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

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

Office of
Executive Officer
DMEA Field Team
Region III

January 18, 1952

Memorandum

To: C. O. Mittendorf, Acting Administrator, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMA-982 (Tungsten) - Holmestake Mining Company, Cargo Muchacho Mine, Imperial County, California.

Reference is made to your subject letter to me dated January 4, requesting certain additional information from Mr. Edward M. MacKevett who reported on the subject property on November 1, 1951.

Mr. Bailey of the U. S. Geological Survey contacted Mr. MacKevett who supplied the following information on the Cargo Muchacho Mine:

> "At the time of the examination Mr. Holmes was not interested in any alternative exploration possibilities. His primary aim was to get a loan to recondition and convert the Holmestake Mill. In the event that such a loan was granted I believe he intended to apply for an exploration loan to reopen the workings of the 7th level.
>
> "The 7th level was worked many years ago and none of the rock broken during its development is available for lamping.
>
> "I don't know of any diamond drilling having been done at the Cargo Muchacho Mine. I am of the opinion that the chances of encountering blind veins by diamond drilling are reasonably good, but that the chances of finding scheelite-bearing ore shoots in these veins are only fair. I didn't suggest diamond drilling in my report because of Mr. Holmes' lack of interest in an alternative proposal."

I trust that the above information will fill your needs.

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

HCMiller:ejs
Files - Chron
Copy to E. H. Bailey, USGS

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

Refer to	Noted	Date
	HCM	1/18
Answered		

January 17, 1952

Subject: DMA 982, Holmestake Mining Company, Cargo Muchacho Mine, Imperial Co., California

Mr. H. C. Miller
U. S. Bureau of Mines
1012 Flood Building
San Francisco 2, California

Dear Mr. Miller:

Ed MacKevett has submitted the following information to be used in replying to Mr. Mittendorf's letter of January 4, 1952, in which he asked for further information on the Cargo Muchacho mine.

" At the time of the examination Mr. Holmes was not interested in any alternative exploration possibilities. His primary aim was to get a loan to recondition and convert the Holmestake Mill. In the event that such a loan was granted I believe he intended to apply for an exploration loan to reopen the workings of the 7th level.

" The 7th level was worked many years ago and none of the rock broken during its development is available for lamping.

" I don't know of any diamond drilling having been done at the Cargo Muchacho mine. I am of the opinion that the chances of encountering blind veins by diamond drilling are reasonably good, but that the chances of finding scheelite-bearing ore shoots in these veins are only fair. I didn't suggest diamond drilling in my report because of Mr. Holmes' lack of interest in an alternative proposal. "

Sincerely yours,

Edgar

Edgar H. Bailey

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BUREAU OF MINES
REGION III
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1982 JAN 18 AM 8:42

SAN FRANCISCO, CALIFORNIA

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

Refer to	Notes	Date
Answered		

JAN 4 1952

Mr. H. C. Miller
Executive Officer, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMA 982 - Tungsten
Holmestake Mining Company
Cargo Muchacho Mine
Imperial County, California

Dear Mr. Miller:

Please refer to Mr. Edward M. MacKevett's report dated November 1, 1951, on the subject property.

Mention is made that scheelite appears to be more abundant in the veins and lenses exposed in the lower workings and that Mr. Holmes reports three strong quartz veins exposed on the inaccessible 7th level. Was any of the rock broken during the development of the 7th level accessible for lamping?

Has the mine been diamond drilled for blind veins? If not, did the examination suggest that it should be drilled?

Sincerely yours,

O. Mitterdorf

Acting Administrator
Defense Minerals Exploration
Administration

Copy to Bailey 1/7
with request for
MacKevett's report

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
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1972 JAN 7 AM 9:03

SAN FRANCISCO, CALIFORNIA

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

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

Office of
Executive Officer
DMA Field Team
Region III

November 7, 1951

Memorandum

To: Tom Lyon, Chairman, Coordinating Committee, Defense Minerals Administration, Washington, D. C.

From: Executive Officer, DMA Field Team, Region III

Subject: Docket DMA-932 - Homestake Mining Company, Imperial County, California

Kindly refer to my subject memorandum to you dated November 6. In the third paragraph of the memorandum kindly cross out the word "silver" in the three places where it appears and substitute the word "gold".

H. C. MILLER

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

Copy to E. H. Bailey, USGS

HCMiller:ejs

Files
Chron

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

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

Office of
Executive Officer
DMA Field Team
Region III

November 6, 1951

Memorandum

To: Tom Lyon, Chairman, Consultative Committee, Defense Minerals Administration, Washington, D. C.

From: Executive Officer, DMA Field Team, Region III

Subject: Docket DMA-982 - Holmestake Mining Company, Imperial County, California

Reference is made to your subject letter to me dated July 9, requesting additional information on the subject mining company's property.

Attached are four copies of a report; "DMA-982, Holmestake Mining Company, Imperial County, California (Tungsten)", by Edward M. Mellevett, geologist, U. S. Geological Survey, dated November 1, 1951. As the company also propose to treat custom ore from several smaller mines, the nearest of these were examined and the findings are included with the report.

The examining geologist reports that the Cargo Muchacho mine of the Holmestake Mining Company has 1237 tons of measured ore averaging 0.39 percent WO_3 and 0.16 ounces per ton of silver, 1211 tons of indicated ore averaging 0.36 percent WO_3 and 0.08 ounces per ton silver, and at least 2494 tons of inferred ore averaging 0.31 percent of WO_3 and 0.14 ounces per ton silver. Probably about 25 tons of inferred ore averaging 0.30 percent WO_3 exists in the smaller mines and prospects visited.

The reactivation of the Cargo Muchacho mine is believed to be a marginal venture, and there is little chance of the other mines examined yielding appreciable tonnages of tungsten ore. Factors favoring a custom mill for tungsten in the Yuma area are:

(1) the chance that larger tonnages of tungsten ore might be developed by deepening the workings in the Cargo Muchacho mine.

(2) that such a mill would serve a large area in the southwestern United States and northwestern Mexico, and would encourage prospecting in these areas.

(3) that in view of the limited field investigation of the mines and prospects in the area, there is a possibility of some of the properties not visited developing into good tungsten producers, particularly those in the Chocolate Mountains.

Apparently this is a borderline case and the examining geologist isn't too sure that the loan would be granted. The area about the Holmestake Mine contains a lot of small tungsten properties which were not examined by Mr. McKevett, as there are so many that it would take a long time to do so. These properties, however, should be considered as possible small feeders to a custom mill if one is erected in the vicinity.

The docket and all documents and correspondence pertaining to it are being returned herewith.

H. C. MILLER

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

Attachments

Copy to: E. H. Bailey, USGS

HCMiller:ejs

Files
Chron

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

BUREAU OF MINES
ADMINISTRATION

REPORT OF INVESTIGATION BY FIELD PARTIES
RI 4811

DMA-982, Homestake Mining Company

Imperial County, California

(Tungsten)

Edward M. MacKevett, Geologist
U. S. Geological
Survey

November 1, 1951

Summary

The results of the present investigation indicate that the Cargo Muchacho mine has 1237 tons of measured ore averaging 0.39 percent WO_3 and 0.16 ounces/ton of Au, 1211 tons of indicated ore averaging 0.36 percent WO_3 and 0.08 ounces/ton Au, and at least 2494 tons of inferred ore averaging 0.31 percent WO_3 and 0.14 ounces/ton Au.

Probably about 25 tons of inferred ore averaging 0.30 percent WO_3 exists in the smaller mines and prospects visited. Allegedly there are numerous mines and prospects in the vicinity of Yuma that are potential sources of tungsten ore that were not examined in the present investigation, and a thorough appraisal of the potential contributors of tungsten ore to the proposed custom mill would necessitate further field work.

Introduction

In response to requests from George B. Holderer, Chief, Tungsten Branch, DMA, and Tom Lyon, Director, Supply Division, DMA, Edward M. Mackevett and Howard W. Imbols both of the U. S. Geological Survey investigated tungsten reserves pertinent to DMA application 982. DMA 982 is a request for a production loan of $50,000 to recondition the Holmestake mill and the Cargo Muchacho mine.

The field examination had a two-fold aspect. First to determine as accurately as possible the amount and grade of tungsten reserves in the Cargo Muchacho mine, and, second, to examine several mines and prospects in the vicinity of Yuma which are believed by the applicant to be potential sources of custom ore.

Three days were devoted to examining some of the mines and prospects that are potential shippers of custom ore to the proposed tungsten mill. This investigation involved visiting the mines and prospects listed by the applicant as being the most promising, and also examining ore piles and specimens from several other tungsten prospects. Such an examination is useful in providing a general idea of the tungsten-producing potential of the district, but in view of numerous other reputed tungsten prospects and probable Mexican sources, conclusive data would necessitate further field investigation.

Five days, September 20th to 24th, inclusive, were spent examining the Cargo Muchacho mine. E. A. Holmes, President of the Holmestake Mining Company, and Harvey Harty, Mill Superintendent, Holmestake Mining Company, showed the Survey men the mine, and were helpful in the investigation of not only the Cargo Muchacho but also the other mines visited.

All of the accessible workings in the Cargo Muchacho mine were lamped with an ultra-violet lamp. Detailed geologic maps (one inch equals 20 feet) were made of the ore bodies that lamped the best. The remainder of the accessible workings were hastily mapped (one inch equals 20 feet) on a base map provided by the Holmestake Mining Company. Thirty-six samples were cut in the Cargo Muchacho mine, and these were assayed by the Hydrometallurgical and Ore-Dressing Branch of the U. S. Bureau of Mines, Reno, Nevada.

An additional factor involved in evaluating the Cargo Muchacho and most of the other mines in the vicinity is that these mines contain important quantities of gold in the same veins as the scheelite. For this reason the samples were assayed both for Au and WO_3.

The Shinebright, Shineright, and Gray Point mines were examined by MacKevett and Imhols in the company of Holmes, Hardy, and Herb Gifford, the owner of these mines. An hour or two was devoted to each of these properties during which time they were checked with an ultra-violet lamp and hasty sketch maps made.

About three hours were spent examining the La Colorada mine in the company of John Mueller, the mine owner, and the mine foreman. During this time both the mine workings and surface exposures of the vein were checked with an ultra-violet lamp and a sketch map was made of the underground workings.

The Madre and Padre mines were visited and lamped in the company of Mr. Hardy. About an hour was spent on these mines.

Several of the small mine owners and prospectors were conferred with in the vicinity of Yuma, and numerous specimens and two stockpiles of tungsten ore were examined.

Many of the reputed tungsten prospects were inaccessible because of washed out roads, and others are too widely dispersed throughout Arizona and Southern California to be visited in the present examination.

Cargo Muchacho Mine

Location

The Cargo Muchacho mine is in the southwestern part of the Cargo Muchacho Mountains in Imperial County, California. It is in Secs. 20 and 29, T. 15 S., R. 21 E. SBBM about 12 miles W. 52°W. of Yuma, Arizona.

The mine is easily accessible by travelling northerly on a graded, well-marked dirt road for about seven miles from the road's junction with U. S. Highway 80, about eight miles west of Yuma.

History

The Cargo Muchacho mine has been a large producer of gold since its discovery in 1877, although the mine was idle between 1900 and 1935. The mine is owned by the Tevis Estate and is under lease to the Homestake Mining Company. Scheelite was first recognized in some of the quartz veins of the Cargo Muchacho mine in 1948.

Workings

The accessible underground workings consist of an inclined shaft about 600 feet long at an average incline of around 60 degrees, approximately 3,000 feet of drifts and crosscuts, and extensive stopes, many of which have

been filled with waste rock from previous mining operations. Parts of the mine are inaccessible because of caving (notably the northernmost drifts of the mine which penetrate a zone of easterly-trending faults), and parts are inaccessible because of back filling (mainly the workings of the seventh level which have been rendered inaccessible by back filling the Main shaft below the sixth level).

Geology

The Cargo Muchacho mine is in the southwest part of the Cargo Muchacho Mountains, a low rugged range that rises to a maximum of about 2,000 feet higher than the adjacent alluviated areas. According to Henshaw[1] the Cargo Muchacho Mountains are composed entirely of crystalline, predominately granitoid, rocks. Dark-gray gneissic quartz diorite is the host rock at the Cargo Muchacho mine. The foliation of the quartz diorite trends northerly and dips steeply to the east. Andesite (?) is the only other rock type found in the mine and occurs as a dike about 6 inches thick. A series of northerly-striking, easterly-dipping shear zones cut the rocks in the general vicinity of the mine. Within the shear zones are veins and lens-like bodies of quartz that locally contain gold and tungsten. Quartz monzonite crops out about a quarter of a mile south of the main shaft.

Surface exposures of quartz are sparse in the mine area and aside from a fairly persistent vein in the shear zone that was exploited through the main shaft, consist only of small irregular stringers. Considerable pinching and swelling and changes in dip are evident in the quartz bodies exposed in the underground workings. The quartz bodies attain a maximum thickness about 16 feet but their average thickness is between one and two feet. The dip of the shear zones and contained quartz bodies generally is steeply to the east, but ranges from about 30 degrees eastward to steeply westward. Post mineralization movements have shattered the quartz bodies.

In addition to the northerly-trending shear zones, steeply-dipping cross faults with general easterly strikes are exposed in many of the underground workings. These faults cut the northerly-trending shear zones, generally with minor displacements.

Ore

With the exception of minor ore dragged along cross faults, all of the potential tungsten ore is localized in quartz-rich shoots in the shear zones. Sparse surface exposures, branching shear zones, and variations in dips and strikes preclude the accurate determination of the number of shear zones and the number of potential ore bodies.

Quartz is the dominant constituent of the ore bodies. "Limonite", gold and

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1/ Henshaw, P. C., Geology and Mineral Deposits of the Cargo Muchacho Mountains, Imperial County, California. 38th Report of the State Mineralogist, Calif. State Division of Mines, 1942, p. 148

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scheelite are generally also present. The scheelite appears to be more abundant in the lower workings of the mine. According to the present mine operators, assays that were made early in 1951 indicate an inverse ratio between the concentration of gold and scheelite in the ore bodies, i.e., quartz with a high gold content is low in scheelite and visa versa.

Scheelite commonly occurs as veinlets and surface coatings within the quartz-rich zones. Less commonly it is found as fine disseminations in quartz, and rarely as medium- or coarse-grained crystals in quartz. Most of the scheelite apparently was deposited late in the sequence of primary mineralization.

Sampling

A total of 37 chip samples was taken in the Cargo Muchacho mine. The majority of these samples were cut perpendicular to the strike and completely across scheelite-bearing shear zones. Following is a tabulation of the samples:

Sample No.	Length (in feet)	Percent WO_3	Ounces/ton Au
A-1	6.6	0.02	0.14
A-2	8.0	0.89	0.075
A-3	6.4	0.20	0.24
A-4	4.7	0.56	0.12
A-5	10.0	*0.02	0.04
A-6	7.4	0.14	0.05
A-7	7.5	0.05	0.16
A-8	5.2	0.70	0.13
A-9	8.7	0.54	0.17
A-10	4.5	0.40	0.13
A-11	4.2	0.17	0.15
A-12	4.0	0.33	0.46
A-13	2.3	0.13	0.21
B-1	3.6	1.23	0.12
F-1	5.2	0.53	0.07
F-2	7.2	0.12	0.04
F-3	10.0	0.69	0.03
F-4	6.3	0.84	0.05
F-5	7.0	0.20	0.02
F-6	6.0	0.01	0.065
F-7	7.0	* 0.01	0.085
F-8	8.0	* 0.01	
H-1	4.0	0.03	0.06
H-2	4.3	0.09	0.08
H-3	5.0	0.40	0.08
H-4	5.0	1.67	0.05
H-5	6.2	0.73	0.05
H-6	6.2	0.76	0.21
H-7	6.6	0.44	0.095
H-8	6.0	0.20	0.04
H-9	6.0	0.13	0.12
H-10	2.8	0.16	0.08
4-1	4.7	*0.02	0.35

Sample No.	Length (in feet)	Percent WO_3	Ounces/ton Au
6-2	6.0	*0.02	0.25
6-1	*6.4	*0.02	0.20
6-3	6.0	0.02	0.05
6-4	5.4	0.10	0.06

* Less than

Ore Reserves

Lamping under ultra-violet light revealed two ore bodies that contain fair amounts of scheelite. These are the "A" ore body which is exposed in the southern parts of the 5th level and 5th sublevels, and the "winze" ore body which is exposed in a crosscut and small drift off the 6th level. (see map of underground workings). The "A" ore body includes the applicant's A and B blocks, and the "winze" ore body consists of the applicant's F. G. and H ore blocks.

The "A" ore body is a nearly-vertical, quartz-rich body with an average thickness of about 6 feet. It averages about 60 feet in length and extends from the second sublevel below the fifth level to an unknown height above the fifth level.

The "winze" ore body occurs in a roll in a vein exposed in the short sixth level drift. To the west of the drift the vein becomes nearly horizontal, is leaner and narrower, and probably pinches out. To the east of the drift the vein steepens and dips 60 to 70 degrees easterly. The "winze" ore body averages about 8 feet in thickness. It extends about 60 feet along the drift, and to unknown distances in its southerly and down-dip portions. The writer's estimate of the ore reserves, made on the assumption that twelve cubic feet of ore weighs one ton, and based on mapping, lamping, and sampling areas follows:

"A" Ore body

Block A

South of "A" winze

Between 5th level and 5th sublevel #1 ($\frac{25x23x6}{12}$ + $\frac{50x22x7.5}{12}$)

976 tons of measured ore averaging 0.47 percent WO_3 and 0.14 ounces/ton Au.

Between 5th sublevel #1 and 5th sublevel #2 ($\frac{50x6x7.5}{12}$ + $\frac{30x7x3.7}{12}$)

261 tons of measured ore averaging 0.32 percent WO_3 and 0.18 ounces/ton Au.

Below 5th sublevel 2 $\left(\frac{30 \times 15 \times 3.7}{12}\right)$

194 tons inferred ore averaging 0.25 percent WO_3 and 0.24 ounces/ton Au.

North of "A" winze $\left(\frac{34 \times 21 \times 5}{12} + \frac{30 \times 21 \times 10}{12}\right)$

648 tons of indicated ore averaging 0.32 percent WO_3 and 0.08 ounces/ton Au

Block B

All of "A" ore body above 5th level $\left(\frac{55 \times 30 \times 5.8}{12}\right)$

800 tons of inferred ore averaging 0.49 percent WO_3 and 0.14 ounces/ton Au

"Winze" Ore Body

Block F $\left(\frac{80 \times 30 \times 7.6}{12}\right)$

That part of the "Winze" ore body lying below the small drift off of the 6th level in the northern part of the mine.

1500 tons of inferred ore averaging 0.18 percent WO_3 and 0.04 ounces/ton Au.

Block G $\left(\frac{25 \times 30 \times 6.2}{12}\right)$

That part of the "Winze" ore body above the 6th level

388 tons of indicated ore averaging 0.42 percent WO_3 and 0.05 ounces/ton Au

Total Reserve

1237 tons of measured ore averaging 0.37 percent WO_3 and 0.16 ounces/ton Au.
1211 tons of indicated ore averaging 0.36 percent WO_3 and 0.08 ounces/ton Au.
2494 tons of inferred ore averaging 0.31 percent WO_3 and 0.14 ounces/ton Au.

(plus additional tonnage in workings of 7th level)

Ore "blocks" C, E, and D, listed by the applicant appear to have a very meager scheelite content, and it is extremely doubtful if these could be exploited profitably for tungsten.

A small amount of ore might be developed in the southern part of the main 6th level vein; however, the occurrence of tungsten ore in this locality is spotty, and the major part of the vein has already been stoped.

Exploration

Exploration work to discover new reserves would be to reopen the workings of the 7th level. No direct geologic evidence favors this move, but the following reasons indicate that it would be logical:

(1) scheelite appears to be more abundant in the veins and lenses exposed in the lower mine workings

(2) the fact that the workings have been back-filled suggests that they were low in gold, and if the low-gold, high tungsten concept is valid, the veins of the 7th level should have abundant scheelite.

(3) K. A. Holmes 2/ allegedly the last person to visit the 7th level, in 1935, reports three strong quartz veins exposed there, two of which were too lean in gold to be exploited.

Other Deposits
(for locations see attached topographic map)

Shinebright and Shineright (formerly Questionmark), Tumco District, Cargo Muchacho Mountains, Imperial Co., California. Owner: Herb Gifford, Route 3, Box 338, Yuma, Arizona.

These prospects are in the southern part of the Cargo Muchacho Mountains near the head of Jackson Gulch. They are accessible by turning from the Cargo Muchacho road near the foot of Jackson Gulch and going in a general northeasterly direction for about two miles over a very poor, steep, dirt road.

Like most of the other mines of the district the Shinebright and Shineright were formerly gold mines. The workings consist of several small pits and trenches. Small amounts of scheelite occur in a few narrow shoots adjacent to the footwall of an auriferous quartz vein. The small quantity and sporadic distribution of the scheelite virtually precludes any large-scale production from this deposit, but it is inferred that 5 or 10 tons of ore averaging less than 0.50 percent WO_3 could be mined by selective, hand-sorting methods.

Gray Point (Dallaride) mine. Owner: Herb Gifford, Route 3, Box 338, Yuma, Arizona.

The Gray Point mine is in the northern Cargo Muchacho Mountains, north of Ogilby, California. A fair dirt road connects the mine with Ogilby, a distance of about 7 miles. The Gray Point mine was formerly worked for gold. The mine workings consist of an inclined shaft, about 100 feet long at an angle of 25 degrees, a 70 foot drift, and some stopes. (see sketch map of workings). The workings open an easterly-striking quartz vein that dips 25 degrees north. The country rock is granite. Meager amounts of scheelite are exposed along the

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2/ Holmes, K. A., Oral Communication, September, 1981

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footwall of the vein in a drift about 30 feet below the surface. It is very doubtful if scheelite could be profitably mined from this deposit as only about one ton of inferred ore estimated to contain 0.25 percent WO_3 is present.

La Colorada ---Owner John H. Mueller, Winterhaven, California
(see sketch map)

This mine is in the granitic area at the northern end of the Cargo Muchacho Mountains. It is accessible from Ogilby by travelling northerly over a fair dirt road for a distance of about 8 miles. The mine is being operated for gold and probably a small amount of tungsten can be won as a bi-product, but the chances of significant tungsten production are remote.

The mine workings open a persistent quartz vein about one foot in average thickness that is traceable on the surface for about 1000 yards. Only a few minor scheelite-bearing zones were seen in the underground workings, and surface panning at night revealed only a few widely-scattered scheelite grains within the vein.

Madre and Padre Mines---Under lease to the Homestake Mining Co., Winterhaven, California

These gold mines are adjacent to the Cargo Muchacho claims in the southwestern part of the Cargo Muchacho Mountains and are accessible from Ogilby over a fair dirt road. They expose a quartz vein, one to eight feet thick, near the contact between quartz diorite and quartz monzonite. The vein strikes N. 50° W., dips 20° S. and is traceable for several hundred feet. Minor amounts of scheelite occur near the footwall of the vein in the lower mine workings, and a small tonnage of tungsten ore might be recovered as a bi-product in gold mining.

Supplementary Data

The Golden Geyser claims in the southern Cargo Muchacho Mountains were not visited, but according to local mining men they are very similar to the Shinebright and Shineright prospects.

Two piles of tungsten ore were examined during the investigation. The first of these consisted of about two tons of hand-sorted, high-grade scheelite-bearing ore piled at Glamis, California, reportedly from prospects in the Chocolate Mountains about 40 miles north of Glamis. These prospects are owned by Everett Vanderpool of Glamis, California, and lie on a military bombing range. The grade of this ore appears to be approximately two percent WO_3, but no information is obtainable concerning the reserves. Local mining men reported several other prospects in the Chocolate Mountains.

The other small ore pile is at Jacumba, California, and consists of about a ton of hand-sorted ore from a prospect about 10 miles north of Jacumba.

Tungsten mines of northern Sonora and Baja California are potential contributors to a custom mill in the Yuma area.

Conclusions

The apparent amount of ore in the Cargo Muchacho mine makes its reactivation as a tungsten mine a marginal venture under present economic conditions. There is little chance of sizable tungsten production from any of the other mines or prospects visited.

Factors favoring a custom mill in the Yuma area are:

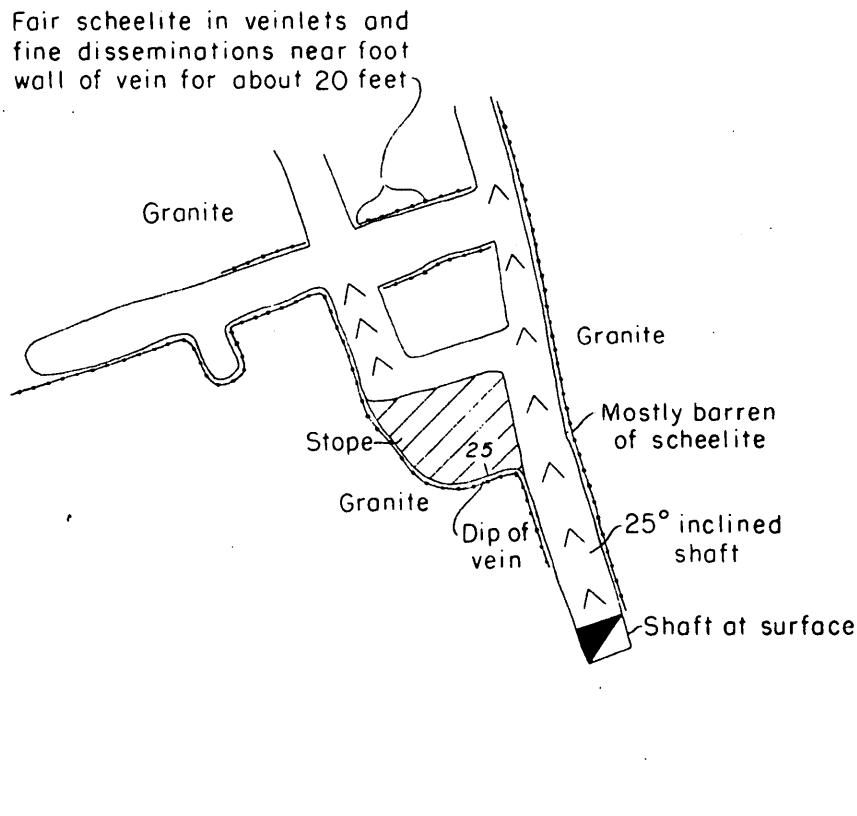
(1) the chance that larger tonnages of tungsten ore might be developed by deepening the workings in the Cargo Muchacho mine.

(2) that such a mill would serve a large area in the southwestern United States and northwestern Mexico, and would encourage prospecting in these areas.

(3) that in view of the limited field investigation of the mines and prospects in the area, there is a possibility of some of the properties not visited developing into good tungsten producers, particularly those in the Chocolate Mountains.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMA 982
(TUNGSTEN)



Mapped by
E. M. MacKevett and H. W. Imholz
September 1951

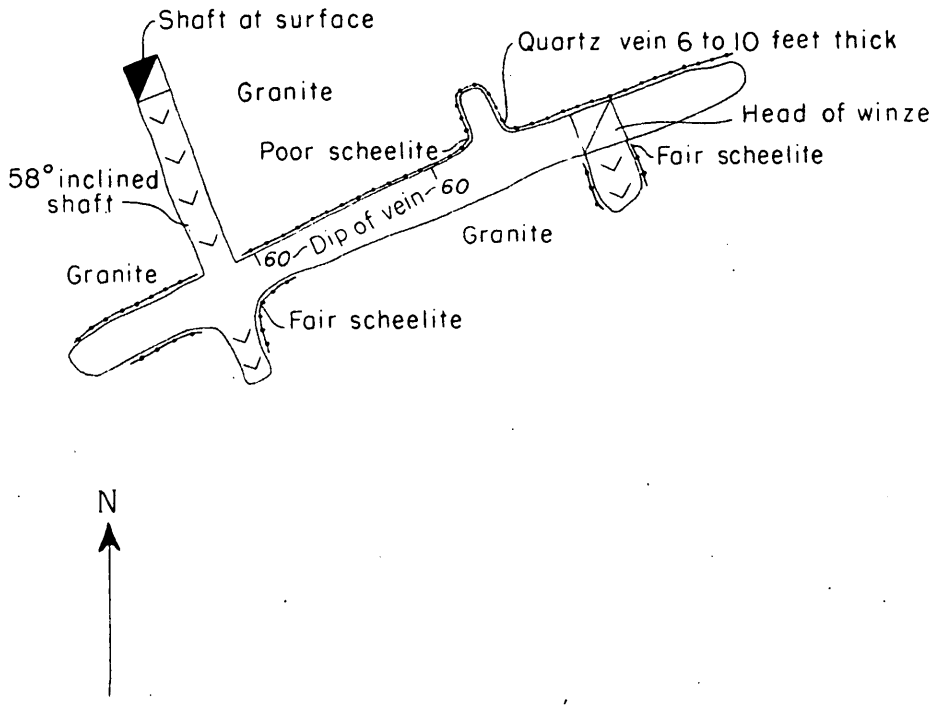
SKETCH MAP OF

THE GRAY POINT MINE, IMPERIAL COUNTY, CALIFORNIA

0 40 80 120 Feet

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMA 982
(TUNGSTEN)



Mapped by
E. M. MacKevett and H. W. Imholz
September 1951

SKETCH MAP OF

LA COLORADA MINE, IMPERIAL COUNTY, CALIFORNIA

0 40 80 120 Feet

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

102 Old Mint Building
San Francisco 3, California

November 5, 1951

Subject: DMA 982, Holmestake Mining Company, Imperial County, California

Mr. H. C. Miller
U. S. Bureau of Mines
1012 Flood Building
San Franicso, California

Dear Mr. Miller:

Enclosed are five copies of a report by E. M. MacKevett on the Holmestake Mining Company which has applied for a direct loan to erect a tungsten mill at their property in Imperial County, California. As the company also proposed to treat custom ore from several smaller mines, the nearest of these were examined and the findings are included with the report.

The examining geologist reports that the Cargo Muchacho mine of the Holmestake Mining Company has 1237 tons of measured ore averaging 0.39 percent WO_3 and 0.16 ounces per ton of ~~silver~~ gold, 1211 tons of indicated ore averaging 0.36 percent WO_3 and 0.08 ounces per ton ~~silver~~ gold, and at least 2494 tons of inferred ore averaging 0.31 percent of WO_3 and 0.14 ounces per ton ~~silver~~ gold. Probably about 25 tons of inferred ore averaging 0.30 percent WO_3 exists in the smaller mines and prospects visited.

The reactivation of the Cargo Muchacho mine is believed to be a marginal venture, and there is little chance of the other mines examined yielding appreciable tonnages of tungsten ore. Factors favoring a custom mill for tungsten in the Yuma area are:

(1) the chance that larger tonnages of tungsten ore might be developed by deepening the workings in the Cargo Muchacho mine.

(2) that such a mill would serve a large area in the southwestern United States and northwestern Mexico, and would encourage prospecting in these areas.

(3) that in view of the limited field investigation of the mines and prospects in the area, there is a possibility of some of the properties not visited developing into good tungsten producers, particularly those in the Chocolate Mountains.

Sincerely yours,

Edgar H. Bailey

Refer to	Noted	Date
	HCM	7/27
Answered		

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

July 25, 1951

Subject: DMA-982, Holmestake Mining Company, Winterhaven California

Mr. Dwight Lemmon
Mineral Deposits Branch
U. S. Geological Survey
Washington 25, D. C.

Dear Dwight:

The Region III DMA field team has been requested in a letter from G. B. Holderer dated July 19 to verify whether or not the tungsten mines listed on the accompanying sheet have the ore claimed. The mine owners have indicated they would supply such ore to the proposed Cargo Muchacho mill, and, as I understand it, the availability of the custom ore might materially effect the decision of DMA regarding financial aid for building the mill.

We plan to examine the Cargo Muchacho property in the near future, but I hesitate to assign the examining geologists the task of checking ore reserves on eight other properties unless it is absolutely necessary. Mr. Holderer's letter did not indicate whether or not you had been consulted on this, and I thought you might be able to supply us with enough information on some of the properties so that our geologists would not have to revisit each one.

Please send any pertinent data you may have by airmail, as we have written the owner of the Cargo Muchacho mine we would make the examination at his convenience any time after July 31.

Sincerely yours,

Edgar H. Bailey

CC: H.C.Miller

Refer to	Note	Date
	RHM	7/30
Answered		

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

July 24, 1951

Mr. Kenneth A. Holmes, President
Holmestake Mining Company
P. O. Box 308
Winterhaven, California

In reply please refer to
DMA 982 Tungsten

Dear Mr. Holmes:

Your letter of July 12 to Dr. James Boyd has been referred to this office for reply.

You probably have received by now our letter informing you that a field examination had been requested for your property. We have also instructed the field team to discuss with you the entire problem of the shipping of custom ores to your mill.

Very truly yours,

George B. Holderer
jam

George B. Holderer
Chief, Tungsten Branch

7/30
65 Kas Blackbet.

Copy to Beasley 7/30

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

RECEIVED
JUL 2 1951

Refer to	Notes	Date
	HEW	7/24
Answered		

July 22, 1951

Subject: DMA 982, Holmestake Mining Company, Winterhaven, California

Mr. H. Hardy
Holmestake Mining Company
P. O. Box 308
Winterhaven, Imperial County
California

Dear Mr. Hardy:

I have been requested to examine the Cargo Muchado Mine by Mr. H. C. Miller, Executive Officer, Region III, Defense Minerals Administration.

In your letter of July 18 to Mr. Miller, you indicated that access to the mine may be difficult unless you have sufficient time to arrange for the services of a hoisting engineer. As I can arrange to be at the mine almost any time, it will probably be better for you to set the date for the examination after you have obtained the hoistman. You understand, of course, that I will be traveling from San Francisco and must have several days notice. Any date for my arrival at the mine after July 31 will be agreeable to me.

Yours very truly,

William P. Irwin

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

DEPARTMENT OF INTERIOR
340 BUREAU OF MINES
REGION III
RECEIVED
JUL 23 1951
SAN FRANCISCO, CALIFORNIA

July 19, 1951

Air Mail

Mr. H. C. Miller, Executive Officer
DMA Field Team, Region III
1012 Flood Building, 870 Market Street
San Francisco, California

In reply please refer to:
DMA-982 — Tungsten

Dear Mr. Miller:

In a letter of July 9 we requested a field examination of the Cargo Muchacho Mine leased by the Holmestake Mining Company, K. A. Holmes, President.

The Company plans to mill custom ore. One of its arguments in support of a loan is the need of a custom mill in the area to which small mine owners can ship their ore. Mr. Holmes states that there are some 25 to 30 such owners. Recently he sent us eight affidavits of owners who claim to have tungsten ore that they would ship to a custom mill. A list of the owners giving details is attached hereto. Please verify the information as far as possible. In addition, gather what information you can regarding the contemplated charges for milling the custom ore. It would also be well to learn whether any laboratory mill tests have been made on the ores from the various localities. Should Mr. Holmes supply additional names please treat them the same as those of the attached list.

Very truly yours,

George C. Selfridge
for

George B. Holderer
Chief, Tungsten Branch

Copy to Bailey 7/25

Enclosure

POTENTIAL SHIPPERS OF CUSTOM ORES TO HOLMESTAKE MILL NEAR YUMA, ARIZONA

Name of Mine	Location	Owner	Address	Tons of ore	Grade-% WO_3
Gray Point	Near Ogilby, Calif.	Herb Siffort	Rt.3, Box 338, Yuma, Arizona	800	2.00
Golden Geyser	Cargo Muchacho District, Calif.	M. J. Farmer	Box 351, Winterhaven Calif.	1000	1.00
Desert Scheelite	Glamis, Calif.	E. C. Van Derpoll	Glamis, Calif.	1000	1.00
Clara & Sue	Mohawk District, Yuma Co., Ariz.	W. D. Riley	734-2nd Avenue, Yuma, Ariz.	showings	1.00
?	Tumco District, Imperial Co., Calif.	A. T. Logan	621-2nd Avenue, Yuma, Ariz.	500	0.50
La Colorada	Ogilby, California	John M. Mueller	Winterhaven, Calif.	2000	0.50
Gold Ace	Big Game District	David Balsz	473-2nd Avenue, Yuma, Ariz.	3000 +	1.50
Blue Top	Castle Dome District Yuma Co., Ariz.	J. M. Worthington	1292-5th Avenue, Yuma, Ariz.	?	1.25

Refer to	Noted	Date
Answered		

U. S. Geological Survey
RECEIVED
Geologic Branch
San Francisco, Calif.

Holmestake Mining Company

IMPERIAL COUNTY
P. O. BOX 308
WINTERHAVEN, CALIFORNIA

J. W. HOLMES, PRESIDENT

July 18, 1951

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JUL 20 1951
SAN FRANCISCO, CALIFORNIA

Mr. H. C. Miller, Executive Officer
DMA Field Team, Room 1012 Flood Bldg.
870 Market Street
San Francisco, California

U. S. Geological Survey
RECEIVED
JUL 21 1951
Geologic Branch
San Francisco, Calif.

Dear Sir:

We are in receipt of a letter from Mr. Tom Lyon, Director, Supply Division, DMA advising us that he had written you requesting that you arrange for an examination of our Cargo Muchacho Mine to see if it will qualify for a DMA loan of $50,000 under DMA file 982.

Mr. E. J. Matson, an engineer from the Reno, Nevada office of the Bureau of Mines, made a preliminary examination of our property in February, 1951 and when leaving, indicated that he would recommend that the Bureau of Mines drill a series of holes from the 400 foot level of the mine.

A letter from Mr. A. C. Johnson, Chief of Mining Division Region 111, written March 8, 1951 gave us the results of the samples taken by Mr. Matson but made no mention of his recommendations. The results of his samples were as follows:

No. 1	Grab	0,48%	WO_3	$6.30 Au
No.2	3'	1.02	"	5.60 "
No. 3	4'	2.18	"	2.45 "

If it is convienient we would like to know a littel ahead of time when you will make your examination as the mine is not operating at present and it make take alittle time to locate one of our hoisting engineers. Most of our scheelite is on the 500 and 6000foot levels and that is a long way to climb and carry samples.

Anything that you can do to expidite thsi examination will be greatly appreciated. We are confident that we have sufficient ore in sight to warrant the loan. Our mill, a 100 ton all slime cyanide plant, was rebuilt last year after a fire and needs only tables and flotation equipment to convert it into an efficient scheelite concentrating plant which in addition to recovering scheelite will produce a sulfide-gold concentrate which should insure a profitable operation.

Refer to	Noted	Date
Answered		

Yours truly,

HOLMESTAKE MINING COMPANY

by Harvey Hardy.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
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JUL 24 1951
SAN FRANCISCO, CALIFORNIA

DEPARTMENT OF INTE
BUREAU OF MINES
REGION III
RECEIVED
JUL 13 1951
SAN FRANCISCO, CALIFORNIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

To	Noted	Date
Answered		

July 12, 1951

Subject: DMA 982, Holmestead Mining Company, Winterhaven California

Mr. Paul C. Bateman
U. S. Geological Survey
P. O. Box 602
Bishop, California

Dear Paul:

Yesterday, I received from Mr. Miller an impressive thick docket covering a DMA request for a production loan of $50,000 to recondition the mill and the Cargo Machado gold mine. I am writing to you about it because the commodity of interest now is tungsten rather than gold, and as a field examination is required I thought you might like to have an opportunity to see the mine.

The Cargo Muchado gold mine is near Ogilby, which I suppose you know is in the extreme southwestern corner of the state and is reported to have a very salubrious climate at this time of year. The gold mine is very old (pre- 1870), with seven levels, the deepest of which is 550 feet below the surface. The docket includes a good looking planimetric map without any geology. In 1948 the mine was lamped and scheelite discovered in quartz-scheelite veins. The Holmestead Mining Company claims widths up to ten feet and presents samples ranging to 10.00% WO_3 and averaging nearly 1%. Twenty tons treated at Pine Creek contained 0.73% WO_3, and 120 T. treated in the company mill ran 0.9%.

The applicant claims to have blocked out and available for mining in veins and old stope fill a little more than 18,083 T --- grade not given. A few samples cut by Matson in February, 1951 gave roughly 0.5 - 2.2% WO_3 over 4 foot lengths. Therefore, the deposit seems to have real merit, even though the ore is in quartz veins rather than in your favorite tactite bodies.

We have been requested to map the mine workings, which apparently are all still open and accessible, and the applicant as usual is in somewhat of a rush. Please let me know if you wish to do the job in order to have some first hand knowledge of the deposit, or if you prefer I assign Porter to it. If you take it on I'll send the docket, and some Division of Mines reports which give a local geologic map and a summary of the history

of the mine. I imagine if you are interested you should take Ed along to assist you and to revive you in case you get sunstroke.

Sincerely yours,

Edgar H. Bailey

CCE H.C.Miller

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

JUL 9 1951

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JUL 11 1951
SAN FRANCISCO, CALIFORNIA

Answered

Mr. H. C. Miller, Executive Officer
DMA Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco, California

In reply please refer to
DMA-982
Tungsten

Referred to G. S.

Dear Mr. Miller:

On April 4, 1951 the Holmestake Mining Company applied for a purchase contract for tungsten concentrate, and we even proposed to recommend a contract for 8000 units of WO_3. Subsequently, the Company requested a production loan of $50,000. to recondition the mill and the Cargo Muchacho gold mine.

The data submitted by the Holmestake Company is not adequate to demonstrate ore reserves. We have read a memorandum report by Mr. E. J. Matson of the Bureau of Mines, written in February 1951 and still do not have a clear picture of the tungsten possibilities of the mine.. Therefore, we request that you arrange for an inspection of the mine, and that you give us your recommendations concerning ore reserves and possible exploration.

The maps of workings submitted by the applicant do not show geology, but suggest that geologic mapping might be justified.

We enclose the complete docket.

Very truly yours,

Tom Lyon

Tom Lyon
Chairman, Coordinating Committee

Enclosure

Approved:

Lowell B. Moon
Bureau of Mines

Edwin T. McKnight
Geological Survey

Copy to G.W. Beardsley 7/11

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

Answered
Refer to
Notes
Date

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JUL 11 1951
SAN FRANCISCO, CALIFORNIA

July 5, 1951

Mr. Kenneth Holmes
Holmestake Mining Company
Box 308 Winterhaven
Imperial County, California

In reply please refer to
DMA-982

Dear Mr. Holmes:

We have reviewed your application for a loan of $50,000 to recondition your mill and the Cargo Muchacho gold mine for production of tungsten.

The information that you present is not adequate to demonstrate a reserve of measured or indicated ore sufficient to warrant the mill expenditure. Defense Minerals Administration cannot recommend that the lending agencies of the Government, such as Reconstruction Finance Corporation, make production loans until an adequate ore reserve is proved.

Therefore, we are referring your application to Mr. D. C. Miller, Executive Officer, DMA Field Team, Room 1012 Flood Building, 870 Market Street, San Francisco, California, and are requesting that Mr. Miller arrange for a thorough examination of the mine to investigate ore reserves. It is hoped that Mr. Miller can arrange for sufficient geologic mapping to give a clear picture of the potentialities of the property.

Very truly yours,

Tom Lyon
Director, Supply Division

Copy to Bailey 7/12

DMLemmon:sc

CC: Adm. Reading File
Mr. Strobel
Regional Field Team
Mr. Holderer
Mr. Lemmon
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

CALIFORNIA-ARIZONA
YUMA QUADRANGLE

R.U. Goode, Geographer.
R.B. Marshall, Topographer in charge.
Topography by D.L. Reaburn.
Colorado River Valley from surveys by R.B. Marshall and W.T. Turner.
Triangulation by A.H. Sylvester and International Boundary Survey.
Surveyed in 1902-03.
Topography shown in Mexico is approximate.

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION 1903

Scale $\frac{1}{125000}$

1 ½ 0 1 2 3 4 5 6 7 8 9 Miles

3000 1500 0 3000 6000 9000 12000 Yards

5000 0 5000 10000 15000 20000 25000 Feet

1 0 1 2 3 4 5 6 Kilometers

Contour interval 50 feet
Datum is mean sea level

Polyconic projection

YUMA, CALIF.-ARIZ.
Edition of 1905
reprinted 1944
N3230-W11430/30