230.30
Fuel & lube	592.98	231.26	88.95	913.19
Equipment				
Rental	3203.53	1249.34	480.57	4933.44
Purchased	1701.30	663.49	255.21	2620.00
	9,164.14	3,573.92	1,374.71	14,112.77

FILE COPY
SURNAME: 400

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

Rutledge
Selfridge
Johnson
Mott

OCT 2 1952

Mr. H. C. Miller
Executive Officer, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine Co., Nevada
Exploration Contract Idp-8248

Dear Mr. Miller:

In the subject contract, a total of $4,290.00 was allowed for "New Buildings, Improvements, and Rehabilitation and Repairs" as follows:

1. Construct a 16' x 24' compressor and tool shed of rough lumber at an estimated cost of $2,100.00 for all necessary labor, material and supplies.

   Of the above amount, $100.00 was allowed for site preparation.

2. Move and reconvert the present compressor building to a blacksmith shop at an estimated cost of $850.00 for all necessary labor, materials, and supplies. The building will be covered with sheet metal and floored with rough lumber.

   Of the above amount, $100.00 was allowed for site preparation.

3. Lay 2,000 feet of buried water line from a spring to the adit portal at an estimated cost of $1,340.00 for all necessary labor, materials, and supplies.

   Of the above amount, $600.00 was allowed for bulldozing trench and covering pipeline.

   An additional $1,200.00 was allowed for snow removal from the road if necessary.

In a review of the monthly cost report for June, the following costs to date are given:

Initial Rehabilitation and Repairs	$1,058.43
New Buildings, Improvements, etc.	8,379.56
	$9,437.99

The sum expended, $9,437.99, if the item of $1,058.43 is for rehabilitation of the old compressor building to serve as blacksmith shop, is more than twice that estimated under the contract. It is questioned if some of the funds spent were for buildings not allowed under the contract or buildings of a more permanent and better quality than that necessary and specified for an exploration project.

We would appreciate receiving a breakdown on the items covered under the costs for "Initial Rehabilitation and Repairs" and "New Buildings, Improvements, etc." with comments on their seemingly high cost.

Sincerely yours,

(signed) FRANK E. JOHNSON (B.H.)

Chairman, Operating Committee

B.H. 10-2-52

Approved:

C. H. Johnson (B.H.)
Member, Bureau of Mines

G. R. Kinkel, Jr. (B.H.)
Member, Geological Survey

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

FARutledge:lm
9/30/52

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 30 1952

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

Date: Sept. 25, 1952

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Interim Inspection Report

Attached are four copies of Interim Report on -

Docket DMEA 2082

Contract Idm-E 248

Commodity Tungsten

Operator - Mt. Wheeler Mines, Inc.

Property - Mt. Wheeler Mine, Lincoln County, Nev.

By Russell R. Trengove

Dated Sept. 16, 1952

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to: Finance Officer, Region III (with one copy of report)
E. H. Bailey, USGS (with one copy of report)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 30 1952

INTERIM REPORT

Docket No.: DMEA-2082 (tungsten) Sept. 16,1952

Name and address of operator: Mt. Wheeler Mines, Inc.,
P. O. Box 150,
Salt Lake City 10, Utah

Name and location of property: Mt. Wheeler Mine, Lincoln Co., Nev.

Contract No.: Idm-E248

SUMMARY AND CONCLUSIONS

This property was inspected on September 10, 1952. The main adit was advanced 170 feet since the last visit on Aug. 6, 1952. Total advance on the contract is 302 feet. A crosscut was driven to the south, about in the middle of the first 200-foot block, a distance of 56 feet (see fig. 1). Two raises were driven and a crosscut is being driven east from the second raise. These raises are in ore ranging from 3 feet to 8 feet in thickness. The ore is spotty so one sample was taken from the broken ore from the second round in the second raise and one composite sample from both raises was taken from the stockpile. The analyses of these samples will be available for the next report but it is estimated that the WO_3 content will range from 0.5% to 1.5%.

Mr. Selfridge from the Washington office accompanied by Ralph Robert's and Roscoe Smith of the Salt Lake office of the U.S.G.S., visited the property with the Bureau engineer. Mr. Selfridge would like for the adit to be driven in the ore rather than in the shale below the tungsten bearing limestone bed. However, it was decided to continue the adit in the shale until the porphyry dike is intersected - a distance of probably 135 feet beyond the face of the adit

(September 10). This drifting to the dike may possibly furnish additional information on the position of the limestone bed. One objection to driving in ore is the very limited space for stockpiling on the steep mountain slope.

The contract states that the total crosscutting shall not exceed an aggregate distance of 125 feet - that is a 25-foot crosscut in the middle of each 200-foot block of the 1,000 feet of adit.

The operator has already driven 56 feet in the first crosscut (fig. 1) and would like to continue crosscutting an additional footage to the south to find the south extremity of the mineralized zone. This was discussed with Mr. Selfridge and he was of the opinion that this work could be done without an amendment to the contract provided the 125 feet of crosscutting was not exceeded.

However, the Bureau engineer recommended that the operator should visit the Reno and San Francisco offices of the Bureau, inform them of his problems and secure an amendment to the contract if found necessary.

I was informed by Sam Arentz, General Manager of the Combined Metals Reduction Co., that they will not mill Mt. Wheeler ore in their Minerva mill as it would not be a profitable venture. The proposed construction of the Combined Metals tungsten mill, using flotation, to be situated at Caselton, Nev., has not been started to date. Therefore, if it is decided to drive the adit in ore, the ore would have to be hauled away from the adit to a stockpile or milled elsewhere.

Now what?

WORK COMPLETED

Construction of mining camp buildings, mine buildings, and purchasing and installing mine equipment.

Advanced adit	302 feet
Advanced crosscut	56 feet
Two raises	10 feet

Russell R. Trengove

Russell R. Trengove
Mining Engineer

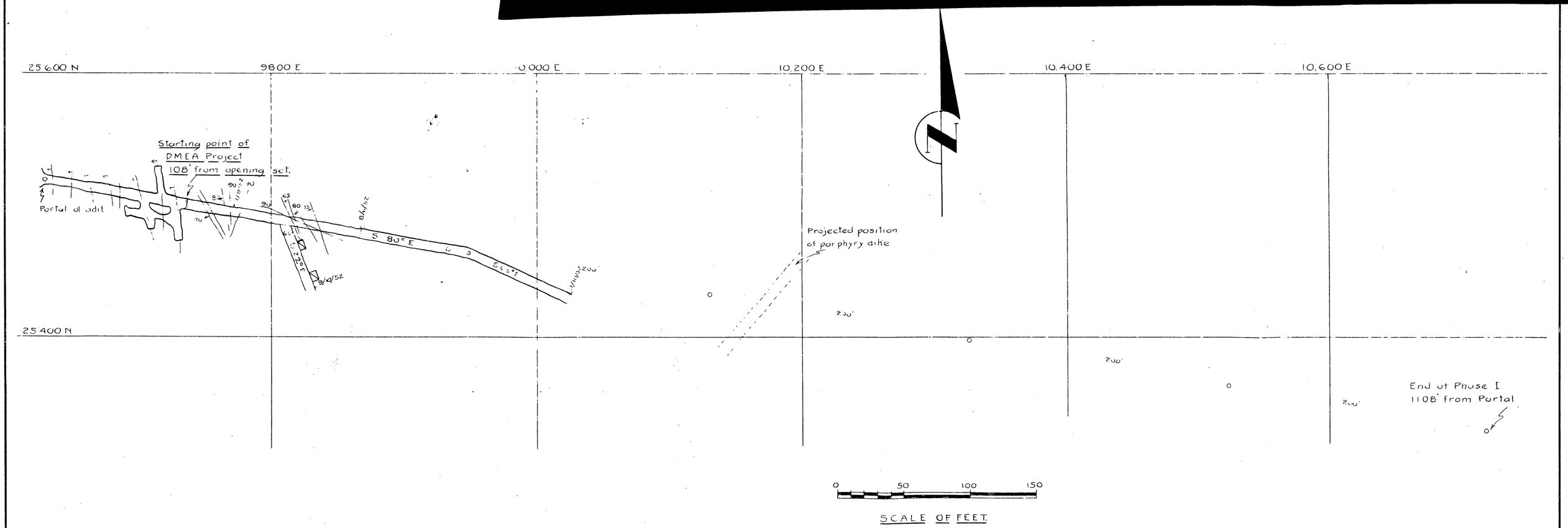

FIGURE 1 PROGRESS MAP OF MOUNT WHEELER MINES, INC TUNGSTEN MINE, WHITE PINE COUNTY, NEVADA

FILE COPY
SURNAME:

Selfridge

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

September 23, 1952

Memorandum

To: Administrator, DMEA

From: G. C. Selfridge

Subject: Inspection report
Docket No. DMA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
Lincoln County, Nevada
Contract No. Idm-E-248

The Mt. Wheeler property was visited on September 10 in the company of Messrs. Roberts, Smith, and Sumsion of the Survey. Mr. Trengrove of the Bureau was already on the property. The buildings, including the compressor and tool shed of rough lumber allowed for in the contract, sit on concrete foundations and are roofed and sided with aluminum sheeting. The adit had been extended close to 300 feet and one crosscut had been driven to the southeast. Two raises from the crosscut had penetrated the mineralized limestone bed and a round or two had been driven to the northwest from each. Examination of the old crosscuts and the connecting dog hole showed that the best ore had been mined. In the new section of the adit there are sections that exhibit no cross fractures in the shale. Supposedly the continuity of the ore eastward rests u on the number and closeness of these fractures where they cut the east-trending shear zones in the lower part of the favorable limestone bed. The first raise in the new crosscut exhibits some scheelite to the east but none to the west. The second raise lamps better than the first showing fluorescence on all sides of the working. Skins of scheelite definitely occur on the east-trending fractures.

With regard to the work done under the contract the adit was not turned at the start of the drifting but some 200 feet farther on as shown by a map submitted by Mr. Williams as of September 1. Seemingly the new crosscut was started a little behind schedule. Thus the limestone-shale contact now lies 60 feet south of the adit. Study of the map shows that the contact and the mineralized fractures in the raises are diverging. Before the adit is driven much further, at least not beyond the dike just ahead, the matter of another crosscut should be considered in conjunction with a raise from the adit in the vicinity of the stronger mineralized east-west fracture in the shale.

Further turning of the adit will depend upon the results of the auxiliary work. It may be that the next southward trending crosscut will not find mineralization near the projected contact or it may depending upon additional favorable east-west fractures to the south. If mineralization is present to the south, the adit should be kept as far to the south as feasible. Washington is not convinced yet that the deposit will be economic and support an adit in waste and then drifting in the ore to open it up eastward. For mining purposes should the zone be wider north-south than thought, it would be easier to slush down dip than up. Under the contract two crosscuts are allowed to explore the shear zone immediately to the north of the adit. Instead of driving these in the shale and then raising and drifting, consideration should be given to their driving up the dip from raises in the south crosscuts following the lower part of the limestone bed that is mineralized. If the mineralization is extensive it still can be mined on the dip by slushing. It would appear that the south crosscuts should be driven at systematic intervals. If only the more favorable fractures are selected, they will probably lead to ore and nothing will be known about the ground in between. This question came up during the visit. The first new raise had no ore on the west side. Under the contract 10 feet of drift is to be driven in each direction from the raise. Williams would rather drive 20 feet in ore on one side than drive in waste but the writer thinks that in this particular case it is equally important to know just how far the waste may extend and for that reason the work was laid out systematically to avoid the human element just the same as sample channels are laid out at fixed intervals.

To date the Government has no check samples on the exploration. Mr. Trengrove was going to sample the dump and the muck piles under the raises. Bulk sampling seems to be the more feasible method. However, large samples should be taken and quartered the number of times necessary to secure a truly representative sample. When and if the rock is sent to a custom mill, the matter of sampling will become easier.

Mr. Williams plans on submitting another application this winter for work next spring. Before approval of another application, the best possible information regarding geology and economics should be secured from the work provided for in the present contract.

George C. Selfridge

Chief, Iron and Ferro-Alloy Division

GCSelfridge:ls
9/23/52
cc: Docket
Admn. Read. File
Mr. Selfridge

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

Department of the Interior
Defense Minerals Administration
RECEIVED
SEP 15 1952

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, California

September 10, 1952

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P. O. Box 150
Salt Lake City 10, Utah

Re: Docket DMEA-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
Exploration Contract Idm-E248

Dear Mr. Williams:

We acknowledge your letter, dated September 4, requesting an amendment to your contract, permitting you to spend $750.32 of the project funds as part payment on a new jeep, costing $2,256.44 to replace the jeep you now have, which was badly wrecked in a recent collision.

It will not be possible to do as you request. Your contract provides for seven months' rental at $100 a month for a jeep, and, as suggested in my letter to you of July 16, 1952, the best we can do is to amend your contract, so that in place of allowing you rental for a jeep as you are not able to rent one from a third party, we will allow a depreciation charge on a jeep, bought and paid for by you. In the case of a new jeep, costing $2,256.44, the depreciation allowance would be $37.61 per month.

If this proposal meets with your approval, an amendment will be prepared along such lines if requested by you.

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to DMEA, Interior Building, Washington, D. C. (with copy of Williams' letter)
E. H. Bailey, USGS
A. C. Johnson, Reno, Nevada

C
O
P
Y

MT. WHEELER MINES, INC.

P. O. Box 150
Salt Lake City 10, Utah

September 4, 1952

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
Room 1012 Flood Building
870 Market Street
San Francisco 2, California

Re; Docket No. DMEA-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
Exploration Contract Idm-E248
Request for Amendment for Purchase of "Jeep" 1 Ton Pick-Up

Dear Mr. Miller:

We have recently had an accident with our 4 wheel drive Willys "Jeep" 1 ton Pick-Up truck which caused serious disalignment of the front end and crankshaft of the engine resulting in two connecting rods going out. Careful examination of the unit suggests that this condition may cause continued breakdown in the future. It is, therefore, our best judgment that a new unit should be purchased.

Willys Intermountain Company has offered as a trade whereby we may acquire the new unit at a net cost of $700.00 plus heater, oil filter and tire change-over of $68.32, making a total of $768.32. The transaction will be as follows:

Cost new unit, Salt Lake	$2,188.12
Heater and defroster	40.21
Oil filter	8.86
5-Road-lug tire changeover at $3.85 each	19.25
Total Cost	$2,256.44
Trade-in on old unit	1,488.12
Net Balance	$ 768.32

Under our contract, Idm-E248, we are allowed $700.00 for "Jeep" rental which has not been used. We therefore request an amendment allowing us to spend $768.32 of project funds as above outlined. This of course would result in the Government having an equity of 75% of $768.32 in the new unit.

We should very much appreciate receiving this amendment as quickly as possible for the unit is badly needed on the job and the dealer is anxious to consummate the deal.

Thank you very much for your kind consideration.

Very truly yours,

MT. WHEELER MINES, INC.

By: /s/ James D. Williams
President

JDW-K

MT. WHEELER MINES, INC.

C O P Y

P. O. Box 150
Salt Lake City 10, Utah

September 4, 1952

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
Room 1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
Exploration Contract Idm-E248
Request for Amendment for Purchase of "Jeep" 1 Ton Pick-Up

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We should very much appreciate receiving this amendment as quickly as possible for the unit is badly needed on the job and the dealer is anxious to consummate the deal.

Thank you very much for your kind consideration.

Very truly yours,

MT. WHEELER MINES, INC.

By: /s/ James D. Williams
President

JDW-K

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

Date: August 21, 1952

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Interim Inspection Report

Attached are four copies of Interim Report on -

Docket DMEA 2082

Contract Idm-E 248

Commodity Tungsten

Operator - Mt. Wheeler Mines, Inc.

Property - Mt. Wheeler Mine
Lincoln County, Nevada

By Russell R. Trengove

Dated August 11, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 25 1952

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to: Finance Officer, Region III (with one copy of report)
E. H. Bailey, USGS (with one copy of report)

INTERIM REPORT

Docket No. DMEA-2082 (tungsten) August 11, 1952

Name and address of operator: Mt. Wheeler Mines, Inc.,
P. O. Box 150,
Salt Lake City 10, Utah.

Name and location of property: Mt. Wheeler Mine, Lincoln Co., Nev.

Contract No. - Idm-E248

SUMMARY AND CONCLUSIONS

This property was visited on August 6, 1952. Since the previous inspection, July 9, 1952, the adit advanced a distance of 98 feet for a total advance of 132 feet. Previous drifting was done with 6-foot holes with an average advance of 5.6 feet per shift. It was found to be advantages to drill 5-foot holes. They now average 4.4 feet of advance per shift. Many cross fractures were encountered (see fig. 1) all of which show varying amounts of WO_3 which encourages belief that the C. M. or Wheeler limestone bed, immediately above the adit, is highly mineralized with scheelite. A track switch will be installed in the center of the 200-foot adit advance and a crosscut driven south to intersect the limestone bed. Two shifts will be worked daily as soon as the switch is installed. Four floodlights have been installed to light the surface area including the dump. One blower has been installed which furnishes 4500 cu. ft. of free air per minute.

All work to date has been conducted in an efficient and workman like manner and every effort is being made to make this a low cost project.

The operator informed the Bureau engineer that the Combined Metals Reduction Co. have acquired the Minerva tungsten mill situated

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

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SAN FRANCISCO, CALIFORNIA

several miles from the Mt. Wheeler tungsten mine. Mr. Williams plans on going into production in the near future and will truck his ore to this mill. However, upon checking with the Combined Metals Reduction Co., the engineer learned that this mill will be used as a pilot mill only, testing the scheelite ore from the Mt. Wheeler tungsten, Owen Walker's tungsten properties and other tungsten properties owned by the Combined Metals Reduction Co. This test work is preparatory to the design and construction of a tungsten mill to be erected at the company's property at Caselton, Nev.

RECOMMENDATIONS

Have no recommendations to make.

WORK COMPLETED

Construction of mining camp buildings, mine buildings, and purchasing and installing mine equipment.

Advanced adit a distance of 132 feet.

In spite of the difficulty in obtaining experienced miners and keeping them on the job, the progress has been satisfactory. With all new equipment, ideal campsite, modern camp buildings, and good condition of back in the adit, operating conditions are of the best. The operators monthly reports cannot be criticized.

Many cross fractures, encountered in the adit, have been mapped (fig. 1). This fractured material in the shale show varying amounts of scheelite which encourages belief that the overlying C.M. or Wheeler limestone bed is highly mineralized with scheelite.

Samples will be taken when the limestone bed is exposed by crosscutting and raising.

Russell R. Trengove

Russell R. Trengove
Mining Engineer

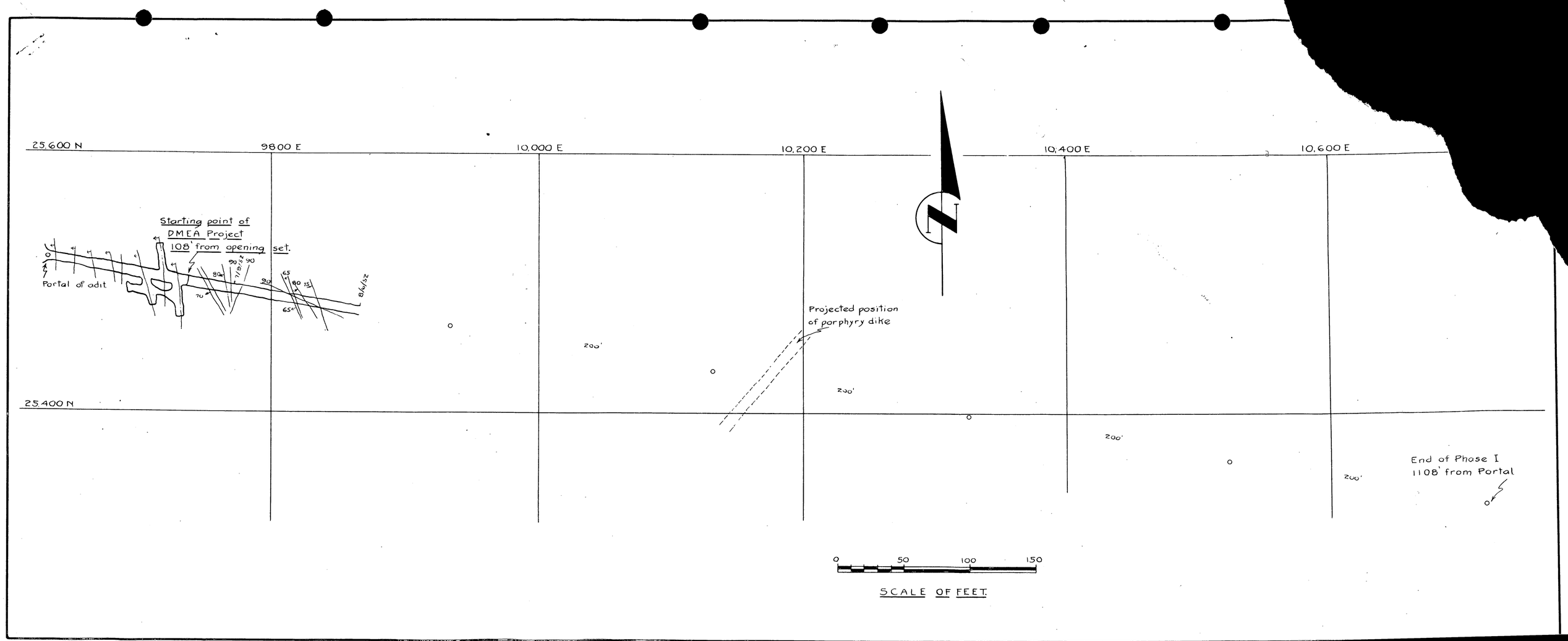

FIGURE 1 PROGRESS MAP OF MOUNT WHEELER MINES, INC TUNGSTEN MINE

500

FILE COPY
SURNAME:

Keating

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

JUL 31 1952

Dmea 2082

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P. O. Box 150
Salt Lake City, Utah

Re: Docket No. DMA-89X (Lead-Zinc)

copy in ↑

Dear Mr. Williams:

This refers to your letter of May 6, 1952, addressed to Mr. Moulds of the Base Metals Division, in which you request the above-numbered application to be held in abeyance pending completion of your contract No. Idm-E248, executed January 29, 1952.

The exploration as outlined in the contract and the overall program described in your letter contemplates extending the existing Pole Tunnel a distance of 4,300 feet to reach a possible downward extension of a tungsten outcrop, and then an additional 3,100 feet of drifting to reach a downward extension of a lead-zinc outcrop. The terms of the contract provide that much of the advance is contingent upon the result of previous work.

It appears that by the time you are prepared to proceed with the program of exploration under Docket No. DMA-89X, it will probably have to be extensively revised. Under the circumstances, it would seem best to consider closing your file as to the application presently submitted and when you are again prepared to proceed, a new application can be made under the conditions which will obtain at that time.

Will you be kind enough to advise this office whether you plan to proceed reasonably soon under your application Docket No. DMA-89X, or if you wish to make a new and revised application. Unless word is received from you within thirty days, it will be assumed that you are no longer interested and your file will be closed.

Sincerely yours,

C. O. Mittendorf (for) J.N. 7-31-52

Acting Administrator

AGKeating/mb
July 30, 1952
cc to: Docket
Adm R. File
Operating Comm.
Mr. Keller (2)
Mr. Keating
Mr. Bishop
Mr. McKnight
Region IV
Chron

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

DEPARTMENT OF THE INTERIOR
Defense Minerals
JUL 29 1952

400

GGS 7/30/52

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

July 25, 1952

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P O Box 150
Salt Lake City 10, Utah

Re: Docket DMEA 2082 (Tungsten)
Mt. Wheeler Mines, Inc.
Exploration Project Contract
Idm-1248

Dear Mr. Williams:

Although we discussed my letter to you, dated July 16, when you called at the office on July 23, I now have some further information to give you, as the Washington Office of the Defense Minerals Exploration Administration to whom I sent a carbon copy of my letter to you has given me some additional ideas.

Although you requested that we forget about your item concerning the jeep, the Washington Office informs me that the matter should be handled as I suggested. Therefore, should you on reconsideration desire to charge the project with depreciation of $34.10 a month for the jeep, a request for an amendment to your contract will be promptly taken care of by this office.

The Washington Office has no objection to the $50 monthly payment to a part-time cook's helper, if warranted. I am telling you this, even though you told me that the cook and his wife had left your employ since you wrote your June 30 letter, and that conditions, therefore, are now different. The amount of $300 a month allowed you under the contract is maximum, as you well know. Should a similar occasion arise in the future and you desire to hire a cook and helper at $300 a month, will replacement of a part-time helper not lead to labor difficulties, as interpreted by the Union's rules and regulations?

The Washington Office agrees that the additional miner for underground work (your Item 3) can be taken care of without an amendment. There is no objection to the hiring of an additional man, but this should not lead to hiring others, as the price of $13.50 per foot is also to cover timbering where needed. You should by all means hire an extra man if necessary to complete the daily cycle rather than lose the round.

The Washington Office has no objection to prorating the expenses on a car or rook ton basis. However, they believe that some other prorating should be considered in addition to the compressor rental, fuel, lubricants, and labor of one compressor man. Some allowance should be made for prorating supervision and the use of any equipment or facilities furnished for exploration under the contract. The proposed production also suggests that possibly the wages of the cook should be prorated, not on a car or tonnage basis but on a "number of employees" basis.

In looking over the contract, the Washington Office notes that your mine is supplied with only a 315-cubic foot compressor, and it asks if this compressor can be used in such a manner that it will supply air to the production activity without delaying the exploration.

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to E. H. Bailey, USGS
DMEA, Interior Building, Washington 25, D. C.

400

FILE COPY
SURNAME:

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

Selfridge
F.E. Johnson 7/24 (MB)

JUL 24 1952

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada
Contract No. Idm-E-248

Dear Mr. Miller:

Please refer to your letter of July 16, 1952, to Mr. James D. Williams, which relates to proposed amendments to the subject contract.

Under Item 1, the matter of the jeep should be handled as you suggested.

Under Item 2, we have no objection to the $50 monthly payment to a part-time cook's helper, if warranted. Mr. Williams should be informed that the $300 per month is the maximum amount allowable under the contract. It might be well to ascertain whether or not the placement of a part-time helper may not lead to labor difficulties, as interpreted by the Union's rules and regulations.

Under Item 3, the additional miner for underground work can be taken care of without an amendment, as you state. We have no objection to the hiring of the additional man, but this should not lead to hiring others as the price of $13.50 per foot is also to cover timbering where needed. Originally Mr. Williams submitted a $12 per foot figure and then requested by telephone a $15 per foot figure and we split the difference at $13.50. He stated that he would start the contract work at $10 per foot and raise the price only if necessary. The present $10.25 per foot is in keeping with his statement, but by all means if the extra man is necessary to complete the daily cycle, he should be employed rather than lose the round.

BL

Under Item 4, we see no objection to prorating the expenses on a car or rock ton basis. However, we believe that some other prorating should be considered in addition to the compressor rental, fuel, lubricants, and labor of one compressor man. Some allowance should be made for prorating supervision and the use of any equipment or facilities furnished for exploration under the contract. The proposed production also suggests that possibly the wages of the cook should be prorated not on a car or tonnage basis but on a "number of employees" basis.

In looking over the contract, we note that the mine is supplied with only a 315-cubic feet compressor. Can this be used in such manner that it will supply air to the production activity without delaying the exploration?

Sincerely yours,

7/24/52

George C. Selfridge (JB)

ACTING Chairman, Operating Committee
Defense Minerals Exploration
Administration

Approved:

J. H. Hedges (JB)

Member, Bureau of Mines

D. M. Lemmon (JB)

Member, Geological Survey

GCSelfridge:ls 7/23/52

cc: Docket
Admn. Reading File
Field Team, Reg. 3
G. C. Selfridge
Operating Commkttee
D. M. Lemmon, USGS
R. W. Geehan, USBM

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 21 1952

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

July 16, 1952

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P O Box 150
Salt Lake City 10, Utah

RE: Docket DMEA-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
Exploration Project Contract
Idm-E248

Dear Mr. Williams:

Reference is made to your letter to me, dated June 30, 1952, in which you submitted amendments to the captioned contract for our consideration.

Under Item 1, you state that though your contract included provision for 7 months' rental at $100 per month for a jeep, you found that you could not rent one at any price, and, therefore, purchased a new one at a cost of $2046.20. Inasmuch as you purchased the jeep on December 20, 1951, or more than a month prior to the date of your contract, the cost of the jeep cannot be charged to your project in which the Government participates. We will have to consider, therefore, the possibility of amending your contract, so that a depreciation charge may be made for the jeep. Such a charge would amount per month to one sixtieth of the cost of the jeep or $34.10.

Under Item 2, you request splitting the salary of a cook at $300 per month between the cook at $250 a month and a part time helper at $50 a month. Inasmuch as the part time helper is the cook's wife, it looks to us as though a $50 a month job is merely being created to increase the "take home" pay of the cook. Is the work the helper does actually needed? How many workers does the cook serve?

Your request under Item 3 for an additional miner for underground work can be taken care of without an amendment. The contract price of $13.50 per foot for 1,000 feet of adit is the controlling factor. The additional labor cost must not exceed the maximum allowable cost of $13.50 per foot for adit work. When you come to drifting, however, the cost of $11.00 per foot cannot be exceeded.

Under Item 4, as we see it, proration of expenses, limited to compressor rental, fuel, lubricants and wages of one compressorman will tend to reduce the cost of the exploration project, so that

no objection can be raised on that score. Prorating the expenses on a rock-ton basis, as suggested, seems to be a satisfactory way to segregate the cost.

A copy of your letter is being sent to the Washington Office of the Defense Minerals Exploration Administration, and word should be received shortly on whether the interpretations I have given to your contract and to your request for amendments, as outlined by me in this letter, are correct and how far I can go in amending your contract.

Very truly yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to DMEA, Interior Building, Washington 25, D. C. (with copy of Williams' letter)
E. H. Bailey, USGS (with copy of Williams' letter)
A. C. Johnson, Reno

C
O
P
Y

Mt. Wheeler Mines, Inc.
P O Box 150
Salt Lake City 10, Utah

June 30, 1952

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
Room 1012 Flood Building
870 Market Street
San Francisco 2, California

RE: Docket No. DMEA - 2082 (Tungsten)
Mt. Wheeler Mines, Inc.
Exploration Project Contract Idm-E248
Request for Amendments

Dear Mr. Miller:

In the course of operations under the above captioned exploration contract a number of situations have developed which appear to be of such nature as to suggest amending the contract in order to take care of them. We have discussed these amendments with Mr. A. C. Johnson, Chief, Region III, Mining Division, during a recent visit with him, and, as the result of that conference, submit the following amendments for your consideration.

1. Purchase of 4-wheel drive "Jeep" 1 ton Pickup

In the contract, under Operating Equipment to be rented, provision is made for 7 months' rental at $100.00 per month for a Willys 4 wheel drive "Jeep." We found that we were unable to rent a Jeep on any basis, and, therefore, were forced to purchase a new one at a cost of $2046.20. We are, therefore, not permitted to rent this unit to ourselves, but, since it is entirely devoted to the exploration project (absolutely necessary to the operation), we feel that it is a proper item of equipment to be purchased for the benefit of the exploration project. The only unfortunate fact is that the actual purchase contract was executed on December 20, 1951, although the vehicle was reserved for service in anticipation of the contract, and, as a matter of fact, has been used exclusively to that end.

2. Cook Allowance - Addition of part time Employee

The contract allows, under Labor and Supervision, one cook at $300.00 per month for a period of 7 months. We request that we be permitted to split this salary as follows:

Cook	$250.00	Per	Month
Part time helper	50.00	"	"
Total	$300.00	"	"

The need for this has been brought about by the situation that the cook's wife is living in camp and, although not required by us to do so, does perform odd duties and functions in and about the messhall. This goes on with our knowledge. Should she sustain injury in performing this casual work the company would undoubtedly be held liable for damages. Under these circumstances we must have her under Workmen's Compensation for our protection.

3. Additional Tunnel Labor

During the initial mining operations in the tunnel we have observed that one extra man is required underground on a split shift basis (4 hours on day shift - 4 hours on afternoon shift), in order to assure one round in and out on each shift. His main duties will consist of taking down the blower line prior to shooting, replacing after shooting and blowing out so the face is clear for the second shift, keeping the waste dump and trackage in good condition, hauling mine water from the end of the pipeline to the mine storage tanks and generally rendering whatever assistance may be necessary to assure two rounds of advance in the tunnel each day. After the first 200 feet of advance he will be needed for installing switches, cutting samples, assist in surveying and mapping and other supplemental work. It is estimated this additional labor will amount to about $1.50 per foot in addition to the contract labor cost of $10.25 per foot, making a total of $11.75 per foot. The allowance under the contract is $13.50 per foot, so we will still be under that figure by $1.75 per foot. We feel that with this added help it will be possible for us to maintain a daily advance of not less than 11 feet.

4. Ore Production - Proration of Expenses

We have been informed that within a reasonable time Combined Metals will be in a position with its tungsten mill at Pioche, Nevada, to receive custom ore from us. In view of this we will probably wish to start production from the first 110 feet of the Pole tunnel previously driven by us and also from the No. 1 shear zone 800 feet North from the Pole tunnel. However, before we do this we wish to make certain that no conditions or problems will be raised which might interfere with the conduct of the exploration project or its accounting and payment.

We represent that no labor, equipment, materials or supplies, other than air from the project compressor, will be used on this ore production. These items will be purchased and stored separately at all times; labor will be paid on a separate payroll. There will be no comingling of ore from company production with any which might result from the exploration project. Under these stipulated conditions it is our thought that any proration of expenses be limited to the compressor rental, fuel, lubricants and wages of one compressorman and based upon the ratio of rock-tons of company production to rock-tons produced from the exploration. The simple method would be to keep a record of the number of mine cars produced from each as they will approximate one ton each.

We wish to assure you that these suggested amendments have received our careful consideration and we believe them to be in the best interests of the operation. We trust that they meet with your approval.

Sincerely yours,

/s/ James D. Williams
President

cc: Mr. A. C. Johnson

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Bldg.
870 Market St.
San Francisco 2, Calif.

May 23, 1952

Memorandum

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

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2082 (Tungsten), Mt. Wheeler Mines
Exploration Project Contract Idm-E248

Attached are the original and three copies of Amendment No. 1 to subject exploration project contract, signed by me for the Government and by James D. Williams for the Mt. Wheeler Mines, Inc.

An explanation for making this amendment was given in our letter of May 7 to Mr. James D. Williams, President, Mt. Wheeler Mines, Inc., copy of which letter was sent to your office.

The field engineer's copy is being retained in this office, and we will expect to receive the finance officer's copy shortly through the regular channels. The applicant has retained his copy.

for H. C. Miller
Executive Officer, DMEA Field Team
Region III

Attachment

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno
L. L. Norvell

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 27 1952

Copy for DMEA, Washington 25, D. C.

400

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

May 7, 1952

Mr. James D. Williams,
President
Mt. Wheeler Mines, Inc.
218 Felt Building
P. O. Box 150
Salt Lake City 1, Utah

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 12 1952

Re: Docket No. DMEA-2082 (Tungsten)
Mt. Wheeler Mines, Inc.
The Mt. Wheeler Mine
Exploration Project Contract Idm-E248

Dear Mr. Williams:

My answer to your letter of April 11th has been delayed as I wanted to discuss your letter with Mr. Mittendorf and others in the Washington Office before acting upon your several requests.

The Washington Office is not in favor of changing any contracts that have been written in the past. Some future contracts may be prepared on a unit cost basis, but the applicant would have to furnish a complete breakdown of his individual costs, thereby substantiating his ultimate unit cost. In the case of Mt. Wheeler Mines, Inc., it would seem that the method of bookkeeping would have no direct bearing on the flexibility in carrying out the exploration. That the contract should not be changed to a unit cost basis is obvious in the price of $50.32 per foot, which is high. Every facility was provided for and in many cases the amounts allotted certain items were quite generous. In allowing a unit cost per foot the Government would have no participation in any of the salvage, which should be considerable. Surely the small drifts and raises do not warrant the same price as the main adit.

The item for the rental of mine cars was an oversight, and an amendment to the contract has been prepared to cover the rental of six 21-cubic foot cars at $25.00 each for seven months, or a total of $1,050.00.

Six copies of the amendment are attached, and if approved by you and signed, the original and four copies should be returned

to this office and the sixth copy is for your files. If you do not approve the amendment as prepared, all six copies should be returned to this office unsigned.

In answer to item 2 of your April 11 letter, Exhibit "A" of the contract allowed for the 1500 feet requested by you, and on reviewing the work in the Washington Office it was noted that a small amount of extra work should be done at the top of two of the raises on the other ore zone and this was added in the description without changing Exhibit "A".

The 15% rate for compensation, insurance, payroll, taxes, and O.A.B., is a typographical error. The allotted sum was calculated on a 10% basis as submitted by you.

No item for timbering was included in the contract because it was the impression of the Washington Office that this was an unknown and minor item and could largely be taken care of by the higher than usual labor contract price allowed under the contract.

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Enclosures

Copy to A. C. Johnson, Reno, Nevada
DMEA, Washington, D. C.
L. L. Norvell, San Francisco
E. H. Bailey, USGS

FILE COPY
SURNAME:

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

APR 25 1952

Mr. H. C. Miller
Executive Officer, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMA 2082 - Tungsten
Mt. Wheeler Mines, Inc.
The Mt. Wheeler Mine
Exploration Proj. Contract Idm-E248

Dear Mr. Miller:

This is in reply to your letter of April 15, 1952, forwarding four copies of a letter by Mr. James D. Williams in which he requests that the contract be changed to a unit cost basis.

We are not in favor of changing any contracts that have been written in the past. However, we would favor writing contracts in the future preferably on a unit cost basis, but the applicant would have to furnish a complete breakdown of his individual costs, thereby substantiating his ultimate unit cost.

In the case of Mt. Wheeler Mines, Inc., it would seem that the method of bookkeeping would have no direct bearing on the flexibility in carrying out the exploration. That the contract should not be changed to a unit cost basis is obvious in the price of $50.32 per foot, which is high. Every facility was provided for and in many cases the amounts allotted certain items were quite generous. In allowing a unit cost per foot the Government would have no participation in any of the salvage, which should be considerable. Surely the small drifts and raises do not warrant the same price as the main adit.

As previously written you, the item for the rental of mine cars was an oversight. Exhibit "A" of the contract allowed for the 1500 feet requested by Mr. Williams, and on reviewing the work it was noted that a small amount of extra work should be done at the top of two of the raises on the other ore zone and this was added in the description without changing Exhibit "A".

The 15 percent rate for compensation, insurance, payroll, taxes, and O.A.B., is a typographical error. The allotted sum was calculated on a 10 percent basis as submitted by Mr. Williams.

No item for timbering was included in the contract because our impression was that this was an unknown and minor item and could largely be taken care of by the higher than usual labor contract price allowed under the contract.

We believe that the exploration at the Mt. Wheeler Mine should be carried out under the present contract and when it nears completion and results have been favorable, then the contract can be amended in any form necessary to reach the final objective.

Sincerely yours,

C. O. Mittendorf (fw)

Acting Administrator
Defense Minerals Exploration
Administration

ce
4/24

GCSelfridge:ls
4/22/52

cc: Docket
Admn. Reading File
Field Team, Region 3
G. C. Selfridge
D. M. Lemmon, USGS
R. W. Geehan, USBM
Operating Committee

FILE COPY
SURNAME:

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

Selfridge
Schneider
Kryn
Hedges
Johnson

APR 21 1952

Mr. H. C. Miller
Executive Officer, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMA 2082 - Tungsten
Exploration Proj. Contract Idm-E248
Mount Wheeler Mines, Inc.
The Mount Wheeler Mine
White Pine County, Nevada

Dear Mr. Miller:

Several weeks have passed since we received your memorandum of February 11, 1952, in which you mentioned that an amendment would be secured to cover the matter of the rental of mine cars, an item which was inadvertently omitted in the contract.

If you have not secured an amendment for this item, will you please prepare the customary amendment covering the rental of six 21-cubic foot cars at $25.00 each for seven months. This makes a total of $1,050.

Sincerely yours,

C. O. Mittendorf (for)

Acting Administrator
Defense Minerals Exploration
Administration

J.N.
4-21-52

GCSelfridge:ls
4/17/52

Copy to: Docket
Admn. Reading File
G. C. Selfridge
Field Team, Region III
J. L. Chambers
Operating Committee
D. M. Lemmon, USGS
R. W. Geehan, USBM

BL

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

Air Mail

April 15, 1952

Memorandum

To: C. O. Mittendorf, Acting Administrator, Defense Minerals Exploration Administration, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2082, Contract Idm-E248 - Mt. Wheeler Mines, Inc.

I don't know where the idea got started, but within the last few days I have had several people ask me about reducing the cost of exploration to a unit cost basis per foot of advance. The plea is that it would simplify accounting procedure and give greater flexibility in carrying out the exploration.

Yesterday I received the first written request for an amendment to a contract "to reduce the exploration to a unit cost basis per foot of advance". Four copies of this request from Mr. James D. Williams, President, Mt. Wheeler Mines, Inc., dated April 11, are attached. You will note that in addition to Mr. William's request for an amendment to permit him to operate on a unit basis, he points out several inconsistencies in the original contract which would have to be taken care of by an amendment to the contract unless a unit cost basis amendment is prepared.

It would be appreciated if you will give me your opinion as to how best I should take care of Mr. Williams request for a unit cost basis amendment.

Kindly reply air mail.

Defense Minerals Administration
RECEIVED
APR 1 1952

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to E. H. Bailey, USGS

COPY

MT. WHEELER MINES, INC.
P. O. Box 150
Salt Lake City 10, Utah

April 11, 1952

Mr. H. C. Miller, Executive Officer
D.M.E.A. Field Team, Region III
Room 1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Mt. Wheeler Mines, Inc.
D.M.E.A.-2082; Idm-E-248
Amendment to Unit Basis

Dear Mr. Miller:

In accordance with my discussion with Mr. Johnson in Reno, on Thursday last, and my telephone conversation with you on the same day, I am submitting our request for an amendment to the above captioned contract to reduce the exploration to a unit cost basis per foot of advance.

It is my understanding that such a unit basis is favored by Washington in the interest of simplification of accounting and also to promote general efficiency in the execution of the exploration. We are in complete accord with that philosophy. Also, since weather has not permitted much more than a preliminary start under the contract there is nothing to be undone in making this change.

It is my further understanding that in converting our present contract to the unit cost basis the total contract amount would be divided by the total exploration footage scheduled and the result would be the unit cost per foot allowable under the proposed amendment. If this be so, the following basis would obtain -

1. Total contract amount $75,476.00

2. Exploration footage scheduled

(a)	Pole Adit	1000 Ft.
(b)	Crosscuts	250 "
(c)	Raises	150 "
(d)	Drifts	100 "
	Total	1500 Ft.

3. Unit Cost $\frac{\$75,476.00}{1500}$ = $50.32 Per Foot

In this connection with this proposed amendment, I should like to call to your attention several apparent inconsistencies in the original contract, Idm-E-248.

1. No provision was made for the rental of ore cars as submitted in our application of September, 1951.

2. The total exploration footage anticipated under Sections 4 to 10, inclusive, of Exhibit "A" amounts to 1540 feet, whereas allowable costs under "Labor and Supervision" on page 4 of Exhibit "A" provides for only 1500 feet.

3. Compensation insurance, payroll taxes and O.A.B. at 15 percent of payroll is shown as $3,291.00, whereas the total anticipated payroll will be as follows -

(a)	Blacksmiths and compressor men		$ 5,510.00
(b)	Cook		2,100.00
(c)	Contract labor		
	1. Pole Adit	$13,500.00	
	2. Drifts - 350'	3,850.00	
	3. Raises - 150'	1,650.00	19,000.00
(d)	Superintendent - Engineer		3,500.00
(e)	Engineer - Geologist		2,800.00
			$32,910.00

and 15% of this total payroll amounts to $4,936.50. It would appear that an error was made in this calculation by applying a 10% rate instead of the 15% rate as submitted.

4. On page 4 of Exhibit "A", note 2, states that timbering, where necessary, will be paid at the rate of $3.00 per foot, and on page 5 of Exhibit "A", note 3, states that timbering, where necessary, will be paid at the rate of $5.00 per foot, yet no estimated amount (contingency) has been allowed in the total estimated cost to cover such timbering if, as and when necessary.

I point these out for a purpose, namely, that by accepting the amendment on a unit cost basis of $50.32 per foot, we will, of necessity, undertake to provide for these additional facilities and contingencies within the unit cost agreed upon.

I should also like to point out that in requesting this amendment we are not unmindful of the fact that expenditures under Sections 1 to 3, inclusive, of Exhibit "A", plus the cost of equipment, materials and supplies will have to be paid for by us with no return until after the first month of underground exploration operations and subsequent reimbursement by your office on a unit footage basis only. We are willing to assume this in the interest of simplification and efficiency.

I have discussed this proposed amendment, on the basis herein submitted, with my Board of Directors and our opinion is unanimous in that the amended basis

is practical, easy to report and administer, favors efficient management and will tend to promote greater understanding and cooperation between the parties.

Sincerely yours,

/s/ James D. Williams
President

JDW-K

DMEA docket

COPY

Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

February 11, 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Mt. Wheeler Mines, Inc. - Docket DMA-2082 (Tungsten), Contract Idm-E248

We are attaching the original and three copies of the above-referenced exploration contract which has been signed by Mr. James D. Williams, President, Mt. Wheeler Mines, Inc.

The operator has retained his copy and the field engineer's copy is being retained in this office. We expect the finance officer's copy to be returned by you to this office shortly.

Mr. Williams writes that the matter of rental of mine cars was omitted from the exhibit attached to the contract. As he believes this omission was unintentional, he promised to submit an Amendment to cover the rental item at an early date.

(signed) H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to E. H. Bailey, USGS

FILE COPY
SURNAME:

400

Selfridge
Lemmon
Gulyas
Hodges
Thayer

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

JAN 29 19

Mr. H.C. Miller,
Executive Officer, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA-2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada

Dear Mr. Miller:

We are enclosing the original and five copies of the above referenced exploration contract signed by this office for the Government, together with Exhibit "A" (5 pages), a subordination agreement and three maps.

If the terms and conditions of this contract are satisfactory to you and the Operator, all six copies should be signed by a duly authorized official of the Company. One copy is to be given to the Operator, one copy retained by your office, and the original and three copies returned to this office.

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

Please note that the following major changes have been made in the contract as originally outlined and amended:

1. The daily wage rate and footage prices have been increased. Mr. Williams wished to change the $12.00 per foot price for the adit to $15.00, so we split the difference making it $13.50. The raises and drifts were handled in the same fashion.

2. Only two supervisors were allowed, primarily because of the winter working conditions, instead of three which included a full time geologist.

3. The mess hall and bunk houses have been built, so were eliminated from the contract.

4. Duplication of the miscellaneous small tool item was eliminated.

5. The item for tractor work was increased.

6. A battery trammer was added on a rental basis.

7. A cook was added.

The above changes reduced the estimated cost of the project from $86,000.00 to $75,476.00.

The project has been drawn up on a compromise basis in that the adit will not be driven either in a straight line or within the ore body. By the time that the second 200-foot section and its auxiliary workings are completed, it should be known whether or not the ground will stand within the ore zone and whether or not the size and grade of the zone will support an operation under the presently proposed program. If the ground will stand and it is feasible, the adit should be driven within the ore zone. Even though the adit may wind, it would be cheaper to timber occasionally or to slab in ore to eliminate sharp curves than to drive duplicate drifts.

Should the presently opened ore zone fault below the adit level, there would be no objection to crosscut north to the quartz vein, for which some work has been provided if this has not been done, to explore it. The amount of exploration will depend on what is found. If the adit closely follows the presently exposed ore zone, there will be an excess of funds for crosscutting and, if necessary, some of it might be used for tapping the zone at 100-foot intervals instead of 200-foot intervals.

Probably the most important information that should be secured is the average grade of the ore. This should be done as soon as possible.

Sincerely yours,

Ce
1-29-52

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
~~Acting Administrator~~
Defense Minerals Exploration Administration

/s/ J. H. Hedges
For Bureau of Mines

/s/ T. P. Thayer
For Geological Survey

GCSelfridge:ls
1-25-52

Copy to: Admn. Reading File
Docket
R. W. Geehan, USBM
D. M. Lemmon, USGS
Field Team, Region III
G. C. Selfridge

140

FILE COPY
SURNAME:

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

January 22, 1952

Memorandum

To: Acting Administrator

From: Chief Counsel

Subject: Mt. Wheeler Mines, Inc., exploration contract--Docket No. DMEA-2082

The attached six copies of a draft of an Exploration Project Contract in this case is in satisfactory legal form and is approved by this office subject to the attachment of the necessary maps.

Your file in this case is returned.

J. L. Hofflund
Chief Counsel

Attachments

~~xJxxkxxHxf~~
CJKoontz/em
Copy to: Reports & Records
J. L. Hofflund
C. J. Koontz
chron.

Not Stuffed R.R.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY Room 307, 320 South Main
Salt Lake City 1, Utah
15 January 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 17 1952

Memorandum

To: Mr. G. C. Selfridge

From: R. M. Smith and D. C. Arnold

Subject: DMEA (89) 2082, Tungsten, Mt. Wheeler Mines, Inc., White Pine County, Nevada

Mr. Frank E. Johnson has requested (December 26, 1951) detailed comments by the examining geologists on Mr. Mittendorf's letter to Mr. James D. Williams, dated December 26, 1951. These comments follow:

The review of the general geology is an accurate description of the scheelite deposit.

Mr. Williams recently stated that mining has been done on the east-striking ore shoot south of the adit since the DMA examination was made, and that this work has exposed the ground between the north-striking fractures. He reports that scheelite of minable grade occurs consistently for a length of 35-40 feet, a width of 8-10 feet, and a height of 4-5 feet. This demonstrates greater east-west continuity of ore than was apparent at the time of the examination.

The applicant's proposed exploration program specifies that the Pole adit is to be driven S. 80° E. This bearing is his estimate of the strike of the ore zone. As the beds dip only 10°-15° S. local variations in strike are to be expected. For example, the strike of the shale-limestone contact in the existing adit is about S. 75° E. It is understood by the applicant and the field team that the bearing of the adit will be changed, if necessary, to stay under the Wheeler bed. As the regional strike is nearly east, a change of bearing toward the east is probable.

The exploration work should include north and south crosscuts on promising showings to test the presence of the inferred ore shoots. These crosscuts should be spaced at about 300 foot intervals. Although a long range objective (2200 feet of adit) is provided for in the proposed program, its completion should be entirely dependent upon finding ore bodies along the way.

Location of the proposed adit within the extreme walls of the shear zone provides access to both hanging wall and footwall quartz veins with the shortest possible crosscuts. Cost of the adit, crosscuts, and

raises will be paid, not by one stope on ore, but by two stopes, one on each side and parallel to the adit. Location of the adit between the ore shoots is in part "preparation for mining" (MO 5, Sec. 7a), and would not be allowed under ordinary circumstances. Because ore is inferred to exist 2200 feet from the portal, a better description might be "preparation for later phases of exploration".

The examining geologists do not agree with Mr. Williams that a drift in the ore zone would be impractical because of high timber costs (the ground appears to stand well in narrow workings). Mr. Williams' reference to excessive timbering costs is interpreted to mean that if the adit is driven in the ore zone, and if stoping widths of 10 feet or more are found and mined, it will then become necessary to timber the stopes in order to maintain a haulage way through them. The geologists do consider such a drift to be impractical, however, because of possible step faulting along north-striking faults, which may displace the ore zone down to the east. Although displacements may be small - 10 feet or less - even very small displacements would preclude track haulage. ? ?

The existence of step faults has not been proven but the existence of north-striking fractures is well known. It is inferred that the more persistent of these fractures will displace the Wheeler bed and any ore shoot contained in it. A pilot adit, driven on the ore is likely to be somewhat tortuous because of step faulting, and the distance it can be advanced before haulage problems become insurmountable is not predictable.

Although the rock in the shear zone is broken, it is believed that stope timbering may be confined to occasional stulls with headboards.

Dividing the work between the Pole adit and the shear zone 900 feet north is advisable. Surface work is already planned for the north shear zone; underground work at this showing would increase capital costs of the exploration.

In general, the examining geologists believe that the applicant's program is well designed to explore the deposit, and recommend that it be approved.

R. M. Smith
D. C. Arnold

cc: Bailey
Johnson

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

W. P. MARSHALL, PRESIDENT

1220

SYMBOLS

DL = Day Letter

NL = Night Letter

LC = Deferred Cable

NLT = Cable Night Letter

Ship Radiogram

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

L SLA153 NL PD=SALTLAKECITY UTAH 30=

C O MITTENDORF, ACTING ADMINISTRATOR=

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR WASHDC=

THANKS FOR YOUR LETTER RE DOCKET DMA-2082- TUNGSTEN WE AGREE FUNDAMENTALLY WITH THE OBJECTIONS SET OUT IN YOUR LETTER TO DEVELOP AND OPEN FOR EXTRACTION AS RAPIDLY AS POSSIBLE THE MAXIMUM NUMBER OF TUNGSTEN ORE FACES CONSISTENT WITH THE LIMITED AMOUNT OF MONEY AVAILABLE TO US FOR THE PURPOSE. WE ARE AGREEABLE TO THE SUGGESTION CONTAINED IN NEXT TO LAST PARAGRAPH ON PAGE TWO OF YOUR LETTER WHICH WOULD INVOLVE GRADUALLY CHANGING THE COURSE OF THE PRESENT TUNNEL TO AN ESTIMATED COURSE OF SOUTH 65 DEGREES EAST TO STAY JUST UNDER THE LIMESTONE PARALLEL TO AND AS CLOSE TO THE ORE MAKING EAST-WEST FRACTURE ZONE AS POSSIBLE AND STILL AVOID EXPENSIVE TIMBERING. THIS WILL PERMIT RUNNING CROSSCUTS IN THE NORTH AND SOUTH FRACTURE ZONES ALONG ANY ORE SHOWINGS FOUND WITHOUT GREATLY INTERFERRING WITH MAIN ADIT WORK. PLEASE UNDERSTAND HOWEVER THAT SMALL DISPLACEMENTS OF THE BED MAY MAKE NECESSARY TURNING NORTHERLY OR SOUTHERLY FROM TIME TO TIME TO MAINTAIN THE DESIRED ELEVATION OF ADIT

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

JAN 1 8 20 AM '52

JAN 2 7 03 AM '52
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D.C.

FILE COPY
SURNAME:

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

Selfridge
Yearsley
Thayer
Mittendorf (for)

Mr. H. C. Miller
Executive Officer, Region III
DMEA Field Team
1012 Flood Building
870 Market Street
San Francisco, California

DEC 26 1951

Re: Docket No. 2082 - Tungsten
Mt. Wheeler Mines, Inc.
Mt. Wheeler Mine
White Pine County, Nevada

Dear Mr. Miller:

Enclosed herewith are two copies of a letter to Mr. James D. Williams, President of Mt. Wheeler Mines, Inc. The letter is largely self-explanatory. Will you please have the field team that made the examination, Messrs. R. M. Smith and D. C. Arnold, comment on the letter. We particularly would like to know what difficulties might be encountered by driving directly on the ore. If this is impossible, can it be followed by a winding adit rather than a straight one which is diverging from the trend of the ore?

There is serious doubt in our minds that the ore zone, which is of limited cross section, can support double drifting with any amount of crosscutting and raising.

Any additional information that the field team can supply concerning the exploration of the deposit will be appreciated.

Sincerely yours,

(signed) FRANK E. JOHNSON (for)
Chairman, Operating Committee
Defense Minerals Exploration
Administration

Enclosures - 2

GCSelfridge/hmj
12-17-51
cc to: Adm. Reading File
Mails and Files
Mr. Mittendorf
Mr. Selfridge
Mr. Geehan
Mr. Thayer
Region III (2)
Docket

12-24 SP

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

J.C.

FILE COPY
400
SURNAME:

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

Selfridge
Thayer
Mitchell
Fergusson

DEC 26 1951

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P. O. Box 150
Salt Lake City 10, Utah

Re: Docket No. DMA 2082 - Tungsten
Mt. Wheeler Mine
White Pine County, Nevada

Dear Mr. ~~Wheeler~~ Williams:

We now have reviewed the subject docket and have tried twice unsuccessfully to communicate with you by telephone to discuss existing impression or views held by all interested parties.

Review of the general geology suggests that, at the adit, the better scheelite showings occur in the basal part, 8 feet or so, of the east-striking Mt. Wheeler bed at its intersection with quartz veins in an east-striking shear zone. The Mt. Wheeler bed dips flatly to the south and the shear zone and its quartz veins or stringers dip steeply to the north. Thus, the intersection of the shear zone and the limestone bed constitute a potential eastward-striking, horizontal ore zone or pipe. Within this zone the scheelite is further localized by northward trending fractures. Thus, the ore horizon can be likened to a string of beads, the cross section of which normal to the trend of the ore zone, is limited by the favorable part of the bed in the near vicinity of the quartz vein where it is cut by the northward trending fractures. The east-west dimension of the individual ore pockets will depend on how far the economic mineralization was able to migrate along the bed-quartz stringer intersection. Should the fractures occur sufficiently close, a flat lying ore pipe might result. Otherwise, the zone will consist of a series of irregular disk-like to spheroid-like ore pockets separated by barren or low grade sections of limestone.

An adit, the Pole, has been driven 105 feet as the beginning section of a proposed adit 7,200 feet in length. This adit is to bear S 80° E and eventually will come in under the workings of the Bonanza group of claims. The adit was started at the limestone-underlying shale contact and between two quartz stringers which appear to be the hanging and foot walls of the shear zone. Two crosscuts from raises were driven southward along fractures exposed by the adit and ore was found in each in the near-vicinity of the footwall quartz stringer.

SA

If the above strikes are true, the adit should eventually crosscut the Mt. Wheeler bed from footwall to hanging wall and leave the ore to the north. However, you state that the adit, and this is shown by the cross section, is cutting deeper into the shale and eventually will be entirely in shale. This can mean only one thing, that the strike of the Mt. Wheeler bed is less southeast than the proposed direction of the adit.

We primarily are interested in getting information concerning a tungsten deposit as soon and as economically as possible once an Exploration Project is started. Until something definite is known concerning the potentialities of a deposit, we believe long range objectives should be held in abeyance.

Review of the May 23, 1951, application showed that contemplated additional development in the form of crosscuts, raises and drifts amounted to considerably more than the 2,200 feet of proposed adit. This suggests that the ore zone will have to support double drifting in addition to the necessary crosscuts and raises.

Because little information is available concerning the frequency of the cross fractures and because the possibility of diverging from the ore zone, thereby necessitating longer crosscuts and raises in barren shale to reach it, the suggestion was made in Washington that the adit be driven in the heart of the exposed ore zone. This would produce ore at once and at the same time explore the entire zone along its eastward trend. The favorability of the cross fractures to economic mineralization would be learned immediately. Furthermore, one would have a better knowledge as to what might be expected at the intersection of the fractures and the hanging wall quartz stringer to the north.

In your letter of November 24th, you state that it would be impractical to drive in the ore because the shear zone is a highly broken area and the adit undoubtedly would require timbering. We had received the impression that a pilot adit could be driven in the ore with a minimum of timbering. If this could be done and it was found that an extraction adit was needed and was warranted, it could be driven on bearings determined by the opening in the ore with a minimum of dead work.

While reviewing the contract, another alternative has suggested itself. The Mt. Wheeler bed and the shear zone form a gable-like structure. If the shear is too broken to drive the adit in without timbering, would it be feasible to drift along but just outside the footwall of the shear zone and just under the limestone? If so, the ore zone could be reached with a minimum of dead work.

Will the broken character of the shear zone make opening and mining of the ore zone difficult and expensive even though the adit is

carried as now proposed?

Would it not be worthwhile to divide the proposed work between the present opening and the shear zone 900 feet to the north which you feel has equal merit?

We would appreciate having your comments and those of your staff on our thoughts. These are to open as much ground as possible with a minimum of dead work and a maximum of acquired information.

We are forwarding a copy of this letter to the Field Team in case you would wish to confer with the interested members.

Sincerely yours,

C. O. Mittendorf (fw)

Acting Administrator,
Defense Minerals Exploration
Administration

GCSelfridge/lm/hmj
12-17-51
cc to: Adm. Reading File
Mails and Files
Mr. Mittendorf
Mr. Selfridge
Mr. Geehan
Mr. Thayer
Region III (2)
Docket

12-21
J.D

400
FILE COPY
SURNAME:

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

Selfridge

DEC 7 - 1951

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.,
P. O. Box 150
Salt Lake City 10, Utah

Re: Docket No. DMA 2082, Tungsten
Mt. Wheeler Mine
White Pine County, Nevada

Dear Mr. Williams:

This is to acknowledge receipt of your letter of November 24, to Mr. Mittendorf.

On receipt of your letter we assigned your application to an engineer for immediate attention.

We regret that the recent changes disrupted the processing of your application and we shall do everything possible to avoid any further delay.

Sincerely yours,

SIGNED

George C. Selfridge, Acting Chief
Iron and Ferro-Alloy Division,
Defense Minerals Exploration
Administration.

GCSelfridge/hmj
12-5-51
cc to: Mails and Files
Adm. Reading File
Mr. Mittendorf
Mr. Selfridge
Mr. Thayer
Docket

DN

MT. WHEELER MINES, INC.
P. O. BOX 150
SALT LAKE CITY 10, UTAH

DEPARTMENT OF THE INTERIOR
RECEIVED
NOV 26 1951
Defense Minerals Administration,
Production Expansion Division.

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.
Nov 26 11 43 AM '51

November 24, 1951

Mr. C. O. Mittendorf, Administrator
Defense Minerals Administration
Department of the Interior
Washington 25, D.C.

Re: Mt. Wheeler Mines, Inc.
DMA-2082 - Tungsten
Suggested Program

Dear Mr. Mittendorf:

I called Mr. Holderer yesterday regarding the status of our Mt. Wheeler tungsten exploration project contract and was referred to Mr. D. E. Moulds. Further conversation with Mr. Moulds developed the fact that, because of the recent organizational changes within DMA, normal routine had been disrupted temporarily, and that our docket file was not immediately available. In view of this situation, he suggested that we communicate directly with you giving a brief summary of our negotiations to date so that you may be apprised of the elements of our application. This, I am very pleased to do.

1. History of Application

(a) The original application was submitted on November 24, 1950, on the basis of a lead-zinc exploration project. This was assigned Docket Number DMA-89 on December 4, 1950. On December 12, 1951, additional information was submitted regarding surface tungsten discoveries. In this supplemental report we requested that such information be added to the original application.

(b) An amended application was submitted on May 23, 1951, on the basis of a tungsten exploration project, but with the express reservation that the tungsten project not prejudice the original lead-zinc application. This was assigned Docket Number DMA-2082 - Tungsten on or about September 20, 1951. In his letter of that date, Mr. Holderer, Chief of the Tungsten Branch, stated that he concurred in the merit of the tungsten project as submitted, but suggested a very material downward revision of the estimated exploration and project cost, viz., from our request of 2,200 feet of drift, 1,200 feet of laterals and 700 feet of raises costing $175,101.00, to 1,000 feet of drift and 350 feet of laterals costing $ 45,500.00. We immediately telephoned Mr. Holderer and discussed fully this proposed revision; setting forth in particular the impossibility of completing this amount of work for the amount suggested and, also, pointing out the need for raises at appropriate points. I gave him preliminary figures based upon my counter proposal which amounted to $69,200.00, which was then agreed upon as the basis of a revised application. 43.33/ft.

(c) A revised application was submitted on September 26, 1951. Additional information was requested under the date of October 3, 1951, which was forwarded in detail on October 15, 1951. The Landlord's Subordination Agreement was submitted on October 28, 1951. On October 31, 1951, we

were informed that it had been decided that the adit tunnel should follow the E-W shear zone instead of the shale-lime contact as we proposed. Nothing further has been heard to date.

Ballard Sept 30

2. Chronology of Events

(a) Acquisition and Development of Properties.

The original claims were acquired on July 9, 1950. Detailed geological examinations were made in September, October and November, 1950. Surface work was commenced on December 17, 1950, and consisted of bulldozing large areas of the Wheeler Bed outcrop in Pole Canyon. Important tungsten indications were opened. In February, 1951, an adit was started at the lime-shale contact and driven 110 feet S 80° E along the productive Wheeler Bed. (C.M. bed in Pioche.) Laterals were driven south from this adit to the E-W shear zone where important tungsten discoveries were made in the lower 8 ft. of the Wheeler bed just above the shale. Forty-five feet of work in this shear zone has produced 100 plus tons of scheelite ore averaging 3.67% WO_3 as produced and placed in a stockpile dump on the surface where it can be measured and sampled. An additional 50-60 tons of 0.5 - 0.75% WO_3 ore produced from the laterals before breaking into the shear zone has also been stockpiled in a separate dump.

During May, June, July and August, 1951, claim location work was done which added 67 claims to the group, making a total of 90 claims in all; 11 patented and 79 unpatented.

(b) Preparation for Exploration Project.

In September, 1951, a 4.6 mile road was constructed from the main County Highway in the valley, at elevation 6,000 ft., to the Pole adit tunnel at elevation 7,800 ft. This road is adequate for all current needs including ore trucking. At the same time a camp site was graded just below the Pole tunnel. In October, 1951, camp construction was started on the first three of five buildings; mess hall, dormitory and engineers' residence. The balance will be completed next spring. These first three buildings will be completed and ready for occupancy by Christmas and will provide very adequate quarters for a working crew of fifteen men. Water for domestic and mine use has been developed above camp. All rental equipment listed in the revised application of September 26, 1951, has been arranged for. Manpower for the project is now on the job. Supplies and material are being accumulated in Salt Lake City. All that now remains uncompleted is the DMA contract. To date, we have expended in excess of $45,000.00 of private funds in order to have this project in readiness for the exploration program. Ample funds are available to meet our 25% contribution under the DMA contract.

3. Our Views Concerning the Project.

(a) We do not feel that the revised project, calling for the expenditure of $69,200.00, as submitted on September 26, 1951, does any justice whatever to the property. Our work to date, indicates a very large area where commercial tungsten ore, of mineable widths, quantity and grade

outcrop or have been suggested underground. Metallurgical test work by the U.S. Bureau of Mines at Salt Lake has fully demonstrated that simple table work plus acid leach will produce a 67.7% WO_3 concentrate, with a recovery of 81%, and having impurities considerably below the most rigid specifications extant. We still maintain that under all the circumstances and evidence submitted we are entitled to the $175,101.00 project as submitted on May 23, 1951. However, for the sake of expediency in getting this deal moving, we will gracefully accept the lesser project if you insist.

(b) It is our understanding that a certain difference of opinion had developed in Washington between the Tungsten Branch and the U.S.G.S. Field team concerning the location of the adit tunnel; the final result of which seems to be that it shall be driven on the E-W shear zone. (Please refer to letter of Geo. B. Holderer of October 31, 1951.) To this we simply cannot agree since it is contrary to all good mining practice and we cannot accept the judgment of the Field team in matters of pure operational problems. This should be strictly management's prerogative. May I respectfully point out that our geological and engineering staff consists of men who probably have the greatest aggregate experience in exploring, developing and mining this lower Cambrian section in the Pioche area. The log at Mt. Wheeler is, for all practical purposes, equivalent with that of Pioche. It has been upon their considered judgment, based upon months of study in the field, that we drove the Pole adit in its present location. Actual conditions in the tunnel demonstrates that the lime-shale contact will rise slightly as the adit advances and not dip as suggested in the above letter. Fact must obtain over theory.

well done on shale relation to one shot? mining?

Further, the impossibility of following a three dimensional intersection with a tunnel should be immediately apparent; i.e., the intersection of the Wheeler Bed, E-W shear zone and N-S cross fractures. Also, the shear zone is a highly broken area and will undoubtedly require timbering the entire distance. Any stoping from such a tunnel will immediately render it unfit as an adit. The success of the initial 110 feet of our work should clearly indicate the reasonableness of our conclusions.

In closing, we wish to emphasize the practical desirability of getting this exploration project in operation by the first of the year at the latest, by the following circumstances -

1. Camp will be completed and ready for occupancy by that date.

2. Equipment, supplies, etc., should be moved in and set up before the main force of winter hits us. (Note 8,000 ft. elevation.)

3. A full mining crew is now on the job on construction. It would be unfortunate to lose them.

4. All equipment has been arranged for but cannot be held indefinitely.

5. The property admittedly has considerable merit.

6. The tungsten need appears to be acute.

7. We are ready, willing and able to perform.

I know that you will appreciate the thoughts behind this communication and that I need not apologize for its frank and direct approach. I, in turn have every confidence in your mining experience and good American commonsense. We shall be very pleased to have your decision.

Very truly yours,

James D. Williams

James D. Williams
President

340
FILE COPY
SURNAME:

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

OCT 31 1951

Air Mail

Holderer
Ballard

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P. O. Box 150
Salt Lake City 10, Utah

In reply please refer
to DMA-2082

Dear Mr. Williams:

In reference to your letter dated October 15, 1951 and the paragraph "Formations cut by adit tunnel," if the strike of the contact is E - W and the dip 12° South, it appears that the contact would gradually lower in the drift at about 2° instead of raise.

However, since this is an exploration project and not a development loan, we believe the adit should follow the E - W shear zone for exploration purposes, rather than your proposal of raising or crosscutting to explore the shear zone.

Very truly yours,

George B. Holderer

10.31

George B. Holderer
Chief, Ferro-Alloys Branch

TJBallard:ec
Oct 30, 1951

CC: DMA Docket File
Adm. Reading File
Mr. Holderer

350
FILE COPY
SURNAME:

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

Hamilton
Johnson
McKnight
Bishop

OCT 29 1951

2082 G.E.C.

DMA 99
Mt. Lincoln Mines, Inc.

Mr. James D. Williams, President
Mt. Lincoln Mines, Inc.
218 Felt Building
Salt Lake City, Utah

Dear Mr. Williams:

Your letter of October 17, 1951, to Mr. Billings with regard to the above subject has been received.

We are pleased to send you seven (7) additional copies of form MF-202 as requested.

Very truly yours,

cc 10/29

G. E. Johnson, Acting Chief
Lead-Zinc Branch

Enclosures

JCHamilton'lm
10/25/51

cc: Administrator's reading file
Deputy Administrator
O. Bishop
E. T. McKnight
G. E. Johnson - 3620
DMA docket file

JAMES D. WILLIAMS

OCT 22 8 39 AM '51

October 17, 1951

Ans. 10/25

Mr. T. P. Billings, Chief
Lead-Zinc Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Re: Mt. Lincoln Mines, Inc.
DMA-89, Pb-Zn
Form MF-202

Dear Mr. Billings:

Please excuse the delay in replying to your letter of September 11th. I have not received the executed MF-202 from St. Lawrence Mining Company, but have been informed that the delay was occasioned by the absence of officers and directors from Rochester. I anticipate these will be returned at an early date.

I will need an additional seven copies of the MF-202 for execution by the lessors of the Bonanza group of claims through which the crosscut will run. Will you please forward these to me.

Thank you very much for your kind consideration.

Very truly yours,

MT. LINCOLN MINES, INC.

By James D. Williams
James D. Williams

JDW:hw

JAMES D. WILLIAMS

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
OCT 22 8 39 AM '51

October 17, 1951

Mr. T. P. Billings, Chief
Lead-Zinc Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Re: Mt. Lincoln Mines, Inc.
DMA-89, Pb-Zn
Form MF-202

Dear Mr. Billings:

Please excuse the delay in replying to your letter of September 11th. I have not received the executed MF-202 from St. Lawrence Mining Company, but have been informed that the delay was occasioned by the absence of officers and directors from Rochester. I anticipate these will be returned at an early date.

I will need an additional seven copies of the MF-202 for execution by the lessors of the Bonanza group of claims through which the crosscut will run. Will you please forward these to me.

Thank you very much for your kind consideration.

Very truly yours,

MT. LINCOLN MINES, INC.

By James D. Williams
James D. Williams

JDW:hw

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 3 0 1951

MT. WHEELER MINES, INC.
P. O. BOX 150
SALT LAKE CITY 10, UTAH

October 28, 1951

Mr. George B. Holderer
Chief, Tungsten Branch
Defense Minerals Administration
Washington 25, D.C.

Re: DMA 2082 - Tungsten
Landlord's Subordination

Dear Mr. Holderer:

Enclosed are the executed agreements covering the above captioned matter. Please excuse the delay - deer season started Oct. 6th, which means that no one can be found in Nevada until it is over.

Thank you very much.

Very truly yours,
Mt. Wheeler Mines, Inc.
James D. Williams

OFFICIAL FILE COPY

To	Init.	Date
210		

RECEIVED
JAN 14 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

FILE COPY
SURNAME:

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

Holderer

G.E.C.

OCT 19 1951

Air Mail

Mr. James D. Williams, President
Mount Wheeler Mines, Inc.
P. O. Box 150
Salt Lake City 10, Utah

In reply please refer to
DMA 2082, Tungsten

Dear Mr. Williams:

We have received your letter, dated October 15, 1951, pertaining to various costs. However, you have not replied to our letter, a copy of which is enclosed, concerning the "Landlord's Subordination Agreements."

If you are unable to obtain subordination by the landlord, a guarantee securing the repayment to the Government may be considered in lieu thereof. Such guarantee must be supported by acceptable evidence of financial responsibility and ability to repay the Government.

Further processing cannot proceed until receipt of either the "Landlord's Subordination Agreements" or the above-mentioned guarantee.

Very truly yours,

George B. Holderer

George B. Holderer
Chief, Tungsten Branch

10-19

Enclosure

TJBallard:
~~GBHolderer~~:dgs

CC: Adm. Reading File
DMA Docket File
Mr. Holderer

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

OCT 19 9 02 AM '51

MT. WHEELER MINES, INC.
P. O. BOX 150
SALT LAKE CITY 10, UTAH

OFFICIAL FILE COPY

October 15, 1951

To	Init.	Date
340	A.E.C.	10-19
210		

OCT 19 1951
Recd by
Mr. Holderer

Mr. George B. Holderer
Chief, Tungsten Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Re: DMA - 2082 - Tungsten Revised Project

Dear Mr. Holderer:

Please excuse my delay in replying to your letter of October third. I have been on an extended trip to the mine. We are very pleased to furnish you with the following additional information as requested.

1. Number of men and classification (underground).
   (a) Driving main adit (per shift - two shifts per day). days/week?
   1 Miner.
   1 Mucking machine operator and trammer.
   2

   (b) When raising and crosscutting begins (per shift - two shifts per day).
   3 Miners.
   2 Mucking machine operators and trammers.
   5 10

   (c) In addition, there will be one combination blacksmith and compressor man on each shift during both periods above. 2

2. Underground wage scale.
   The base Nevada wage scale for miners, effective this month, is $14.50 per eight hour shift plus 1 1/2 times the base rate for overtime in excess of 40 hours per week. It is not anticipated that such rate will be increased in the immediate future, but a provision should be incorporated in the contract authorizing us to pay the legally established wage scale at any time. This would take care of any interim increases over which we have no control. wages

   However, it is our definite plan to do all underground exploration on a footage contract basis with independent contractors, on the following basis:
   ✓ (a) Main adit.
   $12.00 per linear foot for mining, mucking, tramming, installing pipe, track and blower line, plus $3.00 per linear foot for timbering, where necessary.

   ✓ (b) Lateral drifts.
   $10.00 per linear foot on same basis as (a) above.

   ✓ (c) Raises.

$15.00 per linear foot on same basis as (a) above, plus $5.00 per linear foot for timbering.

We should request that the contract specifically authorize us to do the exploration on this footage contract basis, if, on our best judgement, greater efficiency will result. I am enclosing a copy of the footage contract agreement in general use in this area, and which we plan upon using for the exploration work. legal?

3. Cross section of openings.
   (a) Main adit — 6'x7' in the clear.
   (b) Laterals — 5'x7' in the clear.
   (c) Raises — To be cut 5'x10', and timbered two compartment; one 4'x5' muck compartment and one 3'x4' manway compartment.

✓4. Cost of rail and accessories. check

20# rail - 1350 ft. track underground and 250 ft. track on surface for waste dump and bins; a total of 3200 linear feet of rail. At 20# per linear yard, this will amount to essentially 11 tons of rail.

Current price fob Salt Lake $9.15/cwt.

22,000# at $.0915 =	$2,013.00	
Freight to mine at $1.10/cwt	242.00	
Rail splices 190 pair at $1.20	192.00	-228
Freight on rail splices	25.00	
Ties 4"x6"x60" - 550 at $1.00	550.00	
Freight on ties	75.00	
Track spikes 500# at $.15	75.00	
Bolts and nuts 200# at $.20	40.00	
7-double throw swiches at $125.00	875.00	
Total rail and accessories	$4,087.00	-4123.00

✓5. Cost of pipe.

3" air line, 1200 ft. at .70/ft.	$ 840.00	
2" air line, 500 ft. at .35/ft.	165.00	-175
1" water line, 1,700 ft. at .16/ft.	272.00	
1 1/2" water line from spring .27/ft. to adit 2,000 ft. at	540.00	
18" vent-tube 1,200 ft. at $1.50/ ft.	1,800.00	
Freight to mine 20,000# at $1.10/cwt	220.00	
Miscellaneous fittings, valves, etc.	150.00	
4'x10' air receiver 150#/sq. in. W.P.	250.00	
	$4,237.00	-4247.00

Existing facilities.

The new compressor house and change room listed in the May application will be used for a blacksmith shop and small warehouse. The change room will be established in camp now under construction. A new building will be errected at the mine to house the larger compressor and to provide for machine repairs and other miscellaneous work. The small air receiver now at the tunnel will be used for a water pressure tank to supply drill water underground.

23 (f) of September exhibit.

All six items listed therein will be rented from established equipment firms or individuals as follows. (None are owned by the Company.)

1. Bulldozer	Earl Robinson	Ely, Nevada
2. Diesel Compressor	Foulger Eqt. Co.	Salt Lake City
3. Mine cars	Utah Bit and Steel	Midvale, Utah
4. Muching machine	Eimco Corp.	Salt Lake City
5. Diesel generator	Industrial Eqt. Co.	Los Angeles
6. 4 wheel drive "Jeep"	Willys Intermountain Co.	Salt Lake City
*7. Trammer	Goodman Mfg. Co.	Chicago, Illinois

*Please see under "addendum" at close of letter.

Formations cut by adit tunnel.

The face of the adit, at 110 ft. advance to date, is at the bottom of the wheeler bed-Pioche shale contact with about 3 feet of shale in the bottom. Since the course of the adit will be S80°E., and the strike of the contact is essentially E-W., with a 12° southerly dip, it is assumed that the contact will gradually rise above the face of the adit, so that after a few hundred foot advance, the face will be entirely in shale. It is anticipated that short inclined raises from the adit to the south will cut the E-W scheelite shear zone at appropriate points where strong N-S cross fractures occur. Also, since the adit has been planned as the main haulage way for the ultimate project, it would not be practical to attempt following directly on the E-W shear zone. Further, if such were attempted, considerably greater cost would be incurred for the project because this shear zone is badly broken and might require timbering the entire distance.

Down faulted block.

This is purely hypothetical. However, a small fault was observed on the measured section of the log, about 1,000 feet to the north of the Pole tunnel. Very little throw, if any, was indicated.

Pioche shale above wheeler bed.

This section has been carefully studied and mapped in detail, as shown on exhibit "F" of the May amended application. No such marker bed has been observed, and there is no evidence of any appreciable displacement caused by the N-S cross fractures. This conclusion is fully supported by the evidence adduced from the first 110 foot drive of the adit where ten or more of such N-S cross fractures can be observed.

Northernmost shear zone.

The assumption that this shear zone has the same potentialities as the explored one is correct. As a matter of fact, some of the highest grade scheelite ore thus far found came from this area. Logistic problems dictated the No. 3 (explored) shear zone as the most practical approach to the exploration. We feel that both zones have about equal merit.

Addendum.

In reviewing the project as it is presently constituted, several very practical matters, not delineated in the revised application, have made themselves manifest to us. Briefly, these are as follows:

1. Desireability of adding an electric battery trammer, complete with an extra set of batteries and charging panel, as item no. 7 of rental equipment under 23(f). This would greatly increase footage advance and also allow for increased lateral work as the adit advances. It would be recognized that hand tramming will be slow and cumbersome in a 6'x7' tunnel with up to a 1,100 foot tram. This unit may be rented for $475.00 per month from the Goodman Manufacturing Co. thru a local Salt Lake equipment dealer. It is recommended that it be included in the project. $332.50

2. It will be necessary for us to maintain messhall and dormitory services and facilities for the crew, since the closest point for residence is Ely, Nevada, 40 miles away. It will be recognized that with a small crew, past experience has demonstrated quite generally that it is impossible to "break even" on anything more than the actual food items. Therefore, we feel that it would be proper to request that we be authorized to add one cook, at $300.00 per month, under 23(a) of the revised application to cover this added cost of operating the necessary camp facilities. It would certainly appear that such may be considered a necessary cost of performing the exploration.

3. The camp, consisting of a messhall, two 6 man dormitories and a superintendent's residence is now under construction and should be completed in 30-45 days. The adit drive can be started any time after the first two buildings are completed (by November first). The delivery of all rental equipment can be made as soon as the project contract is executed. All necessary manpower is immediately available. The Landlord's subordination agreement will be forwarded within a few days.

Thank you for your very kind consideration.

Very truly yours,

MT. WHEELER MINES, INC.

By: James D. Williams
James D. Williams, President

JDW:mn

FILE COPY
SURNAME:

Holderer
Ballard/H

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

OCT 5 19

Air Mail

a.E.C.

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
PO Box 150
Salt Lake City 10, Utah

In reply please refer to
DMA 2082, Tungsten

Dear Mr. Williams:

It is necessary to have Landlord's Subordination Agreements on the following claims that will be involved in your exploration project:

Polecat and Polecat Nos. 1 and 2 under lease and option to Mt. Wheeler Mines

We are enclosing 8 copies of the Landlord's Subordination Agreement Form MR-202. Seven copies of these should be submitted.

Very truly yours,

George B. Holderer

George B. Holderer
Chief, Tungsten Branch

gf 10/5

Enclosures

TJBallard:dgs
October 5, 1951

CC: Adm. Reading File
DMA Docket File
Mr. Holderer

240
FILE COPY
SURNAME:

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

A. E. C.
OCT 8 1951

Selfridge
Holbert

Mr. James D. Williams, President
Mt. Wheeler Mines, Inc.
P. O. Box 120
Salt Lake City 10, Utah

RE: DMA-2082-Tungsten
Revised project

Dear Mr. Williams:

Thank you for your prompt submittal of the Exhibits for the revised program.

In order to avoid delay in the higher echelons, we still need some additional information. Will you please furnish us the following data:

1. The number of men, with their classification, that will be employed, per shift, to drive the adit. The maximum number of men that will be employed underground per shift when raising or crosscutting is started.

2. The daily wage scale underground.

3. The cross section size of the adit, laterals and raises.

4. The lineal feet of rail and its cost with accessories.

5. The lineal feet of pipe, its size and cost.

In the May application under "Existing Equipment and Facilities" a new compressor house and change room was listed. Is this no longer available?

In #2 (f) of the September exhibit, do any of the six items noted belong to the Company?

The submitted maps indicate that the adit will be driven outside of the mineralized limestone horizon at times. In the actual driving of the adit will it be necessary to go out of the limestone or can the mineralized pipe be followed except where a cross fracture might displace it?

In the longitudinal section there is a down-faulted block pictured. Is this hypothetical or are there sufficient concrete data

to support the degree of faulting?

Has anyone examined the Pioche shale above the Mt. Wheeler bed for a marker bed that might be used to measure the displacements on the northward trending fractures?

Judging from the plan and its notations one receives the impression that the northernmost shear has the same potentialities as the explored one. Is this assumption correct?

As soon as the above information is received we shall complete the processing of your application with all possible speed.

Very truly yours,

George B. Holderer

George B. Holderer
Chief, Tungsten Branch

GSelfridge:ec
10/3/51

CC: Adm. Reading File
DMA Docket File
Mr. Holderer

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

October 3, 1951

DMA-2082

Mr. James D. Williams
Mt. Wheeler Mines, Inc.
Felt Building
Salt Lake City, Utah

Dear Mr. Williams:

We have completed preliminary beneficiation tests on a sample of scheelite ore from the Mt. Wheeler mine, near Ely, Nevada, which you submitted to this station. The object of our studies was to recover the tungsten content of the ore in a high-grade product by simple methods.

A representative head sample of the test lot was assayed with the following result:

Sample	Assay, percent			
	WO_3	Mo	$CaCO_3$	Fe
D-Ne-15.1, Mt. Wheeler	0.94	<.01	43.7	0.02

Microscopic examination of the ore showed that it contained the tungsten mineral scheelite in a predominately limestone gangue. Some quartz, ankerite (an iron-calcium carbonate), and limonite occurring as pseudomorphs after pyrite also were found in the ore. Much of the scheelite can be liberated by grinding to 10- to 20-mesh, but grinding to 48-mesh is necessary for fairly complete liberation.

These facts indicated that table concentration would probably be the best method of concentration for this sample of ore because fatty acids are not very selective in floating scheelite from a calcium carbonate gangue. The ankerite and limonite are relatively heavy minerals and would tend to concentrate with the scheelite during the tabling operation; hence, subsequent concentration with high-intensity dry magnetic separation would be necessary to remove these diluents from the table concentrate product.

Table Concentration and Magnetic Separation

Fine gravity concentration methods were investigated on ore ground to several different sizes; namely, 10-mesh, 20-mesh, and 48-mesh. In each case, the ground ore was hydraulically sized and tabled to obtain a concentrate, a middling, and a tailing for rejection. In the 10-mesh and the 20-mesh tests, the middlings were reground and retabled because they contained considerable tungsten occurring as grains of scheelite locked with the gangue. The middlings from the 48-mesh test were not retreated. The table concentrate products from each test were dried and treated on a dry high-intensity magnetic separator to remove iron-bearing impurities. The best over-all results were obtained in the test wherein the ore was crushed to minus 20-mesh prior to the rougher table operation, and the data for this test are given in the following table:

Metallurgical Data

Tabling Ore Crushed to 20-mesh

Product	Weight, percent	Assay, percent WO_3	Mo	P	Distribution, percent of total WO_3
Table concentrate, nonmagnetic	1.29	53.7	0.03	0.49	72.0
Table concentrate, magnetic	.24	3.4	-	-	.8
Retreatment table concentrate, nonmagnetic	.24	35.8	0.03	0.50	8.9
Retreatment table concentrate, magnetic	.09	.5	-	-	.1
Retreatment table middling	10.14	.44	-	-	4.6
Table tailing	69.24	.08	-	-	5.4
Table slimes	18.76	.42	-	-	8.2
Calculated head	100.00	.96	-	-	100.0
Combined concentrate	1.53	50.9	0.03	0.49	80.9

The data indicate that 80.9 percent of the total tungsten in the ore was recovered in a combined concentrate product assaying 50.9 percent WO_3, 0.03 percent Mo, and 0.49 percent P, and containing 1.53 percent of the original weight of the ore. This

product did not meet the usual 60 percent WO_3 minimum high-grade scheelite specification or the 0.05 percent P minimum, and it was therefore treated by hydrochloric acid leaching to remove phosphorus and improve the grade by dissolving the calcite gangue.

In treating the ore with hydrochloric acid, the concentrate product was leached for 90 minutes at 22 percent solids with 1,390 pounds of concentrated 37 percent hydrochloric acid per ton of concentrates treated. Leaching temperature was 28° C. The residue contained 98.8 percent of the tungsten in the feed to leaching, and readily met specifications for high-grade scheelite products. The chemical analysis of the residue follows:

	Assay, percent										
	WO_3	P	Cu	Pb	Zn	Mo	Bi	Sb	As	CaO	FeO
Residue	67.7	0.01	0.01	0.06	0.04	0.03	0.002	0.05	0.09	17.0	2.5

Thus by the combination tabling, magnetic separation, and hydrochloric acid leaching treatment, we recovered in a high-grade tungsten product approximately 80 percent of the total tungsten in the original ore as represented by the sample submitted.

The combined retreatment tailings and table slimes from the original minus 20-mesh test contained 12.8 percent of the tungsten in the ore and assayed 0.43 percent WO_3. In an effort to recover additional tungsten values, a composite sample of these products was treated by flotation, using a refined fatty acid as collector and gangue depressants. However, in this test only 38.9 percent of the tungsten in the flotation feed was recovered in a product assaying 1.2 percent WO_3. Further work would be required to determine the possibility of recovering more tungsten from these products.

In the tabling test employing a 10-mesh grind on the original ore, the table tailings for rejection assayed 0.17 percent WO_3 and contained 15.1 percent of the total tungsten in the ore. The combined nonmagnetic concentrates assayed 41.2 percent WO_3 and contained 71.7 percent of the total tungsten. These results are not as good as those obtained by grinding the original ore to 20-mesh, and it was concluded that the loss in recovery with the coarser grinding would not be justified by the lower grinding costs.

The results of the table test in which 48-mesh grinding was employed on the original ore indicated that 77.7 percent of the tungsten in the ore was recovered in a nonmagnetic concentrate assaying 54.1 percent WO_3. The table tailing to reject assayed

0.12 percent WO_3, which is higher than the 0.08 percent WO_3 obtained in the 20-mesh test. The lower recovery obtained in the 48-mesh test and higher grinding costs that would be involved indicate that slightly coarser primary grinding is desirable. However, the fact that no regrinding and middling retreatment step was employed in this method would simplify the flow sheet somewhat at the cost of some loss in recovery.

Flotation

Flotation of the ore was investigated using a refined fatty acid as collector for the scheelite and quebracho to help depress the calcite gangue. The ore was ground to 65-mesh prior to flotation. Only about one-third of the scheelite was recovered in the flotation concentrate, and the grade of the product was extremely low. The poor results were attributed to the ready floatability of the calcite gangue, and further flotation tests were not made, as very satisfactory results had been obtained by gravity methods.

We hope that these data will be helpful in evaluating the Mt. Wheeler ore, as represented by the material submitted.

Sincerely yours,

G. M. Potter

G. M. Potter, Acting for
S. R. Zimmerley, Chief
Metallurgical Division
Region IV

FILE COPY
SURNAME:

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

Holden
Nelson

SEP 20 1951

Air Mail

Mt. Wheeler Mines, Inc.
218 Felt Building
Salt Lake City 1, Utah

In reply please refer to
DMA 2082, Tungsten

Gentlemen:

We have reviewed the field report on the Pole Canyon Deposit, and we do not believe the prospect merits an exploration project costing $175,101 at this time. However, we believe a more limited project costing about $45,500 is desirable.

The following revised program is suggested:

1.	Detailed areal, geologic, and topographic mapping, and surface trenching, to determine the displacements and mineralization before driving the drift, or at least in advance of the heading.	$5,000
2.	1,000 feet of drifting along the strongest vein @ $30 foot	$30,000
3.	Six crosscuts on strongest cross fractures, plus 20 feet of drifting at each intersection, if justified	$10,500
	Total	$45,500

Presuming that this revision is agreeable to you, it will be necessary to submit revised cost figures and other data consistent with the smaller project. We are enclosing a copy of the Exploration Contract for your guidance in furnishing the necessary exhibits to be attached to the final contract. These should be typed on separate paper and returned to this office with the original and five copies. A map showing the surface trenching, drifting, and crosscutting, as well as can be planned, should be included for each copy of the proposed contract (6).

We call your attention to the change in DMA number from 89-X to 2082 in order to avoid confusion with your lead-zinc project, which

still retains the number 89-X.

Very truly yours,

George B. Holderer

B 7 9/20

George B. Holderer
Chief, Tungsten Branch

Enclosure
1 Contract Form
MF-200

TJBallard:dgs
Sep 19, 1951

CC: Adm. Reading File
DMA Docket File
Mr. Holderer

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. George Holderer DATE: September 12, 1951

FROM : T. P. Thayer

SUBJECT: DMA-89 Mt. Wheeler Mines, Inc. - tungsten part of docket

The field team's estimate of ore reserves seems extremely optimistic, and the definitions of measured, indicated and inferred ore appear to be greatly abused in Fig. 4. The reference to production of the Minerva district is irrelevant and immaterial.

The general distribution of scheelite along the E-W fractures seems established, by two crosscuts and limited bulldozer work which expose possibly 50-100 lineal feet of vein. To infer from this limited information that mineralization along 8800 of vein (2200 feet each on 4 veins) would be strong enough so that half the length would be minable seems extrapolating rather far. The effect of the north-south fractures with displacements of "50 feet or less" on exploration and mining seems not to have been taken into account in the recommendation, although offsets of even as little as 10 feet would greatly increase costs.

note Since the proposed tunnel is to be in a shear zone anyway, it would seem more logical to drift along one of the main veins, to establish the continuity, not guess at it. More data should be gotten on displacements on the N-S fractures, and for this purpose the area should be mapped geologically on a large scale with sufficient trenching to really "nail down" relations. It would seem better to increase the amount of surface exploration in the early stages, and drift along one strong vein, with occasional crosscuts along promising fractures. Mineralization above the Wheeler bed should be discernible in surface cuts, instead of doing 300 feet of raises at cost of $9,000.

Recommended project:

1.	Detailed areal geologic mapping and surface exploration	$5000
2.	1000 feet of drifting along strong vein	30000
3.	6 crosscuts on strong cross fractures plus 20 feet of drifting at each intersection with vein No. 2, if justified	10500

If this exploration yields promising results, a larger project might be justified, although if really successful this project should be self-liquidating and further government aid would be unnecessary.

Abstract from letter of August 30, 1951 from H. C. Miller to Chairman, Coordinating Committee regarding DMA-89, Mt. Wheeler Mines, Inc.

"Attached are four copies each of two reports on the Mt. Wheeler Mines, Inc. properties by R. M. Smith and D. C. Arnold, Geologists of the U. S. Geological Survey. The two properties are near each other and the two exploration loans requested have been assigned the same DMA docket number (89X). As one property contains chiefly tungsten and the other lead-zinc, the examining geologists elected to prepare individual reports. Both reports, the Region III field team feels, need the few additional comments given below.

Tungsten report. Of the 15,755 tons of tungsten ore believed to be on the property only 355 tons are measured and indicated. Although the remainder may be present, the uncertainty involved is of a high order of magnitude. The applicant's proposal centers chiefly around driving a 2200 foot drift parallel to, and between, two veins only about 50 feet apart and crosscutting at intervals to test them. If the grade of ore as given is 1% WO_3, in our opinion the applicant should drive his drift along one of the veins, developing ore on it and stockpiling or shipping the ore removed in the exploration. By this means, the exploration could be put on a nearly self-supporting basis, and we do not concur with the examining geologists that a $131,326 loan is needed to explore the property."

note

OK

Code 550

89-X

XMI

417 WA SFS /I-DON/

SAN FRANCISCO 8-29-51 818A

TOM LYON, CHAIRMAN

COORDINATING COMMITTEE, DEFENSE MINERALS ADMINIST-

RATION, WA

REUNTEL AUGUST 28 MT. WHEELER 89-X REPORT. FIELD REPORT REACHED SURVEY OFFICE YESTERDAY AND FIELD TEAM WILL REVIEW IT TODAY. IF IT SEEMS COMPLETE THE REPORT WILL GO FORWARD TO YOU TONIGHT OR TOMORROW.

H C MILLER, EXECUTIVE OFFICER DMA FIELD TEAM REGION 888

28 89-X

RS 822A

AUG 30 1951

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

AUG 30 7 56 AM '51

FILE COPY
SURNAME:

GBHolderer
by CaC.S.

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

Department of the Interior

Defense Minerals Administration

1420137 Salaries and Expenses,

Defense Production Activities, Interior,
1952 100 (340)

August 28, 1951

STRAIGHT

MR. E. C. MILLER
1012 FLOOD BUILDING
870 MARKET STREET
SAN FRANCISCO, CALIFORNIA

Mt Wheeler Mines, Inc.

ADVISE STATUS OF MT WHEELER 89-I FIELD REPORT

Tom Lyon
Chairman, Coordinating Committee

Confirmation

TJBallard:dgs

CC: Adm. Reading File
Reports & Records Unit
Mr. Holderer
Files

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

Docket DMA 89X, Tungsten, Mt. Wheeler Mines Inc.

White Pine County, Nevada

R. M. Smith and D. C. Arnold, Geologists
U. S. Geological Survey

August 22, 1951

On-site Geol
DMA-89

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Location and accessibility	1
History and production	1
Geology	2
Ore deposits	3
Ore reserves	5
Proposed exploration	6
Exploration costs	7
Conclusions and recommendations	8

ILLUSTRATIONS

Figure 1. Index map of Nevada.

Figure 2. Proposed Pole tunnel.

Figure 3. Section AA' Pole tunnel.

Figure 4. Geologic map of Pole tunnel.

Docket DMA 89X, Tungsten, Mt. Wheeler Mines Inc.

White Pine County, Nevada

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Mt. Wheeler Mines, Inc. has applied for an exploration loan of $131,326 to explore a tungsten occurrence on its property near Mt. Wheeler, White Pine County, Nevada.

The property was examined July 11-13 by R. M. Smith and D. C. Arnold of the U. S. Geological Survey in conjunction with another examination on the same property, DMA 89, Lead-Zinc.

The mine lies on the west flank of the Snake Range, White Pine County, Nevada about midway between the tungsten districts of Oceola and Minerva.

The rocks of the area are gently south dipping Cambrian sediments. The oldest formation is Prospect Mountain quartzite. It is overlain by Pioche shale which in turn is overlain by the St. Lawrence and Lincoln limestones. The Pioche shale contains a 15-foot limestone unit (the Wheeler bed) that is the host rock of the scheelite deposit.

The sedimentary rocks are cut by a well developed fault pattern of north striking steep fractures, east striking vertical shear zones and bedding shear zones. The east striking zones contain quartz stringers and veins up to eight inches wide.

The ore is locallized along some of the quartz veins, and concentrations of scheelite occur at intersections with north striking fractures. Scheelite concentrations occur as crystals up to 1/2 inch diameter disseminated in and replacing dolomitized limestone. The concentrations may form nearly continuous chains or flat pipelike shoots six feet high, five to ten feet wide and of unknown length. The continuity of the shoots will depend on the

frequency of the cross fractures. Figure 4 shows that these exist at close intervals. Their extent eastward is not known.

There are four quartz veins observed to carry scheelite. Hence it is inferred that there will be at least four ore shoots. Ore reserves are estimated to be:

Stockpiled ore	100 tons
Measured ore	80 tons
Indicated ore	175 tons
Inferred ore	15,400 tons
Total	15,755 tons

All classes of ore are estimated to average 1 percent WO_3 or more. The total reserve is thus about 16,000 units of WO_3.

It is concluded that the reserves are not adequate to return the government's share of the cost, but that the chance for discovering substantial quantities of tungsten ore is good.

It is recommended, therefore, that the Defense Minerals Administration grant the requested loan, or a substantial part thereof, to accomplish the proposed work, and that the contract specify a progressive program wherein each phase of exploration is contingent upon the success of preceding phases.

Recommendation

Docket DMA 89X, Mt. Wheeler Mines Inc.

White Pine County, Nevada

INTRODUCTION

Mt. Wheeler Mines, Inc., 218 Felt Building, Salt Lake City, Utah, has applied for an exploration loan of $131,326 to explore a tungsten deposit in the Mt. Wheeler area, White Pine County, Nevada.

The property was examined by R. M. Smith and D. C. Arnold on July 11-13, 1951, at the applicant's request during the course of a lead-zinc examination at the same property for the same applicant (Docket DMA 89).

Mr. James D. Williams, Manager of both operations, and Harry Poller, engineer, were present during the examination. The authors wish to acknowledge the assistance given by Mr. Earl B. Young, Chief Geologist, Combined Metals Reduction Company, Salt Lake City, Utah.

Location and accessibility

The mine is located in Pole Canyon, T. 12 N., R. 68 E., MDB and M.

A 2-mile jeep road serves the mine which is 45 miles southeast of Ely, Nevada, and 70 miles north of Pioche, Nevada. The property can be reached by a 19 mile graveled road that leads southeast from U. S. Highway 93, one mile south of its intersection with U. S. Highway 6.

History and production

Scheelite was discovered in the Wheeler bed in 1950 by the Mt. Wheeler Mines, Inc. The bed was exposed for sampling by bulldozing the surface aluvium in three localities shown on fig. 2. An adit was run 105 feet easterly into the west slopeof Pole Canyon along the base of the Wheeler bed. Crosscuts were driven 20 feet north and 20 feet south near the end of the adit and a raise driven to the top of the bed. Scheelite in com-

mercial quantities was encountered in the limestone bed associated with east striking quartz veins and stringers (fig. 4).

Production to date amounts to about 100 tons of stockpiled ore averaging 1.23 percent WO_3.

Production from the Minerva district 6 miles south has been about 82,000 units of WO_3.[1]

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[1] Lemmon, D. M., Tungsten Deposits of the Minerva District: U.S.G.S. Open File Report, p. 2, 1944.

One occurrence, the Black Mule mine, is reported [1] in the Wheeler bed.

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[1] Lemmon, D. M., Personal communication.

The deposit is discontinuous and had only a small production.

GEOLOGY

The Pole Canyon area is underlain by sedimentary rocks of Cambrian age. These rocks have been cut by a few porphyry dikes and by a well developed fault pattern.

The oldest rock is the Prospect Mountain quartzite; it is overlain successively by the Pioche shale, the St. Lawrence limestone and the Lincoln limestone. Figure 3 shows a columnar section of these units. They strike about east and dip 10-15° S.

The Prospect Mountain quartzite forms the main part of the range in the Wheeler Peak area and dips to the south so that at Pole Canyon it crops out up to altitudes of 7,800 feet.

The Pioche shale is 350 feet thick and contains a 15-foot limestone member about 45 feet above its base that has been named the Wheeler bed [1].

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[1] Young, Earl B., Private report, DMA 89, 1951.

The St. Lawrence limestone is 670 feet thick and is made up of well bedded gray to tan limestone with several layers of thin bedded dark limestone. One of these thin-bedded layers is at the base of the St. Lawrence and is about 30 feet thick; the other lies at the top of the formation and is 170 feet thick. The Lincoln limestone is a massive white cliff-forming limestone 1300 feet thick.

A few quartz porphyry dikes strike northeast and probably dip steeply northwest.

The fault pattern is composed of three sets of faults: (1) north striking, steep to vertical fractures with carbonate gangue, (2) east striking steeply north-dipping shear zones with quartz stringers and veins, and (3) gently dipping shears along the bedding that contain quartz and carbonate stringers.

ORE DEPOSITS

The deposit occurs in a 15-foot limestone member (Wheeler bed) of the Pioche shale about 50 feet above the Prospect Mountain quartzite. The sedimentary rocks are cut by a series of vertical north striking persistent fractures and by a series of east striking shear zones that dip 75° north. The fractures contain calcite veins up to 6 inches wide and form zones to 15 feet wide of interlacing strands, some of which exist as open fissures without gangue. Displacements along these zones are 50 feet or less. Galena occurs

associated with the carbonate mineralization and replacing the limestone. The east striking shear zones are made up of parallel quartz stringers and veins. Most veins are less than 8 inches wide. They cut the quartzite, Pioche shale, and the massive limestones above and show very little relative movement of their walls. Three of these shear zones about 50 feet wide and 400 feet apart have been exposed by trenching. Beryl crystals are found in the quartz stringers where the walls are quartzite. Higher up, in shale and limestone, the quartz veins contain small amounts of scheelite, fluorite and galena. At the points where the nearly vertical intersections of fractures and veins cut the flat Wheeler bed, scheelite, and locally fluorite, are found disseminated throughout and replacing a 6 foot thickness of the dolomitized limestone in concentrations ranging up to 20 percent WO_3. Not all intersections are productive. The scheelite may extend several feet each side of an east-striking vein; the extent of mineralization in an easterly direction is not known, but where small fractures occur at 10 foot intervals or less the scheelite mineralization from different feeders may form a nearby continuous chain or flat pipe-like shoot about 6 feet high, 5 to 10 feet wide and of unknown length.

Small amounts of garnet occur locally near the quartz stringers. Garnet will probably amount to less than 1 percent of the ore. Limonite after pyrite, tremolite, fluorite, and wollastonite have been identified in the Wheeler bed near the scheelite bearing zones.

Alteration of the limestone consists of bleaching and dolomitization along east striking zones and to a lesser extent along north striking fracture zones.

ORE RESERVES

The applicant has estimated 110,000 tons of inferred ore to exist in the Wheeler bed by assuming a production equal to that of the Minerva district to the south [1]. The two deposits are not comparable, however, and

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[1] Docket DMA-89.

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the estimate is therefore misleading.

The thin bedded carbonaceous units of the St. Lawrence limestone are considered by the applicant to be favorable host rocks for ore deposits. Additional ore may occur in the lower part of the St. Lawrence limestone but as there has been only one occurrence of scheelite from this formation no tonnage is inferred.

The applicant has also inferred that large reserves will be found at the intersection of the Sheffield fracture and the Wheeler bed.

As no increase in mineralization at strong fractures is believed to be predictable at this stage of exploration, a reserve estimate based on extrapolation of exposed occurrences has been made.

Two scheelite bearing quartz veins in the shear zone at the Pole tunnel were observed; one at the portal and one 20 feet south of the portal. Two other scheelite bearing veins were seen in the bulldozer trench 900 feet north of the portal. Therefore four east-striking ore shoots are inferred.

Because insufficient work has been done to determine the continuity of the shoots, it is assumed that the shoots are discontinuous and only one half of the zone length will constitute ore. As the exploration program is layed

out, the shear zones will be exposed for an additional 2200 feet. One half of this length or 1100 feet is inferred to be ore.

On this basis the inferred reserve is 15,400 tons. All classes of reserves are summarized as follows:

Stockpile - 100 tons - 1.23 percent WO_3

Measured Ore - Pole tunnel

No. 1 S. drift, 6 x 7 x 12, 40 tons

No. 2 S. drift, 6 x 7 x 12, 40 tons

Indicated ore - Pole tunnel

Parallel to and 20 feet south of Pole tunnel for 1/2 of shoot length, 6 x 7 x 50, 175 tons

Inferred ore

Four shoots parallel to 2200 foot proposed Pole tunnel for 1/2 total length, 4 x 6 x 7 x 1100, 15,400 tons

All classes of ore are estimated to contain 1 percent WO_3. The total reserve is about 16,000 tons containing 16,000 units of WO_3.

PROPOSED EXPLORATION

The applicant proposes an exploration program designed to explore the Wheeler bed and the overlying lower St. Lawrence bed by: (1) extending the present Pole tunnel 2200 feet from its present 105 foot length to cut the Sheffield fissure (fig. 3); (2) raising 50 feet at each of six locations on north striking fractures in the drift through the Wheeler bed; (3) raising 400 feet at the Sheffield fissure to the lower St. Lawrence bed; (4) drifting on cross fractures cut by the drift for a total of 1200 feet.

The exploration program was designed by competent engineers and geologists and represents their estimate of what may be required properly and adequately to explore the deposit. It is subject to change if and as underground conditions demand. The program appears to be complete except that no specific provision is made to crosscut 900 feet north to the scheelite bearing shear zone exposed at that distance.

The program is expected to require 18 months to complete.

Additional development work on company account to prepare the ore shoots for extraction is estimated to be 2,000 feet of drifting and raising.

Exploration costs

The applicant estimated the cost of the project as follows:

1.	Labor	$53,368.00
2.	Supervision and engineering	22,500.00
3.	Additional facilities	26,543.00
4.	New equipment	21,950.00
5.	Surface exploration	3,200.00
6.	Materials and supplies	39,392.00
7.	Compensation and taxes	8,148.00
		$175,101.00

Item three includes road and camp buildings, item 4 is for mining equipment, and item 5 is for trenching the outcrops of favorable limestone beds. Some of these expenditures may not be essential to an exploration program. The following estimate using a footage basis indicates that the program could be accomplished for about the same figures used by the applicant, but excludes items 3 and 4.

Drifting - 2200 ft. @ $30 per foot	$ 66,000
Raising - 300 ft. (6 raises) @ $30 per foot	9,000
Raising - 400 ft. (1 raise) @ $40 per foot	16,000
Crosscutting - 1200 ft. @ $30 per ft.	36,000
Supervision and engineering	22,500
Surface exploration	3,200
	$152,700

CONCLUSIONS AND RECOMMENDATIONS

The Pole Canyon tungsten deposit has important concentrations of scheelite occurring in the Wheeler limestone bed of the Pioche shale.

The fault pattern is well developed in Pole Canyon and is favorable to the occurrence of ore. No evidence of faults of large displacement was seen in the mine area.

It is concluded that there is a reasonable chance for the discovery of significant amounts of tungsten ore along several east striking zones within the Wheeler limestone horizon.

It is also concluded that the inferred tonnage is not large enough to guarantee that the government's share of the cost (75 percent) will be returned from 5 percent of the net proceeds. If the 75 percent is discounted the total cost of exploration, development, and direct mining is expected to be about $15.00 per ton. Total repayment of the loan would add $6.25 to that figure.

As the amount of tungsten inferred (16000 units) is believed to be a significant contribution to the national supply, and because of the possibility of discoveries beyond the amount now inferred, it is recommended that a loan

be made to explore the deposit. It is also recommended that the contract specify that all phases of the project be contingent on the success of preceding phases. It is suggested that lateral drifts be run concurrently with the main adit at about 300 foot intervals, and that the failure of two successive laterals to encounter ore be considered sufficient grounds to discontinue the project.

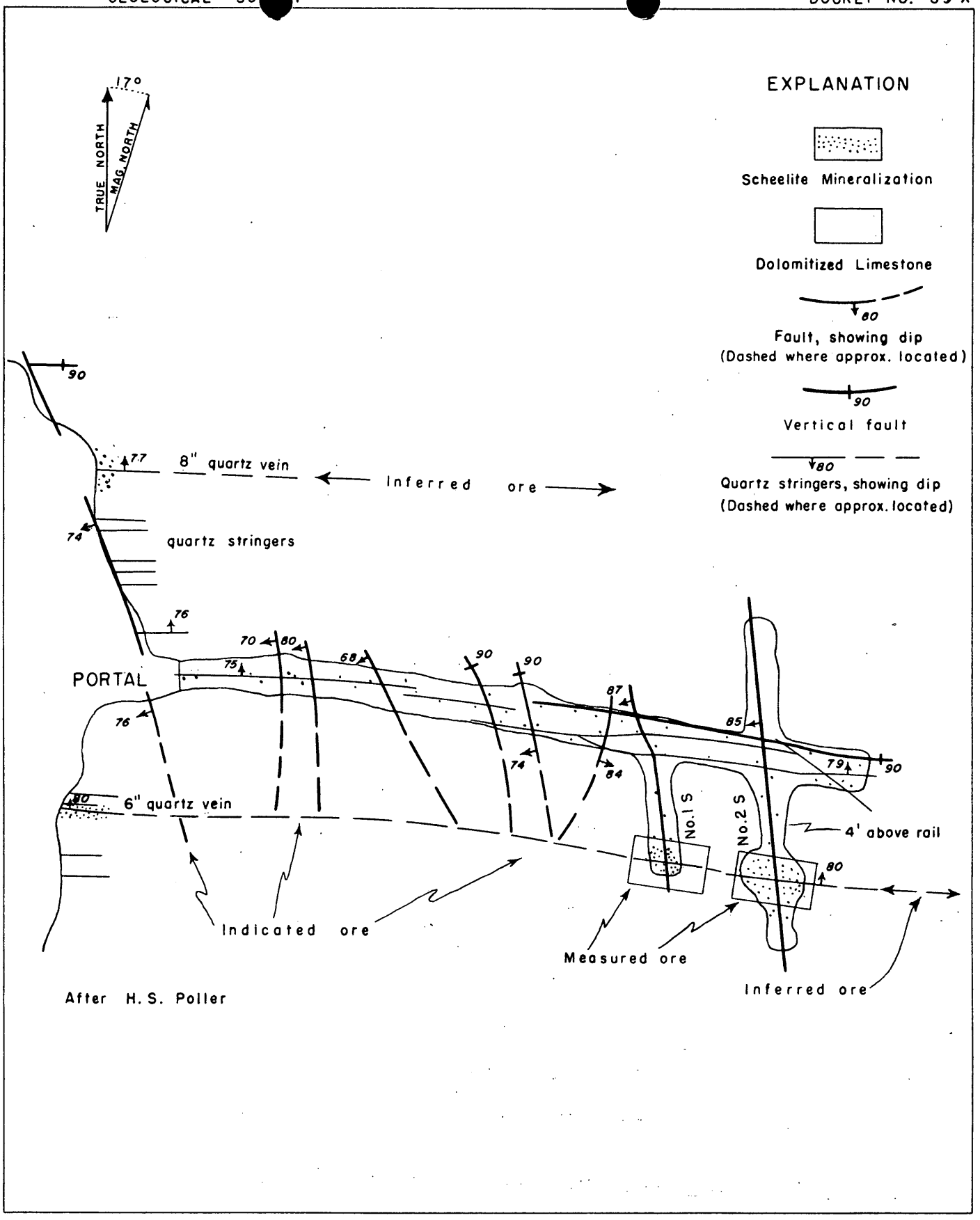


FIG. 4 GEOLOGIC MAP OF POLE TUNNEL
WHITE PINE COUNTY, NEVADA

0 20 40 FEET
Scale

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS ADMINISTRATION
DOCKET NO. 89X

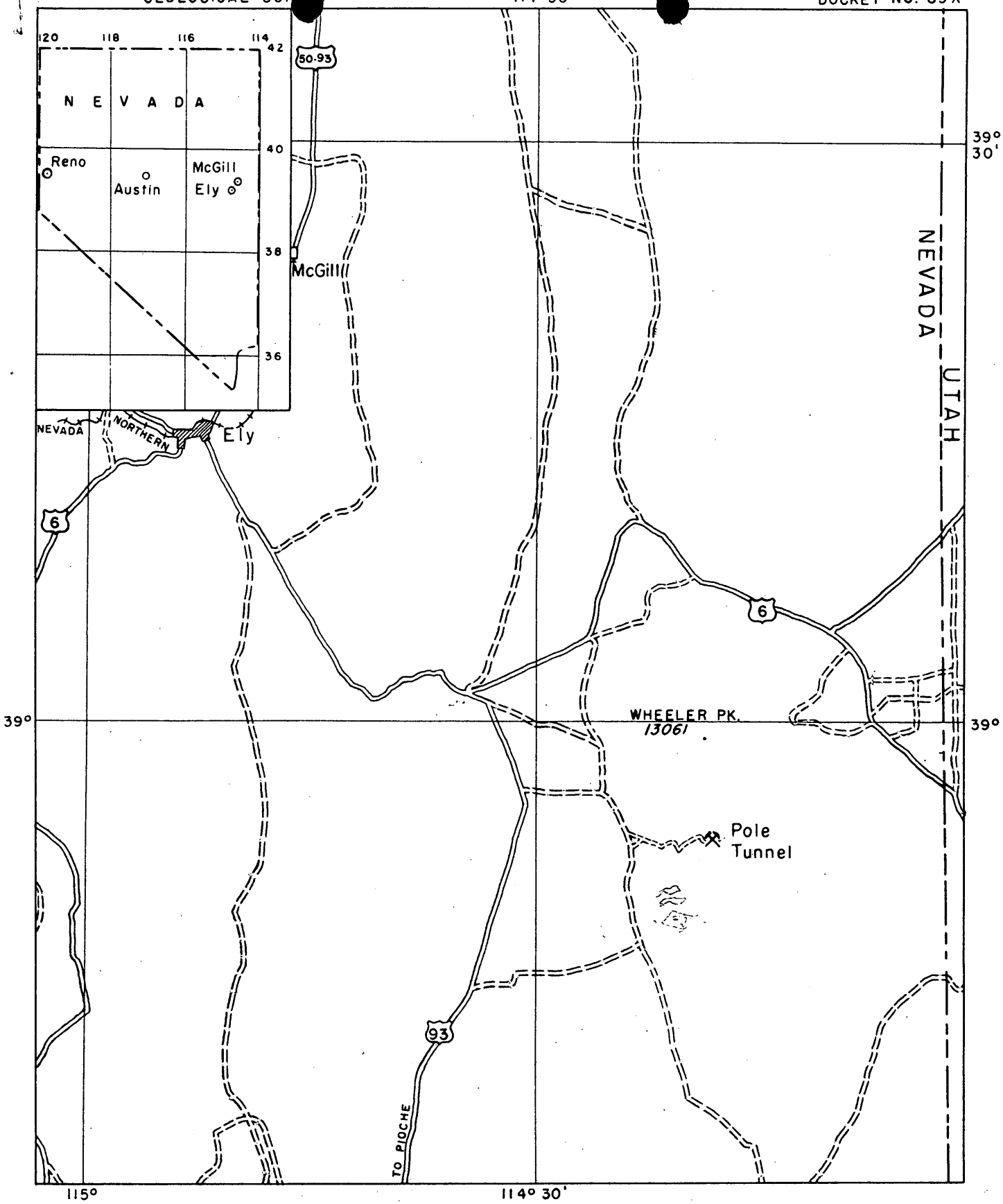


FIG. I

INDEX MAP OF NEVADA

0 5 10 MILES
Scale

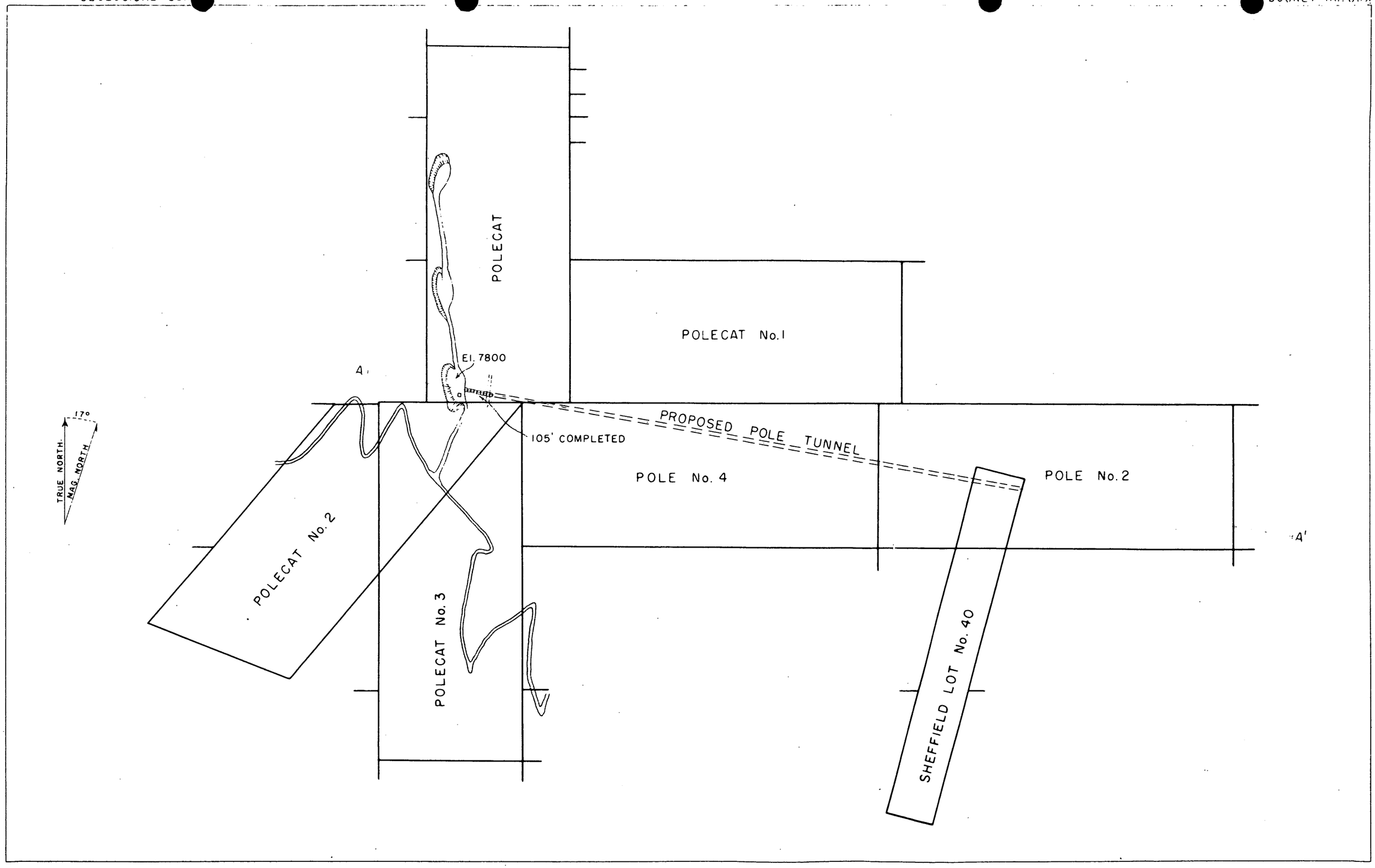


FIG. 2

PROPOSED POLE TUNNEL
WHITE PINE COUNTY, NEVADA

0 400 800 FEET
SCALE

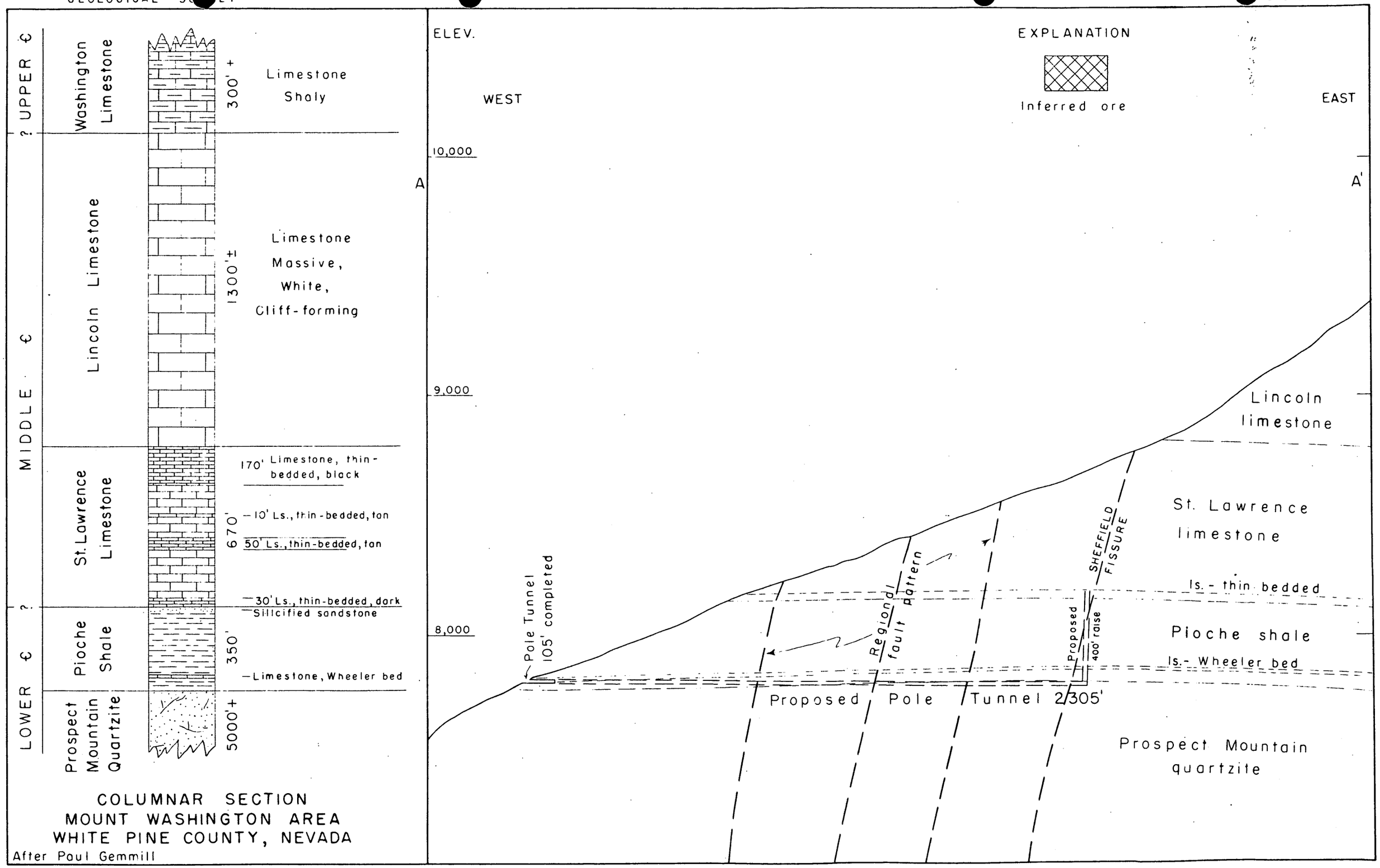


FIG. 3 SECTION ALONG LINE A A' — POLE TUNNEL, WHITE PINE COUNTY, NEVADA

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

DMA-89X

July 10, 1951

DMA 89-X Mt. WheelerMines, Inc.
Snake Range, Nevada

A field examination of this property was requested by the Lead-zinc Branch, and was probably made during the first week of July.

Nothing further can be done toward processing the application until we receive the field report.

Dwight M. Lemmon

Awaiting results of proposed examination, 7/11/51

Dwight

How about a Memo on Mt. Wheeler 89-X

So we can clear docket - Herres inquiring.

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. DMA-89x

Commodity Tungsten

Total Amount $175,101.00

Govt. Participation 75%

1. Name and Address of Applicant Mt. Wheeler Mines, Inc., 218 Felt Building, Salt Lake City 1, Utah.

2. Location of Property White Pine County, Nevada, Township 12 North, Range 68 East, Mt. Diablo Base and Meridian

3. Mineral or metal Scheelite. Is it listed in Section 9 of MO-5? Yes.

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Referred to U.S.G.S. 6/1/51

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes.
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? Yes.

Does the lease have sufficient time to run to cover a future productive period? 3 to 7 years.

*question numbers are those of MF-103

7. Are subordination agreements necessary? _____

a) MF-201? _____

b) MF-202 Required. Not included.

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower General shortage of miners in Nevada.

b) Equipment and supplies May be subject to priorities.
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* 8 miles to U.S. Highway 93, 70 miles to shipping point; Roche, Nev.

d) Water (question 13)* Adequate.

e) Power (question 13)* No public power.

Is a field check needed on any of these points? No.

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Organization has access to competent technical personnel.

Is a field check needed on this point? No.

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? Yes. Exhibit "G."

If not, are there sufficient data given so that you can describe the project? _____ If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? Yes. Maps are adequate and well prepared.

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes.

If not, what part of it is? _____

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Yes.

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data?_____ If so, attach a draft.

e) Are the cost estimates reasonable? Yes.

f) Should more information be requested from applicant? Not necessary.

g) Is a field examination necessary to complete Exhibit A? No.

11. Exhibit B (question 23-d)*

a) Is it applicable? Yes.

b) If so, are sufficient data furnished? Yes. If so, attach a draft.

c) Is a field check needed?_____

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes.

b) Sufficient data? Yes. If so, attach a draft.

c) Are rents and charges reasonable? Yes.

d) Is a field check needed? No.

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? Yes.

b) Is the schedule adequate for the work proposed? Yes.

c) Is the schedule excessive for the work proposed? No.

d) Are the proposed wages and salaries reasonable? Yes.

e) Is a field check needed? No.

14. Exhibit E (question 23-c)*

a) Is it applicable? Applicant says none needed.

b) Sufficient data?

c) Reasonable?

d) Field check needed?

15. In your judgment, can the proposed work be done in the proposed time? Yes.

(All exploration must be completed within two years)

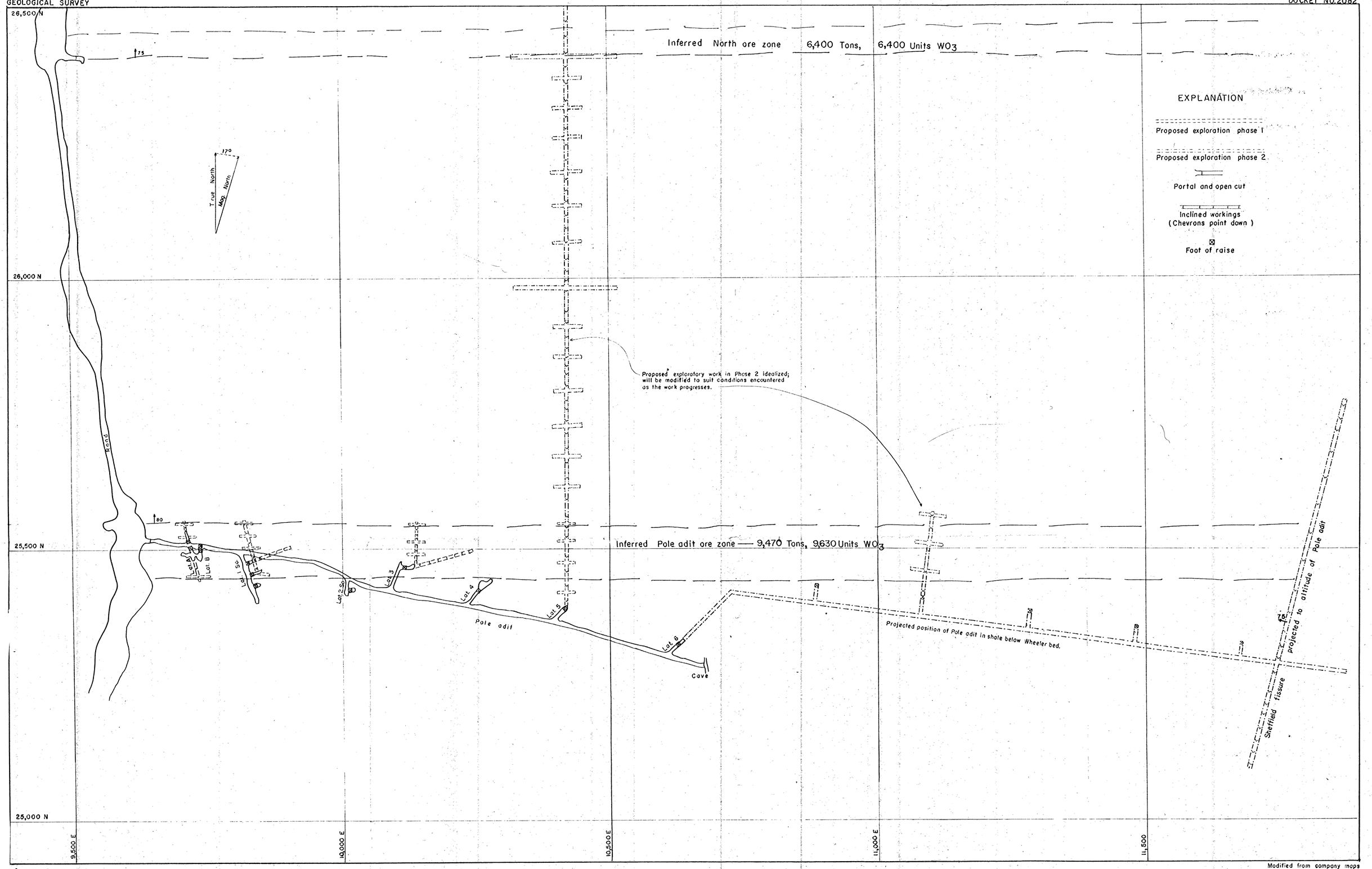
16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question?

Reviewed by:

Date

97692



Modified from company maps

Figure 5

MAP SHOWING PROPOSED EXPLORATION, MT. WHEELER TUNGSTEN PROSPECT
WHITE PINE COUNTY, NEVADA

0 100 200 300 ft.
Scale

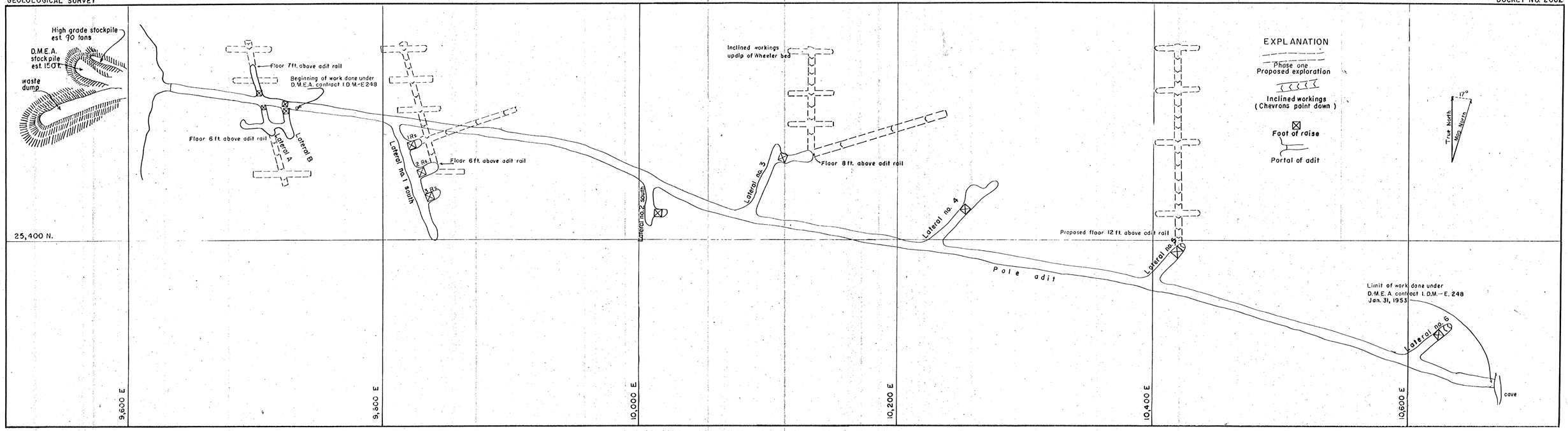
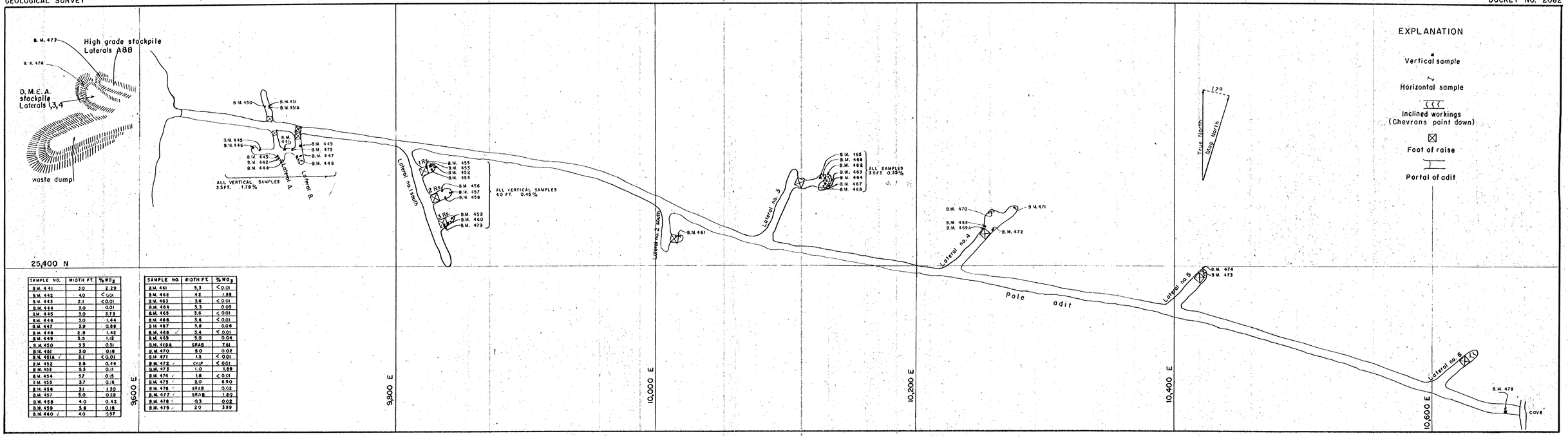


Figure 4

PLAN MAP OF MT. WHEELER TUNGSTEN PROSPECT
POLE ADIT
WHITE PINE COUNTY, NEVADA

0 40 80 120 ft.
Scale

Modified from company maps



SAMPLE NO.	WIDTH FT.	% WO_3
B.M. 441	3.0	2.29
B.M. 442	4.0	< 0.01
B.M. 443	2.1	< 0.01
B.M. 444	3.0	0.01
B.M. 445	3.0	3.73
B.M. 446	3.0	1.44
B.M. 447	3.9	0.88
B.M. 448	2.8	1.42
B.M. 449	3.5	1.12
B.M. 450	3.3	0.31
B.M. 451	3.0	0.18
B.M. 451A ✓	3.1	< 0.01
B.M. 452	2.6	0.14
B.M. 453	5.5	0.11
B.M. 454	5.7	0.15
B.M. 455	3.7	0.16
B.M. 456	3.1	1.30
B.M. 457	5.0	0.23
B.M. 458	4.0	0.12
B.M. 459	5.8	0.16
B.M. 460 ✓	4.0	0.57

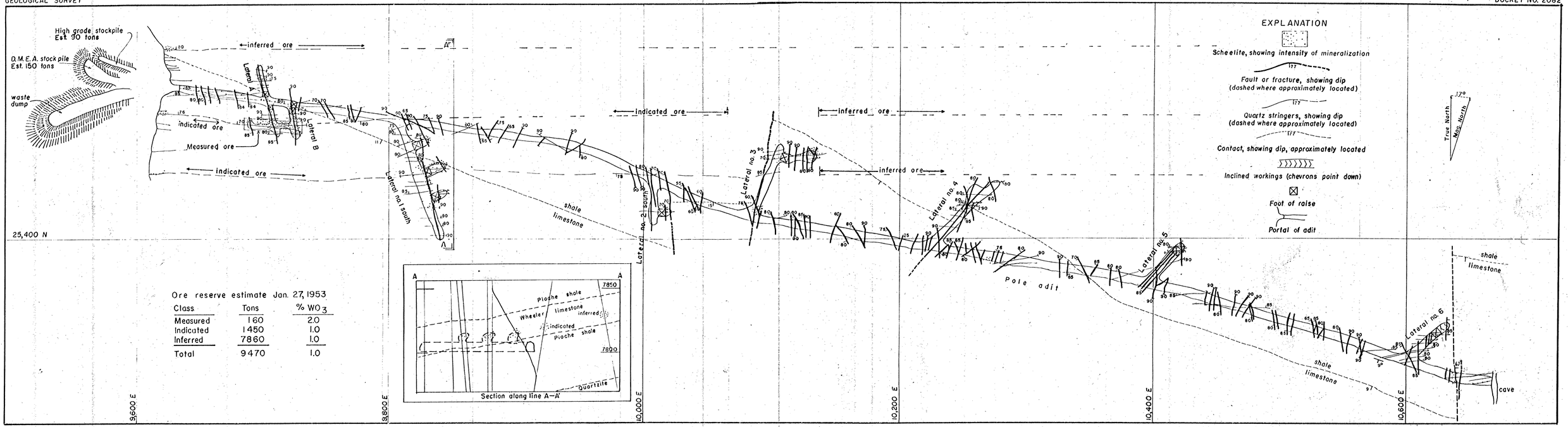
SAMPLE NO.	WIDTH FT.	% WO_3
B.M. 461	5.3	< 0.01
B.M. 462	4.2	1.99
B.M. 463	3.6	< 0.01
B.M. 464	3.3	0.05
B.M. 465	3.6	< 0.01
B.M. 466	3.6	< 0.01
B.M. 467	3.8	0.08
B.M. 468 ✓	3.4	< 0.01
B.M. 469	5.0	0.04
B.M. 469A	GRAB	7.61
B.M. 470	5.0	0.02
B.M. 471	1.3	< 0.01
B.M. 472 ✓	CHIP	< 0.01
B.M. 473	1.0	1.69
B.M. 474 ✓	1.8	< 0.01
B.M. 475 ✓	2.0	6.90
B.M. 476 ✓	GRAB	0.02
B.M. 477 ✓	GRAB	1.80
B.M. 478 ✓	0.3	0.02
B.M. 479 ✓	2.0	3.99

Figure 3

ASSAY MAP OF MT. WHEELER TUNGSTEN PROSPECT
POLE ADIT
WHITE PINE COUNTY, NEVADA

0 40 80 120 ft
Scale

Modified from company maps
Samples by U. S. Bureau of Mines



Ore reserve estimate Jan. 27, 1953

Class	Tons	% WO_3
Measured	160	2.0
Indicated	1450	1.0
Inferred	7860	1.0
Total	9470	1.0

Figure 2

GEOLOGIC SKETCH MAP OF MT. WHEELER TUNGSTEN PROSPECT
POLE ADIT
WHITE PINE COUNTY, NEVADA

0 40 80 120 ft
Scale

Modified from company maps

F.L.A.

REVISIONS		
July 1952 Advance		123.0'
August		210.5'
September		239.0'
October		163.0'

REFERENCES: Solar Obs. for Meridian; Transit Survey by C.R. Hagen; October 29, 1952 (Ref D-100-5); Geology by J.D. Williams

WORK — DRAWN: — TRACED: 11-1-52 JDW — CHECKED: — APPROVED:

[redacted]
MT. WHEELER MINES, INC
P.O. Box 150
SALT LAKE CITY 10, UTAH.

DETAIL OF POLE TUNNEL ADVANCE
DMEA - 2082 - Tungsten ; Contract Idm - E248

SCALE 1" = 20'

D-100-5 (Trace)