DMA Form 1

DEFENSE MINERALS ADMINISTRATION
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DMA Docket No. 3658

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Exploration

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400

MAY 1 6 1955

Mr. Melvin H. Von Hess, President
Butte Western Mining Company
P. O. Box 1045
Billings, Montana

Re: Docket No. DMEA 3658 - Manganese
Lewis mine
Silver Bow County, Montana

Dear Mr. Von Hess:

Your application for aid for an exploration project and other data available to us in Washington concerning the above-referenced property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting the occurrence of a small amount of manganese mineralization on your property, indicates to us that the probability of disclosing minable manganese ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

We wish to thank you for your interest in the Defense Minerals Exploration Program and for bringing this property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:fec
5-13-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. I - MeDIST.
Messrs. DeRuff, USBM
Kiilsgaard, USGS

May 13, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $40,875.00
Docket No. DMEA 3658 - Manganese
Butte Western Mining Company
Isale mine
Silver Bow County, Montana

The denial of the subject application is recommended by this Division based on the following information:

1. The applicant proposed a novel application of directional drilling using oil-well drilling equipment to test the downward extension of the Isale vein. By using controlled directional drilling, several samples could be taken of the vein at various depths from one setup. A summary of the proposed program follows:

   Initial intercept of the Isale vein was to be made at a depth of 400 feet vertically below the surface.

   Additional intercepts were to be made at depths of 600, 800, and 1000 feet dependent upon prior results.

2. The Isale vein appears to be a strong member of the Anaconda vein system in the southwestern part of the Butte district. Consisting predominantly of quartz with variable amounts of rhodochrosite and small amounts of galena, sphalerite, and pyrite, it strikes N. 70° - 85° E. and dips about 70° S. The sample data submitted indicate that its over-all manganese content is too low to be of any economic interest and there is no indication that it will improve with depth. Only 5 of the 27 samples

out contained over 12 percent manganese, the minimum grade rhodochrosite ore acceptable at the Butte GSA Purchase Depot, and the average grade of all samples was 7.2 percent manganese. Apparently the higher grade samples represent small lenses of ore within the vein.

3. When the property was reopened in 1954, the company evidently attempted to increase production from the property by first developing and exploiting the best manganese showing in the mine workings. The fact that all equipment was removed from the property and the mine allowed to flood suggests strongly that the property is sub-marginal. Total production during this operation was 130 tons of ore averaging 14.6 percent manganese.

4. Exploration of other veins in the adjacent area has shown the manganese in these veins to be of a marginal nature.

5. The examining member of the field team recommended denial of the subject application for exploration assistance.

6. The Field Team concurs with the recommendations of the examining geologist.

7. The Commodity Division of the Geological Survey recommends denial.

8. The Commodity Division of the Bureau of Mines concurs in the denial.

FARutledge:fcc
5-13-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.

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

IN REPLY REFER TO:

400

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

Defense Minerals Administration
RECEIVED
MAY 12 1955

May 10, 1955

Re: DMEA-3658
Butte Western Mining Company
Isola Claim
Silver Bow Co., Mont.
$40,875 - Manganese

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: R. B. Trace, U. S. Geological Survey

Subject: Review of Field Team report

The Field Team recommends denial of the subject application, and I concur. The denial is based upon 1) the manganese content of the vein is too low and spotty and 2) there is no expectation that the grade would increase with depth.

R. B. Trace

RBTrace:hlm
G-5/10/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Gilbert DeNuff, 3523 Interior

400

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 1, Washington

MAY 5 - 1955

April 28, 1955

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

Re: Docket No. [illegible]-3653 (manganese)
Butte Western Mining Company
Isele Claim
Silver Bow County, Montana

RSM

Dear Mr. Selfridge:

Enclosed are copies of a memorandum by James J. Quinlan, geologist, Geological Survey, recommending a denial of a proposal for the exploration of the Isele claim in the Butte District, Silver Bow County, Montana.

The Field Team regrets the necessity for this action because the applicant proposes a novel method for testing the vein by means of oil-well type drilling tools and equipment, and if this were successful, the results would be of possible general application. Unfortunately, as Quinlan points out, all available information suggests that the manganese content of the vein is too low and spotty to justify the proposed exploration. Quinlan also points out that no significant improvement of manganese content can be expected with depth, particularly at the depth which the applicant proposes to test the Isele vein.

The Field Team concurs with Quinlan and recommends denial of the application.

Perhaps in the letter of denial the applicant should be encouraged to come up with another proposal for using the same method in testing a more promising property.

By Field Team, Region 4, [illegible] District

A. S. Weissenborn, Exec. Officer
(U. S. Geological Survey)

King G. Agnew
(U. S. Bureau of Mines)

Enclosures
cc: [illegible](2) [illegible]
Quinlan

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 6 - 1955

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

April 20, 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: James J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docknt No. DMEA-3658 (manganese), Field Examination, Butte Western Mining Company, Isele Claim, Silver Bow County, Montana.

Introduction

The Isele property was visited by Max D. Crittenden, Jr., and the author on March 11, 1955, with reference to the subject loan application. Robert H. Nelson and Irving G. Irving, representatives of the applicant, accompanied the examiners to the property.

The Isele mine workings were reopened for a brief period last year, but since that time all equipment has been removed from the property, and the mine allowed to flood. Although the mine workings were accessible at the time the application was filled out (April 1954), the applicant misplaced the application and did not file it until January 1955, by which time the mine had been closed.

A check of the Spokane office files of the Geological Survey failed to disclose any reports on the property. Fortunately, however, the application contains a detailed geologic report on the property by Winston M. Sahinen. This report, with accompanying maps, appears to adequately picture the geology of the deposit, and of necessity, any evaluation of the applicant's proposal must in a large part be based on information contained in it.

Conclusions and recommendation

The testing of the Isele vein at depth by the use of oil-well type drilling tools and equipment as proposed by the applicant is of interest as an experimental drilling method which might have application in the mining industry. Unfortunately, however, exploration at depth for manganese along the Isele vein is not considered worthwhile and, therefore, it is recommended that the Butte Western Mining Company's application for DMEA assistance be denied.

Applicant

The applicant is the Butte Western Mining Company, P. O. Box 1045, Billings, Montana. Officers of the corporation are Melvin Von Hess, president, William P. Mefford, vice president, and Glenn P. Scheihing, secretary-treasurer.

The Butte Western Mining Company was organized to reopen the Isele mine. Although none of the officers of the company are experienced mining men, the application indicated that competent personnel would be hired to direct and supervise the project if a contract were granted.

Property and ownership

The property consists of one patented quartz lode mining claim, the Isele Lode, Survey No. 832, sec. 23, T. 3 N., R. 8 W., M.P.M., Silver Bow County, Montana.

The Isele claim is owned by Alex and La Reine C. Leggat, Butte, Montana, Martha Hubbard, Spokane, Washington, Thomas D'Arcy Brophy, New York, New York, John A. Brophy, Sausalito, California, and P. J. Brophy, Denver, Colorado. The claim is leased to D. O. Mecklenburg, Glenn P. Scheihing, and M. H. Von Hess, all of Billings, Montana, and Al C. Fisher, Butte, Montana. The lessees, in turn, have assigned their lease agreement with the owners to the Butte Western Mining Company.

Copies of the various documents by which the applicant claims right, title, and interest in the claim are a part of the application. It appears that the applicant's lease agreement may no longer be in good standing because of failure to comply with the terms of the lease agreement which specified that the Isele shaft was to be sunk an additional 100 feet by December 7, 1954. This point would have to be clarified, only if the DMEA should act favorably on the application.

Brief evaluation of property

The reader is referred to Winston M. Sahinen's report on the property for details as to location, history, past production, workings, sampling, and geology.

The Isele vein appears to be a strong member of the Anaconda vein system in the southwestern part of the Butte district. It strikes N. 70° - 85° E. and dips about 70° S. Although the Isele shaft is reported to have been sunk to a depth of 400 feet, Sahinen could only verify that it was sunk a short distance below the 300 level (284.3 feet below collar), and he concludes that the shaft is either now filled below this point or was never sunk to the depth reported.

The Isele vein is reported to consist of predominantly quartz with variable amounts of rhodochrosite and small amounts of galena, sphalerite, and pyrite. Silver is reported to occur in an unknown mineralogical form. Ore mined in the past has been valued principally for its silver content. Much of the past production is reported to have come from near-surface workings which suggests that secondary enrichment was an important factor in forming ore of commercial grade in the vein. Estimates of the value of past production range from $350,000.00 to over $1,000,000.00.

A study of Sahinen's report and sample data indicates that the over-all manganese content of the vein is too low to be of any economic interest. Sahinen reported that channel samples were taken across the entire vein at every accessible exposure throughout the mine. Twenty-seven samples ranging in grade from 0.2 to 21.8 percent manganese were cut in all. Only five of the 27 samples cut contained over 12 percent manganese, the minimum grade rhodochrosite ore acceptable at the Butte GSA Purchase Depot, and the average grade of all samples was only 7.2 percent manganese. It appears that the higher grade samples represent small lenses of ore within the vein which would be of little economic interest.

Sahinen reports three shipments of manganese from the property totaling 130 tons of ore averaging 14.6 percent manganese. Most of this ore is reported to represent rhodochrosite development muck from 203 DE and 203 DW headings (see maps accompanying Sahinen's report), but some of it also represents hand-sorted ore from other development areas.

When the property was reopened in 1954, it is evident that the company tried to get the property into production by developing and exploiting the best manganese showings in the mine workings. The fact that all equipment was removed from the property and the mine allowed to flood clearly points to the failure of this venture and indicates that the property is submarginal.

Exploration along other veins in the immediate vicinity of the Isele property has shown the manganese in these veins to be of a marginal nature. The Tzarena vein, a short distance north of the Isele claim, has been explored to a depth of 150 feet from a shaft on the property. This vein is also reported to have been cut and drifted along on the 1000 level of the old Germania mine. Available records indicate that there was no significant change in this vein between the shallow workings below the zone of oxidation and the 1000 level.

One point Sahinen fails to mention in his report is the presence of a large rhyolite dike a few hundred feet east of the Isele shaft. This dike appears to be the same dike that is found

immediately east of the Tzarena shaft. At the Tzarena the dike is about 100 feet wide. In the district the rhyolite is later than the veins and cut them out, but it is usually an easy matter to pick up the vein on the opposite side of dikes this size.

In summary, the Isele vein is a strong and well-defined structure in the southwest part of the Butte district. Although rhodochrosite is one of the vein minerals, the over-all manganese content of the vein is far too low for it to be of any economic interest. Available evidence suggests that in this part of the Butte district no significant improvement of the manganese content of the veins can be expected with depth, particularly the depths that the applicant proposes to test.

Evaluation of applicant's proposal

The applicant proposes a drilling program to test the Isele vein at 200-foot intervals between a depth of 400 and 1,000 feet. The applicant proposes to use oil-well type drilling tools and equipment in this drilling program instead of conventional diamond drilling equipment.

The proposed drilling would consist of drilling a vertical hole, 11 inches in diameter, to a depth of about 700 feet. Whipstock holes, 8-3/4 inches in diameter, would then be drilled from the main vertical hole to intersect the vein at depths of 400, 600, 800, and 1,000 feet. The applicant estimates that about 1,400 feet of whipstock holes will be necessary to test the vein at the four proposed intersections, making a total of approximately 2,100 feet of drilling.

Under the proposed program core will be taken only in the vicinity of the vein. The applicant reports that size of the core will depend on the type of bit that ground conditions require, but it will range from 3-1/2 to 5 inches. It is also reported that equipment is available to sample the walls of the holes once the holes have been drilled.

Actual drilling would be done under contract with the Clark Drilling Company of Billings, Montana. Although the application states that the Clark Drilling Company will undertake the proposed drilling program for $36,250.00, a letter dated January 21, 1955, from the Clark Drilling Company estimates the cost at $40,250.00. Allowance made by the applicant for a consulting geologist and assaying would increase the cost by $625.00, or to $40,875.00. On this basis the cost of the 2,100 feet of proposed holes would be about $19.50 per foot.

The location of the proposed vertical drill hole is about 200 feet east of the Isele shaft. It is evident from the application that in planning the proposed hole no consideration was given to the large rhyolite dike which crops out in the vicinity of the proposed hole. As this dike cuts the vein, some careful mapping to determine its position and attitude in relation to the proposed hole should be undertaken if the DMEA were to give favorable consideration to the applicant's proposal. It would be a small matter to move the location of the hole to the west if mapping indicated that the dike would cut out the vein.

The applicant's novel proposal for testing of the Isele vein at depth by use of oil-well type drilling tools and equipment is of interest as an experimental drilling method which might have application in the mining industry. The applicant points out that whipstocking from the same hole to intersect the vein at various intervals will result in a saving as to the amount of hole that would have to be drilled by conventional methods to obtain the same intersections. This is true, but the saving in footage alone will not, however, make the proposed method competitive with conventional diamond drilling methods. To illustrate, the same intersection as proposed by the applicant could be obtained with 3,300 to 4,000 feet of drilling by conventional methods at a cost some 25 to 35 percent lower than that estimated for the applicant's proposed program. However, the larger size core and possibly the higher core recovery offered by the use of oil-well type equipment makes the applicant's proposed method very attractive even considering its higher cost, and for this reason, it might be competitive with conventional methods under certain circumstances. Also, being able to sample the walls of a hole is another attractive feature of the applicant's proposal.

It is unfortunate, however, that exploration at depth for manganese along the Isele vein is not considered worthwhile as it would be very interesting to see if the oil well method as proposed by the applicant is a practicable method for testing ore deposits.

Distribution:
DMEA(4)
USBM(2)
USGS(SRO)
Docket
Quinlan

402

XXXXXXXXXXXXXXXXXXXX
So. 157 Howard Street
Spokane 4, Washington

April 1, 1955

Mr. Melvin H. Van Hess, President
Butte Western Mining Company
P. O. Box 1645
Billings, Montana

Re: Docket No. DMEA-3658 (manganese)
Butte Western Mining Company
Isola Mine
Silver Bow County, Montana

Dear Mr. Van Hess:

In reply to your letter of March 23, 1955, this is to inform you that our field man has been to Butte and spent some time examining the Isola property. This examination was made in company with Irving and Nelson, and some time was spent discussing the property with them. An examination report is in preparation and will be submitted to our Washington office shortly.

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

cc: DMEA (2) w/cys incoming
USBM (2) " "
Quinlan " "

Melvin H. Von Hess, Pres. & Gen. Manager

Telephone 9-2409

400

NATIONAL AGENCY, INC.
Insurance, Bonds, Real Estate
202-208 Billings Livestock Exchange Bldg.
1202 First Avenue North
P. O. Box 1045
Billings, Montana

23 March 1955

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I - Northwest District
South 157 Howard Street
Spokane 4, Washington

Dear Mr. Weissenborn:

Docket No. DMEA 3658 - Manganese
Isele mine
Silver Bow County, Montana

We are in receipt of a communication from Mr. C. O. Mittendorf, Administrator, Washington, D. C., advising that our application for exploration assistance has been referred to you for field examination of the property.

As we previously advised, please have your field team contact geologists Irving and Nelson, Hirbour Building, Butte, Montana for assistance in the examination of the property.

I would greatly appreciate it if you could advise me when your field team will be in Butte, as I would like to be present at the time.

Thank you very much for your co-operation and assistance.

Sincerely yours,

/s/ M. H. Von Hess

Melvin H. Von Hess,
President
BUTTE WESTERN MINING COMPANY
P. O. Box 1045
Billings, Montana

400

Copy Retained 200

xxxxxxxxxxxxxxxxxx
Sc. 157 Howard Street
Spokane 4, Washington

February 14, 1955

Mr. Melvin H. Von Hess, President
Butte Western Mining Company
P. O. Box 1045
Billings, Montana

Re: Docket No. DMEA-3658 (manganese)
Application for aid
Isele Claim
Silver Bow County, Montana

Dear Mr. Von Hess:

Recently one of our field geologists attempted to contact Mr. Winston Sahinen, listed in your application as Consulting Geologist for the Butte Western Mining Company, in order to arrange for a field examination of the Isele mine. Our field geologist learned that Mr. Sahinen is in the Army and was not available to assist in an examination. He also learned that all mining equipment had been removed from the property and that the workings have been allowed to flood. It may be that some of the upper workings are above the water table and accessible. If this is so we will schedule an examination when you advise us as to the condition of the workings. It might facilitate matters if you would inform us of any representative you might have in the Butte district whom our field man could contact before making the examination.

In reviewing the application we find no claim map. It would be appreciated if you could supply us with a claim map which at least shows the relationship of the claim boundaries to the Isele shaft.

Sincerely yours,

John S. Vhay
Acting Member, DMEA
Field Team, Region I
Northwest District

cc: DMEA (2)
USBM (2)
Quinlan

COPY

NATIONAL AGENCY, INC.
Insurance, Bonds, Real Estate
202-208 Billings Livestock Exchange Bldg.
1202 First Avenue North
P. O. Box 1045
Billings, Montana
18 February 1955

Mr. John S. Vhay, Acting Member
DMEA Field Team, Region I
Northwest District
United States Department of the Interior
South 157 Howard Street
Spokane 4, Washington

Dear Mr. Vhay:

Docket No. DMEA-3658 (manganese)
Application for Aid
Isele Claim
Silver Bow County, Montana

Thank you very much for yours of 14 February 1955 regarding the subject. Please be advised that Mr. Winston Sahinen is now in the Army, and in his place we have appointed the firm of Irving and Nelson, Hirbour Building, Butte, Montana as our consulting geologists. Please have your field men contact Irving and Nelson for any field examination of the Isele Claim.

It is possible that the first level of the Isele Claim is still accessible for examination, but it is true that all mining equipment has been removed from the property, and that the majority of the mine is now under water.

The firm of Irving and Nelson is entirely familiar with the mine as it was at the time of closing. They should be able to give you detailed information on the vein structures of the claim.

Enclosed you will please find the photostatic copy of the Isele Lode Claim as per U.S. Survey #832. The shaft is circled in red. It is hoped that this will answer your request for a claim map.

Thank you for your cooperation.

Sincerely yours,

/s/ M. H. Von Hess

Melvin H. Von Hess,
President
BUTTE WESTERN MINING COMPANY
P. O. Box 1045
Billings, Montana

401

XXXXXXXXXXXXXXXXXX
Sc. 157 Howard Street
Spokane 4, Washington

February 25, 1955

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

Copy retained 400

Re: Docket No. DMEA-3658 (manganese)
Butte Western Mining Company
Isele Claim
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are three copies of the claim map which Mr. Von Hess sent us in answer to my letter of February 14, 1955.

These should be added to the docket. Enclosed also are three copies of a letter dated February 18, 1955, from Mr. Von Hess.

Sincerely yours,

John S. Vhay
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Enclosures

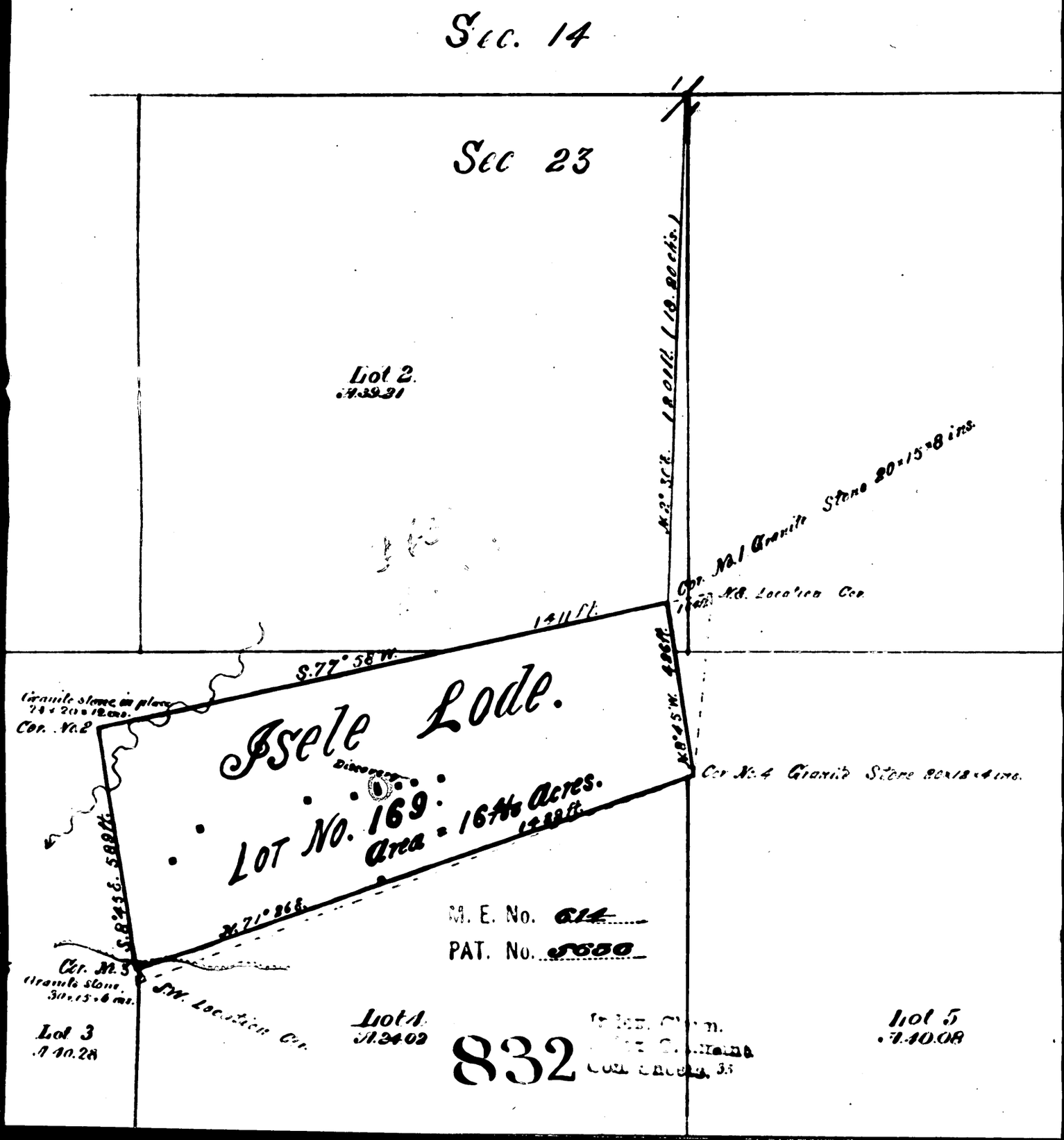
cc: USBM (2)
Quinlan

Copy retained 400

Town. line is N. 2°27'54" E. 1206.02 by Sur. No. 8882

T. 3 N. R. 8 W.

(Surveyed)



SURVEY No 832

PLAT

OF THE

ISELE LODE MINING CLAIM OF

Ferdinand Isele

Designated as Lot No 169 in Township No 3 North Range No 8 West from the Principal Meridian Montana, situated in Independence Mining District Deer Lodge County Montana Territory Containing an Area of 16 4/10 Acres.

Scale of 300 ft = to 1 Inch.

Variation 20° 20 1/2' East.

Surveyed by

Thomas T. Baker

U.S. Deputy Mineral Surveyor.

May 29th

1880

The Original field notes of the Survey of the Lode Mining Claim of Ferdinand Isele named in title, on the Isele Lode Claim, designated as Lot No 169 T. No 3 North R. No 8 West from the Principal Meridian Montana from which this Plat has been made, have been examined, and approved, and are on file in this office, and I hereby certify that they furnish such an accurate description of said Lode Mining Claim, as will if incorporated into a patent, serve to fully identify the premises; and that such reference is made therein to natural objects or permanent monuments, as will perpetuate and fix the LOCUS thereof I further certify that the value of the labor and improvements, upon the said Lode Mining Claim placed thereon by the applicant or his grantors, is not less than Five Hundred Dollars, and that said improvements consist of discovery Shaft 5×10×14 ft. = $125.00: a shaft 8×8×15 ft. = $140.00: a shaft 5×7×10 ft. = $100.00: a shaft 5×5×10 ft. = $80.00: a shaft 7×8×18 ft. = $120.00: a shaft 5×7×27 ft. $250.00: a cross cut 3×5×10 ft. = $25.00: a shaft 6×11×28 ft. = $275.00: a shaft 4×8×14 ft. = $125.00: a shaft 5×9×11 ft. = $100.00: total value of improvements = $1340.00. as appears by the report of the deputy surveyor and the testimony of two disinterested witnesses.

And I further certify that this is a correct Plat of said Isele Lode Mining Claim, or premises made in conformity with said original field notes of the survey thereof

U.S. Surveyor Generals Office
Helena, Montana Territory
August 5th 1880

Roswell H. Mason.
U.S. Surveyor General
for Montana Territory.

832

FEB 10 1955

400

Butte Western Mining Company
P. O. Box 233
Billings, Montana

Re: Docket No. DMEA 3658 - Manganese
Isele mine
Silver Bow County, Montana

Gentlemen:

The above-docketed application for exploration assistance has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. A. E. Weissenborn, Executive Officer, DMEA Field Team, Region I - Northwest District, South 157 Howard Street, Spokane 4, Washington, for a field examination of the property.

Any assistance that you can render the members of the Field Team will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

cc: DOCKET
CODE 400
ADM. READ. FILE
FT, REGION I - SPOKANE
OPER. COMM.
G. DE HUFF, USBM
T. KIILSGAARD, USGS

FARutledge/ls
2/7/55

400

FEB 10 1955

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I - Northwest District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3658 - Manganese
Butte Western Mining Company
Isele mine
Silver Bow County, Montana

Dear Mr. Weissenborn:

Reference is made to the subject docket and to your letter of January 27, 1955, which states that a field examination of the property will be made.

We will, therefore, hold this application in abeyance until the report and recommendations by the Field Team are received. However, if the Field Team concludes that an exploration program is warranted, executed owner's consent to lien forms should be obtained.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Approved:

J. H. Hedges
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

cc: DOCKET
FT, REG. I
CODE 400
OPER. COMMITTEE
ADM. READ. FILE
G. DE HUFF, USBM
T. KIILSGAARD, USGS

FARutledge/ls
2/7/55

Docket

RECEIVED
FEB 16 1955

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

February 14, 1955

Mr. Melvin H. Von Hess, President
Butte Western Mining Company
P. O. Box 1045
Billings, Montana

WSV

Re: Docket No. DMEA-3658 (manganese)
Application for aid
Isele Claim
Silver Bow County, Montana

Dear Mr. Von Hess:

Recently one of our field geologists attempted to contact Mr. Winston Sahinen, listed in your application as Consulting Geologist for the Butte Western Mining Company, in order to arrange for a field examination of the Isele mine. Our field geologist learned that Mr. Sahinen is in the Army and was not available to assist in an examination. He also learned that all mining equipment had been removed from the property and that the workings have been allowed to flood. It may be that some of the upper workings are above the water table and accessible. If this is so we will schedule an examination when you advise us as to the condition of the workings. It might facilitate matters if you would inform us of any representative you might have in the Butte district whom our field man could contact before making the examination.

In reviewing the application we find no claim map. It would be appreciated if you could supply us with a claim map which at least shows the relationship of the claim boundaries to the Isele shaft.

Sincerely yours,

John S. Vhay
Acting Member, DMEA
Field Team, Region I
Northwest District

cc: DMEA (2)
USBM (2)
Quinlan

DOCKET
SURNAME
400 Rutledge
Martin
DeHuff
Kilsgaard
Selfridge
Valiel
Johnson

MAY 16 1955

Mr. Melvin H. Von Hase, President
Butte Western Mining Company
P. O. Box 1645
Billings, Montana

Re: Docket No. DMEA 3658 - Manganese
Isele mine
Silver Bow County, Montana

Dear Mr. Von Hase:

Your application for aid for an exploration project and other data available to us in Washington concerning the above-referenced property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting the occurrence of a small amount of manganese mineralization on your property, indicates to us that the probability of disclosing minable manganese ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

We wish to thank you for your interest in the Defense Minerals Exploration Program and for bringing this property to our attention.

Sincerely yours,

C. O. Mittendorf
Administrator

FARutledge:foc
5-13-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. I - NWDIST.
Messrs. DeHuff, USBM
Kiilsgaard, USGS

R.C.S.

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

May 13, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $40,875.00
Docket No. DMEA 3658 - Manganese
Butte Western Mining Company
Isele mine
Silver Bow County, Montana

The denial of the subject application is recommended by this Division based on the following information:

1. The applicant proposed a novel application of directional drilling using oil-well drilling equipment to test the downward extension of the Isele vein. By using controlled directional drilling, several samples could be taken of the vein at various depths from one setup. A summary of the proposed program follows:

   Initial intercept of the Isele vein was to be made at a depth of 400 feet vertically below the surface.

   Additional interceps were to be made at depths of 600, 800, and 1000 feet dependent upon prior results.

2. The Isele vein appears to be a strong member of the Anaconda vein system in the southwestern part of the Butte district. Consisting predominantly of quartz with variable amounts of rhodochrosite and small amounts of galena, sphalerite, and pyrite, it strikes N. 70° - 85° E. and dips about 70° S. The sample data submitted indicate that its over-all manganese content is too low to be of any economic interest and there is no indication that it will improve with depth. Only 5 of the 27 samples

cut contained over 12 percent manganese, the minimum grade rhodochrosite ore acceptable at the Butte GSA Purchase Depot, and the average grade of all samples was 7.2 percent manganese. Apparently the higher grade samples represent small lenses of ore within the vein.

3. When the property was reopened in 1954, the company evidently attempted to increase production from the property by first developing and exploiting the best manganese showing in the mine workings. The fact that all equipment was removed from the property and the mine allowed to flood suggests strongly that the property is sub-marginal. Total production during this operation was 130 tons of ore averaging 14.6 percent manganese.

4. Exploration of other veins in the adjacent area has shown the manganese in these veins to be of a marginal nature.

5. The examining member of the field team recommended denial of the subject application for exploration assistance.

6. The Field Team concurs with the recommendations of the examining geologist.

7. The Commodity Division of the Geological Survey recommends denial.

8. The Commodity Division of the Bureau of Mines concurs in the denial.

W S Martin

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

DOCKET
SURNAME
Rutledge
400 Martin
Dobbins

May 13, 1955

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From: Iron and Ferro-Alloys Division, DMEA

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   Initial intercept of the Isele vein was to be made at a depth of 400 feet vertically below the surface.

   Additional intercepts were to be made at depths of 600, 800, and 1000 feet dependent upon prior results.

2. The Isele vein appears to be a strong member of the Anaconda vein system in the southeastern part of the Butte district. Consisting predominantly of quartz with variable amounts of rhodochrosite and small amounts of galena, sphalerite, and pyrite, it strikes N. 70° - 85° E. and dips about 70° S. The sample data submitted indicate that its over-all manganese content is too low to be of any economic interest and there is no indication that it will improve with depth. Only 5 of the 27 samples

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FARutledge:foc
5-13-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.

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

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

Defense Minerals Administration
RECEIVED
MAY 12 1955

May 10, 1955

Re: DMEA-3658
Butte Western Mining Company
Zeale Claim
Silver Bow Co., Mont.
$40,875 - Manganese

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: R. B. Trace, U. S. Geological Survey

Subject: Review of Field Team report

The Field Team recommends denial of the subject application, and I concur. The denial is based upon 1) the manganese content of the vein is too low and spotty and 2) there is no expectation that the grade would increase with depth.

R. B. Trace

RBTrace:hlm
G-5/10/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Gilbert DeRuff, 3583 Interior

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

Defense Minerals Administration
RECEIVED
MAY 12 1955

May 10, 1955

Re: DMEA-3658
Butte Western Mining Company
Isele Claim
Silver Bow Co., Mont.
$40,875 - Manganese

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: R. D. Trace, U. S. Geological Survey

Subject: Review of Field Team report

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R. D. Trace

RDTrace:hlm
G-5/10/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Gilbert DeMuff, 3523 Interior

IN REPLY REFER TO:

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

Defense Minerals Administration
RECEIVED
MAY 12 1955

May 10, 1955

Re: DMEA-3658
Butte Western Mining Company
Isele Claim
Silver Bow Co., Mont.
$40,875 - Manganese

WSM

Memorandum

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R. D. Trace

R. D. Trace

Docket

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
SPOKANE
MAY 2 - 1955

April 28, 1955

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

Re: Docket No. DMEA-3658 (manganese)
Butte Western Mining Company
Isele Claim
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are copies of a memorandum by James J. Quinlan, geologist, Geological Survey, recommending a denial of a proposal for the exploration of the Isele claim in the Butte district, Silver Bow County, Montana.

The Field Team regrets the necessity for this action because the applicant proposes a novel method for testing the vein by means of oil-well type drilling tools and equipment, and if this were successful, the results would be of possible general application. Unfortunately, as Quinlan points out, all available information suggests that the manganese content of the vein is too low and spotty to justify the proposed exploration. Quinlan also points out that no significant improvement of manganese content can be expected with depth, particularly at the depth which the applicant proposes to test the Isele vein.

The Field Team concurs with Quinlan and recommends denial of the application.

Perhaps in the letter of denial the applicant should be encouraged to come up with another proposal for using the same method in testing a more promising property.

By Field Team, Region I, NW District

A. E. Weissenborn
A. E. Weissenborn, Exec. Officer
(U. S. Geological Survey)

Wing G. Agnew
Wing G. Agnew
(U. S. Bureau of Mines)

Reviewed by
DMEA OPERATING COMMITTEE
5-11-55
(date)

Enclosures
cc: USBM(2) USGS(SRO)
Quinlan

DMEA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 6 - 1955

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

April 20, 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: James J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA-3658 (manganese), Field Examination, Butte Western Mining Company, Isele Claim, Silver Bow County, Montana.

Introduction

The Isele property was visited by Max D. Crittenden, Jr., and the author on March 11, 1955, with reference to the subject loan application. Robert H. Nelson and Irving G. Irving, representatives of the applicant, accompanied the examiners to the property.

The Isele mine workings were reopened for a brief period last year, but since that time all equipment has been removed from the property, and the mine allowed to flood. Although the mine workings were accessible at the time the application was filled out (April 1954), the applicant misplaced the application and did not file it until January 1955, by which time the mine had been closed.

A check of the Spokane office files of the Geological Survey failed to disclose any reports on the property. Fortunately, however, the application contains a detailed geologic report on the property by Winston M. Sahinen. This report, with accompanying maps, appears to adequately picture the geology of the deposit, and of necessity, any evaluation of the applicant's proposal must in a large part be based on information contained in it.

Conclusions and recommendation

The testing of the Isele vein at depth by the use of oil-well type drilling tools and equipment as proposed by the applicant is of interest as an experimental drilling method which might have application in the mining industry. Unfortunately, however, exploration at depth for manganese along the Isele vein is not considered worthwhile and, therefore, it is recommended that the Butte Western Mining Company's application for DMEA assistance be denied.

Reviewed by
DMEA OPERATING COMMITTEE
5-11-55
(date)

Applicant

The applicant is the Butte Western Mining Company, P. O. Box 1045, Billings, Montana. Officers of the corporation are Melvin Von Hess, president, William P. Mefford, vice president, and Glenn P. Scheihing, secretary-treasurer.

The Butte Western Mining Company was organized to reopen the Isele mine. Although none of the officers of the company are experienced mining men, the application indicated that competent personnel would be hired to direct and supervise the project if a contract were granted.

Property and ownership

The property consists of one patented quartz lode mining claim, the Isele Lode, Survey No. 832, sec. 23, T. 3 N., R. 8 W., M.P.M., Silver Bow County, Montana.

The Isele claim is owned by Alex and La Reine C. Leggat, Butte, Montana, Martha Hubbard, Spokane, Washington, Thomas D'Arcy Brophy, New York, New York, John A. Brophy, Sausalito, California, and P. J. Brophy, Denver, Colorado. The claim is leased to D. O. Mecklenburg, Glenn P. Scheihing, and M. H. Von Hess, all of Billings, Montana, and Al C. Fisher, Butte, Montana. The lessees, in turn, have assigned their lease agreement with the owners to the Butte Western Mining Company.

Copies of the various documents by which the applicant claims right, title, and interest in the claim are a part of the application. It appears that the applicant's lease agreement may no longer be in good standing because of failure to comply with the terms of the lease agreement which specified that the Isele shaft was to be sunk an additional 100 feet by December 7, 1954. This point would have to be clarified, only if the DMEA should act favorably on the application.

Brief evaluation of property

The reader is referred to Winston M. Sahinen's report on the property for details as to location, history, past production, workings, sampling, and geology.

The Isele vein appears to be a strong member of the Anaconda vein system in the southwestern part of the Butte district. It strikes N. 70° - 85° E. and dips about 70° S. Although the Isele shaft is reported to have been sunk to a depth of 400 feet, Sahinen could only verify that it was sunk a short distance below the 300 level (284.3 feet below collar), and he concludes that the shaft is either now filled below this point or was never sunk to the depth reported.

The Isele vein is reported to consist of predominantly quartz with variable amounts of rhodochrosite and small amounts of galena, sphalerite, and pyrite. Silver is reported to occur in an unknown mineralogical form. Ore mined in the past has been valued principally for its silver content. Much of the past production is reported to have come from near-surface workings which suggests that secondary enrichment was an important factor in forming ore of commercial grade in the vein. Estimates of the value of past production range from $350,000.00 to over $1,000,000.00.

A study of Sahinen's report and sample data indicates that the over-all manganese content of the vein is too low to be of any economic interest. Sahinen reported that channel samples were taken across the entire vein at every accessible exposure throughout the mine. Twenty-seven samples ranging in grade from 0.2 to 21.8 percent manganese were cut in all. Only five of the 27 samples cut contained over 12 percent manganese, the minimum grade rhodochrosite ore acceptable at the Butte GSA Purchase Depot, and the average grade of all samples was only 7.2 percent manganese. It appears that the higher grade samples represent small lenses of ore within the vein which would be of little economic interest.

Sahinen reports three shipments of manganese from the property totaling 130 tons of ore averaging 14.6 percent manganese. Most of this ore is reported to represent rhodochrosite development muck from 203 DE and 203 DW headings (see maps accompanying Sahinen's report), but some of it also represents hand-sorted ore from other development areas.

When the property was reopened in 1954, it is evident that the company tried to get the property into production by developing and exploiting the best manganese showings in the mine workings. The fact that all equipment was removed from the property and the mine allowed to flood clearly points to the failure of this venture and indicates that the property is submarginal.

Exploration along other veins in the immediate vicinity of the Isele property has shown the manganese in these veins to be of a marginal nature. The Tzarena vein, a short distance north of the Isele claim, has been explored to a depth of 150 feet from a shaft on the property. This vein is also reported to have been cut and drifted along on the 1000 level of the old Germania mine. Available records indicate that there was no significant change in this vein between the shallow workings below the zone of oxidation and the 1000 level.

One point Sahinen fails to mention in his report is the presence of a large rhyolite dike a few hundred feet east of the Isele shaft. This dike appears to be the same dike that is found

immediately east of the Tzarena shaft. At the Tzarena the dike is about 100 feet wide. In the district the rhyolite is later than the veins and cut them out, but it is usually an easy matter to pick up the vein on the opposite side of dikes this size.

In summary, the Isele vein is a strong and well-defined structure in the southwest part of the Butte district. Although rhodochrosite is one of the vein minerals, the over-all manganese content of the vein is far too low for it to be of any economic interest. Available evidence suggests that in this part of the Butte district no significant improvement of the manganese content of the veins can be expected with depth, particularly the depths that the applicant proposes to test.

Evaluation of applicant's proposal

The applicant proposes a drilling program to test the Isele vein at 200-foot intervals between a depth of 400 and 1,000 feet. The applicant proposes to use oil-well type drilling tools and equipment in this drilling program instead of conventional diamond drilling equipment.

The proposed drilling would consist of drilling a vertical hole, 11 inches in diameter, to a depth of about 700 feet. Whipstock holes, 8-3/4 inches in diameter, would then be drilled from the main vertical hole to intersect the vein at depths of 400, 600, 800, and 1,000 feet. The applicant estimates that about 1,400 feet of whipstock holes will be necessary to test the vein at the four proposed intersections, making a total of approximately 2,100 feet of drilling.

Under the proposed program core will be taken only in the vicinity of the vein. The applicant reports that size of the core will depend on the type of bit that ground conditions require, but it will range from 3-1/2 to 5 inches. It is also reported that equipment is available to sample the walls of the holes once the holes have been drilled.

Actual drilling would be done under contract with the Clark Drilling Company of Billings, Montana. Although the application states that the Clark Drilling Company will undertake the proposed drilling program for $36,250.00, a letter dated January 21, 1955, from the Clark Drilling Company estimates the cost at $40,250.00. Allowance made by the applicant for a consulting geologist and assaying would increase the cost by $625.00, or to $40,875.00. On this basis the cost of the 2,100 feet of proposed holes would be about $19.50 per foot.

The location of the proposed vertical drill hole is about 200 feet east of the Isele shaft. It is evident from the application that in planning the proposed hole no consideration was given to the large rhyolite dike which crops out in the vicinity of the proposed hole. As this dike cuts the vein, some careful mapping to determine its position and attitude in relation to the proposed hole should be undertaken if the DMEA were to give favorable consideration to the applicant's proposal. It would be a small matter to move the location of the hole to the west if mapping indicated that the dike would cut out the vein.

The applicant's novel proposal for testing of the Isele vein at depth by use of oil-well type drilling tools and equipment is of interest as an experimental drilling method which might have application in the mining industry. The applicant points out that whipstocking from the same hole to intersect the vein at various intervals will result in a saving as to the amount of hole that would have to be drilled by conventional methods to obtain the same intersections. This is true, but the saving in footage alone will not, however, make the proposed method competitive with conventional diamond drilling methods. To illustrate, the same intersection as proposed by the applicant could be obtained with 3,300 to 4,000 feet of drilling by conventional methods at a cost some 25 to 35 percent lower than that estimated for the applicant's proposed program. However, the larger size core and possibly the higher core recovery offered by the use of oil-well type equipment makes the applicant's proposed method very attractive even considering its higher cost, and for this reason, it might be competitive with conventional methods under certain circumstances. Also, being able to sample the walls of a hole is another attractive feature of the applicant's proposal.

It is unfortunate, however, that exploration at depth for manganese along the Isele vein is not considered worthwhile as it would be very interesting to see if the oil well method as proposed by the applicant is a practicable method for testing ore deposits.

Distribution:
DMEA(4)
USBM(2)
USGS(SHO)
Docket
Quinlan

Docket 5

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

April 1, 1955

WSM

Mr. Melvin H. Von Hess, President
Butte Western Mining Company
P. O. Box 1045
Billings, Montana

Re: Docket No. DMEA-3658 (manganese)
Butte Western Mining Company
Isele Mine
Silver Bow County, Montana

Dear Mr. Von Hess:

In reply to your letter of March 23, 1955, this is to inform you that our field man has been to Butte and spent some time examining the Isele property. This examination was made in company with Irving and Nelson, and some time was spent discussing the property with them. An examination report is in preparation and will be submitted to our Washington office shortly.

Sincerely yours,

A. H. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

cc: DMEA (2) w/cys incoming
USBM (2) " "
Quinlan " "

Melvin H. Von Hess, P[illegible]. & Gen. Manager Telephone 9-2409

Docket

NATIONAL AGENCY, INC.
Insurance, Bonds, Real Estate
202-208 Billings Livestock Exchange Bldg.
1202 First Avenue North
P. O. Box 1045
Billings, Montana
23 March 1955

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I - Northwest District
South 157 Howard Street
Spokane 4, Washington

Dear Mr. Weissenborn:

Docket No. DMEA 3658 - Manganese
Isele mine
Silver Bow County, Montana

We are in receipt of a communication from Mr. C. O. Mittendorf, Administrator, Washington, D. C., advising that our application for exploration assistance has been referred to you for field examination of the property.

As we previously advised, please have your field team contact geologists Irving and Nelson, Hirbour Building, Butte, Montana for assistance in the examination of the property.

I would greatly appreciate it if you could advise me when your field team will be in Butte, as I would like to be present at the time.

Thank you very much for your co-operation and assistance.

Sincerely yours,

/s/ M. H. Von Hess

Melvin H. Von Hess,
President
BUTTE WESTERN MINING COMPANY
P. O. Box 1045
Billings, Montana

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

February 25, 1955

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

Copy retained 400

WSM

Re: Docket No. DMEA-3658 (manganese)
Butte Western Mining Company
Isele Claim
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are three copies of the claim map which Mr. Von Hess sent us in answer to my letter of February 14, 1955.

These should be added to the docket. Enclosed also are three copies of a letter dated February 18, 1955, from Mr. Von Hess.

Sincerely yours,

John S. Vhay

John S. Vhay
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Copy retained 400

Enclosures

cc: USBM (2)
Quinlan

So. 157 Howard Street
Spokane 4, Washington

February 25, 1955

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

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Silver Bow County, Montana

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John S. Vhay
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Enclosures

cc: USBM (2)
Quinlan

C
O
P
Y

Docket

NATIONAL AGENCY, INC.
Insurance, Bonds, Real Estate
202-208 Billings Livestock Exchange Bldg.
1202 First Avenue North
P. O. Box 1045
Billings, Montana
18 February 1955

Mr. John S. Vhay, Acting Member
DMEA Field Team, Region I
Northwest District
United States Department of the Interior
South 157 Howard Street
Spokane 4, Washington

Dear Mr. Vhay:

Docket No. DMEA-3658 (manganese)
Application for Aid
Isele Claim
Silver Bow County, Montana

Thank you very much for yours of 14 February 1955 regarding the subject. Please be advised that Mr. Winston Sahinen is now in the Army, and in his place we have appointed the firm of Irving and Nelson, Hirbour Building, Butte, Montana as our consulting geologists. Please have your field men contact Irving and Nelson for any field examination of the Isele Claim.

It is possible that the first level of the Isele Claim is still accessible for examination, but it is true that all mining equipment has been removed from the property, and that the majority of the mine is now under water.

The firm of Irving and Nelson is entirely familiar with the mine as it was at the time of closing. They should be able to give you detailed information on the vein structures of the claim.

Enclosed you will please find the photostatic copy of the Isele Lode Claim as per U.S. Survey #832. The shaft is circled in red. It is hoped that this will answer your request for a claim map.

Thank you for your cooperation.

Sincerely yours,

/s/ M. H. Von Hess

Melvin H. Von Hess,
President
BUTTE WESTERN MINING COMPANY
P. O. Box 1045
Billings, Montana

MHVH:ab

C
O
P
Y

NATIONAL AGENCY, INC.
Insurance, Bonds, Real Estate
202-208 Billings Livestock Exchange Bldg.
1202 First Avenue North
P. O. Box 1045
Billings, Montana
18 February 1955

Mr. John S. Vhay, Acting Member
DMEA Field Team, Region I
Northwest District
United States Department of the Interior
South 157 Howard Street
Spokane 4, Washington

Dear Mr. Vhay:

Docket No. DMEA-3658 (manganese)
Application for Aid
Isele Claim
Silver Bow County, Montana

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Sincerely yours,

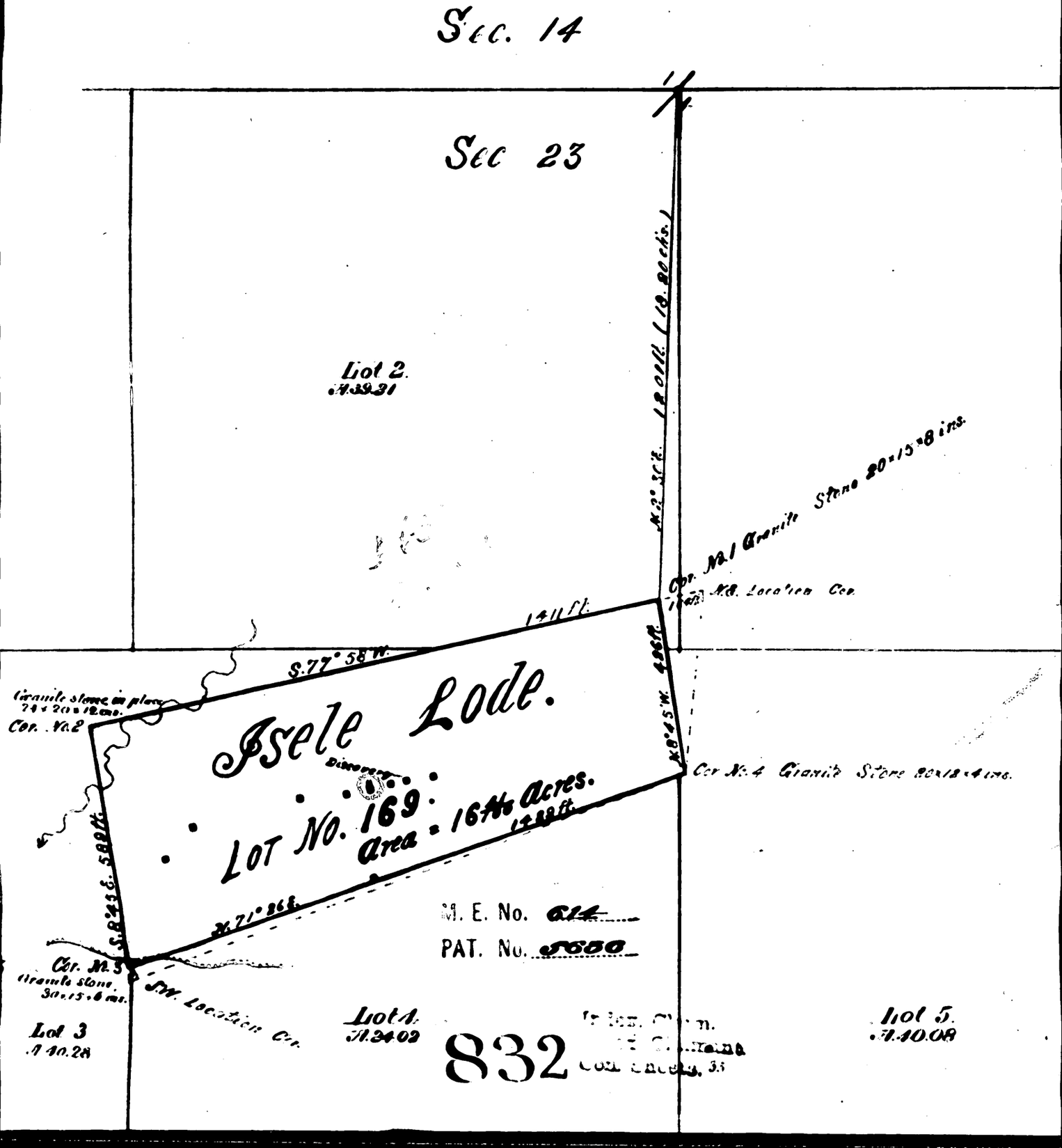
/s/ M. H. Von Hess

Melvin H. Von Hess,
President
BUTTE WESTERN MINING COMPANY
P. O. Box 1045
Billings, Montana

Cor. line is N. 2°27'54" E. 1206.02 ft. Sur. No. 8882

T. 3 N. R. 8 W.

(Surveyed)



SURVEY No. 832

PLAT

OF THE

ISELE LODE MINING CLAIM OF

Ferdinand Isele

Designated as Lot No. 169 in Township No. 3 North Range No. 8 West from the Principal Meridian Montana, situated in Independence Mining District Deer Lodge County Montana Territory Containing an Area of 16 4/10 Acres.

Scale of 300 ft = to 1 Inch.

Variation 20° To 21½° East.

Surveyed by

Thomas T. Baker

U.S. Deputy Mineral Surveyor.

May 29th

1880

The Original field notes of the Survey of the Lode Mining Claim of Ferdinand Isele named in title, on the Isele Lode Claim, designated as Lot No. 169 T. No. 3 North R. No. 8 West from the Principal Meridian Montana from which this Plat has been made, have been examined, and approved, and are on file in this office, and I hereby certify, that they furnish such an accurate description of said Lode Mining Claim, as will if incorporated into a patent, serve to fully identify the premises; and that such reference is made therein to natural objects or permanent monuments, as will perpetuate and fix the LOCUS thereof I further certify that the value of the labor and improvements, upon the said Lode Mining Claim placed thereon by the applicant or his grantors, is not less than Five Hundred Dollars, and that said improvements consist of discovery Shaft 5×10×14 ft. = $125.00: a shaft 8×8×15 ft. = $140.00: a shaft 5×7×10 ft. = $100.00: a shaft 5×5×10 ft. = $80.00: a shaft 7×8×18 ft. = $120.00: a shaft 5×7×8 ft. $250.00: a cross cut 3×5×10 ft. = $85.00: a shaft 6×11×28 ft. = $275.00: a shaft 4×8×14 ft. = $185.00: a shaft 5×9×11 ft. = $100.00: total value of improvements = $1340.00.
as appears by the report of the deputy surveyor and the testimony of two disinterested witnesses.

And I further certify that this is a correct Plat of said Isele Lode Mining Claim, or premises made in conformity with said original field notes of the survey thereof

U.S. Surveyor Generals Office
Helena, Montana Territory
August 5th 1880

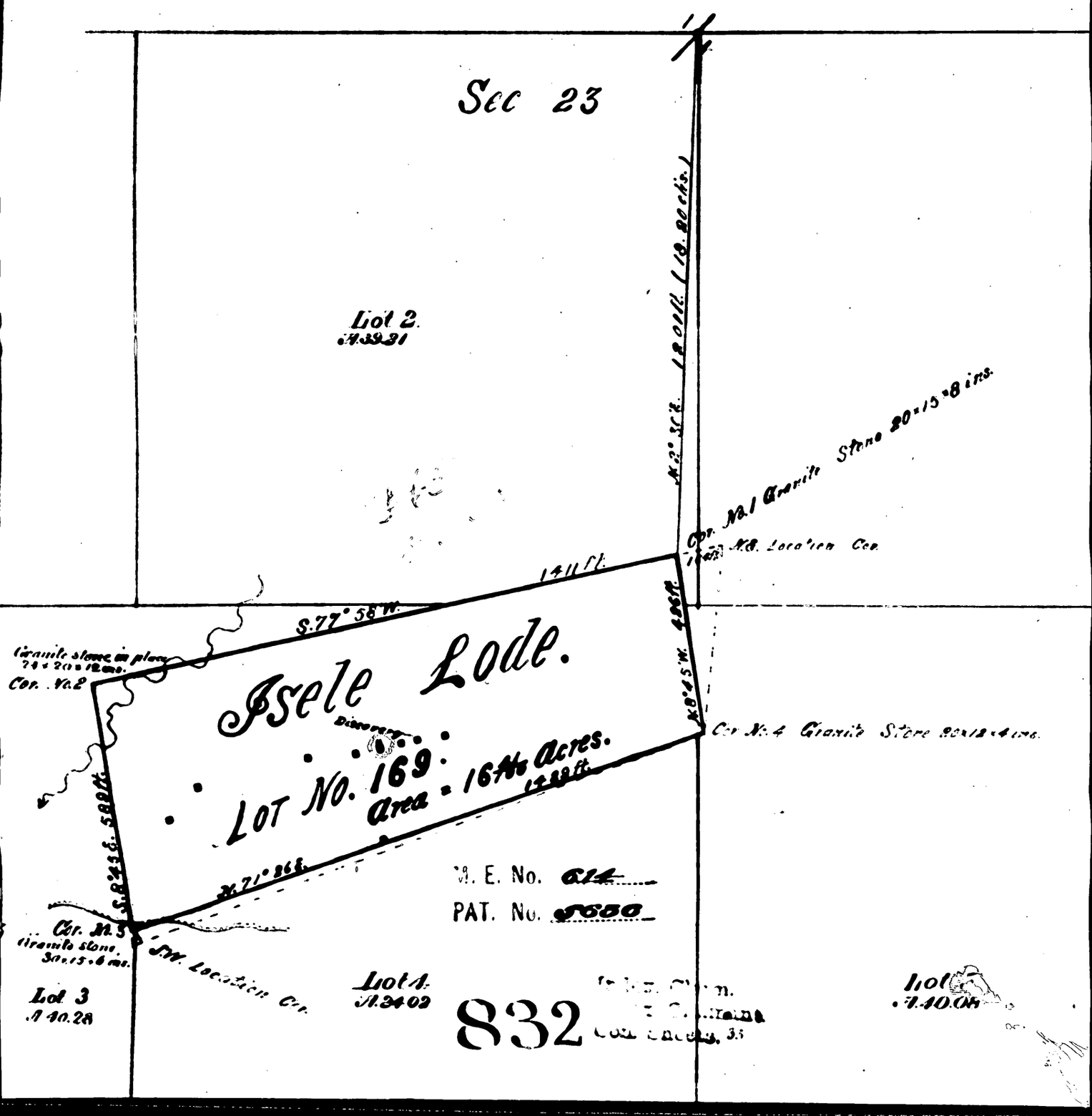
Roswell H. Mason.
U.S. Surveyor General

832

Com. line is 2°27'54" E 1206.02 ft. Sur. No. 8882

T. 3 N. R. 8 W.

(Surveyed)



SURVEY No 832

PLAT

OF THE

ISELE LODE MINING CLAIM OF

Ferdinand Isele

Designated as Lot No 169 in Township No 3 North Range No 8 West from the Principal Meridian Montana, situated in Independence Mining District Deer Lodge County Montana Territory Containing an Area of 16 4/10 Acres.

Scale of 300 ft = to 1 Inch.

Variation 20° 20 21/2' East.

Surveyed by

Thomas T. Baker

U.S. Deputy Mineral Surveyor.

May 29th

1880

The Original field notes of the Survey of the Lode Mining Claim of Ferdinand Isele named in title, on the Isele Lode Claim, designated as Lot No 169 T. No 3 North R. No 8 West from the Principal Meridian Montana from which this Plat has been made, have been examined, and approved, and are on file in this office, and I hereby certify, that they furnish such an accurate description of said Lode Mining Claim, as will if incorporated into a patent, serve to fully identify the premises; and that such reference is made therein to natural objects or permanent monuments, as will perpetuate and fix the LOCUS thereof I further certify that the value of the labor and improvements, upon the said Lode Mining Claim placed thereon by the applicant or his grantors, is not less than Five Hundred Dollars, and that said improvements consist of discovery Shaft 5×10×14 ft. = $125.00: a shaft 8×8×15 ft. = $140.00: a shaft 5×7×10 ft. = $100.00: a shaft 5×5×10 ft. = $80.00: a shaft 7×8×12 ft. = $120.00: a shaft 5×7×27 ft. $250.00: a cross cut 3×5×10 ft = $25.00: a shaft 6×11×28 ft. = $275.00: a shaft 4×8×14 ft. = $125.00: a shaft 5×9×11 ft. = $100.00: total value of improvements = $1340.00.

as appears by the report of the deputy surveyor and the testimony of two disinterested witnesses.

And I further certify that this is a correct Plat of said Isele Lode Mining Claim, or premises made in conformity with said original field notes of the survey thereof

U.S. Surveyor Generals Office
Helena, Montana Territory
August 5th 1880

Roswell H. Mason.
U.S. Surveyor General
for Montana Territory

832

400

DOCKET
Surname:
Rutledge
Martin
Selfridge
Hedges

FEB 10 1955

Mr. A. K. Weissenborn, Executive Officer
DMEA Field Team, Region I - Northwest District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3658 - Manganese
Butte Western Mining Company
Isele mine
Silver Bow County, Montana

Dear Mr. Weissenborn:

Reference is made to the subject docket and to your letter of January 27, 1955, which states that a field examination of the property will be made.

We will, therefore, hold this application in abeyance until the report and recommendations by the Field Team are received. However, if the Field Team concludes that an exploration program is warranted, executed owner's consent to lien forms should be obtained.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

Approved:

J. H. Hedges

Member, Bureau of Mines (JHB)

Thor H. Kiilsgaard

Member, Geological Survey (JHB)

cc: DOCKET
FT, REG. I
CODE 400
OPER. COMMITTEE
ADM. READ. FILE
G. DE HUFF, USBM
T. KIILSGAARD, USGS

FARutledge/ls
2/7/55

R.L.S.

DOCKET
Surname:

Rutledge
Martin
Külsgaard
Hedges
Selfridge
Johnson

400

FEB 10 1955

Butte Western Mining Company
P. O. Box 233
Billings, Montana

Re: Docket No. DMEA 3658 - Manganese
Isele mine
Silver Bow County, Montana

Gentlemen:

The above-docketed application for exploration assistance has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. A. E. Weissenborn, Executive Officer, DMEA Field Team, Region I - Northwest District, South 157 Howard Street, Spokane 4, Washington, for a field examination of the property.

Any assistance that you can render the members of the Field Team will be appreciated.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

cc: DOCKET
CODE 400
ADM. READ. FILE
FT, REGION I - SPOKANE
OPER. COMM.
G. DE HUFF, USBM
T. KIILSGAARD, USGS

FARutledge/ls
2/7/55

R.C.S.

January 31, 1955
Subject: DMEA 3658
Re: Exploration Assistance
Isele Mine

Butte Western Mining Company, Inc.
P. O. Box 233
Billings, Montana

Gentlemen:

The receipt of your application dated April 8, 1954 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA 3658 and referred to the Iron and Ferro-Alloys Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

January 31, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region I

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region I.

DMEA - 3658 Butte Western Mining Company, Inc.

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

P.S. Will you please see that all copies of applications are stamped with the date received, before mailing to the Washington office.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

January 27, 1955

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

Re: Transmittal of an application
for aid
Butte Western Mining Co.
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application for aid in an exploration project submitted by the Butte Western Mining Company.

The applicant proposes to explore the Isele claim near Butte, Montana, in a novel way as far as mining districts are concerned; namely, by drilling a large vertical hole using oil drilling equipment and turning somewhat smaller diameter holes off at an angle from the vertical hole in order to test a manganese-bearing vein.

We will have a field examination made and a cost analysis will be submitted as soon as possible.

Sincerely yours,

John S. Vhay

John S. Vhay
Acting Member, DMEA
Field Team, Region I
Northwest District

Enclosures
cc: DMEA(Orig.&2)
USBM(2)

Clark DRILLING COMPANY

BOX NUMBER 1743
BILLINGS, MONTANA

January 21, 1955

Butte Western Mining Company
Billings, Montana

Attention: Mr. Melvin Von Hess

Gentlemen:

As you have been informed by Mr. Mefford, we are interested in drilling a hole to a depth of approximately 1000' in the Iselie Mine Area, approximately one mile west of Butte, Montana.

We propose to drill several angular holes from the original perpendicular hole, each of these holes to encounter the vein of manganese ore which is believed to be present in the area.

Our estimate of the costs to do this work is as follows:

Moving in equipment	$ 5,000.00
Location preparation	1,700.00
Drilling mud and chemicals	1,950.00
Drilling bits	3,000.00
Diamond bits and coreheads	4,500.00
Eastman whipstock service	5,100.00
Rig rental and labor	17,000.00
Core barrel rentals	2,000.00
	$40,250.00

We are ready to start working on this project upon notification from you that the Government has approved the program and that the necessary money is available.

Very truly yours,

CLARK DRILLING COMPANY

Bill Clark

Bill Clark

RECEIVED
JAN 24 1955
U. S. G. S.
SPOKANE, WASH.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

RECEIVED
JAN 5 1955
U. S. G. S.
WASH.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 3658
Metal or Mineral Manganese
Date Received 1-31-55
Estimated Cost $40,875
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address:

Butte Western Mining Company, a Montana corporation.
P. O. Box 233
Billings, Montana

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract

See Schedule "B" attached.

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise

See Schedule "B" attached.

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it

See Schedule "B" attached.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore See Schedule "D" attached.

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 30 days and be completed within 60 days months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

[x] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated April 8, 1954

BUTTE WESTERN MINING COMPANY
(Applicant)

By Melvin H. Von Hess

President

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.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

Ref: MF-103 (1)

SCHEDULE "A"

1. (a) Butte Western Mining Company, Inc.
P. O. Box 233
Billings, Montana

1. (b) Butte Western Mining Company is incorporated in the State of Montana.

1. (c) Officers of Butte Western Mining Company, Inc.:
President: Melvin Von Hess
Vice President: William P. Mefford
Secretary-Treasurer: Glenn R. Schieng

Address: P. O. Box 233
Billings, Montana

Ref: MF-103 (3)

SCHEDULE "B"

3. (a) Property to be explored consists of the Isele-quartz lode patented mining claim, Survey No. 832, Lot 169, located in the NW¼ of Section 23, Township 3 North, Range 8 West, M.P.M., of the Butte Mining District, Silverbow County, Montana.

3. (b) Mine is commonly known as the Isele Mine.

3. (c) The Butte Western Mining Company is the lessee with a bonded option to purchase under a five year contract.

3. (d) Copy of lease attached as appendix to the application.

3. (e) Lessors are entitled to a 15% royalty of net smelter returns totaling $60,000.00, at which point the Butte Western Mining Company will assume full ownership of the property. (See copy of attached lease).

Ref: MF-103 (4)

SCHEDULE "C"

4. (a), (b), (c), (d), (e). (See accompanying geologic report).

SCHEDULE "D" Ref: MF-103 (5)

5. (a) Exploration is to be conducted for manganese carbonate ore. Incidental occurrences of silver, gold, lead and zinc may be encountered.

5. (b) The proposed work is to consist of exploring the Isele vein (see maps accompanying geologic report) by controlled directional drilling through the use of large diameter oil well type tools and drilling equipment.

It is intended that the drill holes intersect, and explore the Isele vein at intervals of 400', 600', 800' and 1000' from surface vertically. Target areas will consist of the downward projection of known manganese occurrences that have been mined in the upper levels of the mine in the past. Location of subsequent drill holes will necessarily be influenced by findings from the initial (400' level) hole intersection. (See attached drilling plan as presented by the Eastman Oil Well Survey Company, covering possible approaches as to feasible means of attaining desired vein intersections at any level or direction).

The employment of oil well drilling techniques are deemed the most feasible means of exploring the Isele vein for the following reasons:

1. Conventional diamond drilling in the Butte district has resulted in very poor core recoveries and consequently, inadequate information on which to base mine development. It is the unanimous opinion of numerous oil well rotary drilling experts, based on personal inspections of underground workings in the Butte District, that complete analyses of all mineralized target areas will be attained by using oil well drilling techniques.

2. The use of oil well drilling methods with controlled directional drilling procedures will result in the drilling of less hole than would be needed to obtain the same vein intersections by conventional diamond drilling. Therefore, although the cost per unit is greater for the larger diameter oil drill hole, it is believed that the project costs would be competitive with those resulting from a conventional diamond drilling program achieving the same results.

The oil well drilling technique to be used will consist of the drilling of a vertical 11" bore hole on the hanging wall side of the Isele vein to a depth of approximately 700'. Whipstock holes of 8-3/4" diameter will be carried from the main vertical bore hole and will cut the Isele vein at the 400', 600', 800' and 1000' levels. Approximately 1400' of whipstock 8-3/4" diameter

5. (b) (Continued)

hole will be needed to obtain the four vein intersections at the planned elevations. (See attached Clark Drilling Company chart of the longitudinal section illustrating proposed drill holes).

Drilling Procedure:

A Brewster or Wilson rotary oil well drilling rig with a rated capacity of 3500' with 4-1/2" diameter drill pipe will be used to perform the proposed drilling. The rig will be set on the surface approximately 200' southeast of the Isele mine shaft; thereby facilitating the drilling of curved directional holes in a northerly direction from the main bore hole to intersect the downward projection of the best manganese ore shoot presently known in the Isele vein. (Ore shoot shown in Section DD, Plate 2, Sahinen map.)

The procedure will be to drill a vertical 11" bore hole to a depth of approximately 150', using a non-coring, roller type, hard formation, rock bit. At the 150' depth an Eastman retrievable whipstock will be set to start drift angle to the north. An 8-3/4" whipstock hole will be drilled from the 150' turning point to intersect the Isele vein at the 400' level. Knuckle joints and additional whipstocks will be used if necessary so the vein will be intersected at an angle as close to normal as possible.

Prior to estimated vein intersection, a 15' to 20' oil well type 8-3/4" O.D. core barrel will be inserted for the purpose of coring anticipated mineralized intersections. Diameter of the core will be governed by the type of bit that the ground conditions require. It will vary from 3-1/2" to 5" depending upon the core head used. Core recovery of 100% is anticipated. However, in the event that additional information in the ore zone is considered necessary, side wall samples can be obtained through the use of Eastman side wall sampling facilities. The drill pipe size and the hole size will permit the use of wire line side wall coring equipment. This technique makes it possible to absolutely guarantee that representative samples of vein material can be procured at any desired point. The hole will be subjected to periodic wire line surveys which are run inside of the drill pipe. This system will provide an accuracy within 1% of the depth to the point surveyed.

Above procedures will be repeated at projected intervals for subsequent intersection of the vein at greater depths. (See accompanying map).

5. (c) Per Schedule; Start within 30 days and complete within 60 days.

(d) 1. Butte Western Mining Company, a new corporation, formed to rehabilitate the Isele mine.

2. Direct Supervision of the drilling program to be under the supervision of W. P. Mefford, Vice President of Butte Western Mining Company, with 20 years oil field experience.

SCHEDULE "D" (Continued) Ref: MF-103 (5)

5. (d) Continued:

3. Clark Drilling Company are operators of eight (8) rotary drilling rigs, and have been operating as Clark Drilling Company for a period of nine (9) years.

4. Eastman Oil Well Survey Company, a specialty company, leaders in the field of controlled directional drilling and coring procedures.

5. Mr. Winston Sahinen, Consulting Geologist for Butte Western Mining Company. Student 1952

6. Mr. Charles VanAlstine, Mining Engineer, with 25 years experience in the Butte District.

SCHEDULE "E" Ref: MF-103 (6)

6. Estimate of Costs:

(a) Attached contract letter per Clark Drilling Company bid. Total $36,250.00. Consulting Geologist, approximately 15 days at $25.00 per day; Total, $375.00.
Complete Assaying of cores, 50 samples at $5.00; Total $250.00.

?

Letter says $40,250

(b) All labor to be furnished by Contractor.

(c) All materials and supplies to be furnished by Contractor.

(d) All operating equipment to be furnished by Contractor.

(e) None

(f) None

(g) None

(h) None

COPY

THIS AGREEMENT made and entered into this 22nd day of July, 1953, by and between THOMAS D'ARCY BROPHY, of New York, N. Y., JOHN A. BROPHY, of Sausalito, California, and P. J. BROPHY, of Denver, Colorado, parties of the first part, and AL C. FISHER, of Butte, Montana, D. O. MECKLENBURG, GLEN P. SCHEIHING and M. H. VON HESS, of Billings, Montana, parties of the second part;

W I T N E S S E T H: That said parties of the first part, for and in consideration of the rents, royalties, covenants and agreements hereinafter contained to be paid, kept and performed by the parties of the second part, do hereby lease, demise and let unto said parties of the second part the following described mining claim and premises situated, lying and being in the County of Silver Bow, State of Montana, to-wit:

> The Isele Quartz Lode Mining Claim, being Lot No. 18, Survey No. 832, situated in the Summit Valley Mining District, Sec. 23, T. 3 N., R. 8 W., County and State aforesaid; together with the tenements, hereditaments, appurtenances and mining rights incident thereto, excepting and reserving therefrom those certain surface rights heretofore transferred to various individuals, all of which appear of record in the Office of the County Clerk and Recorder of Silver Bow County, Montana.

To have and to hold, all and singular, the said premises together with the appurtenances and mining rights to the said parties of the second part for the term beginning August 1, 1953, and ending midnight on July 31, 1958, unless said term is sooner terminated through the violation of any of the covenants or conditions herein contained.

The said parties of the second part agree that on or before October 10, 1953, they will enter upon said premises and shall thereafter with due diligence work and mine the same. For the period October 10, 1953, to November 10, 1953, said parties of the second part agree to do at least 45 miner's

shifts of work, and for each and every month thereafter during the term hereof do at least 90 miner's shifts of work each and every month until the end of the term of this agreement; unless prevented by Act of God, strikes or other unavoidable casualty; provided whenever in any month the said parties of the second part shall do or cause to be done in such mining, exploration and development work more than the minimum requirement of work for that month the excess shall be applied to reduce the minimum requirement of work for any succeeding month or months until the whole of such excess is exhausted. It is further agreed and understood that in performing such exploration, mining and development work the said parties of the second part shall sink the present shaft upon the Isele Lode from its present depth of 290 feet 100 feet yearly. The said parties of the second part agree that all work done by them or their assigns on said premises shall be done in good and workmanlike and minerlike manner.

The parties of the first part reserve unto themselves and to their agent or agents the right to examine, inspect and have access to all workings in said mining property during the term of this agreement and the parties of the first part shall have the right to use all ways and equipment in and about said premises for such purpose.

The said parties of the second part agree that they will immediately comply with the Workmen's Compensation Law of the State of Montana and will apply to the Industrial Accident Board of the State of Montana for that purpose and do all things necessary to that end previous to employing any person or persons to work in or upon said premises, and will comply with the requirements of the Workmen's Compensation Law during all of the term of this lease.

Said parties of the second part further agree that they will upon the termination of this lease and the option

hereinafter set forth, either by lapse of time or forfeiture because of noncompliance with any of the terms or conditions hereof, deliver up to said parties of the first part the quiet and peaceable possession of said premises and all thereof without any cost or expense of any kind whatsoever to said parties of the first part.

The parties of the second part shall pay for all work and labor performed and materials furnished for or used in or on said mining claim or any part thereof, or in buildings or appurtenances erected thereon, and shall suffer no liens or encumbrances to be placed upon said property or any part or portion thereof or on the buildings thereon or on the buildings which may be placed thereon.

It is agreed and understood between the parties hereto that the said parties of the second part shall have the right within 60 days from and after the termination of this agreement to remove all machinery and tools placed by them on said premises during the term covered by this agreement but they shall not remove buildings or gallows frames or anything fastened to the surface of said premises which would be deemed appurtenant to or fixtures attached to the mine under the laws of the State of Montana.

The said parties of the second part covenant and agree to pay the parties of the first part fifteen percent (15%) of the net mill or smelter returns or the returns from any plant wherein the ores extracted from said premises may be treated, from all ores mined and shipped from said leased premises during the life of this agreement, and it is specifically understood and agreed that said "net mill or smelter returns" or the returns from any plant where said ore shall be treated are to be arrived at by deducting from the gross returns from said ore all hauling, freight and treatment charges, and none other. In the event said ores extracted from the premises hereinabove described are treated by a

mill or smelter working or reducing the said ores the said royalty shall be deducted by the said mill or smelter and forwarded to the said parties of the first part at whatever address they may designate at the time of the shipment of said ore.

It is understood and agreed between the parties hereto that it is within the contemplation of the parties that the ores extracted from said premises shall be manganese ores and in that event the said ore will be treated by the Domestic Manganese and Development Company at Butte, Montana, which said company will calculate the payments due and forward said acceptance notice to the parties of the second part for each shipment of ore by it received. As the said payments for said ore are made from the General Services Administration of the United States Government it is understood that payment for said shipments shall be made to the parties of the second part from the Seattle Office of the said General Services Administration, which office is in the Federal Office Building, Seattle 4, Washington. A duplicate copy of said acceptance notice shall be mailed immediately to the parties of the first part or to their authorized agent, and immediately upon receipt of the payment from the General Services Administration the parties of the second part agree to pay to the parties of the first part the royalties due to them upon said ores as in this agreement specified.

It is understood and agreed that each of the parties of the first part are the owners of a one-twelfth (1/12) interest in the above described premises and as the purchase price of the entire property has been agreed upon at the sum of $60,000.00 each of the said parties of the first part shall receive no greater sum from said royalties than the sum of $5,000.00.

It is further understood and agreed in the event a metals mines tax, license tax, or gross proceeds tax or

net proceeds of mines tax of the State of Montana shall be levied or assessed against the ores mined from said premises by said parties of the second part, the same shall be paid by the said parties of the second part.

It is further covenanted and agreed that for and in consideration of the sum of One Dollar ($1.00), lawful money of the United States, and other good and valuable consideration, to the said parties of the first part in hand paid by the parties of the second part, receipt whereof is hereby acknowledged, and in consideration of the well and faithful keeping of the terms, covenants and conditions by the said parties of the second part to be paid, done, kept and performed, all as set forth in the foregoing lease, the said parties of the first part hereby give and grant unto said parties of the second part, or their assigns, the sole and exclusive right, option and privilege to purchase said mining claim hereby leased at any time during the life of this agreement provided that neither this lease nor agreement has been forfeited or terminated as herein provided, at the price of $60,000.00 lawful money of the United States for the entire premises, of which sum each of the said parties of the first part are entitled to one-twelfth or the sum of $5,000.00, payable within the time and in the manner following, to-wit:

The said purchase price is to be and shall be paid to said parties of the first part through and by means of said royalties which are to be paid to said parties of the first part under the foregoing lease contained in this agreement, and said purchase price shall be paid to the said parties of the first part in full on or before the expiration of the term of this agreement. It is understood and agreed that if said purchase price shall not have been paid in full by and through such royalties by July 31, 1958, then and in that

event the balance of said purchase price which has not been so paid by such royalties shall be paid to said parties of the first part on or before the said 31st day of July, 1958.

It is further understood and agreed by and between the parties hereto that this is an option to purchase and not an agreement upon the part of the said parties of the second part to purchase.

It is further understood and agreed that upon a breach of any of the terms or covenants of this agreement, either of the lease or the option, a forfeiture of this entire agreement, both lease and option, shall immediately result.

It is understood and agreed that each of the parties of the first part own a one-twelfth interest in and to the Isele Quartz Lode Mining Claim and that payments of royalty or on the purchase price of said property are to be paid to the said parties of the first part according to their interests as herein set forth.

It is specifically understood and agreed that said lease and agreement shall not be assigned by the parties of the second part without the written consent of the parties of the first part.

It is understood and agreed that the covenants, conditions and agreements hereof are continuing ones and that the failure of the parties of the first part to avail themselves of the right of termination of this agreement on account of or by reason of the failure of the parties of the second part to perform any one or more of the covenants and agreements herein contained to be by them performed shall not constitute or be deemed to be a waiver of their right to terminate or bring about a forfeiture of this agreement for or on account of any subsequent violation of the same or any

other covenant, condition or agreement herein provided to be by said parties of the second part performed and kept.

The said parties of the second part shall at all times keep posted in at least three conspicuous places on said mining claim notices that the same is being operated under lease and that the parties of the first part are not responsible for any debts or obligations of the said parties of the second part.

The said parties of thefirst part hereby agree that they will upon the payment of the purchase price due hereunder execute and acknowledge a good and sufficient deed conveying and granting said property hereinabove described, free and clear of all encumbrances, to said parties of the second part or their assigns.

This agreement shall be binding upon all the heirs, executors, administrators and assigns of each and all of the parties hereto.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on the day and year in this instrument first above written.

Thomas D'Arcy Brophy

P. J. Brophy

By: John A. Brophy
Attorney-in-fact.

John A. Brophy
Individually.

PARTIES OF THE FIRST PART.

Al C. Fisher

D. O. Mecklenburg

Glenn P. Scheihing

M. H. Von Hess

PARTIES OF THE SECOND PART.

STATE OF CALIFORNIA,)
) ss.
COUNTY OF MARIN)

On this 25th day of July in the year one thousand nine hundred and fifty-three before me, Sally Hettrich, a Notary Public in and for the County of Marin, State of California, residing therein, duly commissioned and sworn, personally appeared John A. Brophy as an individual and John A. Brophy as Attorney in fact for Thomas D'arcy Brophy and P. J. Brophy known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal in the County of Marin, the day and year in this certificate first above written.

(SEAL)

Sally Hettrich
Notary Public in and for the County of Marin, State of California. My Commission expires Aug. 21, 1953

COPY

A G R E E M E N T

THIS INDENTURE, entered into this 9th day of January, 1954, by and between Thomas D'Arcy Brophy, of New York, New York, John A. Brophy, of Sausalito, California and P. J. Brophy, of Denver, Colorado, the Lessors, and Butte Western Mining Company, a Montana corporation, and/or its incorporators for the use and benefit of said corporation, Assignees, WITNESSETH:

THAT WHEREAS on July 22, 1953, the Lessors executed a lease and option to Al C. Fisher, of Butte, Montana, D. O. Mecklenburg, Glenn P. Scheihing and M. H. Von Hess, of Billings, Montana, of the Isele Lode Mining Claim, Lot 18, Survey 832, in Silver Bow County, Montana, for the period of five (5) years from the said date hereof, and

WHEREAS, it was specifically provided therein that the said lease and agreement should not be assigned without written consent of the Lessors; that the Lessees should sink the present shaft on the Isele Lode to a further depth of one hundred (100) feet, during each year of said lease; and that upon a breach of any of the terms or covenants of the agreement, its forfeiture should immediately result;

NOW, THEREFORE, it is hereby agreed between the parties hereto as follows:

1. That the said assignment of the said lease and option to the Assignees is expressly authorized and approved by the Lessors, and that they hereby give their written consent thereto.

2. That the time for the sinking of the said shaft for the first additional one hundred (100) feet is hereby extended from July 22, 1954, to December 7, 1954.

3. That said lease and option is now in good

standing and not in default as to the therein provided for miner's shifts of work agreed to be performed.

4. That the lease and option be, and it is hereby, amended as of July 22, 1953, the date of execution of the said agreement, by striking therefrom the paragraph on page 6 ending with the word "result", and by inserting the following paragraph in lieu thereof, to-wit:

"it is further understood and agreed that time is of the essence hereof; that in the event of a breach of any term, provision or covenant of this lease or option the parties of the first part may give the parties of the second part notice thereof by depositing the same in the United States mail with full first class postage prepaid thereon and directed to the parties of the second part at P. O. Box 1584, Billings, Montana; and that if within the period of thirty (30) days thereafter the parties of the second part shall not remedy such default and also abstain from any further default in the terms, provisions and covenants thereof, then the parties of the first part may at their option, without further notice to the parties of the second part, terminate said lease and option, retake possession of the said mining claim, recover from the escrow holder all documents placed in escrow hereunder, and retain as rent all payments theretofore made.

And in consideration thereof, it is further agreed that the parties of the second part shall immediately have the present abstract continued to date if it can be found, and otherwise shall immediately order from the abstractor and pay for an abstract of title to the mining claim at a cost not to exceed Two Hundred Fifty and no/100 Dollars ($250.00), and shall receive credit from the above lessors for one-fourth (¼) and from the other owners for three-fourths

(3/4) of such costs as advance royalties, and that the said abstract shall belong to the parties of the first part.

IN WITNESS WHEREOF, the parties have executed this indenture the day and year hereinbefore first mentioned.

Thomas D'A. Brophy

P. J. Brophy

By: John A. Brophy
Attorney in Fact

John A. Brophy
Individually

LESSORS

BUTTE WESTERN MINING COMPANY

By: Melvin H. Von Hess
President

D. O. Mecklenburg

Glenn P. Scheihing

Melvin H. Von Hess

ASSIGNEES

COPY

A G R E E M E N T

THIS INDENTURE, entered into this 9th day of January, 1954, by and between Alex Leggat and LaReine C. Leggat, his wife, both of Butte, Montana, and Martha Hubbard, of Spokane, Washington, the Lessors and Butte Western Mining Company, a Montana corporation, and/or its incorporators for the use and benefit of said corporation, Assignees, WITNESSETH:

THAT WHEREAS on July 22, 1953, the Lessors executed a lease and option to Al C. Fisher, of Butte, Montana, D. O. Mecklenburg, Glenn P. Scheihing and M. H. Von Hess of Billings, Montana, of the Isele Lode Mining Claim, Lot 18, Survey 832, in the Silver Bow County, Montana, for the period of five (5) years from the said date thereof; and

WHEREAS it was specifically provided therein that the said lease and agreement should not be assigned without written consent of the Lessors; that the Lessees should sink the present shaft on the Isele Lode to a further depth of one hundred (100) feet, during each year of said lease; and that upon a breach of any of the terms or covenants of the agreement, its forfeiture should immediately result;

NOW, THEREFORE, it is hereby agreed between the parties hereto as follows:

1. That the said assignment of the said lease and option to the Assignees is expressly authorized and approved by the Lessors, and that they hereby give their written consent thereto.

2. That the time for the sinking of the said shaft for the first additional one hundred (100) feet is hereby extended from July 22, 1954, to December 7, 1954.

3. That said lease and option is now in good standing and not in default as to the therein provided for miner's shifts of work agreed to be performed.

4. That the said lease and option be, and it is hereby, amended as of July 22, 1953, the date of execution of the said agreement, by striking therefrom the paragraph on page 6 ending with the word "result", and by inserting the following paragraphs in lieu thereof, to-wit:

"IT IS FURTHER UNDERSTOOD And AGREED that time is of the essence hereof; that in the event of a breach of any term, provision or covenant of this lease or option the parties of the first part may give the parties of the second part notice thereof by depositing the same in the United States mail with full first class postage prepaid thereon and directed to the parties of the second part at P. O. Box 1584, Billings, Montana; and that if within the period of thirty (30) days thereafter the parties of the second part shall not remedy such default and also abstain from any further default in the terms, provisions and covenants thereof, then the parties of the first part may at their option, without further notice to the parties of the second part, terminate said lease and option, retake possession of the said mining claim, recover from the excrow holder all documents placed in escrow hereunder, and retain as rent all payments theretofore made.

And in consideration thereof, it is further agreed that the parties of the second part shall immediately have the present abstract continued to date if it can be found, and otherwise shall immediately order from the abstractor and pay for an abstract of title to the mining claim at a cost not to exceed Two Hundred Fifty and no/100 Dollars ($250.00), and shall receive credit from the above lessors

for three-fourths (3/4) and from the other owners for one-fourth (1/4) of such cost, as advance royalties, and that the said abstract shall belong to the parties of the first part."

IN WITNESS WHEREOF, the parties have executed this indenture the day and year hereinbefore first mentioned.

Alexander Leggat

LaReine C. Leggat

Martha C. Hubbard
(LESSORS)

BUTTE WESTERN MINING COMPANY

By: Melvin H. Von Hess
President

D. O. Mecklenburg

Glenn P. Scheihing

Melvin H. Von Hess

COPY

THIS AGREEMENT made and entered into this 22nd day of July, 1953, by and between ALEX LEGGAT and LA REINE C. LEGGAT, his wife, LA REINE C. LEGGAT, individually, of Butte, Montana, and MARTHA HUBBARD, of Spokane, Washington, parties of the first part, and AL C. FISHER, of Butte, Montana, D. O. MECKLENBURG, GLEN P. SCHEIHING and M. H. VON HESS, of Billings, Montana, parties of the second part;

W I T N E S S E T H: That said parties of the first part, for and in consideration of the rents, royalties, covenants and agreements hereinafter contained to be paid, kept and performed by the parties of the second part, do hereby lease, demise and let unto said parties of the second part the following described mining claim and premises situated, lying and being in the County of Silver Bow, State of Montana, to-wit:

> The Isele Quartz Lode Mining Claim, being Lot No. 18, Survey No. 832, situated in the Summit Valley Mining District, Sec. 23, T. 3 N., R. 8 W., County and State aforesaid; together with the tenements, hereditaments, appurtenances and mining rights incident thereto, excepting and reserving therefrom those certain surface rights heretofore transferred to various individuals, all of which appear of record in the Office of the County Clerk and Recorder of Silver Bow County, Montana.

To have and to hold, all and singular, the said premises together with the appurtenances and mining rights to the said parties of the second part for the term beginning August 1, 1953, and ending midnight on July 31, 1958, unless said term is sooner terminated through the violation of any of the covenants or conditions herein contained.

The said parties of the second part agree that on or before October 10, 1953, they will enter upon said premises and shall thereafter with due diligence work and mine the same. For the period October 10, 1953, to November 10, 1953, said parties of the second part agree to do at least 45 miner's

shifts of work, and for each and every month thereafter during the term hereof do at least 90 miner's shifts of work each and every month until the end of the term of this agreement; unless prevented by Act of God, strikes or other unavoidable casualty; provided wherever in any month the said parties of the second part shall do or cause to be done in such mining, exploration and development work more than the minimum requirement of work for that month the excess shall be applied to reduce the minimum requirementsof work for any succeeding month or months until the whole of such excess is exhausted, It is further agreed and understood that in performing such exploration, mining and development work the said parties of the second part shall sink the present shaft upon the Isele Lode from its present depth of 290 feet 100 feet yearly. The said parties of the second part agree that all work done by them or their assigns on said premises shall be done in good and workmanlike and minerlike manner.

The parties of the first part reserve unto themselves and to their agent or agents the right to examine, inspect and have access to all workings in said mining property during the term of this agreement and the parties of the first part shall have the right to use all ways and equipment in and about said premises for such purpose.

The said parties of the second part agree that they will immediately comply with the Workmen's Compensation Law of the State of Montana and will apply to the Industrial Accident Board of the State of Montana for that purpose and do all things necessary to that end previous to employing any person or persons to work in or upon said premises, and, will comply with the requirements of the Workmen's Compensation Law during all of the term of this lease.

Said parties of the second part further agree that they will upon the termination of this lease and the option hereinafter set forth, either by lapse of time or forfeiture

because of noncompliance with any of the terms or conditions hereof, deliver up to said parties of the first part the quiet and peaceable possession of said premises and all thereof without any cost or expense of any kind whatsoever to said parties of the first part.

The parties of the second part shall pay for all work and labor performed and materials furnished for or used in or on said mining claim or any part thereof, or in buildings or appurtenances erected thereon, and shall suffer no liens or encumbrances to be placed upon said property or any part or portion thereof or on the buildings thereon or on the buildings which may be placed thereon.

It is agreed and understood between the parties hereto that the said parties of the second part shall have the right within 60 days from and after the termination of this agreement to remove all machinery and tools placed by them on said premises during the term covered by this agreement but they shall not remove buildings or gallows frames or anything fastened to the surface of said premises which would be deemed appurtenant to or fixtures attached to the mine under the laws of the State of Montana.

The said parties of the second part covenant and agree to pay the parties of the first part fifteen percent (15%) of the net mill or smelter returns or the returns from any plant wherein the ores extracted from said premises may be treated, from all ores mined and shipped from said leased premises during the life of this agreement, and it is specifically understood and agreed that said "net mill or smelter returns" or the returns from any plant where said ore shall be treated are to be arrived at by deducting from the gross returns from said ore all hauling, freight and treatment charges, and none other. In the event said ores extracted from the premises hereinabove described are treated by a

mill or smelter working or reducing the said ores the said royalty shall be deducted by the said mill or smelter and forwarded to the said parties of the first part at whatever address they may designate at the time of the shipment of said ore.

It is understood and agreed between the parties hereto that it is within the contemplation of the parties that the ores extracted from said premises shall be manganese ores and in that event the said ore will be treated by the Domestic Manganese and Development Company at Butte, Montana, which said company will calculate the payments due and forward said acceptance notice to the parties of the second part for each shipment of ore by it received. As the said payments for said ore are made from the General Services Administration of the United States Government it is understood that payment for said shipments shall be made to the parties of the second part from the Seattle Office of the said General Services Administration, which office is in the Federal Office Building, Seattle 4, Washington. A duplicate copy of said acceptance notice shall be mailed immediately to the parties of the first part or to their authorized agent, and immediately upon receipt of the payment from the General Services Administration the parties of the second part agree to pay to the parties of the first part the royalties due to them upon said ores as in this agreement specified.

It is understood and agreed that Alex Leggat is the owner of a 4/8 interest, La Reine C. Leggat individually is the owner of a 1/8 interest and Martha Hubbard is the owner of a 1/8 interest in the above described premises and as the purchase price of the entire property has been agreed upon at the sum of $60,000.00 Alex Leggat shall receive no greater sum from said royalties than the sum of $30,000.00, La Reine C. Leggat individually shall receive no greater sum from said

royalties than the sum of $7,500.00, and Martha Hubbard shall receive no greater sum from said royalties than the sum of $7,500.00.

It is further understood and agreed in the event a metals mines tax, license tax, or gross proceeds tax or net proceeds of mines tax of the State of Montana shall be levied or assessed against the ores mined from said premises by said parties of the second part, the same shall be paid by the said parties of the second part.

It is further covenanted and agreed that for and in consideration of the sum of One Dollar ($1.00), lawful money of the United States, and other good and valuable consideration, to the said parties of the first part in hand paid by the parties of the second part, receipt whereof is hereby acknowledged, and in consideration of the well and faithful keeping of the terms, covenants and conditions by the said parties of the second part to be paid, done, kept and performed, all as set forth in the foregoing lease, the said parties of the first part hereby give and grant unto said parties of the second part, or their assigns, the sole and exclusive right, option and privilege to purchase said mining claim hereby leased at any time during the life of this agreement provided that neither this lease nor agreement has been forfeited or terminated as herein provided, at the price of $60,000.00 lawful money of the United States for the entire premises, of which sum Alex Leggat is entitled to 4/8 or the sum of $30,000.00, La Reine C. Leggat individually is entitled to 1/8 or the sum of $7,500.00, and Martha Hubbard is entitled to 1/8 or the sum of $7,500.00, payable within the time and in the manner following, to-wit:

The said purchase price is to be and shall be paid to said parties of the first part through and by means of said royalties which are to be paid to said parties of the

first part under the foregoing lease contained in this agreement, and said purchase price shall be paid to the said parties of the first part in full on or before the expiration of the term of this agreement. It is understood and agreed that if said purchase price shall not have been paid in full by and through such royalties by July 31, 1958, then and in that event the balance of said purchase price which has not been so paid by such royalties shall be paid to said parties of the first part on or before the said 31st day of July, 1958.

It is further understood and agreed by and between the parties hereto that this is an option to purchase and not an agreement upon the part of the said parties of the second part to purchase.

It is further understood and agreed that upon a breach of any of the terms or covenants of this agreement, either of the lease or the option, a forfeiture of this entire agreement, both lease and option, shall immediately result.

It is understood and agreed that Alex Leggat, one of the parties of the first part, owns a 4/8 interest, La Reine C. Leggat individually owns a 1/8 interest and Martha Hubbard owns a 1/8 interest in and to the Isele Quartz Lode Mining Claim and that payments of royalty or on the purchase price of said property are to be paid to the said parties of the first part according to their interests as herein set forth.

It is specifically understood and agreed that said lease and agreement shall not be assigned by the parties of the second part without the written consent of the parties of the first part.

It is understood and agreed that the covenants, conditions and agreements hereof are continuing ones and that the failure of the parties of the first part to avail them-

selves of the right of termination of this agreement on account of or by reason of the failure of the parties of the second part to perform any one or more of the covenants and agreements herein contained to be by them performed shall not constitute or be deemed to be a waiver of their right to terminate or bring about a forfeiture of this agreement for or on account of any subsequent violation of the same or any other covenant, condition or agreement herein provided to be by said parties of the second part performed and kept.

The said parties of the second part shall at all times keep posted in at least three conspicuous places on said mining claim notices that the same is being operated under lease and that the paties of the first part are not responsible for any debts or obligations of the said parties of the second part.

The said parties of the first part hereby agree that they will upon the payment of the purchase price due hereunder execute and acknowledge a good and sufficient deed conveying and granting said property hereinabove described, free and clear of all encumbrances, to said parties of the second part or their assigns.

This agreement shall be binding upon all the heirs, executors, adminstrators and assigns of each and all of the parties hereto.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on the day and year in this instrument first above written.

Al. C. Fisher	Alex Leggat
D. O. Mecklenburg	La Reine C. Leggat
Glenn P. Scheihing	Martha C. Hubbard Individually
PARTIES OF THE SECOND PART.	PARTIES OF THE FIRST PART.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 5 1954

A Geological Report

on the

ISELE MINE

Butte, Montana

by

Winston M. Sahinen

March 15, 1954

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A GEOLOGICAL REPORT ON THE ISELE MINE
BUTTE, MONTANA

Location

The Isele mine is located about one mile southwest of the city of Butte in the NW$\frac{1}{4}$ of Sec. 23, T. 3 N., R. 8 W., MPM in the Summit Valley (Butte) Mining District. The property is traversed by highway US 10-91, and by both the Butte, Anaconda and Pacific and the Chicago, Milwaukee, St. Paul and Pacific railways. In addition, the Northern Pacific-Union Pacific main line is about 1500 feet to the south of the Isele shaft. It can be seen that the property is ideally situated with respect to truck or rail transportation in any direction. At present, ore is being trucked to the Domestic Manganese Development Company's plant, less than two miles from the mine.

History and Production

The Isele claim is patented, Survey Number 832, Lot 169, and is reported to have been located about 1894. Production records are inaccurate, ranging in value from $350,000 to over $1,000,000, most of the value apparently being from silver. Considerable production has apparently come from near-surface workings, as the surface of the property is liberally sprinkled with shallow shafts and prospect pits. Some ore was also taken from the 200 and 300 foot levels of the main shaft, as evidenced by caved stopes and raises on these levels. The main shaft is variously reported to be 300, 360, and 400 feet deep, but at present is either filled or was not sunk below a shallow sump on the 300 foot level (283.4 feet below the collar). Accounts of those mine

workings, which are now inaccessible, and the grade of the ore encountered in them are likewise contradictory.

General Areal Geology

The geology of the Butte area has been adequately described in numerous publications, but a brief summary of the salient features will be presented here to explain the regional associations of the Isele mine.

The Butte ore deposits are associated with and are a result of the Boulder Batholith, of late Cretaceous or early Paleocene age. The Boulder Batholith is a large intrusive mass of quartz monzonitic or granodioritic composition of about 1200 square miles in outcrop area. During the crystallization of the batholithic mass, segregations of aplite, a rock consisting predominately of quartz, were formed in the intrusive mass.

The Butte ore deposits were formed by hydrothermal replacement along pre-existing fractures, and by the filling of open fractures in the solidified quartz monzonite of the Batholith.

The Butte veins are resolvable into three systems, on the basis of their general strikes, which are East-West (Anaconda), Northwest-Southeast (Blue Vein), and the Northeast-Southwest (Steward) systems, the Anaconda system being by far the most productive. The Butte ore deposits are also divided into three zones, the central, intermediate and peripheral, on the basis of their mineralogical composition. The valuable constituents of the three zones grade from copper minerals in the central zone, through zinc and copper in the intermediate zone, to manganese, lead, zinc, and silver in the peripheral zone. These zones are roughly hemispheroidal and concentric, much like the layers of an

onion. Post-mineral activity included faulting and the intrusion and extrusion of a rhyolite porphyry. Both the faults and rhyolite cause terminations of ore bodies.

Geology of the Isele Mine

On the basis of the above classifications of the Butte ore deposits, the Isele vein can be classified as genetically related to the Anaconda vein system, and as being in the peripheral zone. The Isele vein parallels the Emma-Black Chief vein, which lies less than a thousand feet to the north, and which has produced many millions of dollars in silver and manganese. The textural characteristics of the Isele ore, however, are different from that of the Emma-Black Chief vein.

The various features of the Isele vein can be grouped into the three general classifications, Structure, Ore, and Wallrock, which are discussed below.

Structure. The main structure in the Isele mine is, of course, the Isele vain, which is a persistent, rather large, east northeast trending quartz lode. The vein is persistent east of the shaft, but is considerably broken up by faulting to the west. (See maps and sections at end of report). The vein dips generally about 75° to the south, and strikes about N 80° E. It varies in thickness from about four feet to 24 feet, with variable amounts of wallrock included as horses in the vein. In some portions of the mine, the vein has been strike-faulted, and consequently thickened in some places, especially in the east end of 301 DE. The vein shows an increase in manganese toward the footwall, and apparently an increase in silver on the hanging wall, as most of the old

development was in the hanging wall.

There are numerous stringers exposed in crosscuts to the north and south of the main vein which generally parallel the main structure. These stringers reach up to three feet in width in 201 XCS, 202 XCS, and 203 XCS.

Faulting has evidently been quite complex on the west side of the mine, but no definite pattern could be arrived at from the limited exposures in the mine. Most of the drifts in the mine are tightly lagged, and were impossible to map in detail.

Ore. The Isele ore is predominately quartz with variable amounts of rhodochrosite, manganese carbonate, which in some places is of sufficient quantity to make a commercial, though low grade, manganese ore. Heavy metal sulphides, such as galena (lead sulphide), sphalerite (zinc sulphide), and pyrite (iron sulphide) are present. Some low-grade lead-zinc ore production has been reported from sulphide concentrations.

Silver occurs throughout the vein in variable concentrations from one to twenty-five ounces, in an unknown mineralogical form that is independent of manganese or lead concentrations. Considerable silver production has been reported from the oxidized zone, above the 85 foot level, from shallow shafts.

A green carbonate mineral, probably mangano-calcite is found associated with the ore from the east side of the 300 foot level. This mineral shows a trace of manganese in a mineralogical bead test. The rhodochrosite in the Isele vein is very pale pink to white, which contrasts markedly with samples from other mines, which show a characteristic dark pink color. The Isele rhodochrosite is also very finely

crystalline, and is intimately mixed with the quartz gangue, but, even so, is 100 per cent acid soluble.

Mineralization of the stringers is predominately quartz with varying amounts of rhodochrosite. A few sulphides were noticed in the stringers.

All of the rhodochrosite in the oxide zone is converted to pyrolusite, manganese dioxide, and other minerals are converted to their oxide form. The boundary between the sulphide and oxide zones is somewhere between the 85 and 200 foot levels (83.5 and 183.0 feet from surface respectively), probably close to 100 feet from surface, which is the approximate position of the water table in the mine. A secondary enrichment in silver probably took place near the surface.

The heavy metal grade of the ore is variable, and proved too inconsistent to sustain prior lead-zinc mining, but the manganese content is more stable and has produced workable manganese orebodies. Since the purpose of this examination was to evaluate the Isele mine as a manganese producer, channel samples were taken across the entire vein width at every accessible exposure of any size throughout the mine. The results of this sampling shows that in no place is the entire vein width of mineable grade, but that manganese concentrations one the footwall can be mined. The results of these samples are shown below in tabular form, in Table I.

According to my sampling results, the only mineable ore in sight at present is in 203 DE-01 Rse, but at present, development is being carried on in 301 DE-01 Rse, and the manganese content is increasing as the raise progresses, according to the mine officials.

Sampling results of a series of samples taken by U. M. Sahinen in 1937, in portions of the 300 level, now inaccessible, are shown in Table 2. Since this examination was made to determine the lead-zinc

potential of the property, a manganese analysis was made on only one sample, number 5.

A measure of the run-of-the-mine ore can be made from smelter settlement sheets, as shown in Table 3. These assays are averages of each of three shipments. Most of this ore came from development in 203 DE and 203 DW, and the rest from hand sorting in other development work.

Table I

Sample No.	Width	Au	Ag	Pb	Mn	Location
1	6.0 ft.	0.02 oz.	3.40 oz.	0.40%	4.90%	101 DE
2	2.0	0.005	1.20	0.30	2.10	101 DE
3	11.2	0.03	4.40	0.25	3.80	101 XCN
4	12.5	0.02	3.20	0.30	4.20	101XCN
5	3.8	0.04	0.08	Tr.	3.50	101 DW
6	11.5	0.01	1.00	0.10	5.60	101 DW
7	7.0	0.08	10.60	0.60	8.20	101 DW
8	1.0	0.19	25.50	1.10	6.50	202 XCS
9	3.0	0.01	1.20	Tr.	6.90	201 XCS
10	1.5	0.01	0.10	0.90	5.10	202 XCS
11	2.5	0.01	0.10	0.70	0.20	202 XCS
12	1.0	0.02	0.30	0.50	5.30	202 XCS
13	3.2	0.05	2.60	0.60	4.10	201 DW
14	3.8	0.03	0.70	0.40	2.80	201 DW
15	14.5	0.04	1.80	0.30	10.20	201 XCN
16	4.5	0.01	0.20	0.20	6.00	202 XCN
17	2.5	0.02	3.20	0.90	12.70	301 DE
18	2.3	0.01	0.80	0.40	7.40	301 DE
19	3.0	0.02	3.60	0.90	7.90	204 XCS
20	7.0	0.09	13.80	1.60	7.70	200 Sta.
21	1.5	0.08	21.60	0.60	7.80	301 DW-02 R
22	2.7	0.03	2.80	0.80	18.60	203 DE
23	2.7	0.02	1.90	0.60	14.10	203 DW
24	7.2	0.05	4.20	0.40	6.90	301 DE-01 Rse.
25	5.0	0.04	3.90	0.50	6.30	301 DE-01 Rse.
26	3.3	0.02	2.80	0.30	21.80	203 DE
27	4.0	0.15	21.60	0.80	15.10	203 DE-01 Rse.

Table 2

Sampling results on 300-foot level, Butte-Isele Mine.

No.	Width	Au	Ag	Pb	Zm	Mn
1	1.1 ft.	0.01 oz	0.40 oz	0.10%	0.20%	
2	1.3	0.01	0.50	0.05	0.20	
3	5.1	0.02	1.70	2.10	6.60	
4	5.7	0.01	1.80	0.10	1.20	
5	14.7	0.04	4.80	0.10	0.80	8.70%

REMARKS:

1. Footwall streak at West end of "new development" at west end of 300 level.
2. Hanging-wall streak, same location as No. 1. Samples 1 and 2 represent the entire width of the vein at this point.
3. Vein at East end of "new development" at west end of 300-foot level.
4. Vein on south side of west drift, 30 feet west of station, 300-foot level.
5. East breast of east drift at crosscut 300-foot level.

Table 3

Lot No.	Weight dry lbs.	Mn %	Fe %	CaO %	MgO %	Pb %	Zn %	Ag oz.	Au oz.
4	127097	12.6	2.34	5.78	2.01	0.35	0.25	2.83	0.010
5	60373	18.4	2.29	4.5	2.1	0.38	0.30	2.25	0.005
6	73956	15.0	1.76	5.3	2.3	0.64	0.50	3.85	0.017

A study of the various assay tables shows that the Isele mine is capable of producing a low-grade, manganese ore. Whether this ore can be mined at a profit depends upon the efficiency of the operation, and the persistence of the orebody.

Wallrock. The wallrock in the Isele mine is quartz monzonite for the most part, with some aplite. The quartz monzonite is altered near the vein or stringers, and grades into fresh quartz monzonite at some distance from any hydrothermal activity. This is the usual sequence for the Butte district.

The altered wallrock is of the green or of the white granite stage, and is usually sparingly mineralized by stringers of quartz, rhodochrosite

and pyrite. Pyrite is usually dissemenated throughout the wallrock near the Isele vein.

Some horses of wallrock, usually green granite, are included in the vein. The rock in these horses is crisscrossed by veinlets and has considerable pyrite dissemenated through it.

Since the vein material itself is considerably stronger than the wallrock near the vein, the hanging wall has caved away from the vein in several places. The long submersion of the mine has accentuated this caving. This appears to be the case in 201 DE, 301 DW, 301 DE, 101 DW, 101 DE and in other small caves throughout the mine.

The Isele vein is a strong, well-defined structure to the east of the main shaft, but is complicated by faulting to the west. The fault pattern on the west side is not well enough exposed to reach any conclusions as to its direction of displacement.

The vein on the east side is well exposed and warrants additional exploration. Exploration on this side will probably expose new orebodies. Since the highest manganese concentrations occur on the footwall of the vein, an effort should be made to prospect this portion throughout the mine.

The vein structure will undoubtedly persist with depths, but the grade of the ore is problematical. The mineralization appears to be irregular, but it is fairly reasonable to assume that additional ore shoots will be opened up by vertical and lateral exploration. I believe that a drilling program is the most economical method of sampling the ore at depth, and that such a program would give good results. Lateral prospecting can be carried on in conjunction with mining operation.

I believe that the Isele mine is a fair risk, and that it can be expected to be a profitable operation. It must be realized, however, that the mine, as presently developed, is a marginal producer, and that very careful and selective mining must be practiced. Since the rehabilitation of the mine is complete enough to allow uninterrupted mining operations, I believe that the mine will "break-even" during the period of exploration.

Recommendations

My recommendations are in order of importance.

1. Continue mining in 203 DE-01 Rse., which, of course, is quite obviously a necessity; also continue 301 DE-01 Rse., but with close sampling control.
2. Proceed with a drilling program to prospect the vein between the 300 and 1000 foot levels.
3. Repair 301 DE and explore the footwall with short "doghole" crosscuts.
4. Explore footwall to east of 202 XCN, by dogholes from 201 DE, which, I believe, can be cleaned out simply by removing the material that has been washed in from the soft hanging wall.
5. The footwall on the 85 foot level can later be explored as a possible source of manganese oxide ore.

Winston M. Sahinen

Winston M. Sahinen
Geologist

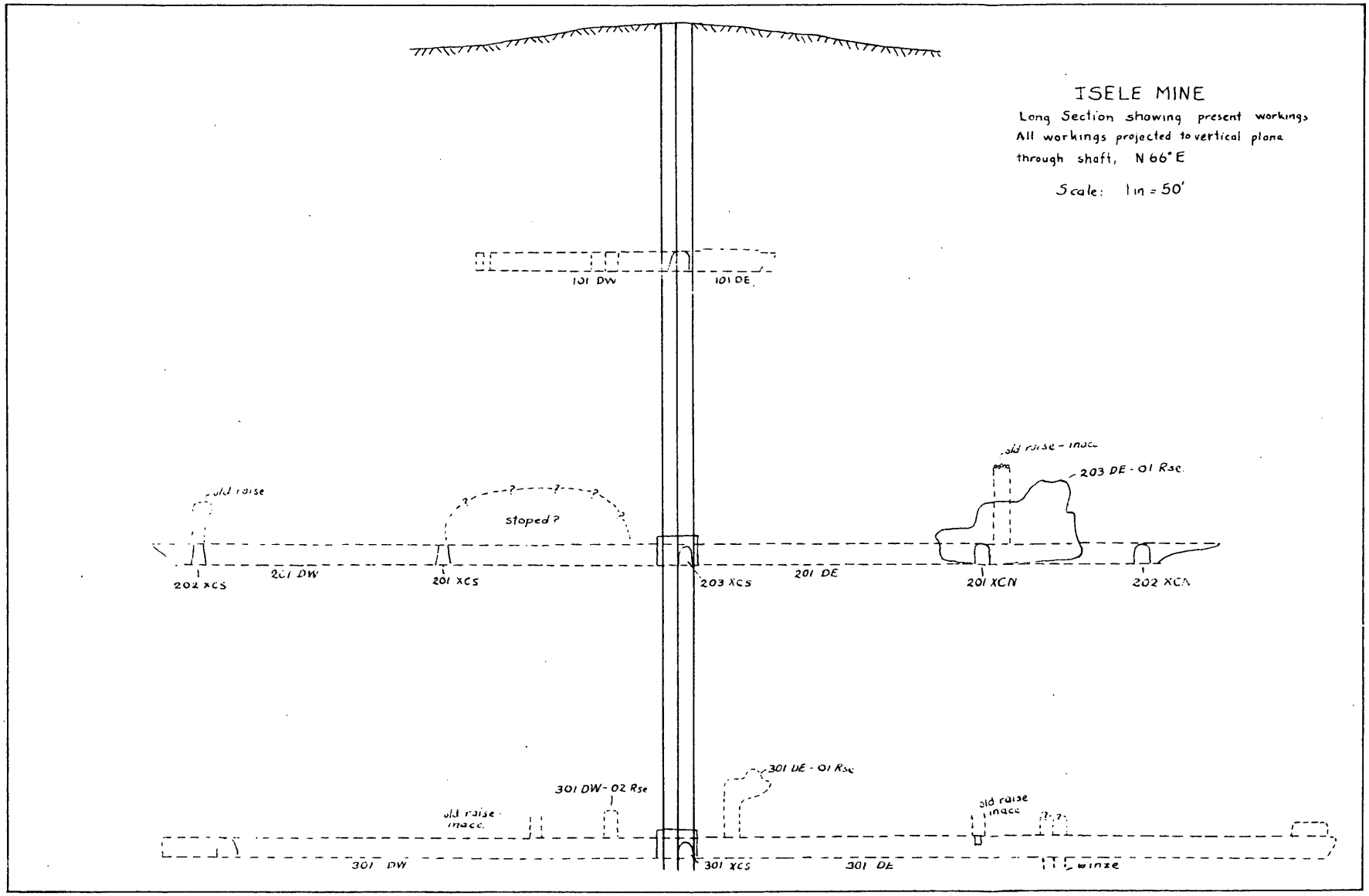

ISELE MINE
Long Section showing present workings
All workings projected to vertical plane
through shaft, N 66° E
Scale: 1 in = 50'
101 DW
101 DE
old raise
stoped ?
202 XCS
201 DW
201 XCS
203 XCS
201 DE
old raise - inacc
203 DE - 01 Rse.
201 XCN
202 XCN
301 DE - 01 Rse
301 DW - 02 Rse
old raise - inacc.
old raise inacc
301 DW
301 XCS
301 DE
winze

PLATE VI

MR 29
(April 1951)

Docket No. DMA 594
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Canyon Lode Mining Company

hereinafter called the "Operator," as follows:

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

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Montana, County of Deer Lodge described as follows: [3] Two patented claims: Cable claim No. 1220, and Uncle Billy claim No. 1896

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

(*a*) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: None

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

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] Tungsten; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] 2 years from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

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

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

6. *Operating equipment.* Attached hereto, marked "Exhibit 'C'," is a detailed list of operating equipment divided into categories of items to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or rental value, as the case may be, annexed to each. As to equipment purchased for the project, the Government will contribute its agreed pro-rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

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

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

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

9. *Rehabilitation and repairs.* Attached hereto, marked "Exhibit 'E'," is a detailed schedule of existing facilities, buildings, installations, and fixtures, with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition, which cost shall be allowed as a cost of the project.

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

11. *Participation by the Government.* At the end of the first full calendar month after the Operator has commenced work under the project, and at the end of each succeeding calendar month, the Operator shall submit to the Government a voucher for payment with a detailed statement of work done and allowable costs (as defined in Article 10 of this agreement) incurred, in a form and with supporting data acceptable to the Government. After approving the voucher, the Government shall pay to the Operator 75 percent of the sum of such costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $29,902, which is 75 percent of the agreed estimated total cost of this project, $39,870.00.

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

13. *Progress reports.* The Operator shall provide the Government with monthly reports of progress in form and content satisfactory to the Government, and upon the completion of the project or termination of the contract shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

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

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

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

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

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

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

Executed in triplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ----------

By ----------

U. S. GOVERNMENT PRINTING OFFICE 16—64066-1

Canyon Lode Mining Co. Cable Mine

Exploration Project Contract

EXHIBIT "A"

Exploration Project

The purpose of this project is to open up and make accessible old workings of the Cable mine so that an estimate of grade and recoverable tonnage of copper and tungsten bearing gobs can be made. The raising and drifting will also explore new ground.

Time Schedule

Month		Project I
1st & 2nd	1.	Rehabilitate and sample Uncle Billy shaft.
4th, 5th & 6th	2.	Raise 200' at 65° from the west end of the 145' level to connect with the bottom of the Uncle Billy shaft.
9th & 10th	3.	Drift 200' on the tungsten vein from 100'level of the Uncle Billy shaft.
		Project II
3rd	1.	Rehabilitation of the Nowlan raise and drift.
11th & 12th	2.	Raise 50 feet from the Nowlan 62-foot level to connect with the Nowlan stope. Sample and assay gob in stope.
2nd & 3rd	3.	Rehabilitate main Adit tunnel level.
14th & 15th	4.	Raise 50 feet from Adit tunnel level into Cornish stope. Sample and assay gob in stope.
12th & 13th	5.	Raise 62 feet from Adit tunnel level into Square Set stope. Sample and assay gob in stope.
		Project III
7th, 8th & 9th	1.	Pump out and rehabilitate the 65', 140', 214', and 300' levels of the main shaft below the Adit tunnel.

The work to be performed and the estimated cost thereof is as follows:

1.	Rehabilitate approximately 100 feet of the Uncle Billy shaft @ $40.00 per foot	$4,000.00
2.	Rehabilitate Nowlan raise and drift	1,200.00
3.	Rehabilitate Main tunnel level	4,400.00
4.	362 feet of raising at $35 per foot	12,670.00
5.	200 feet of drifting at $25 per foot	5,000.00
6.	Pumping and rehabilitation of the 65', 140', 214', and 300' levels of the Main shaft.	5,000.00
7.	Sampling and assaying	5,900.00
8.	Equipment to be purchased	2,400.00
	Total	$ 40,570.00

Canyon Lode Mining Co., Cable Mine

Exploration Project Contract

EXHIBIT "B"

Fixtures and Improvements

None

Canyon Lode Mining Co., Cable Mine

Exploration Project Contract

EXHIBIT "C"

Operating Equipment To be rented	Rental Period	Maximum Monthly Rental Allowance	Total
1 - Electric mine hoist	3 months	$45	$135.00
1 - shaft pump	3 months	50	150.00
	Total	$95.00	$285.00

To be purchased	Cost
1 - Air hoist (for timber)	$300.00
2 - Mine cars @ $200.00 each	400.00
2000 feet electric mine cable	1,700.00
Total	2,400.00

To be furnished	Rental Period	Maximum Monthly Rental Allowance	Total
1 - 210 cfm stationary air compressor	15 months	$ 65.00	$975.00
1 - Drifter	2 months	30.00	60.00
1 - Stoper	9 months	25.00	225.00
1 - gasoline powered hoist	2 months	25.00	50.00
			1,310.00

Canyon Lode Mining Co., Cable Mine

Exploration Project Contract

EXHIBIT "D"

Labor and Supervision	Rate per shift
Miners	$14.00
Trammer	12.00
Hoistman	14.00
Mechanic and blacksmith	13.00
General Manager	400.00 per month
Engineer (part time)	100. per month
Bookkeeper (part time)	100.00 per month

Above rates are subject to lawful overtime increases and revision of pay scales under union contracts.

Canyon Lode Mining Co., Cable Mine

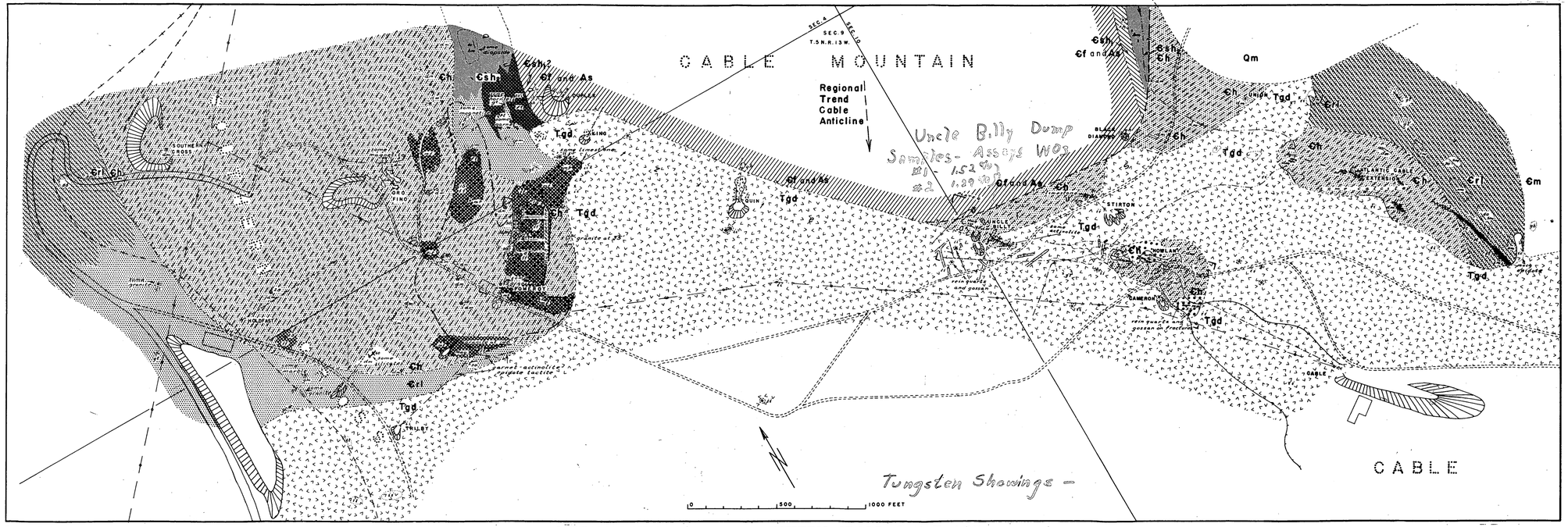
Exploration Project Contract

EXHIBIT "E"

Rehabilitation and repairs

None

CANYON LODE MINING CO. DMA-594
425 Edith St. Missoula, Montana



Base compiled from:
U. S. L. O. patent surveys
U. S. B. M. 1944
U. S. F. S. aerial photographs 1947
W. T. Holser and J. W. Allingham, 1947-1948

METAMORPHISM IN THE SOUTHERN CROSS - CABLE AREA

Geology by:
W. T. Holser, 1947-1948
J. W. Allingham, Jr., 1947

EXPLANATION

Lithology

- Dolomite marble
- Coarse calcite marble
- Calcite-silica banded marble
- Biotite-calcite banded marble
- Diopside-calcite banded marble
- Diopside-garnet banded tactite
- Spotted biotite hornfels
- Quartzite
- Magnetite-carbonate tactite
- Magnetite-silicate banded tactite
- Magnetite
- Granodiorite
- Magnetic anomaly (USBM 1945)
- Adit
- Shaft
- Caved shaft
- Prospect
- Location recovered / Location unrecovered — Diamond drill holes, with U. S. B. M. number
- Open cut
- Outcrop
- Dump
- Surveyed / Caved or inaccessible — Underground workings
- Power line
- Abandoned railroad
- Abandoned ditch

Stratigraphy

- Quat. — Qm — Moraine
- Tert. — Tgd — Cable granodiorite
- Upper Cambrian — Cm — Maywood formation
- Upper Cambrian — Cri — Red Lion formation
- Upper Cambrian — Ch — Hasmark dolomite
- Middle Cambrian — Silver Hill formation — Csh2 — Upper part
- Middle Cambrian — Silver Hill formation — Csh1 — Lower part
- Middle Cambrian — Cf — Flathead quartzite
- Bellian — As — Spokane formation
- Undifferentiated
- Bedding
- Contact
- Fault
- Dip of vein or ore body

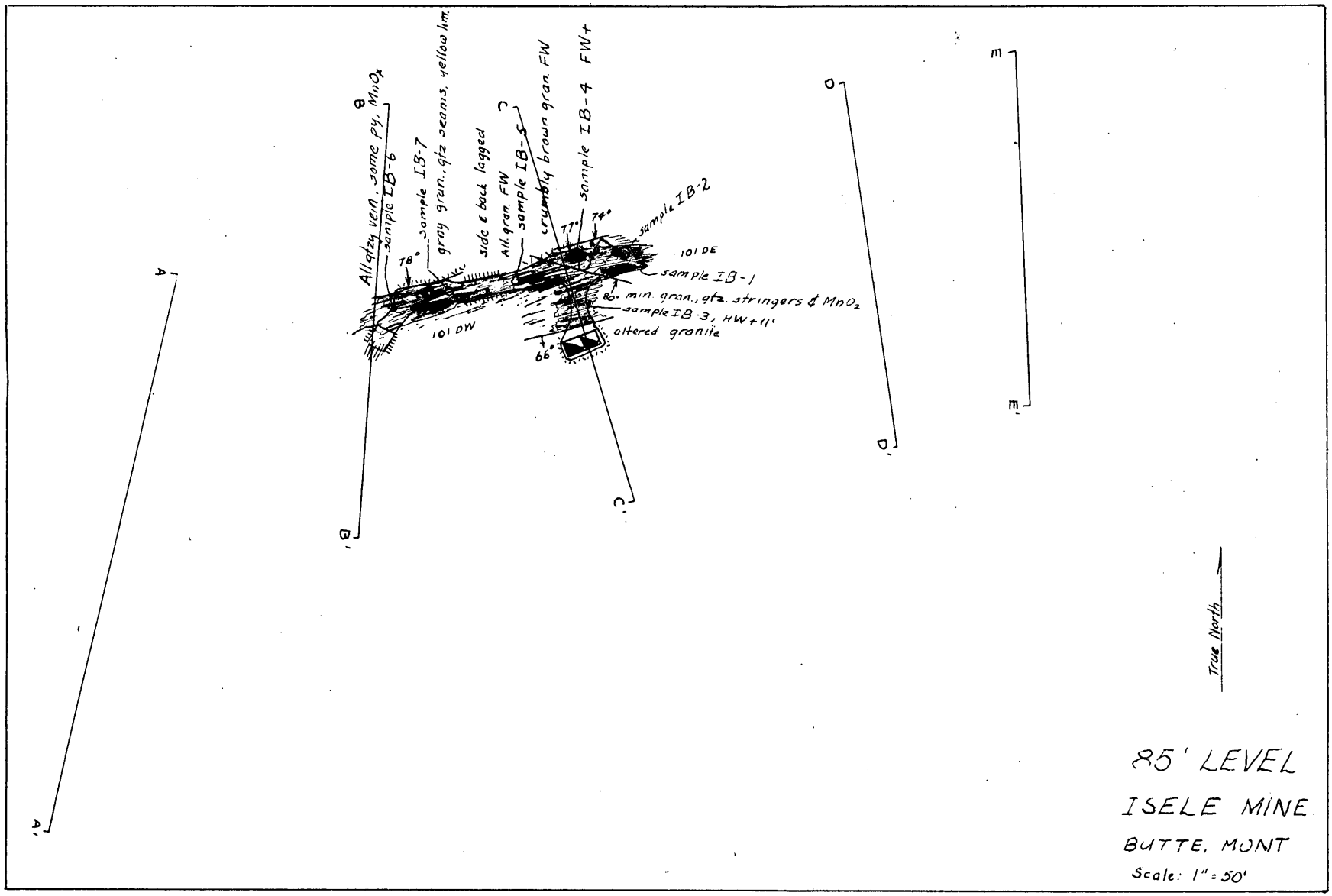

A
A'
B
B'
C
C'
D
D'
E
E'
All qtzy vein, some py, MnO2
sample IB-6
78°
sample IB-7
gray gran., qtz seams, yellow lim.
side & back lagged
All gran. FW
sample IB-5
crumbly brown gran. FW
sample IB-4 FW+
77°
74°
sample IB-2
101 DE
sample IB-1
80° min. gran., qtz. stringers & MnO2
sample IB-3, HW+11'
altered granite
101 DW
66°
True North
85' LEVEL
ISELE MINE
BUTTE, MONT
Scale: 1" = 50'

PLATE I

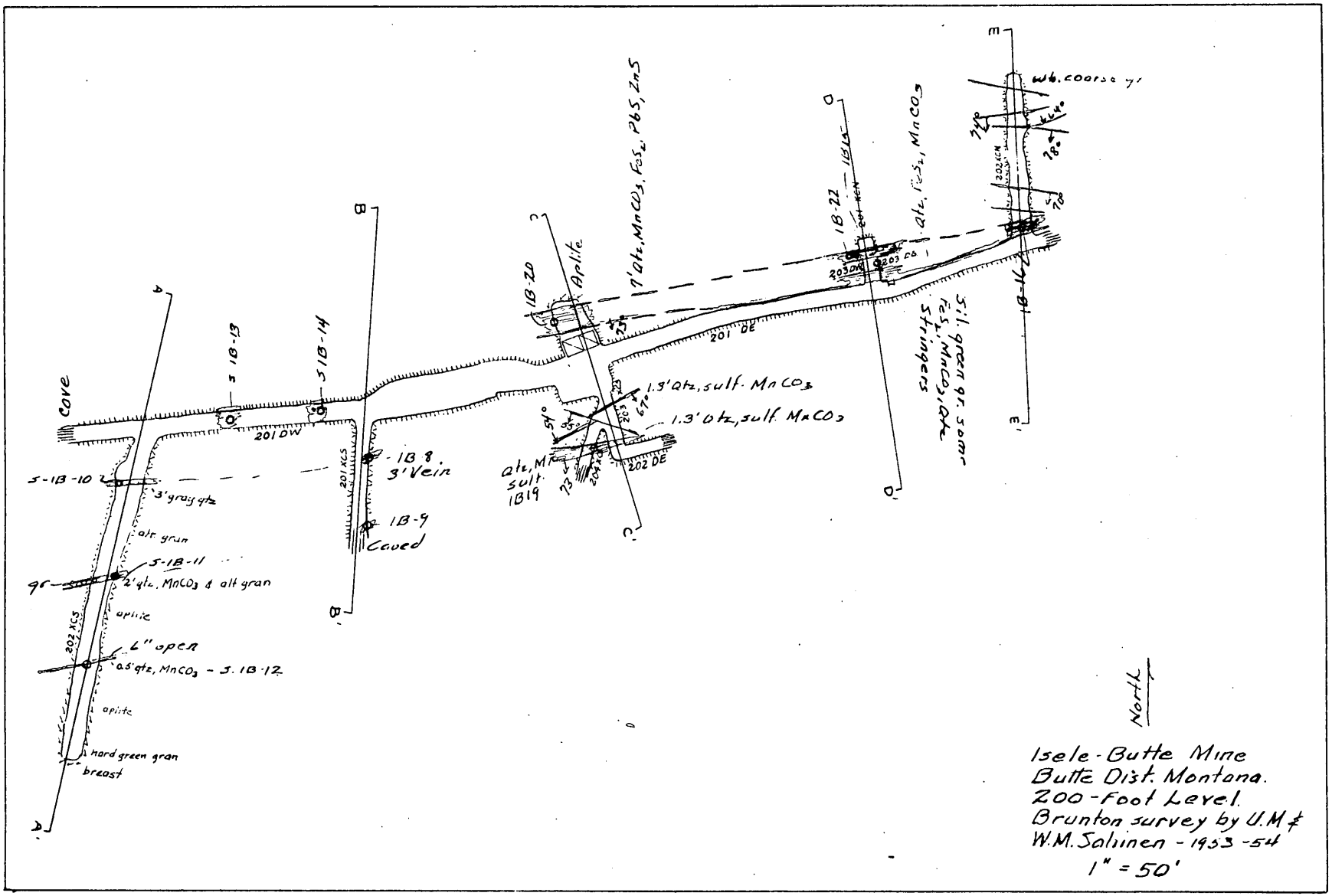

Cave
S 1B-13
S 1B-14
201 DW
S-1B-10
3' gray qtz
alt gran
S-1B-11
2' qtz. MnCO3 & alt gran
aplite
202 XCS
6" open
0.5' qtz, MnCO3 - S. 1B-12
aplite
hard green gran
breast
201 XCS
1B-8
3' Vein
1B-9
Caved
1B-20
Aplite
7' qtz, MnCO3, FeS2, PbS, ZnS
201 DE
1.3' qtz, sulf. MnCO3
1.3' qtz, sulf. MnCO3
202 DE
qtz, MnCO3 sulf.
1B19
1B-22
203 DW
203 DE
qtz, FeS2, MnCO3
stringers
FeS2, MnCO3, qtz
5:1 green gr. soar
1B-16
wh. coarse gr
202 KCN
North
Isele-Butte Mine
Butte Dist. Montana.
200-Foot Level.
Brunton survey by U.M &
W.M. Salinen - 1953-54
1" = 50'

PLATE II

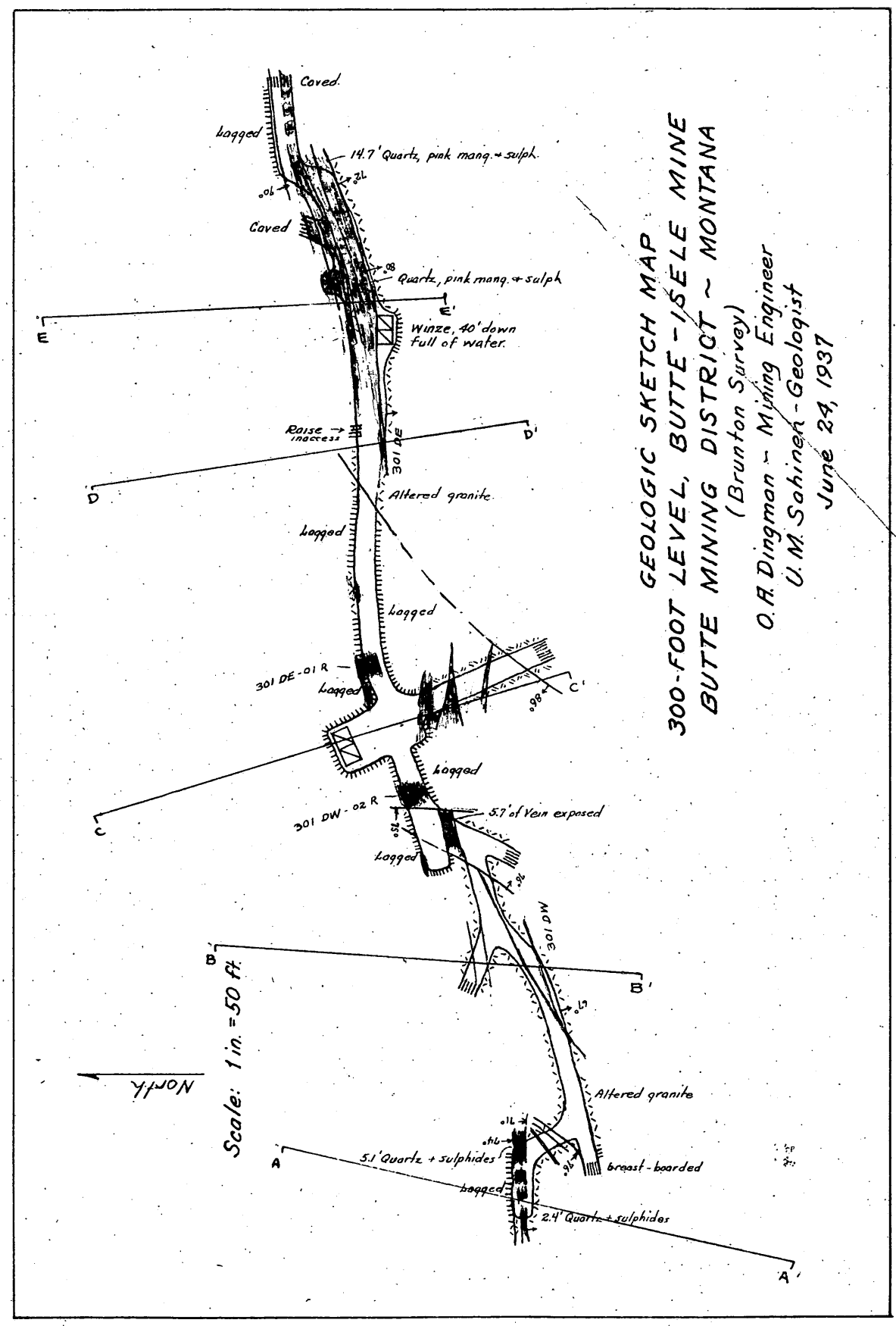

GEOLOGIC SKETCH MAP
300-FOOT LEVEL, BUTTE-ISELE MINE
BUTTE MINING DISTRICT ~ MONTANA
(Brunton Survey)
O.A. Dingman ~ Mining Engineer
U.M. Sahinen - Geologist
June 24, 1937
Scale: 1 in. = 50 ft.
North
Caved
Logged
14.7' Quartz, pink mang. + sulph.
Caved
Quartz, pink mang. + sulph.
Winze, 40' down full of water.
Raise inaccess
301 DE
Altered granite
Logged
Logged
301 DE-01 R
Logged
Logged
301 DW-02 R
5.7' of Vein exposed
Logged
301 DW
Altered granite
5.1' Quartz + sulphides
Logged
breast-boarded
2.4' Quartz + sulphides
A
A'
B
B'
C
C'
D
D'
E
E'

PLATE III

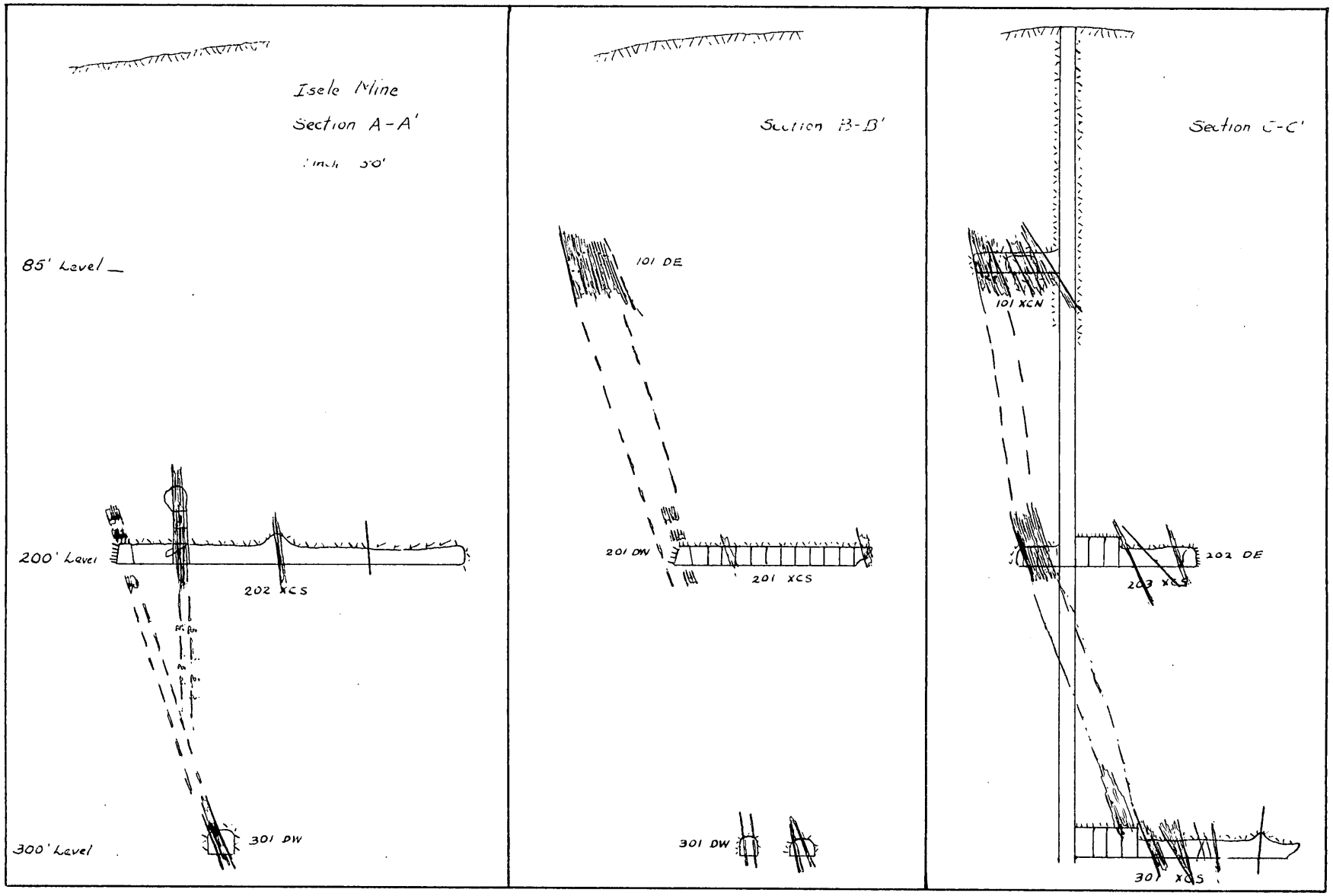
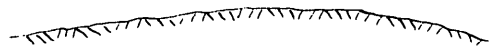

Isele Mine
Section A-A'
85' Level
200' Level
202 XCS
300' Level
301 DW
Section B-B'
101 DE
201 DW
201 XCS
301 DW
Section C-C'
101 XCN
202 DE
301 XCS

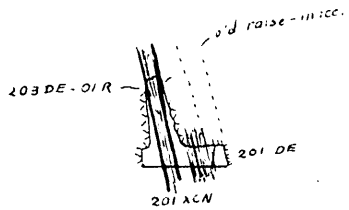
PLATE IV

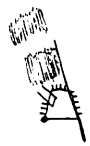


Isele Mine

Section D-D'

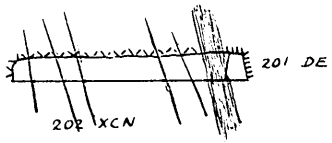
1" = 50'



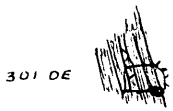


Section E-E'

85' Level



200' Level



300' Level

PLATE V

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

OFFICIAL BUSINESS

Maps

Defense Minerals Exploration Administration
Department of the Interior
Interior Building
Washington 25, D. C.