224 New Customhouse
Denver 2, Colorado

March 16, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 2716 (Tungsten), Contract Idm-E567, U.S. Tungsten, Inc., Hubnerite Mine, Gunnison County, Colorado

Enclosed are the following final reports pertaining to work completed under the subject contract:

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

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

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

Final payment to the operator was processed by this office February 14, 1955, in conformance with the Report of Review by the Contract Administration and Audit Division dated December 1, 1954.

The exploration work consisted of rehabilitation of the portal of the tunnel and 200 feet of drifting and crosscutting at a total accepted cost of $9,775.00, in which the Government participated to the extent of 75% or an amount of $7,331.25.

The exploration work did not result in a discovery or development of tungsten ore, therefore a certification of such is not recommended.

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

JWT:jp
cc Subject
Chron
Shaw w/encls
Harshman w/encls
Townsend

Enclosures

DMEA
Date Rec'd,
FEB 14 1955
BUREAU OF MINES
Denver, Colorado

U. S. Tungsten, Inc.
1111 S. Windermere Ave.
Littleton, Colorado

February 11, 1955

Mr. W. H. King
Executive Officer, DMEA
Field Team, Rgn.IV
224 Custom House
Denver 2, Colorado

Re: Docket No. DMEA 2617
Contract Idm - E567

Dear Mr. King:

Enclosed please find final geologic report and maps relative to work done under referenced contract.

We regret the delay in getting this report to you and hope that it has not inconvenienced you too much. We appreciate your assistance in handling this matter for us.

Very truly yours,

Paul E. Austgen

Paul E. Austgen
Vice-president.

PEA/hm.

FINAL REPORT
AND
SUMMARY OF WORK COMPLETED UNDER DMEA 2617
CONTRACT IDM E-567

EXPLORATION WORK WAS STARTED IN THE OLD CROSSCUT AT POINT P (SEE MAP) AND CONTINUED S 67° W TO POINT 4 WHERE A FAULT ZONE WAS INTERSECTED. AT POINT 5 A QUARTZ STRINGER 4 TO 6 INCHES IN WIDTH, STRIKING S 10° W AND DIPPING 53° E WAS FOUND. THIS STRINGER CONTAINS A GOOD HUBNERITE SHOWING.

AT THIS TIME IT WAS DECIDED TO START AT POINT 6 AND CROSSCUT TO INTERSECT THE VEIN WHICH WAS FOUND IN OCTOBER, 1953.

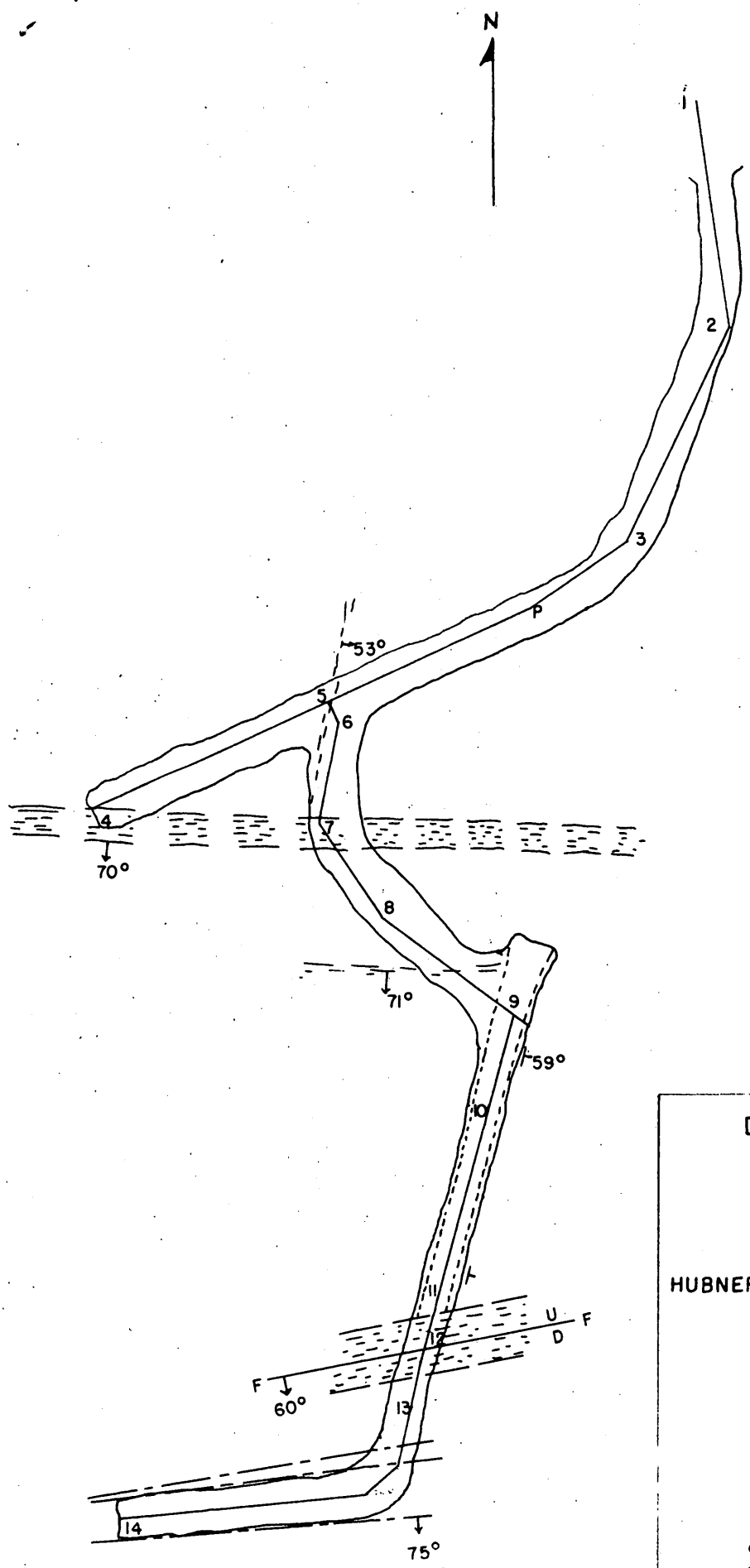
THE FOLLOWING SPRING, WHEN WEATHER CONDITIONS PERMITTED, DRIFTING WAS COMMENCED ALONG THE STRIKE OF THE VEIN, S 13° W. THIS VEIN WAS DISCOVERED TO CONTAIN LARGE QUANTITIES OF PYRITE AND ONLY SMALL SHOWINGS OF HUBNERITE. A FAULT WAS INTERSECTED AT POINT 12 AND THE VEIN WAS DISPLACED TO THE WEST. THIS WAS DETERMINED BY EVIDENCE FOUND IN THE FAULT ZONE.

THE BEARING OF THE DRIFT WAS THEN CHANGED TO S 85° W IN HOPES OF ENCOUNTERING THE VEIN. THE PROJECT WAS DISCONTINUED AT POINT 14 WHEN 200 FEET OF DRIFT WAS COMPLETED.

RESPECTFULLY SUBMITTED,

Elliot Goldstein

ELLIOT GOLDSTEIN



LEGEND

VEIN

TUNNEL WALLS

FAULT GAUGE ZONE

JOINT ZONE

SCALE: 1" = 20'

DOCKET DMEA 2617
CONTRACT Idm 567
VIII
GEOLOGIC MAP

HUBNERITE EXPLORATION PROJ.

ORIGINAL BY

J. KENT BUEHLER

ADDITIONS BY

E. H. GOLDSTEIN

NOV 1, 1954

E H Goldstein

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

February 3, 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 2617 (tungsten), Contract Idm-E 567, U. S. Tungsten, Inc., Hubnerite mine, Gunnison County, Colorado

Enclosed are the original and 8 copies of my final geologic report on the exploration completed under Contract Idm-E 567.

The geologic aspects of the project are described and it is concluded that a discovery of ore grade material was not made and the project should not be certified. It is concluded also that no further exploration with Government assistance is warranted in the Hubnerite mine area.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (9)

ENHarshman:arh

U. S. TUNGSTEN, INC.

HUBNERITE MINE, GUNNISON COUNTY, COLO.

DMEA Docket 2617

Contract Idm-E 576

Final Geologic Report

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

U. S. TUNGSTEN, INC.
HUBNERITE MINE, GUNNISON COUNTY, COLO.
DMEA Docket 2617, Contract Idm-E 576
Final Geologic Report

INTRODUCTION

U. S. Tungsten, 1111 S. Windermere Rd., Littleton, Colorado, applied to the Defense Minerals Exploration Administration for Government assistance to explore for tungsten ore (hubnerite) on a group of 23 patented and 20 unpatented claims in the Complex and Gold Hill areas, Tincup and Quartz Creek mining districts, Gunnison County, Colorado.

In the application for assistance, U. S. Tungsten, Inc., proposed to explore the complex vein by rehabilitating old workings and, if warranted, by subsequent drifting on the vein. In the Gold Hill area they proposed to explore several known and inferred veins by trenching, test pitting, and diamond drilling. The total cost of the program was estimated by the applicant to be $33,000.

At the time of the original field examination representatives of U. S. Tungsten, Inc., requested revision of the application to eliminate diamond drilling, test pitting, and trenching in the Gold Hill area and to substitute crosscutting to and drifting on the Hubnerite vein (figure 1).

The properties of U. S. Tungsten, Inc., were examined on July 31, 1952 by R. R. McLellan and R. D. Berkenkotter of the U. S. Bureau of Mines, and E. N. Harshman, U. S. Geological Survey. They

were accompanied by H. L. Funk, J. M. Boyle, and Fred Leach of U. S. Tungsten, Inc., H. R. Koster and Arthur Pearson, owners of the claims, and W. E. Burleson, consulting engineer for U. S. Tungsten, Inc.

The examining team recommended exploration on the Complex and Hubnerite veins. The Field Team denied that portion of the program recommended for the Complex mine for it was their opinion that the proposed rehabilitation, mapping, and sampling were not exploration.

The exploration project was justified on the presence of considerable hubnerite-bearing material in the dumps of several caved adits and in the overburden in the Hubnerite mine area, and on observations of prior workers in the area. The project did not, however, result in a discovery of ore.

LOCATION AND ACCESSIBILITY

The Gold Hill claim group of U. S. Tungsten, Inc., is located in sections 10, 11, 12, 13, 14, and 15; T. 51 N., R. 4 E., New Mexico Principal Meridian and in section 31, T. 15 S., R. 81 W., 6th Principal Meridian, Tincup mining district, Gunnison County, Colorado. The claims are on Cumberland Pass and lie at altitudes of from 11,000 feet to 12,100 feet. They are reached by way of State Highway 162 to Pitkin, Colorado, thence over the Pitkin-Tincup Forest Service road to the Cumberland Pass area (fig. 1). The claims are accessible only in the summer months.

GEOLOGY

The claims are in an area underlain by fine-grained, gneissic, quartz monzonite believed to be pre-Cambrian in age. Where unaltered the rock contains quartz, plagioclase, biotite, and various accessory minerals; it is light grey. Near zones of hydrothermal alteration the biotite and some of the feldspar has been converted to sericite and the rock has a bleached, pale yellow or reddish hue. Immediately northeast and southwest of the tungsten-bearing area, Paleozoic sedimentary rocks overlie the quartz monzonite.

Several small quartz porphyry dikes cut the quartz monzonite in the Cumberland Pass area. They appear to be pre-mineral but may be related to the period of igneous activity that gave rise to the ore deposits.

The veins of the Gold Hill (Cumberland Pass) area are relatively short quartz-filled fissures in quartz monzonite. Figure 1 shows the locations of all known veins and those inferred from float. They contain hubnerite, scheelite, molybdenite, pyrite, chalcopyrite, tetrahedrite, galena, and sphalerite in a quartz gangue. Banding is pronounced and at least two periods of mineralization are indicated - an early stage in which molybdenite is the predominant ore mineral, and a later stage in which hubnerite and chalcopyrite predominate.

Hubnerite, the only known mineral of economic importance in the Hubnerite mine area, occurs in tabular or prismatic crystals as much as 2 inches long. The hubnerite crystals are light brown and translucent and appear to be of a low iron variety.

The Hubnerite vein is not exposed on the surface but the location of its outcrop is inferred from old caved workings and from hubnerite-bearing float in the talus on the north slope of Cumberland Pass (fig. 1). A parallel vein some 100 feet west of the Hubnerite vein is similarly inferred from old workings.

Underground the Hubnerite vein, as exposed in the mine workings, consists of a well silicified zone 3-1/2 to 6 feet wide in a quartz monzonite host rock. The vein results from rather intense silicification along a strong shear zone striking N. 15° E. and dipping about 55° southeast. Megascopically at least, the wall rock in the footwall of the vein is relatively unaltered although some disseminated pyrite is present in the walls of the drift. In the hangingwall the quartz monzonite has been bleached, kaolinized, and sericitized.

The vein contains disseminated pyrite throughout its exposed length and an occasional crystal of hubnerite. Some oxiddzation of pyrite, with the formation of iron oxides, is noted along the hangingwall of the vein, probably the result of circulating surface waters moving down the dip of the vein. Although powellite and scheelite have been reported from veins in the Gold Hill area, examination with a Mineralite failed to disclose the presence of either mineral in the Hubnerite vein.

Faulting, not apparent on the surface due to a thick mantle of talus, has broken the Hubnerite vein into several short segments only one of which was explored under this contract. The two faults encountered in the Hubnerite mine are shown on Figure 2. They are

prominent structures consisting of 3 to 6 feet of brecciated wall rock and gouge, somewhat silicified and containing very minor amounts of pyrite and hubnerite. On both structures the hangingwall has been downthrown and the vein displaced to the west. The major movement on these faults has been post-ore although the presence of pyrite, hubnerite, and silicified material along them indicates that they may have originated toward the close of the mineralization epoch in the Gold Hill area.

THE EXPLORATION PROJECT

Contract Idm-E 576 authorized the expenditure of $9,775.00 (Government participation $7,331.25) in a two-stage program of exploration for tungsten ore on the Hubnerite vein. Stage I was to consist of 50 feet of rehabilitation in the Hubnerite adit and 100 feet of crosscutting to and drifting on the Hubnerite vein. Stage II was to consist of additional drifting on the Hubnerite vein, not to exceed 100 feet. DMEA approval was required prior to the start of work under Stage II.

Work under the contract was started on or about August 1, 1953. After completing rehabilitation of the old Hubnerite crosscut, it was extended 59 feet southwesterly in an attempt to locate the Hubnerite vein (fig. 2). At that point, approximately 120 feet from the portal, a strong fault was encountered and it became apparent that the Hubnerite vein had been faulted and that the faulted segment lay southeast of the crosscut. A new crosscut was started about

33 feet back from the face of the southwest crosscut and after extending it a distance of 41 feet south and southeasterly, the Hubnerite vein was encountered. This work completed exploration under Stage I of the contract.

On September 30, 1953, the contractor was authorized to proceed with 25 feet of the 100 feet of drifting allotted under Stage II of the contract. This footage was expanded in crosscutting through the vein and drifting 19 feet along it.

Amendment No. 1, dated March 2, 1954, authorized a recess of explorations from November 3, 1953, to June 1, 1954, and extended the completion date from January 10, 1954, to October 31, 1954.

On July 28, 1954, the 75 feet of drifting remaining under Stage II of the contract was authorized. The drift was extended on additional 30 feet at which point the Hubnerite vein was cut off by a strong fault striking N. 15° E. and dipping 57° southeast (fig. 2). The remaining 45 feet of work authorized under Stage II was spent in an unsuccessful attempt to locate the faulted segment of the vein.

CONCLUSIONS AND RECOMMENDATIONS

Although the Hubnerite vein was proven to be a well defined, strong, intensively silicified, structure the exploration project did not result in the discovery of ore grade material. Assays of samples taken by the Bureau of Mines and shown on Figure 2, indicate that although selected samples may contain appreciable amounts of tungsten (i.e. sample M.H.S. 70) the average grade of the vein material will be well below 0.10 percent.

It, therefore, is recommended that no Certification of Discovery be issued. Additional exploration at the Hubnerite mine, with Government assistance, does not appear warranted.

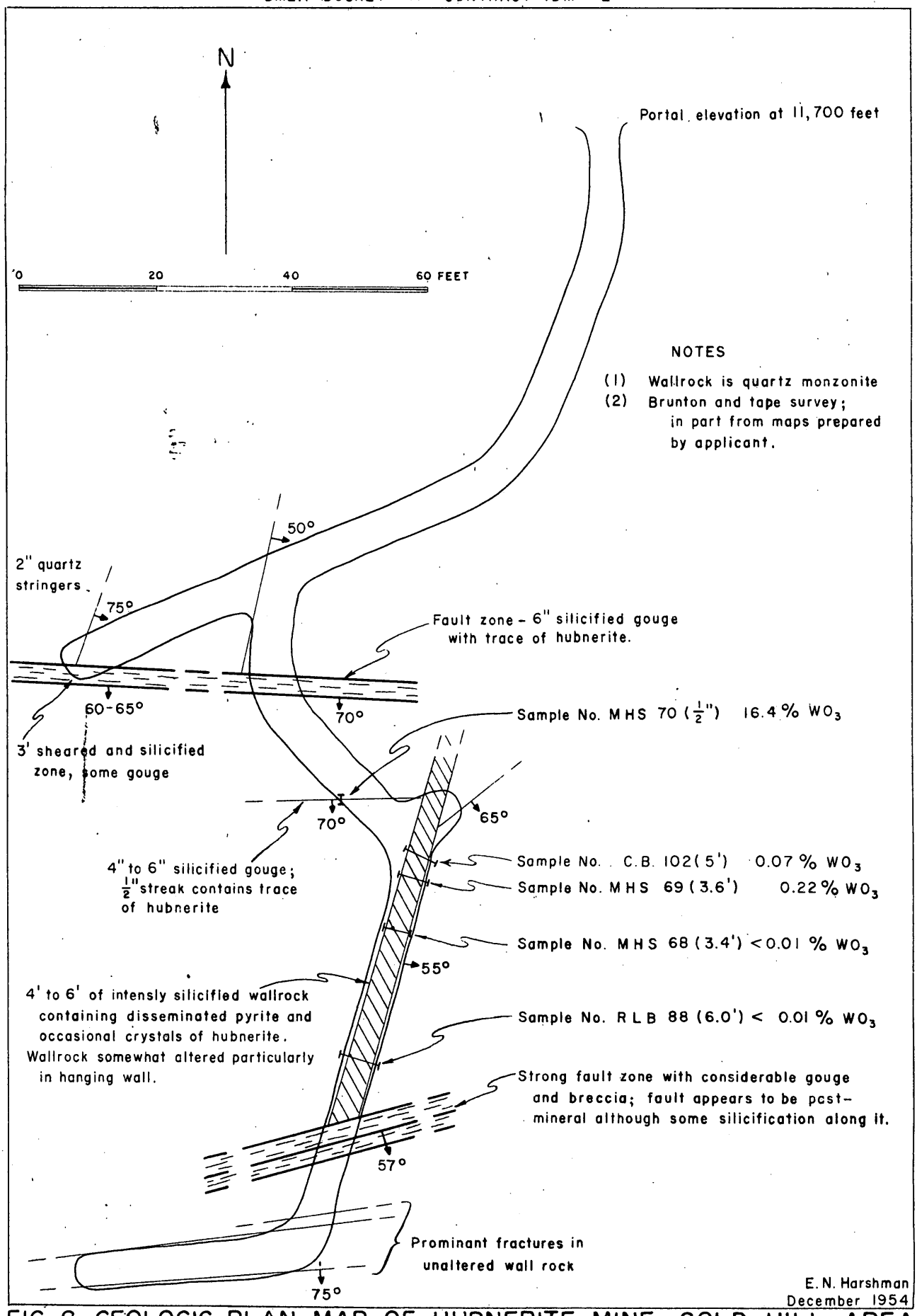


FIG. 2 GEOLOGIC PLAN MAP OF HUBNERITE MINE, GOLD HILL AREA
GUNNISON COUNTY, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

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

DMEA
Date Rec'd.
MAR 7 1955
BUREAU OF MINES
Denver, Colorado

March 7, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw

Subject: Final Engineering Report, Docket No. DMEA 2617, Exploration Project Contract Idm-E567, Hubnerite Mine, U. S. Tungsten, Inc., Gunnison County, Colorado.

Enclosed are the original and 8 copies of the "Final Engineering Report" by R. L. Bolmer, covering Contract Idm-E567.

Under the terms of the contract, the operator rehabilitated the adit portal, drifted and crosscut 200 feet at a cost of $9,775.00. The project did not result in the discovery of tungsten ore reserves and it is recommended that the contract be closed without a certification of the project as a discovery or development.

JOHN F. SHAW

John F. Shaw

cc 8
DMEA
Chron

JFS:mh

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

FINAL ENGINEERING REPORT

DMEA 2617, Exploration Project Contract Idm-2567

Hubnerite Mine

U. S. Tungsten, Inc.

Gunnison County, Colo.

Tungsten

R. L. Bolmer, Mining Engineer

February 21, 1955

DMEA 2617
Contract Idm-E567

HUBNERITE MINE
U. S. TUNGSTEN, INC.
GUNNISON COUNTY, COLO.

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DMEA 2617
Contract Idm-2567

HUBNERITE MINE
U. S. TUNGSTEN, INC.
GUNNISON COUNTY, COLO.

FINAL ENGINEERING REPORT

By

R. L. Bolmer

INTRODUCTION AND SUMMARY

Certain exploratory work for tungsten, authorized at the Hubnerite mine, Gunnison County, Colo. under the provisions of Exploration Project Contract Idm-2567, was completed November 1, 1954. Project exploration at the property did not result in the discovery or development of significant reserves of tungsten ore and a certification of the project as a discovery or development under the terms of the contract, therefore, was not recommended. Further exploration of the property with Government assistance was not considered warranted.

Application for financial assistance to explore for tungsten in and near the Complex, Ida Mae, and Hubnerite mines, Quartz and Timcup Mining Districts, Gunnison County, Colo. (Docket No. DMEA 2617) was submitted in July 1952. The applicant, U. S. Tungsten, Inc., proposed to open and rehabilitate the Complex mine and, if conditions encountered warranted, to drift on the Complex vein. Exploration of several known and inferred veins in and adjacent to the Ida Mae and Hubnerite mines by means of trenching, test pitting, and diamond drilling also was proposed. The total estimated cost of the proposed project was $33,000.00.

The property was inspected July 31, 1952 by an examining team from the Bureau of Mines and the Geological Survey who concluded that only

the Complex and Hubnerite veins showed sufficient indications of tungsten ore to justify a limited program of exploration. A modified program involving the reopening and rehabilitation of the Complex mine for the purpose of mapping and sampling was recommended by the examining team. Rehabilitation of the Hubnerite adit and crosscutting to and drifting on the Hubnerite vein also was recommended.

The DMEA Field Team did not accept that portion of the program recommended for the Complex mine on the basis that mapping and sampling in itself was not an exploration objective was not an exploration objective and that there was not then available sufficient data on which to justify an exploration project. Government assistance in an exploration project at the Hubnerite mine, however, was approved and the short form Exploration Project Contract Idm-E367 was prepared.

The contract agreement was between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration and U. S. Tungsten, Inc., a Colorado corporation, whose present mailing address is 1111 South Windemere Ave., Littleton, Colo. The agreement, 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", was dated July 10, 1953. U. S. Tungsten, Inc., the operator under the contract, agreed to commence work on a project of exploration for tungsten at the Hubnerite property within 60 days from the date of the contract and to bring the project to completion within a period of 6 months from the date of the contract.

The project specifically outlined in the contract was divided into two stages. Stage I involved the rehabilitation of the existing Hubnerite crosscut adit for an estimated distance of 50 feet, extending the existing crosscut an estimated 25 feet to the Hubnerite vein, and

drifting 75 feet southwesterly on the vein. Stage 2 involved an additional 100 feet of drifting on the vein. Its performance required the prior written approval of the DMEA Field Team and was dependent upon favorable indications of ore being exposed in the drifting completed under Stage 1.

The agreed upon total estimated costs of the project, in which the Government would participate, were $9,775.00. The Government would pay 75 percent of the agreed costs, in an aggregate total amount not to exceed $7,331.25, as they accrued for units of work actually completed according to the specifications stipulated in the contract. The unit prices agreed to were $775.00 for the complete rehabilitation job and $45.00 per foot for drifting and crosscutting.

Project work commenced on or about August 1, 1953. The existing 63 feet of the Hubnerite crosscut adit had been rehabilitated and extended a distance of 106 feet to intersect the Hubnerite vein by the end of October 1953. Due to the severe weather conditions in the area, the project was recessed for the winter months. Amendment No. 1 to the contract authorized a recess in operations beginning November 3, 1953. It provided for the resumption of project work on or before June 1, 1954 and its completion prior to November 1, 1954.

The drifting authorized southwesterly on the Hubnerite vein was resumed June 18, 1954. At a distance of 39 feet from the crosscut, the vein was displaced along an east-west fault zone. The remainder of the authorized footage was expended in crosscutting through the fault and then in a westerly direction in an unsuccessful attempt to pick up the continuation of the vein. The final work allowed under Stage 2 of the contract had been completed prior to November 1, 1954 and all activity at the property was stopped.

The Hubnerite vein exposed through project exploration was wide and well defined but contained little, if any, tungsten mineral. The hubnerite mineralization that did occur occasionally along its exposed length was very widely disseminated and in no instance approached commercial concentrations.

All of the project work authorized under the contract was completed by the operator. The work was performed in the manner specified in the contract or according to the minor modifications approved during the project by the DMEA Field Team.

During the periods of operation, costs in an aggregate total of $9,775.00 were reported by the operator, approved by the inspecting engineers, and accepted by the Executive Officer, DMEA Field Team. Reimbursement of 75 percent of the total accepted costs of the project, or $7,331.25, was due the operator under the terms of the contract. An amount of $250.00 was withheld from the final monthly payment due the operator pending the receipt of the operator's final project report and the release of the Report of Review by the Contract Administration and Audit Division. To date, the operator's final report has not been received and the final amount due under the contract has not been paid.

LOCATION

The Hubnerite property is located in Sec. 31, T. 15 S., R. 81 W., 6th P.M., and in Sec. 11, T. 51 N., R. 4 E., New Mexico P. M., Tincup Mining District, Gunnison County, Colo. The property lies just north (on the Tincup, Colo. side) of Cumberland Pass in the Sawatch Range. It is most readily accessible from Pitkin, Colo. on State Highway 162. Cumberland Pass (elevation 12,015 feet) is 12 miles north of Pitkin via

the Pitkin - Tincup Forest Service road. The portal of the Hubnerite adit (elevation 11,700 feet) is reached by a 1/2-mile access road branching from the Forest Service road in the vicinity of the pass (Fig. 1). The Forest Service road is maintained during the summer months; it is not kept free of snow and generally impassable during the winter season.

OPERATOR'S PROPERTY RIGHTS

The operator's property rights, as described under Article 2 of the contract, include the patented Little Emma lode mining claim (U. S. Survey No. 7749) and the unpatented Hubnerite Nos. 1, 2, and 3 lode mining claims. The No. 1 claim is recorded in Book 176 at page 585, and the Nos. 2 and 3 claims, in Book 289 at page 31 in the Gunnison County Clerk and Recorder's Office, Gunnison, Colo. The relative locations and extent of the 4 adjacent claims comprising the property rights under the contract are indicated on Figure 1.

A. L. Pearson and/or Bonnie Pearson of Pitkin, Colo. are understood to be the recorded owners of the Hubnerite group of claims. This group, along with some 40 other claims in the area, is leased to U. S. Tungsten, Inc., the operator under the exploration contract. Details on the present ownership, the lease agreement, and the owner's subordination of the property are not on record in the office of the Denver Experiment Station, Region III, Bureau of Mines.

HISTORY AND PRODUCTION

The Cumberland Pass area was prospected for gold and silver in the 1890's. During World War I, the Complex mine was worked for gold, silver, and lead and the Ida Mae and Hubnerite mines, for tungsten.

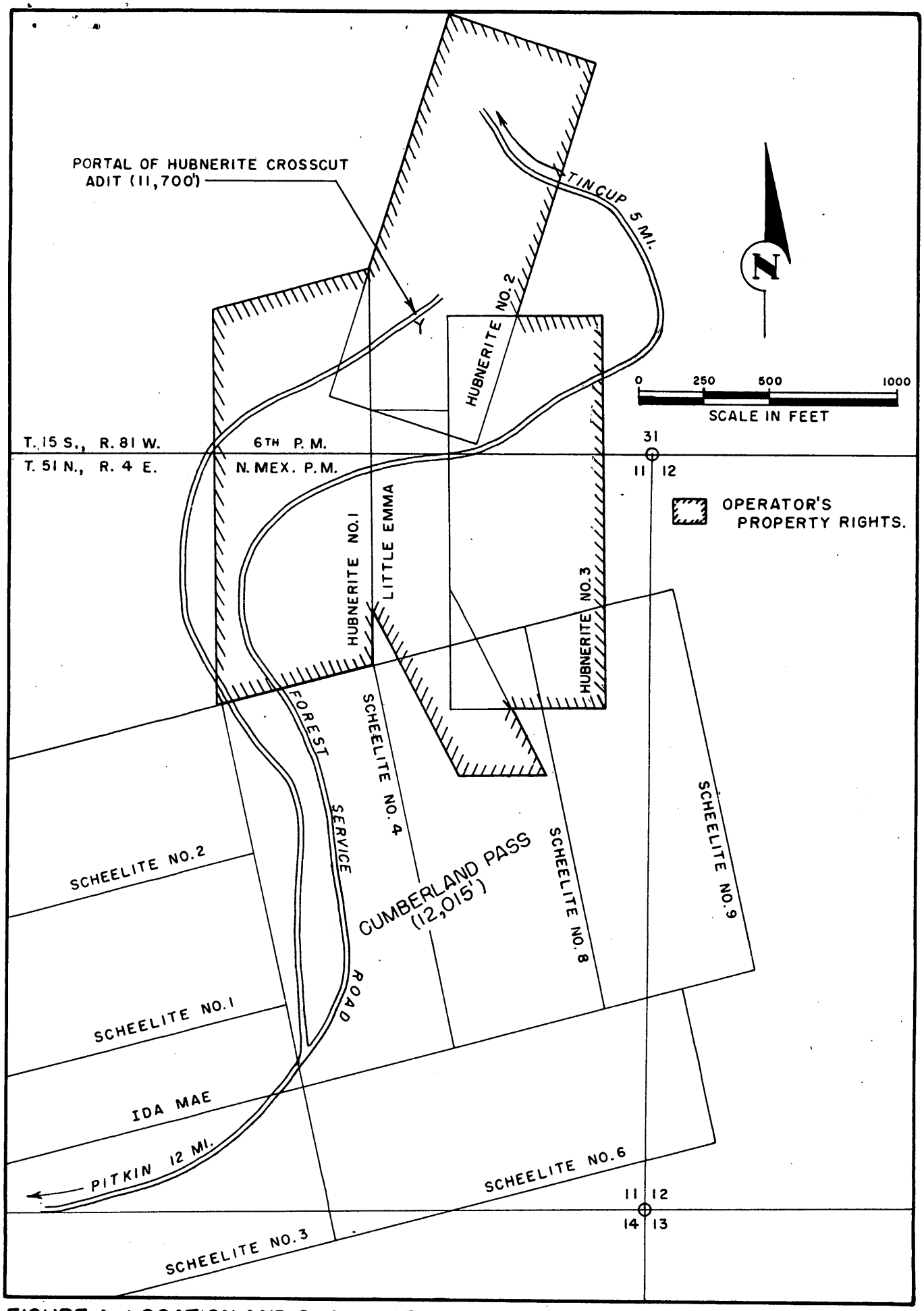


FIGURE 1- LOCATION AND CLAIM MAP, HUBNERITE MINE, GUNNISON COUNTY, COLO.
(DMEA 2617, CONTRACT Idm-E567)

The only recorded production of tungsten from the area was during this period when three carloads of hubnerite ore was shipped from the Ida Mae mine. During World War II, a small amount of tungsten was produced from all three properties.

The properties were idle until August 1951, when U. S. Tungsten, Inc. began exploration and development work on a few of the claims and constructed a small gravity mill in the area. Since that time, the company, in addition to project exploration at the Hubnerite mine, has continued small scale, intermittent work on a few of the claims in the Cumberland Pass area. Such work during 1954 resulted in the production of some 57 tons of ore averaging about 0.5 percent tungsten trioxide which was shipped to custom mills in Boulder County. The production was not derived from the Hubnerite group of claims and, therefore, was not subject to Government royalty.

DESCRIPTION OF THE DEPOSIT

The Hubnerite vein is not exposed on the surface but the location of its outcrop is inferred from old workings and from float in the talus on the northern slope of Cumberland Pass.

The vein has been developed by two drift adits and one crosscut adit driven southwesterly into the steep northern slope of the pass. All of the upper drift and all but the portal of the lower drift are caved and the extent of these workings are unknown. The vein, which is partially exposed in the portal of the lower drift, strikes S. 13° W. and dips 54° easterly. In this location it is about 4 feet wide and contains quartz, pyrite, and minor amounts of hubnerite. Traces of hubnerite also can be found in the old dump material.

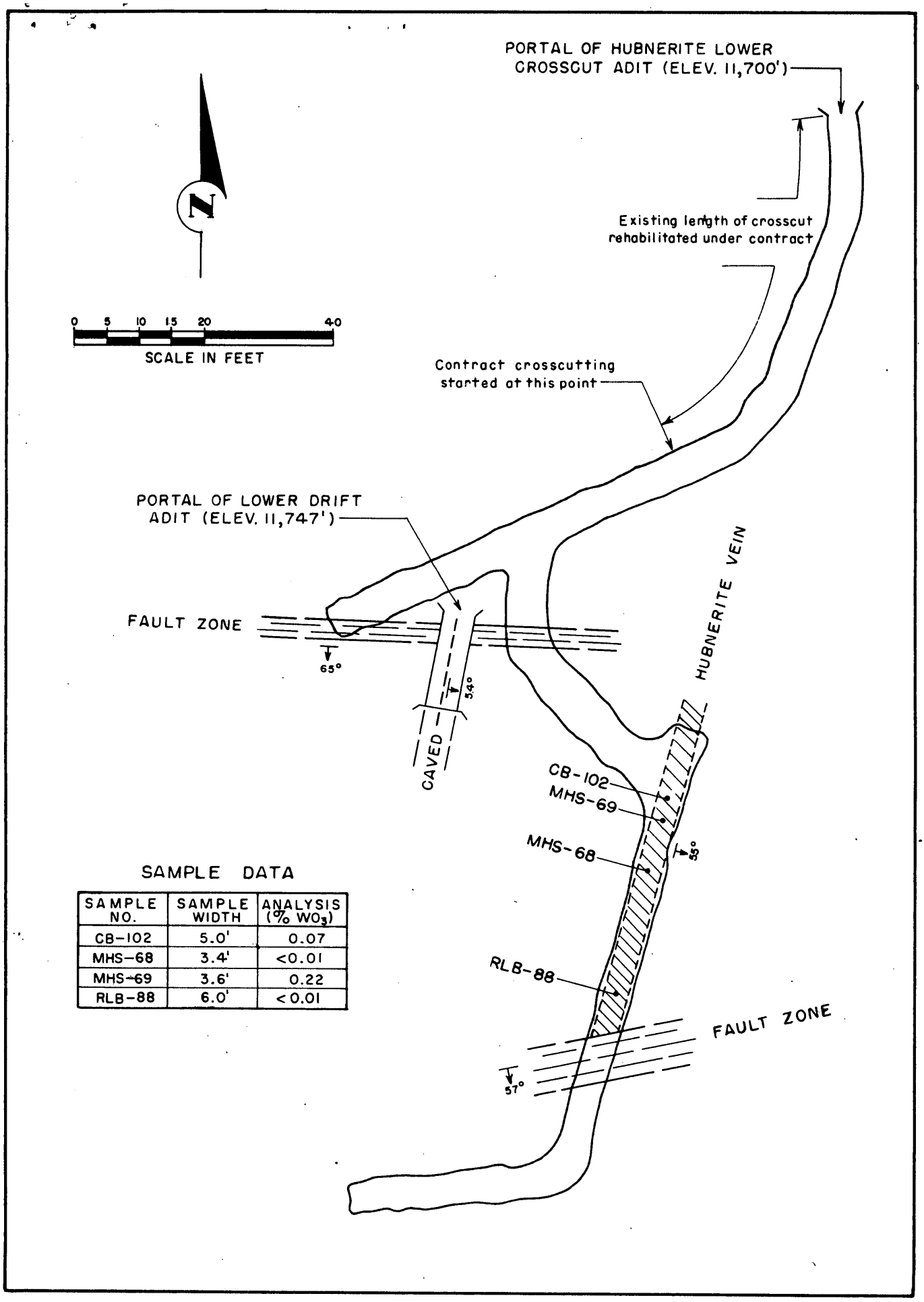
The crosscut adit, which was rehabilitated and extended under the contract, is some 47 feet lower in elevation than the lower drift adit. The vein exposed on this level occupies a shear zone in a host rock of quartz monzonite. The zone ranges from 4 to 6 feet in width, strikes S. 15° W., and dips about 55° southeasterly. It is highly silicified and contains considerable pyrite and an occasional crystal of hubnerite along its exposed length. The vein also contains traces of molybdenite. Scheelite, although reported elsewhere in the district, was not observed in the Hubnerite workings.

The Hubnerite vein appears to be broken into several short segments by a series of east-west trending faults of considerable displacement. Only one such segment of the vein was exposed through project exploration. The short segment of the vein opened along the lower adit level did not contain commercial concentrations of tungsten mineral. The locations and the analyses of the samples taken along the vein on this level have been indicated on figure 2.

WORK COMPLETED UNDER THE CONTRACT

Stage 1 of the authorized project commenced on or about August 1, 1953, the date that the operator's independent contractor moved operating equipment to the property. The existing 63 feet of the lower Hubnerite adit had been cleared of caved material and retimbered by August 11, 1953. Sixteen sets of timber were stood in this section and mine track and a compressed air line were installed.

The extension of the crosscut to intersect the downward projection of the Hubnerite vein was started as soon as its existing length had been rehabilitated. The crosscut was extended southwesterly for 59 feet at which point it intersected a strong east-west fault zone (fig. 2).



SAMPLE DATA

SAMPLE NO.	SAMPLE WIDTH	ANALYSIS (% WO_3)
CB-102	5.0'	0.07
MHS-68	3.4'	<0.01
MHS-69	3.6'	0.22
RLB-88	6.0'	<0.01

FIGURE 2-PLAN OF HUBNERITE MINE, GUNNISON COUNTY, COLO. (DMEA 2617, CONTRACT Idm-E567)

It was probable that the vein had been displaced along this structure and that its faulted segment occurred southeast of the original crosscut. A new heading, directed southeasterly from a point along the original crosscut, intersected the vein September 26, 1953, after an advance of 41 feet. This work expended the footage of drifting and crosscutting authorized under Stage 1 of the contract.

On September 30, 1953, the operator received the Field Team's permission to proceed with 25 feet of the drifting allotted under Stage 2 of the contract. Six feet of this distance, a crosscut through the width of the vein, had been completed when weather conditions forced a recess of project operations.

Operations were resumed on or about June 18, 1954. The remainder of the Stage 2 footage then authorized by the Field Team was expended in drifting southwesterly on the vein. On July 28, 1954, after an inspection and reappraisal of the progress, the Field Team permitted the operator to complete the final 75 feet of drifting allotted under the contract. Drifting southwesterly on the vein was continued. About 39 feet southwest of the crosscut, the vein was displaced along a second east-west trending fault zone. The remaining 55 feet of the contract footage was expended in crosscutting southwesterly through the fault zone and then in a westerly direction in an unsuccessful attempt to pick up the continuation of the vein. This final project work was completed prior to November 1, 1954. The second operating season had drawn to a close and the operator, thereupon, removed all equipment from the site and apparently abandoned the mine.

PROJECT EXPENDITURES

The operator reported and was reimbursed for exploration costs monthly as they accrued during the periods that the project was active. Project costs (summarized below) were reported on the basis of the units of work completed during the reporting period at the unit prices agreed to in the contract. The units of work reported by the operator were verified by engineers of the Bureau of Mines during periodic inspections of the project operations. All of the work reported by the operator was performed in the manner specified in the contract or according to minor modifications approved during the project by the Field Team.

Project costs in an aggregate total amount of $9,775.00 were reported by the operator for work completed, approved by the inspecting engineers as conforming with the terms of the contract, and accepted for Government participation by the Executive Officer, DMEA Field Team. Reimbursement of 75 percent of the accepted total costs of the project, or $7,331.25, was due the operator under the terms of the contract. To date, the operator has received reimbursement for only $7,081.25. An amount of $250.00 was withheld from the final monthly payment due the operator pending the receipt of the operator's final project report and the release of the Final Report of Review by the Contract Administration and Audit Division. The operator's final report had not been submitted by the date of this report.

SUMMARY OF PROJECT COSTS REPORTED BY OPERATOR AND ACCEPTED BY GOVERNMENT

Period	Description of Work	Units Completed	Agreed Unit Price	Accepted Amount
Stage 1				
Aug. '53	Rehabilitation of adit portal	Job	$775.00	$775.00
	Crosscutting to vein	55 ft.	45.00	2,475.00
Sept. '53	Crosscutting to vein	45 ft.	45.00	2,025.00

Period	Description of Work	Units Completed	Agreed Unit Price	Accepted Amount
Stage 2				
Oct. '53	Crosscutting through vein	6 ft.	$ 45.00	$ 270.00
June '54	Drifting southwesterly on vein	9.5 ft.	45.00	427.50
July '54	Drifting southwesterly on vein	25 ft.	45.00	1,125.00
Aug. '54	Drifting southwesterly on vein	4.5 ft.	45.00	202.50
Sept. '54	Crosscutting through fault	10 ft.	45.00	450.00
Oct. '54	Crosscutting beyond fault	45 ft.	45.00	2,025.00
	Total reported and accepted costs of project			$9,775.00

PROJECT EQUIPMENT

The contract authorizing the exploration project at the Hubnerite mine was prepared on form MF-200A (Feb. 1952). Under this short form-type of contract, the agreed upon unit prices reflect a reduction for the estimated salvage value of all facilities, improvements, equipment, and materials that may remain unexpended at the completion of the project.

EFFICIENCY OF PROJECT OPERATIONS

The exploration work at the mine was carried out efficiently enough during the periods that the project was active. Project operations, however, were carried out only intermittently. The weather conditions experienced at the elevation of the property prevented operations during the winter months. It is unknown why exploration work during the summer months, when operating conditions were favorable, was not more continuous. The company's operation did suffer from inexperienced management and internal reorganizations. Some difficulty was experienced in attracting independent contractors to perform the project work.

CONCLUSIONS

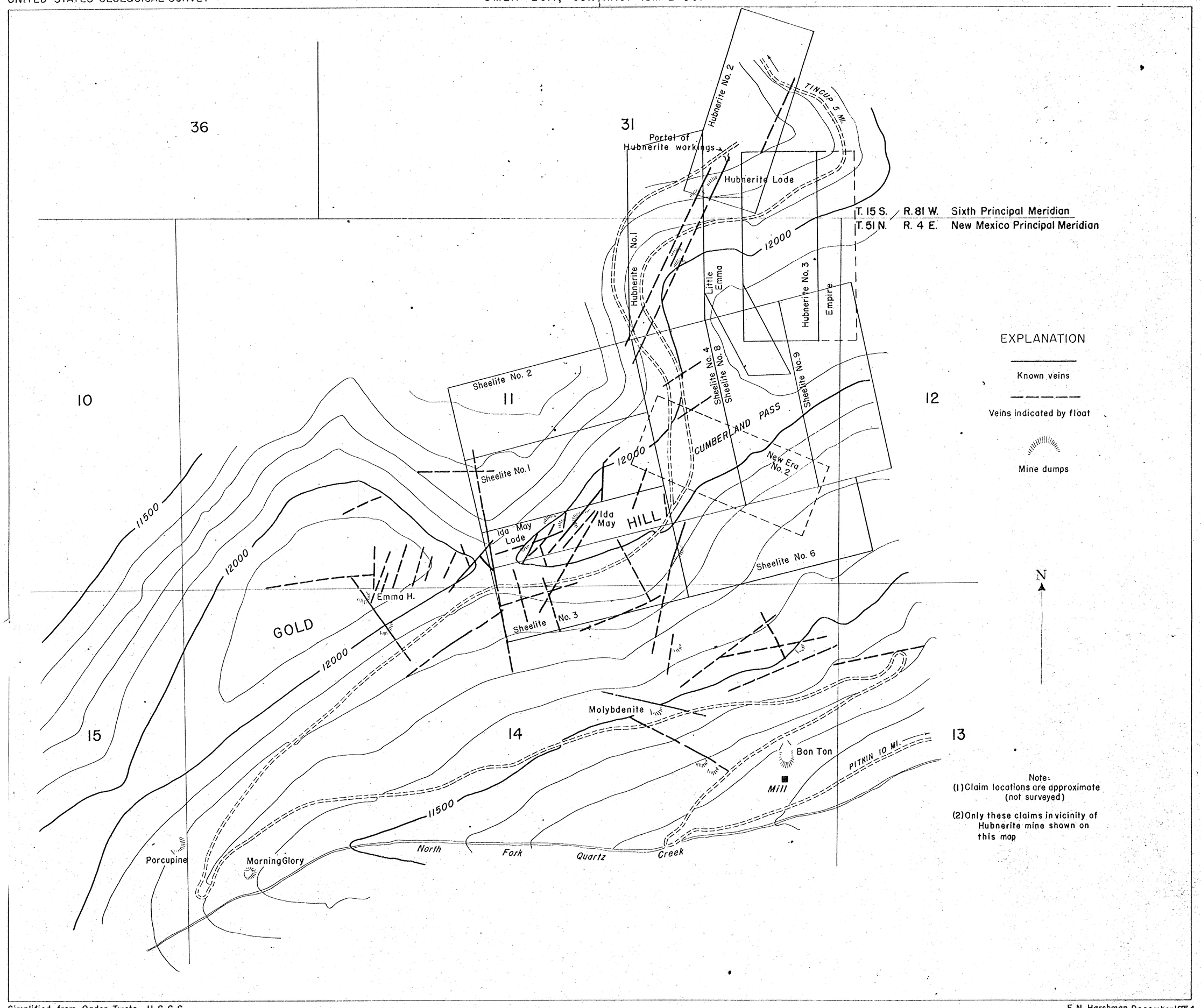
It is concluded that the exploration project at the Hubnerite mine was carried out and completed in the manner specified in the contract. Govern-

ment participation in the allowable costs of the project, therefore, was justified and in order. The exploration work did not result in the discovery or development of tungsten ore reserves. Further exploration of the Hubnerite vein with Government assistance was not considered warranted. It appeared that the operator would not attempt any additional work at the property without such assistance.

RECOMMENDATIONS

Inasmuch as project exploration did not result in the discovery of tungsten ore reserves and it appears that the operator will not continue operations at the property, it is recommended that the contract be closed without a certification of the project as a discovery or development.

mh



Simplified from Ogden Tweto, U.S.G.S.

E.N. Harshman December 1954

FIG. 1.—VEIN LOCATIONS, GOLD HILL AREA
U.S. TUNGSTEN INCORPORATED-GUNNISON COUNTY, COLORADO

500 0 500 1000 feet

Contour interval 100 feet