UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 11 1954

February 5, 1954

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-1608X (Copper-Molybdenum)
Mount Rainier Mining Company
Pierce County, Washington
Contract No. Idm-E383

Dear Mr. Selfridge:

Enclosed are four copies of a final Field Team report on the referenced property.

Very little work was completed on this project. The Nos. 2 and 3 tunnels were made accessible for mapping and sampling. Sample returns indicate that an oreshoot may extend between the 2 and 3 levels but the width of the vein is so narrow and the grade of ore minerals so low that material from this area should not be considered as ore.

The Field Team recommends that no Certification of Discovery be issued for DMEA project work done on this property.

By Field Team, Region II

A. E. Weissenborn, Executive Officer
U. S. Geological Survey

Wing G. Agnew, Acting Member
U. S. Bureau of Mines

Enclosure
cc: Certifying Officer
USBM (2)
Puffett

Reviewed by
DMEA OPERATING COMMITTEE
2-15-54
(date)

Field Team's final report recd.2/18/54

2/18/54 gla

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 11 1954

DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FIELD TEAM, REGION II

# FINAL REPORT

Contract No. Idm-E383

by

E. A. Magill
Mining Engineer
U. S. Bureau of Mines

Willard P. Puffett
Geologist
U. S. Geological Survey

MOUNT RAINIER MINING COMPANY
1627 - 15th Avenue
Seattle 22, Washington

| | |
|---|---|
| Docket No.: | DMEA-1608X |
| Commodity: | Copper-Molybdenum |
| Contract date: | August 4, 1952 |
| Completion date: | October 23, 1953 |

STARBO MINE
Mt. Rainier National Park
Pierce County, Washington

Reviewed by
DMEA OPERATING COMMITTEE
2-15-54
(date)

Spokane, Washington

January 14, 1954

FINAL REPORT

MOUNT RAINIER MINING COMPANY
Starbo Mine
Mt. Rainier National Park
Pierce County, Washington

Contract No. Idm-E383

* * * * *

## INTRODUCTION

This report describes rehabilitation at the Starbo mine, Glacier Basin, Mt. Rainier National Park, Pierce County, Washington, which was participated in jointly by the Mount Rainier Mining Company and the Government, acting through the Defense Minerals Exploration Administration.

### Authorship

Sections of this report on property and expenditures were written by E. A. Magill, Bureau of Mines. Geology was written by W. P. Puffett, Geological Survey. All other sections were authored jointly.

### Summary

A $3,000 exploration project contract was entered into with the Mount Rainier Mining Company to determine if commercial quantities of copper ore are exposed in Tunnels 2 and 3 on the Snowflake claim of the Starbo mine. The work was to consist solely of rehabilitating these two tunnels sufficiently to make them safe for access and examination. Work under the contract began in August 1952 and was completed October 23, 1953.

Examination of these two tunnels disclosed a very narrow mineralized vein in andesite that had been partially developed on both levels. There is indicated an oreshoot about 80 feet long that appears to be continuous between the two levels. The vein attains a maximum width of 3 feet and sampling showed a maximum grade of 5.5 ounces per ton of silver and 14.92 percent copper.

Samples taken on both levels indicate an oreshoot 80 feet long, 0.7 feet wide, averaging 0.058 ounce per ton of gold, 1.79 ounces per ton of silver, and 4.85 percent copper. It is extremely doubtful if the grade of ore within the oreshoot will be as high as the samples indicate. This vein is considered to be too narrow to be minable. No other significant indications of ore were found in the two tunnels.

## Recommendations

The project was unsuccessful in disclosing a minable oreshoot and it is recommended that no Certification of Discovery or Development be declared. Government participation in further exploration is not warranted. From the narrow vein, production is not economically feasible under present conditions.

## LOCATION AND ACCESSIBILITY

The property of the Mount Rainier Mining Company is in unsurveyed T. 16 N., R. 9 E., W. M., Pierce County, Washington, and is in Glacier Basin, near St. Elmo Pass, in the north central part of Mt. Rainier National Park. A bulldozer road 3 miles long connects the lower part of the property with the White River Campground, which is connected by a graveled road to the paved Yakima Park highway. Altitudes in the vicinity of the various claims range from 6,000 to 7,500 feet. Climate is typical of the central Cascades with heavy precipitation generally and heavy snow throughout at least 6 months of the year.

## PROPERTY

The property involved in the exploration project consists of three patented lode mining claims -- the Snowflake, Peach, and Orinda. All work done under the exploration project contract was on the Snowflake lode claim. These claims are covered by Mineral Survey No. 1148.

There are three adits on the property -- No. 2, 3, and 5. Adit No. 2 is at an elevation of 6,540 feet and has a length of 255 feet. Adit No. 3 is at an elevation of 6,410 feet and is 490 feet in length. Adit No. 5 was started at an elevation of about 6,100 feet and was planned to crosscut the vein at depth. It is now caved about 60 feet from the portal. These adits are designated hereafter as tunnels to conform with terminology of previous reports. For the most part, the workings are heavily timbered, especially for several hundred feet in from the portals. It was necessary to use spilling near the portals.

Ventilation was a problem in the No. 3 tunnel and artificial ventilation was necessary to provide sufficient oxygen for access.

The No. 3 tunnel makes an estimated 100 gallons of water per minute. No. 2 tunnel is relatively dry.

A small cabin is the only mining facility on the property.

## History of Property

The following notes on history of the property are taken from a report prepared in February 1951 by A. E. Weissenborn and J. W. Hosterman, Geological Survey, for the National Park Service:

"The claims belonging to the Mount Rainier Mining Company were located prior to 1906. The property originally consisted of 41 unpatented mining claims. In July 1912, all but eight of these mineral locations were relinquished; on January 12, 1924, patent was granted on the Washington No. 1, Washington No. 2, Stronghold No. 1, Stronghold No. 2, Mary, Orinda, Peach, and Snowflake Lodes, which together comprise a total area of 164.837 acres. In addition, the company in the past has enjoyed special-use permits for small tracts of land for tunnel, mill, and campsites.

"In the past, much of the company's efforts apparently have gone into building and maintaining a road within the Mt. Rainier National Park and improving and maintaining the road to Enumclaw prior to the construction of the present paved highway. In addition, at least five exploration tunnels of varying lengths were driven and numerous prospect pits were dug. Camp buildings, living quarters, and mine plant buildings were constructed; a power plant was built; and various other improvements were made. An aerial tramway was reported to have been constructed from one of the exploration tunnels on the Snowflake Lode to a point near the Starbo campsite. All of the buildings are either in ruins or in very bad condition.

"The company was inactive after November 1930, due to legal difficulties. In 1932 the claims were obtained at the sheriff's sale for $500.00, by Mr. Thomas E. Englehorn of Churches Ferry, North Dakota. The company was reorganized by some of the original stockholders, and on July 9, 1946, a quit claim deed from the estate of Thomas E. Englehorn conveyed the eight claims to the Mount Rainier Mining Company for the sum of $500.00.

"The only recorded production from the property is reported in a prospectus of the Mount Rainier Mining Company dated August 1948, which indicates that on October 22, 1927, a shipment of 47.374 net tons of ore averaging 13.5 percent copper, 2.38 ounces per ton of silver, and 0.03 ounces per ton of gold, was made to the Tacoma Smelter of the American Smelting and Refining Company."

Recent activity at the property commenced in 1952 when the road from White River Campground was partially reconstructed just prior to the granting of the DMEA Exploration Project Contract.

THE PROJECT

In 1927 a shipment of ore from the Starbo mine, reportedly produced from Tunnels Nos. 2 and 3, assayed 13.50 percent copper, 2.38 ounces per ton of silver, and 0.03 ounce per ton of gold. Records of assays of samples taken in 1917 indicated copper values from 6.2 to 29.9 percent copper. On the dumps at the portals of Tunnels 2 and 3 are specimens of rock containing substantial percentages of copper. Because of these facts, it was thought that a project to rehabilitate Tunnels 2 and 3 so as to open the veins from which the ore was produced was justifiable and necessary, to determine whether this property merited a more ambitious exploration and development program.

The applicant originally outlined a program that included reopening Tunnels 2 and 3, erecting an aerial tram from the tunnels to the road and doing some diamond drilling to test for molybdenum at another location on his property. Because available evidence did not justify such an expanded program of exploration, the proposed project was modified to include only the rehabilitation of Tunnels 2 and 3. A unit cost project contract was awarded the applicant wherein rehabilitation of both tunnels consisted of one unit of work.

The contract became effective on August 4, 1952. The property was visited by DMEA field men on September 8, 1952, at which time it was found that Tunnel No. 2 had been rehabilitated sufficiently for access and examination. A caved area, 79 feet from the portal of Tunnel No. 3, prevented further examination of these workings on that date. On October 2, 1952, another examination by DMEA personnel found that, although an opening had been made through the caved area in Tunnel No. 3, the air in the workings a few feet beyond this opening contained insufficient oxygen to sustain flame in a lantern and thus the workings were not safe for examination. DMEA personnel revisited the property on October 25, 1952, September 2, 1953, and October 23, 1953. It was not until the

last visit, after the Operator had installed a small exhaust fan driven by a one-cylinder gasoline engine, that oxygen content was sufficient to permit the examination of Tunnel No. 3.

Amendment No. 1 was prepared on December 30, 1952, which allowed the Operator reimbursement for his share of half the original unit cost, and which extended contract time from 6 to 12 months. Amendment No. 2 was prepared on August 6, 1953, to permit an extension of contract time from 12 to 16 months. The project was completed on October 23, 1953.

## GEOLOGY

The areal geology of the Mt. Rainier National Park has been mapped by Mr. Howard A. Coombs[1]. According to Coombs, carbonaceous argillites of the Puget Group of lower Tertiary age are the oldest rocks in the Park and are exposed in the valley of the Carbon River outside of the area examined. These argillites are overlain by massive tuffs, breccias, and porphyries of andesitic composition that are correlated with the Keechelus andesitic series of Miocene (?) age. Andesite flows, felsites, basalts, hornfels, and sediments occur in the series as subordinate types. The Keechelus andesitic series has been intruded by the Snoqualmie granodiorite of late Miocene (?) age, and in the vicinity of the contact, the Keechelus andesitic series has been indurated and altered. The Mt. Rainier Volcanics unconformably overlie the Keechelus andesitic series and, except for the glaciofluviatile deposits, are the youngest rocks in the Park. The Mt. Rainier volcanics are principally flows of hypersthene andesite with subordinate flows of pyroxene andesite, basalt, and beds of pyroclastics.

Glaciers occupy the higher parts of Mt. Rainier and, in places, extend far down the slopes. Glaciofluviatile deposits occupy many of the lower valleys.

Coombs describes the geology in the vicinity of the property of the Mount Rainier Mining Company as follows: "In Glacier Basin between the Emmons and Winthrop Glaciers, the Keechelus tuffs and porphyries have been invaded by granodiorite. The old Starbo mining camp has its tunnels immediately above the contact, where an attempt was made to mine the sulfide seams in the narrow joints of the tuffs and porphyries. This massive, indurated, and altered series continues upward to the base of Mt. Ruth where it is overlain by the lavas of Mt. Rainier."

Tunnels 2 and 3 are at elevations 6,540 and 6,410 feet, respectively, and are driven southward in the Keechelus andesitic formation whose upper contact is at approximately 7,000 feet in

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[1] Coombs, Howard A., Geology of the Mount Rainier National Park, University of Washington Publications in Geology, Vol. 3, No. 2, pp. 131-2.2, 1936.

the vicinity of the workings. The rock exposed in both tunnels is fine-grained, gray andesite. No evidence of intrusives was seen in these workings. The accompanying map shows the outline of the workings as well as structural and other geologic features that were exposed in the heavily timbered workings.

Tunnel No. 2 was driven following a narrow, mineralized fault structure that strikes S. 10°-20° W. and dips very steeply to the west. Where exposed, this structure consists of markedly bleached and altered andesite, containing crystals of black tourmaline, relatively massive chalcopyrite, and minor pyrite. A few narrow faults, which do not offset the vein significant distances, are crosscut by the tunnel. Some chalcopyrite, pyrite, and tourmaline occur in one of the crosscutting faults near the west end of a short crosscut to the west from the main tunnel.

Eighty-two feet from the portal of Tunnel No. 2 there is a stope 80 feet long extending to a maximum height of 27 feet above sill level. As exposed in the top and ends of the stope the vein ranges in width from 4 inches to 1 foot, although the general bleached and altered area bounding the structure extends to a width of 3 feet in some places. Assays obtained from sampling the vein exposed in the stope ranged in value from 0.15 to 11.84 percent copper. Maximum silver content was 3.9 ounces per ton.

In the No. 2 tunnel, south of the stoped area, the vein is a maximum of 8 inches thick and thins markedly southward. There are some copper minerals and much brown iron staining present.

In Tunnel No. 3 there are two small stoped areas. In these stopes are the only visible copper-mineralized areas of the vein structure that were seen. Characteristics of this vein are identical to the mineralized structure in Tunnel No. 2 and probably represent its downward extension. Near the south end of Tunnel 3 the andesite is considerably jointed and broken and on some of the joint surfaces there occurs considerable crystalline pyrite. Along the tunnel at several locations occur green-stained (copper) drips, but no significant quantities of copper minerals were seen near these drips.

As is shown on the accompanying section map, there is indicated a continuous oreshoot through the two tunnels. The basis for the belief in the existence of this oreshoot is the comparable locations of the stoped areas on the two levels. Samples taken in the stopes above Tunnel 2 indicate an oreshoot 80 feet long, 1.2 feet wide, with an average value of 0.096 ounce per ton of gold, 0.64 ounce per ton of silver, and 1.33 percent copper. Samples from the north stope above Tunnel 3 indicate an oreshoot averaging 0.45 foot in width, containing less than 0.01 ounce per ton of gold, 2.6 ounces per ton of silver, and 9.7 percent copper. Samples taken in the south stope above Tunnel 3 indicate an oreshoot 0.58-foot wide, containing 0.032 ounce per ton of gold, 3.53 ounces per ton

of silver, and 8.36 percent copper. Weighted average of all samples taken in the stopes is 0.058 ounce per ton gold, 1.79 ounces per ton silver, and 4.85 percent copper over an average width of 0.74 foot. It is emphasized that the samples were taken only where evidences of ore mineralization were observed and that intervening areas of the vein between sample locations are relatively barren of ore sulfides. Thus, these assay values are an indication of the maximum values to be found in the vein.

With the above figures as a basis, and using a tonnage factor of 12 cubic feet per ton, the following mineralized blocks have been calculated:

| Block No. | Length (ft.) | Height (ft.) | Width (ft.) | Tons | Oz./ton Au. | Oz./ton Ag. | Percent Cu. |
|---|---|---|---|---|---|---|---|
| I | 80 | 40 | 1.2 | 320 | 0.096 30.72 | 0.64 | 1.33 |
| II | 80 | 100 | 0.74 | 493 | 0.058 28.594 | 1.79 | 4.85 |
| III | 80 | 40 | 0.51 | 136 | 0.001 .136 | 3.12 | 8.94 |
| Total tons | 956 — say 1,000 averaging | | | | 0.071 59.450 | 1.36 | 3.54 |
| | | | | | .062 .063 | .59 | 4.25 |

Block I is the extension of the oreshoot above the upper stope, Block II is the unmined area between the two tunnels, and Block III is the extension of the oreshoot below Tunnel 3.

An inspection of the above figures shows that, although the vein does contain significant amounts of copper, the width of the mineralized areas is too narrow to justify their being considered ore.

## Summary of Factual Data

The exploration project between the Government and the Mount Rainier Mining Company was entered into on the "short form" contract, i.e., on a unit estimated cost basis of $3,000 and not on an actual cost basis. Originally, the contract was for a lump sum of $3,000 for clearing and opening Tunnels Nos. 2 and 3. Amendment No. 1 dated December 30, 1952, allowed the work on Tunnels Nos. 2 and 3 to be considered as separate unit cost items. This allowed the Operator to be paid for the work of opening No. 2 tunnel rather than wait until the whole project was completed before receiving any payment.

The total cost of the project was $3,000, the Government's share being $1,500. There was no equipment purchased for the project.

There was no production from the property during the contract. No work is being carried out at the property at the present time.

## Discussion of Conclusions

The major difficulty encountered during the project was the oxygen-deficient air in Tunnel 3. It was only after artificial ventilation was provided that the workings could be examined.

In general, the project was carried out inefficiently and at no time during the project was there anyone connected with the Mount Rainier Mining Company who displayed any special knowledge of mining. The contract work as planned should have been completed under ordinary conditions within a month or 6 weeks; however, it took the Operator 2 summer seasons to complete the work.

The project was successful in making Tunnels 2 and 3 accessible for examination.

Although there is a small narrow crosscut exposed, the rather extensive workings have failed to disclose an ore body that could be considered economic. No features were observed that would indicate the structure was worthy of further exploration under present conditions.

Enclosure
Distribution:
DMEA(4)
USBM(5)
USGS(SRO)
Deckert
Puffett

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

W 90

# OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of October, 1953 Docket No. DMEA 1608x Contract No. IDM B - 383
Operator's Name Mount Rainier Mining Co Minerals Copper & Molybdenum
Address 1627 15th Ave, Seattle 22, Wash.
Contract Amount, $ 3,000.00 Government Participation: 50% Amount, $ 1,500.00

| ITEMS OF COSTS | FOR OPERATOR'S USE | | | FOR GOVERNMENT USE ONLY | | |
|---|---|---|---|---|---|---|
| | Monthly Total | Totals Previously Reported | Totals To Date | Approved Monthly Total | Approved Totals Previously Reported | Approved Totals To Date |
| (1) Independent / Short Form Contracts: | | | | | | |
| Drilling | | | | | | |
| Bulldozing | | | | | | |
| Crosscutting | | | | | | |
| Drifting | | | | | | |
| Opening Tunnel #3 | 1500.00 | 1500.00 | 3000.00 | | | |
| (2) Labor and Supervision: | | | | | | |
| Labor | | | | | | |
| Supervision | | | | | | |
| Technical Services | | | | | | |
| (3) Operating Mat'ls. and Supplies: | | | | | | |
| Timber | | | | | | |
| Explosives | | | | | | |
| Pipe | | | | | | |
| Track | | | | | | |
| (4) Operating Equipment: | | | | | | |
| Rental | | | | | | |
| Purchase | | | | | | |
| Depreciation | | | | | | |
| (5) Initial Rehabilitation and Repairs | | | | | | |
| (6) New Bldgs., Improvements, etc. | | | | | | |
| (7) Miscellaneous: | | | | | | |
| Repairs to Equipment | | | | | | |
| Sampling and Analysis | | | | | | |
| Payroll Taxes | | | | | | |
| Liability Insurance | | | | | | |
| (8) Contingencies (specify): | | | | | | |
| TOTALS | 1500.00 | 1500.00 | 3000.00 | 1500.00 | 1500.00 | 3000.00 |

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Oct. 30, 1953 *Payee Mount Rainier Mining Co.

Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

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

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of

750.00 unpaid
675.00 amt pd. 12/3/53
$ 75.00 balance.

Signature [signature]
(Authorized Certifying Officer)

Date 12/3/53 Vou. No. 996
(See other side)

Made partial payment of $675-00 12/3/53. [signature]

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. E383 in accordance with the terms of the contract.

Signature 1st Elwin A Magill Title Mining Engr Date Oct 30 - 1953

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature 1st Thomas E Howard Title Mining Engr Date Nov 5 - 1953

# MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

*Preparation of Form MF-104—Operator's Monthly Report and Voucher.*—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

RECEIVED
BUREAU OF MINES
NOV 2 1953
SPOKANE, WASH.

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

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

# OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of October 195 3 Docket No. DMEA 1608x Contract No. 1DM-E-383
Operator's Name Mount Rainier Mining Co. Minerals Copper & Molybdenum
Address 1627 12th Ave., Seattle 22, Wash.

| OPERATION | UNIT | COSTS THIS MONTH | UNITS THIS MONTH | COSTS TO DATE | UNITS TO DATE | UNIT COSTS TO DATE | AUTHORIZED BY CONTRACT | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Units | Unit Costs |
| Drifting | | | | | | | | |
| Crosscutting | | | | | | | | |
| Raising | | | | | | | | |
| Shafts | | | | | | | | |
| Winzes | | | | | | | | |
| Drilling: Core | | | | | | | | |
| Churn | | | | | | | | |
| Auger | | | | | | | | |
| Stripping | | | | | | | | |
| Trenching | | | | | | | | |
| Test Pits | | | | | | | | |
| Roads and Trails | | | | | | | | |
| Opening Tunnel #3 | Job | 1500.00 | 1 | 3000.00 | 2 | 1500.00 | 2 | 1500.00 |
| TOTAL DISTRIBUTED COSTS | | | | | | | | TOTAL COSTS AUTHORIZED BY CONTRACT |
| Operating Equipment Purchased | | | | | | | | |
| Initial Rehabilitation and Repairs | | | | | | | | |
| New Buildings, Improvements, etc. | | | | | | | | |
| TOTAL COSTS | | 1500.00 | | 3000.00 | | | | |

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

REMARKS:

Date October 30, 1953 Operator Mount Rainier Mining Co.
Per Ole Oelland Title President

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

(Instructions on reverse)

(For Government use only)

## INSTRUCTIONS

*Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.*—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

Mount Rainier Mining Co.
Contract IBM E 383
Docket DMEA No. 1608x

Narrative October 1953

Access to Tunnel No. 3 was finally made possibe in the latter part of October 1953. The cave in which had blocked the tunnel 75 feet from the portal had been caught up in 1952. Bad air however made the workings inaccessable in 1952 and it was not until a fan and vent pipe were installed in October 1953 to suck air from the tunnel that a through examination could be made.

Tunnel No. 3 was examined on October 23, 1953 by representives from the DMEA.

Ole Oakland

Ole Oakland
President

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

# REFERENCE SLIP

DATE 11/18

REFERRED TO:

1. Mr. Ellis
2. ~~Mr. Chen~~
3. Div. contract file
4.

mc

FOR:

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

REMARKS: Work completed. Recommends Apr's final report be impounded.

Check (X) before the items needing attention.

gla
*Initials of sender.*

GPO 16—63815-1

700

11/12/53 gla

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 16 1953

1201 N. Division St.
Spokane 2, Washington
October 26, 1953

MEMORANDUM

To: DMEA Field Team, Region II

From: W. E. Anderson, Mining Engineer, Bureau of Mines

Subject: Mt. Rainier Mining Co., Pierce County, Washington, Contract No. Idm-K383, Docket No. DMEA 1608 (copper)

The Mt. Rainier mine was visited October 23, 1953, accompanied by Willard Puffett, U. S. Geological Survey. The trip was scheduled in response to a telegram from the Operating stating that the No. 3 tunnel was open and cleared of bad air.

Mr. Ole Oakland, manager, Mr. Thor Oakland, director, and Mr. Virgil Harris, laborer, were at the property during the visit.

The Operator had installed 356 feet of 6" aluminum vent pipe in the No. 3 tunnel and was using a 13" fan with 6" outlet and intake parts, belt driven by a 1.5 h.p. Briggs and Stratton, 4-cycle, gasoline motor. The fan was used as an exhaust fan and it provided sufficient circulation to clear the tunnel of bad air, as was ascertained by carrying a candle through the workings.

A tape and compass survey was made of the workings, and a sketch will be submitted by Willard Puffett in the final report, showing sample locations and extent of workings.

The No. 3 tunnel was open for 494.7 feet and the back had caved at this point, filling the drift so the total length of the original tunnel could not be determined. Three drifts were driven from the No. 3 tunnel as follows:

Portal + 196 feet - 33 ft. on a bearing of S. 75° E.
Portal + 359 feet - 74.6 ft. with the first 48.7 feet on a bearing of S. 68° E. and the balance of 25.9 feet on a bearing of S. 50° E.
Portal + 490 feet - 28 feet on a bearing of N. 68° W.

The No. 3 tunnel was timbered for its entire length with lagging on the back and sides for the first 329 feet. The timber was in good condition except for a few sets at the end of the tunnel. The drifts and tunnels were driven on a grade of approximately 3%, and 3"

square, wooden rails with strap iron attached were used in all the workings. The tunnel was quite wet and approximately 50 gallons per minute was flowing from the portal. The opening through the ore at the portal plus 76 feet was 5 feet high and 1.5 feet wide, damming the flow of water to a certain extent and resulting in a stream from 1 to 2 feet deep for 100 feet beyond the ore.

There were two stopes from the No. 3 tunnel, one at the portal plus 266 feet and the other at the portal plus 353 feet. A sketch showing sections through the stopes will be submitted with the final report.

The vein as observed in the two stopes averaged approximately 6" in width and contained chalcopyrite, azurite, malachite, pyrite and tourmaline. The average grade of the ore will be submitted as soon as assay results are received.

As the No. 3 tunnel was open for examination and sampling, work under the contract is completed and it is recommended that final payment be made. It is also recommended that the requirement of a final report from the Operator be waived as it is apparent that he has very little knowledge of mining or mining practices and a final report from him would not provide any information of consequence.

Orig. & 3 cys - Mash.

W. S. Anderson

WSS (2)
RMKA
M/D
AD
WSA/ho

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D.C.
No. 157 Howard Street
Spokane 1, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
SEP 2 - 1953

September 8, 1953

[illegible]

To: [illegible] Field Team, Denver

From: Allard J. Roffett, Geologist, U. S. Geological Survey

Subject: Docket No. [illegible]-1503 (Copper and Molybdenum), routine inspection of Mt. Rainier Mining Company property, Pierce County, Washington, Contract No. [illegible]-372.

In response to a telegram from Mr. Ole Oakland, President, Mt. Rainier Mining Company, Mr. [illegible] Anderson, U. S. Bureau of Mines, and myself made a special trip to Mt. Rainier National Park to examine Adit No. 3 to the subject property. This adit was not properly ventilated last year for an adequate inspection of it to be made.

Mr. Anderson and myself arrived at the mine at approximately noon on Wednesday, September 2, 1953. Using lighted candles and a kerosene lantern, we traversed the tunnel to check the air to determine if it were safe to stay underground for a sufficient time to map and sample the workings. At a distance 100 feet inward from the portal, the flame on the candles was extinguished, and it was impossible to light matches. At 200 feet from the portal, the flame in the lantern became markedly subdued and at 320 feet from the portal, the flame ceased to exist. To check to see whether a draft was extinguishing the flames, we attempted to light the candles and the lantern in a crosscut but no luck was obtained in lighting a match. Consequently, Mr. Anderson and myself came to the conclusion that insufficient oxygen was in the air in the workings to permit the workings to be mapped safely.

Mr. Oakland stated that the workings had been open since some time in June, and it was apparent that cold water had since flowed through the workings. Thus, one can only speculate as to how long it will take for the workings to be filled with good air as a result of natural circulation. If the Operator does not have equipment to the property to properly ventilate the level, it is doubtful that the work specified in the contract can be brought to a satisfactory conclusion.

Distribution
[illegible] (Orig. 3)
[illegible] (2)
Docket
Roffett

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

1201 N. Division St.
Spokane 2, Washington
September 8, 1953

MEMORANDUM

To: DMEA Field Team, Region II

From: W. S. Anderson, Mining Engineer, Bureau of Mines

Subject: Inspection of No. 3 tunnel, Mt. Rainier Mining Company, Pierce County, Washington, Contract No. Idm-X343, Docket No. DMEA 1608 (copper)

A special trip to the Mt. Rainier mine was made September 2 accompanied by Willard Puffett, U. S. Geological Survey. This trip was scheduled in response to a telephone call from the Operator stating that a compressor had been brought to the property and was placed near the portal of the No. 3 tunnel. The Operator also stated that the tunnel was open and cleared of bad air.

Present at the property during the time of the visit were Ole Oakland, manager, and Thor Oakland and Milton I. Natling, directors, Mt. Rainier Mining Co.

The compressor at the property was a DeVilbiss portable air compressor, designed for use in spraying paint at a maximum pressure of 45 lbs. The compressor was a type PHM 302-9 and was driven by a Tri-Clad squirrel 1 h.p. motor. Current for the motor was supplied by a Homelite generator with a rating of 115 volts AC at 3600 rpm.

The air compressor, although rated at 45 lbs. pressure, was operating at 14 lbs. pressure. The air was delivered through a 3/4-in. hose with an inside diameter of 3/8 inch to an "Ozone" machine which was placed approximately 355 feet in from the portal. (The "Ozone" machine was described in the report of October 28, 1952 by E. A. Magill, Mining Engineer, Bureau of Mines.) A 10-inch circulating fan, of the type designed for home use, was suspended from the back near the discharge from the "Ozone" machine to aid circulation. The fan was a useless addition to an already inadequate installation as it was turning at 74 rpm, which would merely stir the air, not circulate it.

Candles were carried by Mr. Paffett and myself to check if there was sufficient oxygen for combustion. The candles went out at a point 130 feet in from the portal and could not be relindled as matches would not burn in the oxygen deficient atmosphere. To check the possibility that the candles and matches may have been extinguished by a draft of air rather than from the lack of oxygen, a kerosene lantern with a glass globe was taken into the tunnel. The flame in the lantern rapidly dwindled after passing the curved portion of the tunnel and was completely out 350 feet in from the portal.

As there was not sufficient oxygen in the air to maintain combustion it was deemed hazardous to map and sample the workings.

As this was the third trip to the property to check the No. 3 tunnel, with the Operator still not able to provide proper ventilation so that the workings could be mapped and sampled, it would seem advisable to terminate the contract. It is evident the Operator is unfamiliar with mining and mine ventilation and should be considered not competent to fulfill the terms of the contract.

Orig. & 3 cys - Wash.

W. S. Anderson

USGS (2)
DMEA
M/D
WSA/hm

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
1201 North Division St.
Spokane 2, Washington
October 28, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 3 1952

MEMORANDUM

To: DMEA Field Team, Region II

From: E. A. Magill, Mining Engineer, Bureau of Mines

Subject: Progress examination, Mt. Rainier Mining Co., Pierce County, Washington, Contract Idm-E383, Docket 1608X (copper-molybdenum)

A telephone call was received from Mrs. Ole Oakland, wife of the secretary of the Mt. Rainier Mining Co., late in the afternoon of October 23, 1952. Mrs. Oakland stated that she had been requested by Mr. Oakland to call and inform us that the No. 3 adit was now open for examination. Arrangements were made for Willard Puffett, USGS, and myself to visit the property on the 25th.

At the time of our visit on October 25, 1952, Mr. Ole Oakland and his son, Thor Oakland, were at the property. There was no snow on the ground and the weather has been excellent. This is unusual inasmuch as the property lies at an altitude of about 6500 feet on the north slope of Mt. Rainier.

At the time of the examining team's last visit on October 2, 1952 the Operators were advised that the timbering which they had done on the cave 76 feet from the portal was unsafe. This was subsequently proven by the timbering giving away, and the adit being filled with muck. The Operators have made another opening through this cave which cannot be considered any safer than the original opening. To pass through this opening it is necessary to squeeze between two stulls which give an opening 1.2 feet wide at the bottom, 1.5 feet wide at the top and 5 feet high. After squeezing past several other stulls it is necessary to crawl through a hole 1.5 feet wide and 2.0 feet high which is 2.0 feet above the sill level. The caved area is 13 feet in length and should represent no special problem to catch up other than it contains rock from 6 inches to 2 feet in diameter which would add to the difficulties of spilling. The Operators have not used this method in catching up the cave, however. It is apparent from their work that the Operators are totally unacquainted with mining methods. The present timbering of the caved area is considered unsafe for work of any type to be carried on past it.

Besides the difficulty which the Operators are having with the caved portion of the adit is the problem of bad air beyond the cave. The Operators are using an "ozone" machine to clear the air. This machine is manufactured by the Vegoray Ozone Company, Seattle 3, Washington (Model PW 20, Serial No. 502). It is 12" x 12" x 18" and has a filter 7" x 10" on the intake side and a hole 3" in diameter on the discharge side from which the "purified" air is discharged by a small blower. The machine is run by 110 volts AC current supplied by a single cylinder gasoline driven electric generator. The only information that the Operators could furnish concerning how the machine worked was that the machine contained 7 "violet ray tubes" which "purified" the air by making ozone. The Operators are renting the machine including the electric generator for $20.00 per week.

The "ozone" machine has been unsuccessful in "purifying" the air so that the workings past the cave may be mapped or sampled. The machine was placed about 37 feet past the cave and the air up to the machine would allow a candle to burn; however, at a point 50 to 75 feet beyond neither a candle or a kerosene lantern would burn. The success which the Operators will have by the use of the "ozone" machine is extremely doubtful. The problem involved is a lack of oxygen in the air, not one of purification. This was explained to the Operator. The Operator admitted that neither he or his son had ever been back to the face of the adit prior to our visit.

In spite of the lack of oxygen a brief reconnaissance was made of the workings. Measurements and compass courses were taken as far back as possible. Mr. Puffett discusses this more fully in his memo.

It is doubtful that the Operators will be able to complete the project this year. There are three factors which affect its completion:

1. The weather.
2. Finances of the Operator.
3. Ability of the Operators to satisfactorily carry out the project.

All three of the above factors appear to be against completion of the project.

The Operators are working on limited funds and wanted to know whether they could be paid for the work which they had completed. They were told that according to the terms of the contract, no payment could be made until the project was completed.

E A Magill

E. A. Magill

Orig. - Wash. ✓
cc: DMEA, Wash (3)
USGS (2)
DMEA
M/D
D/F
McGuire
EAM/vf

10/5/52 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D.C.
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 3 1952

October 27, 1952

Memorandum

To: DMEA Field Team, Region II

From: Willard P. Puffett, Geologist, U. S. Geological Survey

Subject: Routine examination of progress of Mt. Rainier Mining Company, Pierce County, Washington, under DMEA Contract Idm-E383. Docket No. DMEA-1608X (Copper and Molybdenum).

In response to a telephone call from a representative of the operators stating tunnel No. 3 was open and clear of bad air, a special trip was made Saturday, October 25, 1952, to the Mt. Rainier Mine by E. A. Magill, U. S. Bureau of Mines, and myself to map and sample this tunnel.

Mr. Ole Oakland and son Thor were at the mine. Since our last inspection trip they had rented a small gas-powered electric generator and an ozone machine. This last was an apparatus made by the Vigoray Ozone Company of Seattle, Washington, and was being used by the operators to supply oxygen to the lower tunnel. It developed from conversation with Mr. Oakland that neither he nor his son had traversed the workings of tunnel No. 3, but an employee of theirs had and had reported the air as being good throughout the workings.

The ozone machine was installed 119 feet from the portal. Using a lighted candle and a kerosene lantern to check the oxygen content of the air, Mr. Magill and I were able to proceed 74 feet beyond the ozone machine before the flames of both the candle and lantern were extinguished. In an attempt to determine just how many feet of workings exist in this tunnel, we made a hurried examination farther into the tunnel but it was found that a cave exists ahead which would have to be cleared before the face could be reached.

The general bearing of tunnel No. 3 is S. 18° W. At 192 feet from the portal an untimbered crosscut extends at right angles to the east from the main tunnel for 34 feet. At 267 feet from the portal a stope six timbered sets long and a maximum of 4 sets high above the sill exists. Exposed in the back of this stope is a gougy, bleached fault zone, ranging in width from 1 to 8 inches in which occur stringers of chalcopyrite and considerable quantities of black tourmaline. Two samples were taken from this mineralized fault zone.

Beyond the stope the tunnel bears slightly east of south for 26 feet and then returns to a bearing S. 12° W. At 355 feet from the portal a timbered crosscut extends in a southeasterly direction from the main tunnel for approximately 84 feet. Six feet nearer the portal from this crosscut exists a raise. Because of thè hurried nature of the examination due to an insufficient quantity of oxygen in the air, no examination was made of the workings accessible from this raise. It does appear that stoping has been done to nearly 40 feet above the sill but it was not possible to ascertain how long the stoped area is.

Little detailed examination of the walls of the workings could be made. The tunnel throughout is timbered and the back is obscured by spiling timbers. The rock appears to have been much broken, and much of it exhibits sulphide minerals on "joint" surfaces.

The project cannot be brought to completion by mapping and sampling the workings until the operators have solved the problem of sufficiently ventilating this tunnel to make it safe.

Willard P. Puffett

Willard P. Puffett,
Geologist

Distribution:
DMEA, Orig. & 3
USBM (2)
Puffett
Docket

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 27 1952

1201 N. Division St.
Spokane 2, Washington

October 19, 1952

MEMORANDUM

To: Field Team, DMEA, Region II

From: E. . Magill, Mining Engineer, Mining Division, Region II

Subject: Progress examination Mt. Rainier Mining Co., Pierce County, Washington, Contract Idm-5383, Pocket 1606X (copper and molybdenum)

A progress examination was made of the subject property on October 2, 1952, in company with Willard Puffett, USGS. Mr. Cle Oakland, secretary of the Mt. Rainier Mining Company, was at the property during the visit. Mr. C.Philips Purdy, Jr., of the State of Washington, Division of Mines and Geology, was also at the property and accompanied Mr. Oakland into the upper end of Glacier Basin to examine reported showings of molybdenum. Unfortunately the search for the molybdenum was unsuccessful.

The Operators had advised me in a phone conversation on October 1 that the cave in No. 3 adit had been caught up and that the workings were open for examination; however, they mentioned that the workings past the cave were "gassey". Examination disclosed that the Operators had made a small opening through the cave which they had been working on at the time of the previous visit on September 8. This cave started at 76 feet from the portal and extends for 13 feet, two sets having rotted and given away. The Operators had made a hole at sill level 2 feet high and 1.5 feet wide through the cave (normal clearance inside the timbers is 5.5 feet high and 4.3 feet wide). A very poor timbering job had been done on this small opening and the inadequate timbers showed that they were taking on excessive weight. An estimated 100 to 200 gallons of water per minute was running through the small hole, further complicating matters. The timbering job is considered unsafe for work of any type to be carried on past it.

The air beyond the cave is bad. At a point some 25 feet past it, a match or candle will not burn due to lack of oxygen. This lack of oxygen prevented any sampling or mapping beyond the cave. The timbers appear to be in good condition for at least several hundred feet past the cave.

The Operators were advised that the cave should be dug out and safely timbered so that it at least approached the size of the original opening. A larger opening may allow sufficient natural circulation to freshen the air so that the proposed examination can be carried out. Otherwise, artificial ventilation will have to be provided.

Although the Operator claims to have already expended more than the $3,000 allowed in the contract for rehabilitation, it is believed that the sum allowed was more than sufficient to carry out the rehabilitation program.

If the project is to be carried to completion it may be necessary to extend the completion date as the mine is at an elevation of about 6500 feet and severe storms can be expected at any time.

E. A. Magill

CC: 3-Wash.
2-DMGS
DMEA
EAM
F/D
L/F

EAM:kt

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
[redacted]
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 27 1952

October 14, 1952

MEMORANDUM

To: DMEA Field Team, Region II

From: Willard P. Puffett, Geologist, U. S. Geological Survey

Subject: Routine inspection of progress at property of Mt. Rainier Mining Company, Pierce County, Washington, under DMEA Contract Idm-8383. Docket DMEA-16 8X (copper-molybdenum).

On October 2, 1952, a routine inspection was made of the Mt. Rainier Mining Company's No. 2 and No. 3 tunnels. I was accompanied on this inspection by E. A. Magill, U. S. Bureau of Mines. Mr. Ole Oakland, Secretary of the company, and his son, Thor, were at the property.

At the time of the previous inspection on September 8, the operators were engaged in attempting to clear a cave in tunnel No. 3. By the time of this inspection a hole 2 feet high and 1½ feet wide had been made through the cave near the sill and timbers of sorts had been implaced to allow passageway. Mr. Magill attempted to make an examination of the workings beyond this cave but the air was found to be bad at a distance of twenty five feet beyond the cave. Consequently, it was impossible to make an examination of the rest of the workings.

Attached to this report is a map of the accessible workings, on which as much of the geology as was possible to ascertain has been plotted. Also are shown locations and assay results of samples taken. The country rock in which both tunnels have been driven is a dark gray to gray felsite, determined by Coombs 1/ to be altered tuffs of the Keechelus Andesite series. In the mine workings the fragmental character of the rocks was not discernible.

As is shown on the attached map, there has been some stoping done on the mineralized fault structure on which the upper tunnel had been driven. Apparently the ore occurred as pods or lenses of nearly solid chalcopyrite, intimately intergrown with black tourmaline.

1/ Coombs, Howard A., Geology of Mt. Rainier National Park, Washington University Publication in Geology, Vol. 3, No. 2, July 1936, p. 160.

There is some question as to whether the operator will be able to clear the lower tunnel of the bad air. If this is not done, no further examination of the tunnels can be made and consequently the project cannot be brought to completion as per contract.

Willard P. Puffett
Geologist

Enclosure

cc: DMEA (4)
UPPM (2)
Puffett

9/29/50 gm

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
1201 N. Division St.
Spokane 2, Wash.

September 17, 1952

MEMORANDUM

To: DMEA Field Team, Region II

From: E. A. Nagill, Mining Engineer

Subject: Progress examination Mt. Rainier Mining Co., Pierce County, Wash., Contract Idm-5383, Docket 1608X (copper and molybdenum)

A routine progress examination was made of the subject property on September 8, 1952, in company with Willard Puffett, USGS. Mr. Ole Oakland, Secretary of the Mt. Rainier Mining Co., was on the property at the time of the visit as was his son Thor Oakland who is directing the rehabilitation work.

The operators have constructed a road 3½ miles in length from the White River camp ground to a point near the portal of the No. 5 adit where their camp is located. This road was constructed at company expense last July. The operators claim that its construction cost was $1800. The road is passable only to small 4-wheel drive vehicles, being too narrow for a truck. Undoubtedly, portions of it will be washed out this winter.

The operators have shoveled out the portal of the No. 2 adit so that a person may crawl in; no work has been done in the adit other than digging out the portal. It is estimated that this work did not take over two man-shifts; however, it has allowed access so that the workings could be mapped and sampled. The No. 2 adit workings were mapped and five samples taken, a copy of the map with sample location will accompany a later report by Willard Puffett. The workings consist of 45[illegible] feet of drift with two short crosscuts from it; the vein has been stoped for a distance of 80 feet to a maximum of 47 feet above the sill. All workings are timbered with the back lagged, excepting for the sets near the portal the timbers are for the most part sound. The mineralization exposed in this adit consists of lenses of pyrite, chalcopyrite with associated black tourmaline. The ore remaining on the edges of the stope varies in width from less than an inch to six inches of solid sulfides. The maximum stope width is slightly over three feet; however, it is doubtful

that the sulfide lenses were that wide. From what could be seen (subject to assay returns) there are no ore reserves indicated in the No. 2 adit.

At the time of the visit the operator had four men, including his son, attempting to reopen the No. 3 adit. The portal had been cleared and the adit cleaned out for a distance of 79 feet, at which point there was a bad cave of undeterminable length. The adit is timbered with sets on 5-foot centers back and sides lagged.

From what was observed, the operator had no one who was experienced in mining connected with the operation. The equipment which they are working with is inadequate. A number of suggestions were made to the operator in an attempt to help him with the difficulties encountered.

E. A. Magill

CC: 3-Wash
2-USGS
BMEA
M/D
EAM

EAM:kt

Form ME-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JAN 20 1953

# OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of Aug - Sept, 1952 Docket No. DMEA 1608x Contract No. IDM-E 383
Operator's Name Mount Rainier Mining Co Minerals Copper & Molybdenum
Address 1627 15th Ave., Seattle 22, Wash
Contract Amount, $ 3000.00 Government Participation: 50 % Amount, $ 1500.00

| ITEMS OF COSTS | FOR OPERATOR'S USE | | | FOR GOVERNMENT USE ONLY | | |
|---|---|---|---|---|---|---|
| | Monthly Total | Totals Previously Reported | Totals To Date | Approved Monthly Total | Approved Totals Previously Reported | Approved Totals To Date |
| (1) Independent Short Form Contracts: | | | | | | |
| Drilling | | | | | | |
| Bulldozing | | | | | | |
| Crosscutting | | | | | | |
| Drifting | | | | | | |
| Opening Tunnel #2 | 1500.00 | — | 1500.00 | | | |
| (2) Labor and Supervision: | | | | | | |
| Labor | | | | | | |
| Supervision | | | | | | |
| Technical Services | | | | | | |
| (3) Operating Mat'ls. and Supplies: | | | | | | |
| Timber | | | | | | |
| Explosives | | | | | | |
| Pipe | | | | | | |
| Track | | | | | | |
| (4) Operating Equipment: | | | | | | |
| Rental | | | | | | |
| Purchase | | | | | | |
| Depreciation | | | | | | |
| (5) Initial Rehabilitation and Repairs | | | | | | |
| (6) New Bldgs., Improvements, etc. | | | | | | |
| (7) Miscellaneous: | | | | | | |
| Repairs to Equipment | | | | | | |
| Sampling and Analysis | | | | | | |
| Payroll Taxes | | | | | | |
| Liability Insurance | | | | | | |
| (8) Contingencies (specify): | | | | | | |
| TOTALS | 1500.00 | | 1500.00 | 1500.00 | | 1500.00 |

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Jan 7, 1953 *Payee Mount Rainier Mining Co

Per [signature] Title Sec & Treas

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

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

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

750.00

$ 750.00

Signature [signature] (Authorized Certifying Officer)

Date 1/16/53 Vou. No. (See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. E 3 83 in accordance with the terms of the contract.

Signature /s/ Webster S Anderson Title Mining Engr Date 1/12/53

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature /s/ E. A. Magill Title Mining Engr Date 1/12/53

# MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

*Preparation of Form MF-104—Operator's Monthly Report and Voucher.*—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration

JAN 2 0 1953

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

# OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of Aug-Sept 1952 Docket No. DMEA 1608x Contract No. 1DMF 383
Operator's Name Mount Rainier Mining Co Minerals Copper & Molybdenum
Address 1627 15th Ave Seattle 22, Wash

| OPERATION | Unit | Costs This Month | Units This Month | Costs to Date | Units to Date | Unit Costs to Date | Authorized by Contract: Units | Authorized by Contract: Unit Costs |
|---|---|---|---|---|---|---|---|---|
| Drifting | | | | | | | | |
| Crosscutting | | | | | | | | |
| Raising | | | | | | | | |
| Shafts | | | | | | | | |
| Winzes | | | | | | | | |
| Drilling: Core | | | | | | | | |
| Churn | | | | | | | | |
| Auger | | | | | | | | |
| Stripping | | | | | | | | |
| Trenching | | | | | | | | |
| Test Pits | | | | | | | | |
| Roads and Trails | | | | | | | | |
| Opening Tunnel #2 | | 1500.00 | 1 | 1500.00 | 1 | 1500.00 | 2 | 1500.00 |
| Total Distributed Costs | | | | | | | | Total Costs Authorized by Contract |
| Operating Equipment Purchased | | | | | | | | |
| Initial Rehabilitation and Repairs | | | | | | | | |
| New Buildings, Improvements, etc. | | | | | | | | |
| Total Costs | | 1500.00 | | 1500.00 | | | | |

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

Date Jan 7, 1953 Operator Mount Rainier Mining Co

Per Ole Oakland Title Sec Treas

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

Remarks:

(Instructions on reverse)

(For Government use only)

## INSTRUCTIONS

*Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.*—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
So. 157 Howard Street
Spokane 4, Washington

DMEA(d)

September 12, 1952

Memorandum

To: A. E. Weissenborn, Executive Officer, DMEA Field Team, Region II

From: Willard P. Puffett, Geologist, U. S. Geological Survey

Subject: Routine inspection of progress at Mt. Rainier Mining Company property, Pierce County, Washington, under contract Idm-E383. Docket No. DMEA-1608X (Copper and Molybdenum)

A routine inspection was made of the Mt. Rainier Mining Company property on Monday, September 8, 1952. I was accompanied on this inspection by E. A. Magill, U. S. Bureau of Mines. Mr. Ole Oakland and son accompanied us to the property, where three laborers were at work.

Work was progressing at the property under terms of the unit-cost contract, wherein only one unit was concerned, the job of clearing tunnels No. 2 and 3, for inspection and sampling.

Sufficient work had been done at tunnel No. 2 to permit ingress and mapping of the workings. A tape and compass survey was made and five samples were taken of the mineralized fault zone. This tunnel now measures 255 feet long from the first solid timbered set to the face. Indications are that approximately 35 feet of the timbered adit had caved and been removed at the portal. The entire workings consisting of 255 feet of drift, 35 feet of drift on a crosscutting fault, another short 15 foot crosscut, and an 80 foot long and 28 foot high stope, had been timbered when the original work was done. The stope was a filled-square-set type, but a great amount of the fill had run into the adit level by the time of the inspection.

Inasmuch as the adit level was timbered and the entire length of back with the exception of two sets was completely lagged it was difficult to obtain a great amount of geologic information concerning

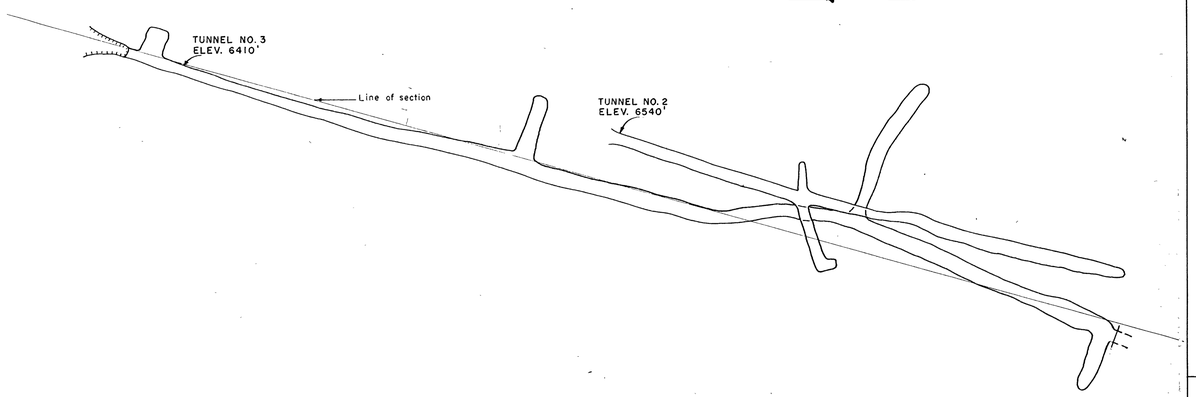
the mineralized structure on which the drifting had been done. From the information obtained though, it is believed a mineralized fault structure was drifted on, and in all probability this steeply dipping fault was kept near the left wall of the drift. As exposed on the surface directly above the present portal, the fault is not more than one-foot wide. Eighty-two feet from the present portal stoping had been started that continued for 30 feet above the adit level. This stope averages three sets high above the adit sill, but four contiguous sets had been mined four sets above the sill. Exposed in the back of the stope is a fault structure that ranges from 2 to 12 inches wide. Sporadically contained in this fault zone are lenses of chalcopyrite generally associated with copious quantities of black tourmaline (schorlite ?). Indications are that this fault structure was followed in the drift for at least 90 feet beyond the end of the stope. Remnants of the mineralized portions remain on the drift wall but apparently the zone never widened sufficiently for more stoping to be initiated. The face of the adit is in barren ground, only a narrow crosscutting fault being exposed there.

Ninety-two feet from the present portal, a tunnel consisting of seven timbered sets had been made at nearly right angles to the west of the main adit. At the end of this tunnel a five-foot crosscut had been made to the left (south). Here there is exposed two mineralized faults, one trending slightly south of west and the branching one trending nearly southwest. Apparently the tunnel had been a drift on the former structure. Chalcopyrite and tourmaline are present in and bordering these fault structures, the width of the mineralized zone being not more than 18 inches at the widest occurrence.

The present portal of No. 3 tunnel is 120 feet slightly east of north and 130 feet lower in elevation than the portal to tunnel No. 2. Access could be gained to only 79 feet of this tunnel, which probably represents 109 feet of the original tunnel as again on this tunnel level evidence indicates that approximately 30 feet of portal has been caved and removed. A bad cave had been encountered in this tunnel and efforts were being made to get through the broken ground. No map was made of this tunnel inasmuch as the ore zone had as yet not been intersected. Both tunnels had been driven in volcanics, the upper tunnel in a light gray felsite and the lower tunnel in slightly porphyritic volcanic of probable rhyolite composition. Samples were taken at various locations on the mineralized fault structure in tunnel No. 2, but assay results have not yet been obtained. No copy of the map made as a result of this inspection accompanies this report as it is believed that the project will be soon completed and after the final examination, a composite map of the workings of the two tunnels giving pertinent geology and assay results of samples taken will be submitted with the final report.

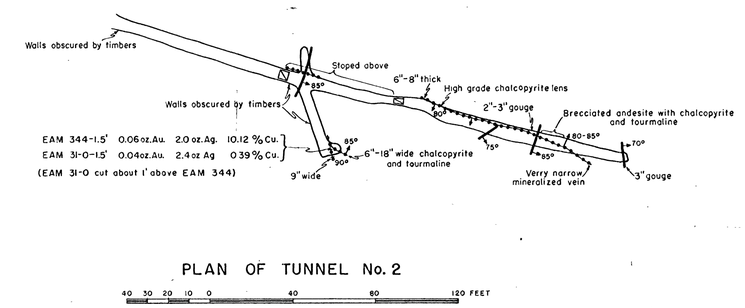
Willard P. Puffett

cc: DMEA (4)
USBM (2)
Puffett



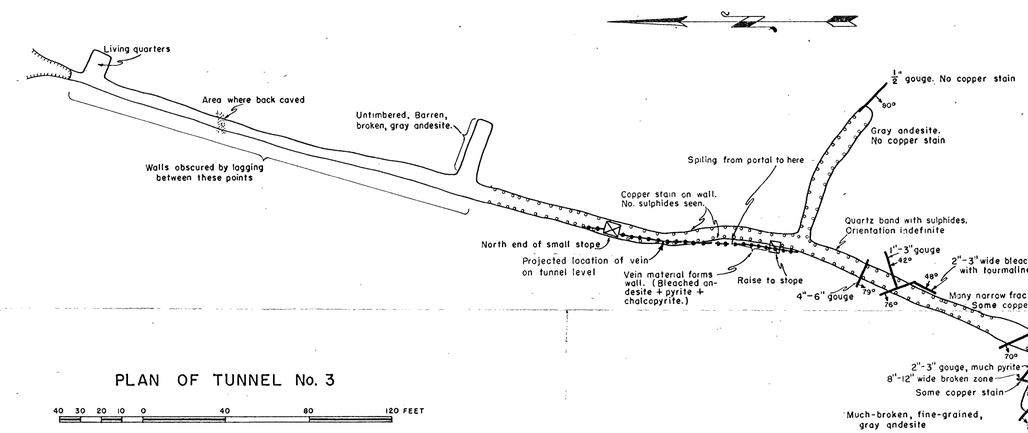

COMPOSITE PLAN OF TUNNELS 2 AND 3

40 30 20 10 0 40 80 120 FEET



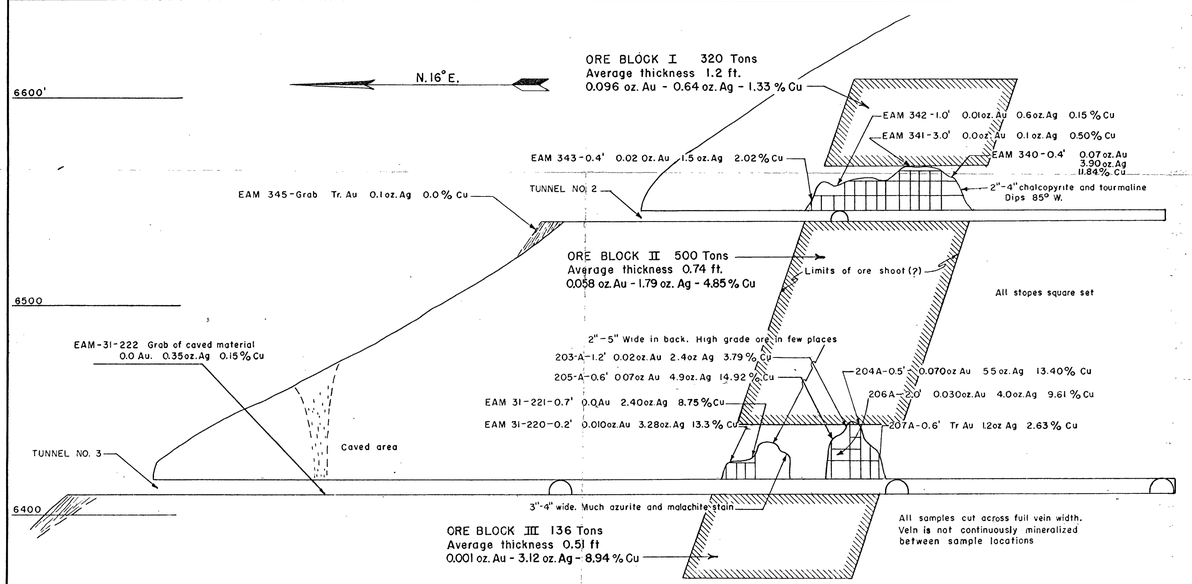

PLAN OF TUNNEL No. 2

40 30 20 10 0 40 80 120 FEET




PLAN OF TUNNEL No. 3

40 30 20 10 0 40 80 120 FEET




VERTICAL SECTION THROUGH TUNNELS 2 AND 3

TUNNEL NO 2 PROJECTED TO SECTION

40 30 20 10 0 40 80 120 FEET

TUNNELS No. 2 AND No. 3

STARBO MINE

MT. RAINIER MINING COMPANY

T. 16 N. R. 9 E.W.M. ( Unsurveyed )

MT. RAINIER NATIONAL PARK

PIERCE COUNTY, WASHINGTON

Brunton and tape survey 9/8/52, 10/12/52, 10/23/53
W. P. Puffett, U.S.G.S.
E. A. Magill and W. S. Anderson, USBM