DMA Form 1

DEFENSE MINERALS ADMINISTRATION
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CONTROLLED DOCUMENT

DMA Docket No. DMEA-2823

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EXPLORATION ASSISTANCE

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

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CYS TO USBM, USGS, 1 cy retained Region II

To:	Rm 3538 Code 400	Date	12/24/52
To:	Oper Comm	Date	12-31-52
To:	Oper Comm	Date	2-13-53
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CONTROLLED DOCUMENT

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

So. 157 Howard Street
Spokane 4, Washington

DMEA 2823

October 6, 1953

Mr. Peter H. Toepfer
Courtney Hotel
Philipsburg, Montana

Dear Mr. Toepfer:

Reference is made to your letter of September 4, 1953, in which you discuss your previous examination of the Moose Hill tungsten property, Lincoln County, Montana. You point out the difference of opinion between you and Bob Hundhausen as to the geology of the Moose Hill deposit and that the DMEA application was turned down because of this wide variance between the two reports.

Insofar as we know, the DMEA application was not turned down because of yours and Hundhausen s reports. The variance was noted, and it was therefore concluded to send a new examining party to the property to attempt to resolve the difference of opinion expressed in the two reports. However, before the property became accessible to an examination, the applicant withdrew his application for reasons with which we are not familiar.

We do not believe that the DMEA office in Washington will be in any way prejudiced against the Mystery manganese application because of any previous reports you might have written on the Moose Hill tungsten property. The Washington office has heretofore judged each application on its own merits. We have been assured by Mr. Mittendorf that DMEA has not been influenced by political pressures and it, therefore, stands to reason that they would not be prejudiced by reports anyone may have written on other properties.

Unfortunately, as the Moose Hill application has been withdrawn, we would not be justified in making an examination to determine the validity of either yours or Hundhausen s opinions as to the geology. We do not believe, however, that you should be too concerned with this as we are sure that the Mystery application will be judged on its own merits and will in no way be affected by your work on either the Moose Hill application or on the Snowshoe Gulch application.

Sincerely yours,

Thor H. Kiilsgaard
For: A. E. Weissenborn, Exec. Officer
DMEA Field Exec. Officer

cc: USBM (2)
DMEA (2)
Quinlan

400

FILE COPY
SURNAME:

Martin

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

MAY 29 1953

Mr. J. G. Forkner
Route 13, Box 551
Fresno, California

Re: Docket No. DMMA 2823 - Tungsten
Moose Hill Tungsten Mine
Lincoln County, Montana

Dear Mr. Forkner:

In accordance with the request contained in your letter of May 15, 1953, to the DMMA Field Team in Spokane, Washington, we have withdrawn from our active files your application for exploration assistance.

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

Sincerely yours,

C. O. Mittendorf

Administrator

Copy to: Docket
Admn. Read. File
Field Team, Reg. 2
Code 400
D. M. Lemmon, USGS
R. W. Geehan, USBM

P.H.
5-29-53

WSMartin/ls
5/27/53

Docket

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

1201 N. Division St.
Spokane 2, Washington
May 21, 1953

MAY 25 1953

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

Subject: Docket No. DMEA 2823 (tungsten)
Moose Hill Tungsten
Lincoln County, Montana
J. C. Forkner

Dear Mr. Selfridge:

Enclosed is a copy of a letter from the subject applicant stating that he has relinquished his lease on the property and wishes to withdraw his application.

We are cancelling the field examination previously scheduled.

Sincerely yours,

M. E. Volin
Acting Executive Officer
DMEA Field Team, Region II

Enclosure

Copy returned 400

C
O
P
Y

J. C. FORKNER, INC.
Route 13, Box 551
Fresno, California

May 15, 1953

Mr. M. E. Volin
Member, DMEA Field Team
Division II
U. S. Bureau of Mines
1201 South Division St.
Spokane, Washington

Dear Mr. Volin:

This is to inform you that I have turned back to Waylett-Jones-Pratt the Moose Hill Tungsten Prospect near Libby, Lincoln County, Montana. On this property I made an application for a DMEA loan. Please cancel said application.

I want to thank the members of your Team for all the kindnesses shown me - especially Mr. Hundhausen who was very considerate.

It is possible I may see you again.

Yours,

J. C. FORKNER

DMEA
Moose Hill Tungsten Prospect
Lincoln County, Montana

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

1201 N. Division St.
Spokane 2, Washington
May 21, 1953

Mr. J. C. Forkner
Route 13, Box 551
Fresno, California

Subject: Docket No. DMEA 2823 - Tungsten
Moose Hill Tungsten Mine
Lincoln County, Montana

Dear Mr. Forkner:

This will acknowledge receipt of your letter of May 15, 1953 in which you state that you wish to withdraw your application for DMEA assistance to explore the subject property.

We are forwarding your request to the DMEA office in Washington, D. C. so that your application can be withdrawn from the active file. An acknowledgment of the withdrawal will be made to you from that office.

Sincerely yours,

M. E. Volin
Acting Executive Officer
DMEA Field Team, Region II

cc: DMEA, Wash. (2)
USGS (2)

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 6 1953

March 2, 1953

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

Re: Docket No. DMEA 2823 - Tungsten
J. C. Forkner
Moose Hill Tungsten Mine
Lincoln County, Montana

Dear Mr. Selfridge:

Reference is made to your letter of February 16, 1953, in which you request a field examination of the subject property.

We are informed that the Lincoln County area of Montana is currently inaccessible because of winter weather; however, we will conduct a field examination on the Moose Hill property at the earliest practicable date.

Sincerely yours,

Thor H. Kiilsgaard

Thor H. Kiilsgaard
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: USBM (2)

400

FILE COPY
SURNAME:

Chapman
Martin
Geehan
Lemmon
Hedges

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

FEB 16 1953

Mr. J. C. Forkner
Route 13
Box 551
Fresno, California

Re: Docket No. DMEA 2823 - Tungsten
Moose Hill Tungsten Mine
Lincoln County, Montana

Dear Mr. Forkner:

Your application for exploration assistance on the above-noted property has been carefully reviewed and has been referred to Mr. A. E. Weissenborn, Executive Officer, Region II, South 157 Howard Street, Spokane 4, Washington, for a field examination.

The Regional Office will contact you at an early date in regard to the examination of your property. Any assistance that you can render the members of the field team in the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

P.H.
2-16-53

cc: Docket
Field Team, Region 2
Code 400
Admn. Read. File
D. M. Lemmon, USGS
R. W. Geehan, USBM

TLChapman/hhb
2/11/53

400

FILE COPY
SURNAME:

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

Chapman
Martin
Gatson
Lemmon
Selfridge

FEB 16 1953

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2823- Tungsten
J. C. Forkner
Moose Hill Tungsten Mine
Lincoln County, Montana

Dear Mr. Weissenborn:

Reference is made to the subject docket. It appears desirable that a field examination be made of the property due to the differences of opinion in the two reports at hand.

The applicants do not appear to be capable of conducting an exploration program and it would be necessary for them to obtain a geologist-engineer to supervise the work.

With the present knowledge it would not be possible to set up a competent exploration program.

It will be necessary for the applicant to obtain an "Owner's Consent to Lien" from the lessor.

The members of the Commodity Divisions of the U. S. Geological Survey and the U. S. Bureau of Mines concur in this referral.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB) J.H. 2-16-53

Approved:

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

D. M. Lemmon (JHB)
Member, Geological Survey

cc: Docket
Field Team, Region 2
Code 400
Admn. Read. File
Operating Committee
R. W. Geehan, USBM
D. M. Lemmon, USGS

TLChapman/hhb
2/11/53

Docket

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

DEC JAN 23 53
DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 2 1953

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

Re: Docket No. DMEA-2823
J. C. Forkner
Moose Hill Tungsten Mine
Lincoln County, Montana

Dear Mr. Selfridge:

In reply to the Operating Committee's letter of December 31, 1952, we are forwarding one copy of a report R. J. Hundhausen made as a result of a regular Bureau of Mines examination on the Moose Hill Tungsten property. Please note that this was not intended to be a DMEA examination report. It will be noted that Hundhausen and the applicant's engineer are in complete disagreement as to the character and even the strike of the deposit.

The conflict between the two reports cannot be resolved without an independent examination--and perhaps not then--for if there is this difference of opinion it is obvious that exposures must be lacking. As the property is in snow county it will probably be in the early summer months before an examination can be scheduled.

It is fairly obvious that the first step in the exploration should be bulldozing and it is quite possible that a very small amount of bulldozing would quickly establish which of the two contentions is correct. We would much prefer waiting until we can make a field examination specifically for DMEA but if the Operating Committee is willing to accept, a contract could be drawn up. This would provide merely for about 150 hours of bulldozing followed by a couple hundred feet of drifting, such drifting to be done in consultation with the Field Team and only if, in the opinion of the Field Team, the drifting is warranted. The bulldozing would be laid out to test the applicant's thesis first as this appears to be the simpler and more easily determinable possibility. A rough draft of a suggested contract is attached.

Reviewed by O.C. Berry per Hazel 2/5/53.

Copy retained 400

If this is not acceptable the only alternative is to wait until spring, which might be the wiser plan.

By DMEA Field Team, Region II

A. E. Weissenborn

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

M. E. Volin

M. E. Volin, Member
(U. S. Bureau of Mines)

Enclosures

cc: USBM (2)
Puffett

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : M. E. Volin, Chief, Mining Division, Region II DATE: November 19, 1952

FROM : R. J. Mandhausen, Acting Chief, Examinations and Surveys Section, Mining Division, Region II

SUBJECT: Royal Group (Jones Tungsten), (Waylett Tungsten), (Moose Hill Tungsten), Lincoln County, Montana.

INTRODUCTION

This report is the result of a second examination of the subject deposit made September 23, 1952. It supplements the information furnished in a report dated August 13, 1952. The purpose of the examination was to observe the results of bulldozer trenching made during the current season and to determine whether or not the deposit justified a DMEA loan.

The property is responding favorably to exploration and warrants further exploration in view of the present showings. Work at the property was terminated October 1, 1952, because of weather conditions but the lessee, Mr. J. C. Forkner, Fresno, California, expects to carry out more work during the 1953 season with the aid of a DMEA loan, although he has not submitted an application to date. Mr. Forkner has staked several new claims and now refers to the property as the Moose Hill Tungsten Mine.

WORK ACCOMPLISHED

The map accompanying this report shows the work done during the 1952 season and summarizes the Bureau of Mines assay data. The bulldozer work was disappointing in that bed rock structures were not exposed because the trenches were too shallow. For that reason, structural interpretations may be subject to change pending further exploration.

DESCRIPTION OF THE DEPOSIT

The trenching has revealed a quartz lode in Wallace shale of pre-Cambrian age. The lode is exposed for a length of 400 feet and varies in apparent width from 5 to 120 feet. The general trend of the lode is in a north 70° west direction. It is an irregular bedding plane replacement lode which seems to dip to the northeast at an angle of 45 - 55 degrees. This is 15 to 20 degrees steeper than the slope of the hill. The lode is folded and contorted with the enclosing shale country rock and because it apparently dips with the slope of the hill the outcrop is highly irregular. The true width of the lode may be considerably less than the apparent width because of the structural and topographic relationships but this is not revealed by the shallow cuts.

The lode consists of quartz veins and veinlets ramifying through the altered shale wall rock. Brecciated inclusions of the wall rock in all stages of replacement by vein quartz are common.

The scheelite mineralization is probably confined to the quartz lode material but is definitely later in genesis. It seems clear that the scheelite veinlets have not been brecciated or folded to the same extent as the quartz lode material. The scheelite is apparently more concentrated in discrete shear planes lying at an acute angle to the trend of the lode. These shears strike between N 20 - 30° W and dip steeply to the east. The scheelite is in narrow veinlets of irregular lengths and widths from 1 to 2 inches.

The most westerly trench on the accompanying map exposes the lode over an apparent width of 125 feet. This trench should be deepened in order to show the attitude of the hanging wall and foot wall of the lode. Probably 40 to 50 percent of the lode consists of quartz stringers, the remainder is unreplaced shale. Two character samples were taken of the broken quartz material lying in the bottom of the shallow trench. These samples were taken in the daytime before the exposure was lamped. The first sample No. C-15 was a 40 pound grab sample taken over 70 feet of trench; it assayed 0.35% WO_3. The second sample No. C-16 was a 40 pound grab sample taken over 55 feet of trench and was check assayed at 3.09% WO_3. This sample was no doubt inadvertently salted and should be disregarded but the fact remains that this lode quartz carries scheelite.

A private report on the property by Mr. Peter Toepher, made October 7, 1952, recommends exploration in a northerly direction to follow out the trend of the scheelite veinlets. This direction is across the strike of the beds. In fact, Toepher recommends exploration "on the north end of this projected shear zone", where it intersects a massive limestone formation near the creek bottom. This exploration is not recommended by the writer. It overlooks the fact that the lode material has been injected along a favorable brecciated bed and consequently it seems logical to assume that the scheelite mineralization has also followed up along the favorable bed carrying the quartz lode material. It is extremely doubtful that the scheelite fractures will pass out of the walls of the lode and across the numerous bedding planes of the shale wall rock.

Due to the limited exposures, it is not possible to state conclusively the relationship of the scheelite mineralization to the quartz lode. It is my opinion however, that the scheelite will be confined to the quartz lode material and will be contained in shear planes or fractures lying at an acute angle to the trend of the lode in an echelon alignment. These shears are in general, developed parallel to the fold axes. Where movement on the shears has been excessive, e.g., where the lode is strongly folded or even displaced, later tension fractures or short narrow gash veins have developed in a position nearly normal to the shear plane. This relationship is best shown in the No. 1 trench section just beneath the old shaft. At this point, the zone of scheelite mineralization is 6 feet wide and averages 0.78% WO_3. This combination of structures is likely to furnish the widest commercial ore.

If the foregoing structural interpretations are correct, the lode should be extended in an easterly and westerly direction by bulldozer trenching. If topographic conditions permit, the trenches should cross the lode in a direction of N 70 - 80 E so as to cut the secondary scheelite shear structures which strike N. 20-30W. If the lode can be traced downhill to the west to a point 150 - 200 feet below the No. 1 trench a drift-adit should be driven in on the lode in search of mineable zones of scheelite. The drift should follow along the hanging wall of the lode as closely as possible and only be turned from the hanging wall to follow the scheelite structures. It is expected that the scheelite structures will terminate in the foot wall of the lode. If the structures occur in echelon as expected and at relatively closely spaced intervals, it will be advisable to maintain a moderately straight hanging wall drift and not to zigzag back and forth from hanging wall to foot wall. The scheelite veins can be developed by means of short stub drifts turned off from the main haulage drift. Parts of the lode, for example, may be adapted to stripping and open pit mining but this is doubtful. The possibility of a short crosscut to interset the lode should be considered if the angle of divergence between the slope of the hill and the dip of the lode is not too large. These features, of course, can only be determined after further development.

R. J. Hundhausen

R. J. Hundhausen

RJH/vf

cc: Wash. (2)
R/O
N/D
D/F
RJH

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~

1201 N. Division St.
Spokane 2, Washington
January 28, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 2 1953

MEMORANDUM

To: DMEA Field Team, Region II

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

Subject: Cost estimate for exploration work proposed by J. C. Forkner, Moose Hill Tungsten Mine, Lincoln County, Montana, Docket No. DMEA 2823

Application for Government assistance for the subject exploration project was made December 5, 1952 by Mr. J. C. Forkner. As I have not visited the property I have based the following cost estimate on information from a report by R. J. Hundhausen, Mining Engineer, Bureau of Mines, and from the application. The subject program also was discussed with members of the Geological Survey and the Bureau of Mines, and the following tentative program is proposed.

The exploration work is to be conducted in two stages, with the second stage contingent on the results of the first.

The work proposed in Stage I consists of:

Trenching to uncover vein exposed in existing cuts.

Stage II consists of:

Approximately 200 feet of drifting to explore vein exposed in Stage I.

Copy retained 400

Cost Estimate

Stage I

150 hours of bulldozing @ $15.00/hr.	$2,250.00
Assays, 20 @ $5.00/ea.	100.00
Supervision, 18 days @ $20.00/day	360.00
Total estimated cost - Stage I	$2,710.00

Stage II

Drifting 200 feet (7x5 cross section) on a one shift a day basis, average 4' advance per shift. Total advance for a 26-day month - 104 feet.

Labor and supervision for one shift	Cost/foot
2 miners @ $16.00/day	$ 8.00
10% workmen's compensation, OAB, unemployment insurance	.80
8-1/3% overtime	.67
Supervision; engineering, bookkeeping, etc. @ $500/mo.	4.81
Total	$14.28

Operating equipment - Rental basis	Cost/foot
1 315 cfm portable compressor @ $325/mo.	$ 3.13
1 Eimco loader @ $275.00/mo.	2.64
2 Mine cars @ $20/mo/ea.	0.38
2 Drills with pusher leg @ $50/mo/ea.	0.96
1 Pickup truck @ $100/mo.	0.96
Total	$ 8.07

Supplies:	Cost/foot
Fuse, 200'/4 ft. round @ $13/1000'	$ 0.52
Caps, 20/4 ft. round @ $21.60/1000	0.11
Powder, 15#/ft. @ $21.75/100#	3.26
Steel and bits - assume	1.30
Rail - 20# @ $7.80/100#	1.03
Spikes, bolts and fish plates	.15
Air hose - 50' @ $98.00/100') Water hose - 50' @ $90.00/100')	.47
Air 2" pipe @ $48.63/100') Water 1" pipe @ $16.00/100')	.65
Small tools and misc. equip. $150.00	.75
Maintenance and repairs	1.50
Freight - assume $200.00	1.00
Pickup operating cost - assume	.30
Total	$11.04

Recapitulation cost of breaking and mucking bald headings.	Cost/foot
Labor and supervision	$14.28
Operating equipment	8.07
Supplies	11.04
	$33.39
Plus 10% contingencies	3.34
Total cost/foot of advance	$36.73
Assaying - 50 samples @ $5.00/ea.	250.00
Construction of compressor house and storage shed	500.00

Total cost of project

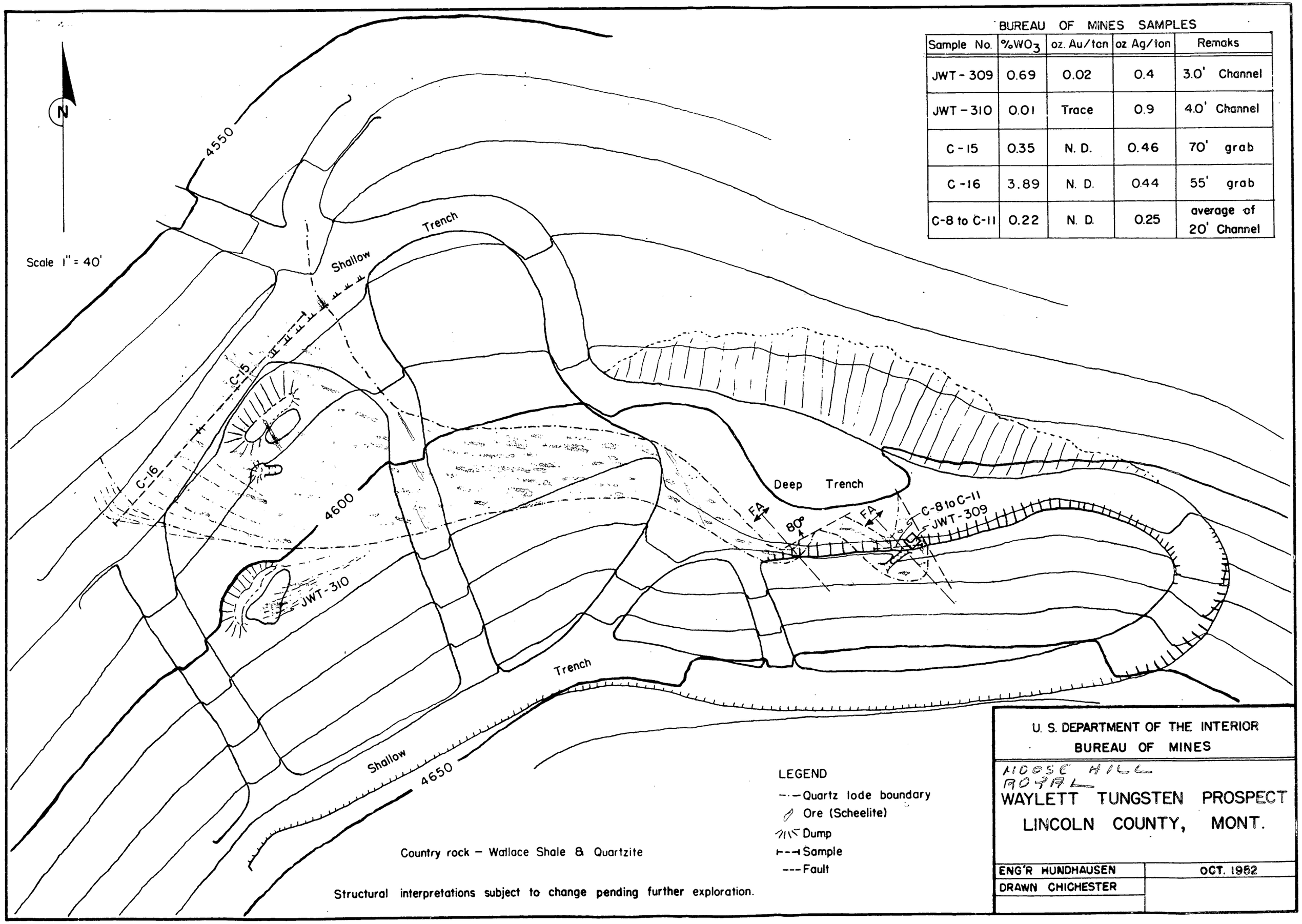
Stage I

Bulldozing 150 hours @ $15/hr.	$2,250.00
Assays - 20 @ $5.00	100.00
Supervision, 18 days @ $20/day	360.00
	$2,710.00
Plus 10% contingencies	271.00
Total estimated cost for Stage I	$2,981.00

Stage II

1. 200 feet of drifting @ $36.73/ft.	$7,346.00
2. Assaying 50 samples @ $5.00/each	250.00
3. Construction of compressor house and storage shed	500.00
	$8,096.00
Plus 10% contingencies for Items 2 and 3	75.00
Total estimated cost for Stage II	$8,171.00
Estimated total cost of Stages I and II	$11,152.00

Orig. & 1 cy - Wash.
USGS
DMEA
WSA



BUREAU OF MINES SAMPLES

Sample No.	%WO_3	oz. Au/ton	oz Ag/ton	Remaks
JWT - 309	0.69	0.02	0.4	3.0' Channel
JWT - 310	0.01	Trace	0.9	4.0' Channel
C - 15	0.35	N. D.	0.46	70' grab
C - 16	3.89	N. D.	0.44	55' grab
C-8 to C-11	0.22	N. D.	0.25	average of 20' Channel

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

MOOSE HILL
ROYAL

WAYLETT TUNGSTEN PROSPECT
LINCOLN COUNTY, MONT.

ENG'R HUNDHAUSEN	OCT. 1952
DRAWN CHICHESTER	

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

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300
(PMGC)

FILE COPY
SURNAME:

Martin.
Selfridge.
Mattendorf

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

DEC 31 1952

Mr. A. F. Weissenborn
Executive Officer, DMEA Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2823
J. C. Forkner
Moose Hill Tungsten Mine
Lincoln County, Montana

Dear Mr. Weissenborn:

Reference is made to your letter of December 15, 1952, transmitting three copies of the subject application. We note that in connection with a regular Bureau of Mines program an examination of the same property was made last summer, and although you do not agree with either the applicant's geologic interpretation or his proposed program, you found indications that an exploration project is merited. You add that because of seasonal inaccessibility further field work must wait until the Spring of 1953 and that you are withholding your recommendation pending clarification of the foregoing differences of opinion.

The applicant, however, in his letter of December 4 to you urged that a program be approved without delay so funds would be available promptly and full advantage could be taken of the short working season.

In the event that review of all available information indicates an exploration program is warranted, a project can perhaps be planned with each stage after the first contingent on field team approval of previous results. Under the circumstances, may we suggest that you send us a copy of the report already available to you, together with your tentative recommendation.

Sincerely yours,

Frank E. Johnson (JHB)

Chairman, Operating Committee

F.H. 12-31-52

Approved:

J. H. Hedges (JHB)

Member, Bureau of Mines

A. R. Kinkel, Jr. (JHB)

Member, Geological Survey

WSMartin:ls 12/29/52

CC: Docket
Admn. Read. File
Field Team, Reg. 2
Op. Committee
Code 400
D. M. Lemmon, USGS
R. W. Geehan, USBM

December 24, 1952

Mr. J. C. Forkner
Route 13, Box 551
Fresno, California

Subject: DMEA-2823
Re: Exploration Assistance
Moose Hill Tungsten Mine

My dear Mr. Forkner:

The receipt of your application dated December 5, 1952 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-2823 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-2823 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

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

25451

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 23 1952

1201 N. Division St.
Spokane 2, Wash.
December 15, 1952

MEMORANDUM

To: Chairman, Operating Committee, DMEA, Washington, D. C.

From: DMEA Field Team, Region II

Subject: Application for exploration assistance (tungsten), Moose Hill Tungsten Mine, Lincoln County, Montana, J. C. Forkner

Transmitted herewith are three copies of the subject application. One copy has been retained for our files.

The prospect was examined last summer by a Bureau of Mines engineer in connection with the regular Bureau program of mineral property examinations and surveys. This examination indicated that the property merits an exploration project, and although the information is not sufficiently detailed to enable us to make specific recommendations for a DMEA contract, we are lead to believe that the applicant's interpretation of the geology of the deposit may be in error and that a somewhat different program than what he proposes should be considered.

The property is inaccessible at the present time and further field work will have to be deferred until next spring, but we think that any recommendation should await clarification of the divergency of opinions.

By Field Team, Region II

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

M. E. Volin, Member
U. S. Bureau of Mines

Enclosure

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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. DMEA-2823
Metal or Mineral
Date Received 12/23/52
Estimated Cost
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: Mr. J. C. Forkner
Route 13, Box 551
Fresno, California
(all required information attached)

(*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

(*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

(*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

(*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.

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

.....

(*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 ..... days and be completed within ..... 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?

☒ 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 December 5, 195 2

.....
(Applicant)

By .....

.....

.....

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

INSTRUCTIONS

1. (a) J. C. Forkner, Route 13, Box 551, Fresno, California.
   (b) None
   (c) None
   (d) None

2. ---

3. (a) Quartz Mining Claims: Queen, Princess, Royal, Waylett, Nellie, Doodle-Bug, Duchess, King, King 2, all in Section 21 and 22, Township 27 North, Range 30 West, Lincoln County, Libby, Montana.

   Recorded: Volume 96, Misc. records Page 94, Lincoln County, State of Montana, first day of July, 1952, 10:36 A. M., Libby, Montana.

   Also Quartz Mining Claims: Snow Slide, Numbers 1, 2, 3, 4, 5, 6, 7, 8, Quartz Claims, Apex, Numbers 1 and 2, also Quartz Claim No. 9, Mr. J. C. Forkner -- all of the above in Sections 21 and 22, Township 27, North, Range 30 West, Lincoln County, Libby, Montana.

   These Claims have not been recorded.

   (b) Moose Hill Tungsten Mine.

   (c) The first eight claims above mentioned, plus Apex 1 and 2 is purchaser under contract.

   (d) Copy of contract hereto attached.

   (e) None

   (f) Answered above.

4. (a) Under the direction of Mr. J. C. Forkner, the present Applicant herein, bulldozing is to continue in the vicinity of the Scheelite shear zone. This work succeeded in showing numerous geologic features upon which an exploration program can now be based. It is planned to carry out this work during the summer of 1952.

   (b) During the exploration program mentioned in Paragraph "a" above, there were approximately 200 tons of Tungsten ore stock piled in Cut No. 1. This ore now on the property is estimated by Mr. F. W. Bryant, the Superintendent, and by Mr. J. C. Forkner, the Applicant, as running 1 % WO_3.

   (c) Geologic features are shown on maps drawn by Mining Engineer, Mr. Toepfer, hereto attached.

   (d) The Moose Hill Tungsten Mine, which at the present time is only a prospect, is located near the head of Miller Creek in Sections 21 and 22, Township 27 North, Range 30 West, Lincoln County Montana, 30 miles northeast of Libby on U. S. Highway Number 2 -- 26 miles on Highway No. 2 and 5 miles through the forest on a dirt road. Gasoline stations, motels, and residences, are all along U. S. Highway No. 2 for 26 miles between the Mine and Libby.

J. C. Forkner

(e) Libby is 31 miles away as above described in Paragraph "d" which is on the Northern Pacific Railroad, population is 4000, which takes care of two industries, one large lumber mill and the Zonalite Insulation Plant. Spokane is 180 miles for all the manufacturing supplies that should be required. Missoula, Montana, is about the same distance as Spokane, Butte, about 300 miles. Miller Creek, and the north fork of Miller Creek, has a good supply of water, and surrounds Moose Hill. In addition to that the valley of Miller Creek is plentifully supplied with underground water. Electric power is within 5 miles on U. S. Highway Number 2.

5. (a) Tungsten

(b) The work that Mr. J. C. Forkner, the Applicant, desires to do will be done in two parts. Part 1 will be bulldozing, and Part 2 will be diamond drilling. The bulldozing will be divided into three operations, as follows:

Part One. (Bulldozing)

Operation 1. On Engineer Toepfer's report, on Page 3, first paragraph, which is attached to this application, he says: "The most important scheelite occurance is shown in No. 1 Cut (see map). Here, there is an 8.4 foot wide shear zone containing what appears to be scheelite of commercial grade. The vein has been exposed to a depth of 12 feet in the cut, and has been exposed at a lower elevation in another cut which is now covered. The face of the cut exposes a great deal of steeply-dipping quartzite, which if proven continuous on the plane of the vein, would provide a favorable host-rock. Bulldozing was not attempted in the quartzites on the northern projection of this shear zone. This is a particularly favorable area. Massive limestone blocks are found near the creek on the north end of this projected shear zone. This limestone should prove to be a more favorable host-rock than the quartzite." The Applicant proposes to follow the suggestions made by Engineer Toepfer in this Operation -- following the exposed vein as pointed out in the map prepared by the Engineer for the purpose of exposing the vein as far as it is possible to do so by the bulldozer.

Operation 2. The Applicant proposes to bulldoze in the area shown on the map hereto attached, between the vein and north of the Waylett pit, where about $2000 worth of work has already been done. We believe that by going a few feet deeper in that particular area we will find a greater and richer deposit of Tungsten ore. We drilled 10 holes, eight feet in depth, on one of these cuts in preparing to shoot for bulldozing, which said bulldozing was not continued because of the breakdown of the bulldozer. These drill cuttings were panned by the Applicant and showed in the concentrate that the percentage of Tungsten increased. We believe that by bulldozing this particular area that it will disclose commercial Tungsten ore. Mr. O. V. Miller, a Mining Engineer, who has lived in this particular mining district for 30 years, mining for himself and operating mines for other people, is familiar with the geology of this country. He made an examination of all of the prospecting done by the Applicant and reported to the Applicant that he believed a large deposit of commercial Tungsten will be found by going deeper in this particular area.

J C Forkner

Operation 3. Engineer Toepfer suggests on Page 5, as follows: "Another bulldozer trench should be cut on the south side of the ridge to the area of quartzite breccia believed to be on the southward extension of the known scheelite-bearing shear zone." This bulldozing suggested will be carried out by the Applicant.

Part Two. (Diamond Drilling).

After the three subdivisions of Part 1 is fulfilled, the DMEA and the Applicant, should go over the situation -- the disclosures made by bulldozing, etc., -- and determine how much diamond drilling should be done, if any.

(c) The work will start on or before June 1, 1953, and will be completed in 60 days or thereabouts.

(d) The Applicant herein has had 40 years experience preparing land in California for irregation and farming these preparations, consisting in leveling land, building roads, building canals, viaducts, overpasses, headgates, and all operations required for such preparations. Mr. Frank Bryant, who will be the Superintendent of the bulldozing operations, has spent 30 years in leveling land, building canals, bridges, viaducts, dams, headgates, etc., which of course requires a tremendous amount of moving dirt. He probably is as well equipped in moving dirt as any one in the west.

6. (a) Estimate of Costs. (All Bulldozing to be contracted).

RD8 Bulldozer and Operator: 480 hours at $14.00 per hour	$ 6,720.00	$ 6,720.00
(b) Air Compressor at $2.25 per hour, drilling and other labor - 480 hours	1,080.00	
Superintendent over all work - $500.00 per month for two months	1,000.00	2,080.00
(c) Operating Materials and Supplies:		
10 boxes of powder @ $23.00 per box	230.00	
10 boxes of caps @ $2.50 per box	25.00	
30 rolls of fuse @ $2.50 per roll	75.00	
50 rock drill bits @ 25¢	12.50	
500 gallons gasoline for Air Compressor & Jeep	175.00	
25 gallons oil for Air Compressor & Jeep	25.00	542.50
(d) Operating Equipment:		
Air Compressor Rental - 2 months @ $107.00	214.00	
Jack Hammer Rental - 2 months @ $40.50	81.00	
Air Hose Rental - 2 months @ $18.00	36.00	
2 Steel Drills - 7/8" x 2'	5.60	
2 Steel Drills - 7/8" x 4'	7.40	
Jeep Rental - 2 months @ $8.00 per day	480.00	824.00
(e) None		
(f) None		
(g) Estimated $5.45 per hundred		
(h) Board & Room for superintendent at Libby, Montana, 60 days @ $8.00 per day	480.00	480.00
		$10,646.50

7. (a) Yes
(b) Money

J C Forkner

J. C. FORKNER, INC.
~~ROUTE 1 BOX 501~~
FRESNO, CALIFORNIA
Rte. 13, Box 551

December 4, 1952

Mr. N. N. Volin
Member, DMEA Field Team
Division II
U. S. Bureau of Mines
1201 South Division St.
Spokane, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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Dear Mr. Volin:

Herewith I am mailing you four copies of the questionnaire relative to my application to the DMEA for a loan for developing tungsten in Montana, which I call the Moose Hill Tungsten Mine. In fact, this is at the present time only a prospect.

You no doubt have in your office reports on this prospect. Mr. R. J. Hundhausen from your office in Spokane has seen the prospect on two different occasions, and in my judgment he is quite well acquainted with the developments of same up to date.

There was no place in the questionnaire asking how much money I wanted from the Government for this exploration. So I will state it here in this letter.

The amount of bulldozing which I think is necessary to develop the prospect to an extent which will disclose the vein which we already have partially disclosed will amount to about $10,000. The details are furnished you in the questionnaire. More information can be obtained by bulldozing for less money than by any other possible way of exploration. In my opinion, what we have already done with the expenditure of approximately $5000 has pointed the way to what can be done with $10,000.

After accomplishing the work which I want to do and which I have itemized in the questionnaire, if we find enough tungsten ore to justify diamond drilling, then the Bureau of Mines and I should determine how much diamond drilling should be done. It is impossible at this time to make any reasonable estimate of what that amount should be. But there is one thing that I am sure of, and that is, the amount that we determine is needed to develop this prospect into a real mine should be available immediately after the disclosures made by bulldozing, since there will probably not be left more than two or three months of time in which diamond drilling can be done in the year 1953.

We will not have time to make new applications. I believe that $20,000 should be available to drill, in case the DMEA and I shall decide to proceed with diamond drilling, and the money should be available at once so that we could take advantage of the weather conditions.

Therefore, I am asking the loan of $10,000 for bulldozing, and $20,000 for diamond drilling for the Moose Hill Tungsten Mine, in Lincoln County, Montana.

Very truly yours,

J. C. Forkner

Memorandum of Agreement

This Agreement made this 24th day of June 1952 between H.K. Waylett - R.C. Jones - both of Libby, Montana and F.H. Pyatt - 1212 Lake St. Sand Point, Idaho First parties and J.C. FORKNER of Fresno - California Route 13 Box 551 - Second party.

First Parties desire to sell and Second party desires to buy the following described property for the price upon terms and conditions as follows.

Mining Claims Queen - Prince - Royal - Waylett - Nellie Doodle Bug - Duchess - Duke - King - King No. 2 - in Sections 21-22 - Township 27 N. Range 30 W. Lincoln County - Montana

Price $50.000 cash on or before June 1 - 1953 - Or $100.000 total Royalty Basis of 10% - a minimum of $10.000 on or before June 1 - 1953 and a minimum of $10.000 on or before June 1 - each year there after until full amount of $100.000 is paid.

First parties agree to furnish good title at once

First parties agree to at once locate Mill site at best place and assign same to Second party when This deal is closed. First parties agree to do all assessments according to law to keep claims in good standing. Mill site included in purchase price above.

First parties agree to aid and assist Second party in showing said property

First party agrees to assign all water rights they have located or will locate pertaining to these claims.

First parties agree to assign to Second party any additional claims located or hereafter located not mentioned herein. pertaining to above claims for $1000 each

Second party agrees to proceed at once to test said property to determine whether he shall consummate this transaction. and in case he does not close the purchase. to turn over to first parties all information in his possession pertaining to the placer claims

All placer claims used as roads to be assigned to Second party as part of this transaction without any other payment.

without additional pay

H. K. Waylett

R. C. Jones

F. H. Pyatt

J. C. Forkner

NOTARIZATION REVERSE SIDE

STATE OF MONTANA)

COUNTY OF LINCOLN)

R. C. Jones, F. H. Piatt, H. K. Waylett and J. C. Ferkner personally appeared before me, H. B. Wallace, A Notary Public for the State of Montana and personally signed the within instrument.this 24th. day of June, 1952.

H B Wallace
Notary Public
Residing at Libby, Mont.

My Commission Expires
Dec. 5, 1952.

THE MOOSE HILL MINE
(Tungsten)
LINCOLN COUNTY, MONTANA

SUMMARY:

The Moose Hill prospect is a new tungsten discovery, and is still in an early stage of prospecting. An 8.4 foot scheelite-bearing vein has been uncovered in one location, and three other occurances of scheelite nearby indicate a widespread tungsten mineralization.

The purpose of this report is to provide a summation of the knowledge gained during the bulldozer trenching in 1952, and to provide a basis upon which further exploration can be conducted during 1953. This further exploration is warranted in view of the present showings.

HISTORY AND OWNERSHIP:

Gold placer operations were begun on Libby Creek in 1878, and have continued intermittantly until recent years. Lode gold deposits on the headwaters of West Fisher and Libby Creeks were exploited at a later date. However, there has been no active lode mining since 1933.

The Midas mine, three miles west of the Moose Hill prospect, was first located in 1905. There are no records of its early production of gold ore. Scheelite was known to occur locally within the vein, and between 1916 and 1918, tungsten concentrates were also produced.

In 1951, Harry Waylett and two associates prospected the area east of the Midas mine for scheelite, and found it to be present in four old prospect pits at the head of the Miller Creek drainage. A group of 10 lode claims were located, namely the Queen, Princess, Royal, Waylett, Doodlebug, Nellie, Dutchess, Duke, King, and King #2.

In 1952, these claims were leased with option to buy, to J. C. Forkner of Fresno, California, who in addition staked the Snowslide #1, #2, #3, #4, #5, #6, #7, #8, the Forkner #9, and the Apex #1, and #2 claims. Under the direction of Mr. Forkner, Bulldozer trenching was conducted in the vicinity of the known scheelite occurences. This work succeeded in showing numerous geological features upon which an exploration program can now be based. It is planned to carry out this work during the summer of 1953.

LOCATION AND ACCESSIBILITY:

The Moose Hill prospect is located near the head of Miller Creek in Sections 21 & 22, T-27-N, R-30-W, Lincoln County, Montana. The prospect workings are on the north side

of the ridge between the forks of this creek. Libby, Montana, on the main line of the Great Northern railroad, is the nearest rail shipping point, and is 31 miles distant by road. From Libby, south, the first 26 miles are on U. S. Highway #2. The last 5 miles are on unimproved road up Miller Creek, the last miles of this distance having very steep grades. However, this last mile is temporary road for prospecting purposes, and ultimately a road of favorable grade can be built.

TOPOGRAPHY AND CLIMATE:

The Moose Hill prospect is located in the eastern foothills of the Cabinet Range, about 21 miles south of Libby, Montana. Its elevation is about 4,600 feet above sea level. The area in the vicinity of the prospect is characterized by rounded hills and ridges having few rock outcrops except on the summits. However, the hill slopes are steep and bedrock can generally be exposed at shallow depth. The area is densely timbered with young trees which have sprung up since the 1910 fire. An abundance of timber for mine use is available on the property.

Rain and snowfall are heavy in this area, the prospect being within what is known as the "Snow Belt". As the road up Miller Creek is cut through dense young timber and has little side-slope upon which to dispose of snow, it is very likely that mining operations would not be feasible for more than 8 months of the year, unless provision is made for operating the mine and mill under isolated conditions during the winter months.

GENERAL GEOLOGY:

The country rock of the Cabinet mining district consists of broadly-folded and faulted sedimentaries of Beltian age. The sedimentaries are mainly composed of argillites, but also include calcareous shales, limestone, quartzite, and sandstones. The folding and faulting was accomplished during the Tertiary mountain-building time. While batholitic intrusives are not found in the district, they are found in other parts of the Cabinet Range, and similar deep intrusives are believed to be the source of the ore deposits in this district.

The ore deposits of the district may be classified as simple gold-quartz veins which generally occupy bedding planes in the country rock. Except at the Midas mine which has produced tungsten, gold is the only mineral of economic importance.

Glaciation has been very active in this area. Numerous local glaciers occupied the heads of the West Fisher and Libby Creek drainages, but did not extend to the lowland valley running north to Libby. This lowland valley was itself occupied by the

Continental Glacier extending south from Canada. The Miller Creek Valley is unglaciated, having been between the Continental glaciation and the areas of local glaciation. As the mouth of Miller Creek was blocked by morainal material, its valley has been deeply filled with detritus. Thus commercial scheelite placers cannot be expected to be found within the filled valley.

GEOLOGY OF THE DEPOSIT:

Three old test pits on the Moose Hill claims were found to carry scheelite mineralization. In all pits, the mineralization was found to be associated with shear planes striking between N 30°W and N 20°W and dipping between 86°E and 81°E. The country rock in all cases was a brecciated quartzite recemented by quartz. The brecciation and recementation appears to have preceded the shearing and introduction of scheelite.

Bulldozing in the vicinity of the Waylett pits (see map) showed the country rock to be composed mainly of heavily contorted argilites which carried only scattered scheelite mineralization. Cross-cut trenches located to intercept the scheelite-bearing shear zones of the pits, failed to uncover appreciable amounts of scheelite in the argillite country rock. It appears that the scheelite mineralization is dependent upon the country rock. The shearing stresses which could break the quartzite to provide channels for the mineralizing solutions, could only bend the more pliable argilites and thus failed to provide mineralizing channels there.

The most important scheelite occurance is shown in No. 1 Cut (see map). Here, there is an 8.4 foot wide shear zone containing what appears to be scheelite of commercial grade. The vein has been exposed to a depth of 12 feet in the cut, and has been exposed at a lower elevation in another cut which is now covered. The face of the cut exposes a great deal of steeply-dipping quartzite, which if proven continuous on the plane of the vein, would provide a favorable host-rock. Bulldozing was not attempted in the quartzites on the northern projection of this shear zone. This is a particularly favorable area. Massive limestone blocks are found near the creek on the north end of this projected shear zone. This limestone should prove to be a more favorable host rock than the quartzite.

No. 1 Cut and the cut above it expose a heavy fault zone dipping northeastward at a low angle (see map). This fault appears to project to a wide saddle crossing the top of the ridge, and thus I have called it the Saddle Fault. This fault appears to be post-mineral, the vein showing definite bending at its fault contact. This fault appears

to have great displacement, the rock above it being mainly undisturbed calcareous shales dipping gently northeast, while the rock below it consists of mainly non-calcareous argillites, quartzites, and sandstones, all of which are greatly disturbed by folding and faulting. Thus it does not appear advisable to consider prospecting above this fault.

A complete projection of the Saddle Fault will probably show it to intercept the ridge surface in an oval projection. At numerous places just below this fault projection, resilicified quartzite breccia float has been reported by Frank Bryant who is in charge of Mr. Forkner's work. Of particular interest, he reports such float to be present on the south side of the ridge on what appears to be the projection of the present known scheelite-bearing shear zone. These areas of recemented quartzite breccia warrant further investigation.

MINEROLOGY AND GRADE OF ORE:

One sample (#52-13) was taken in three channel cuts across the face of the vein exposed in No. 1 Cut. The results of this sampling have not yet been obtained. These results may prove to be somewhat low due to the enthusiastic attention this ore face has received from local "rock hounds". The width of the vein was measured to be 8.4 feet.

Various samples taken by Frank Bryant assayed as follows:

Main vein 24 ft. north of shaft;	
6 ft. below bottom of shaft - 21 ft. from surface	0.22% WO_3
Level of shaft on main vein	3.72
Different places on Main vein	0.68
12 ft. north of shaft on main vein,	
2 ft. below bottom of shaft	0.86
Main vein, 4 ft. below bottom of shaft	1.15
Main vein, 2 ft. below bottom of shaft	0.34
Composite sample	1.59

The ore is very hard, the gangue being composed of dense quartzite and quartz. No other gangue minerals were observed, nor did there appear to be any metallization other than that of scheelite. In the Waylett pits, a very small amount of a copper-bearing mineral (tetrahedrite?) was observed in a few specimens.

It is to be noted that scheelite is a mineral not subject to leaching nor secondary enrichment, and samples taken near the surface can be considered representative of the primary ore.

PROPOSED EXPLORATION PROGRAM:

This prospect is ideally suited to exploration by bulldozer trenching. As scheelite does not leach out from outcrops, the bulldozing needs to be conducted only to the depth required to expose the bedrock. Two men with shovels should be employed to clean the bedrock for night-time examination with an ultra-violet light. Particular attention should be paid to areas of quartzite and limestone.

The accompanying map shows the projection of the main vein. Bulldozer trenches should cross-cut this projection on the 4,559 foot, 4,500 foot, and 4,400 foot elevations, and another trench in the limestone near the creek should also cross the projected vein. All of the trenches should be continued at least 100 feet beyond the vein projection. One of these trenches should then be chosen to be continued eastward along the north slope of the ridge, that trench exploring this area and later serving as a better access road to the prospect.

Following this, a bulldozer trench should be cut southwestward below the Saddle Fault to the farther end of the saddle, so as to explore the areas of resilicified quartzite breccia known to be present there. Another bulldozer trench should be cut on the south side of the ridge to the area of quartzite breccia believed to be on the sourthward extension of the known scheelite-bearing shear zone.

Where commercial scheelite ore is found in this program, the veins should be followed by further bulldozing, and all exposures measured and sampled. The successful completion of this exploration program would then place the property in readiness for development.

October 7, 1952
Drummond, Montana.

PETER H. TOEPFER
Mining Engineer.

ESTABLISHED 1897

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RESEARCH ANALYSTS
INDUSTRIAL CHEMISTS
TESTING ENGINEERS
INSPECTION

October 17, 1952 Examinatinn 270460

For - Mr. J. C. Forkner
Rt. 13, Box 551
Fresno, California

Sample - Tungsten Ore, received from Peter H. Toepfer
Mining Engineer on October 13, 1952.

Marked: "#52 - 13"

	-Percent by weight-
Tungsten Trioxide (WO_3)	0.77

THE TWINING LABORATORIES

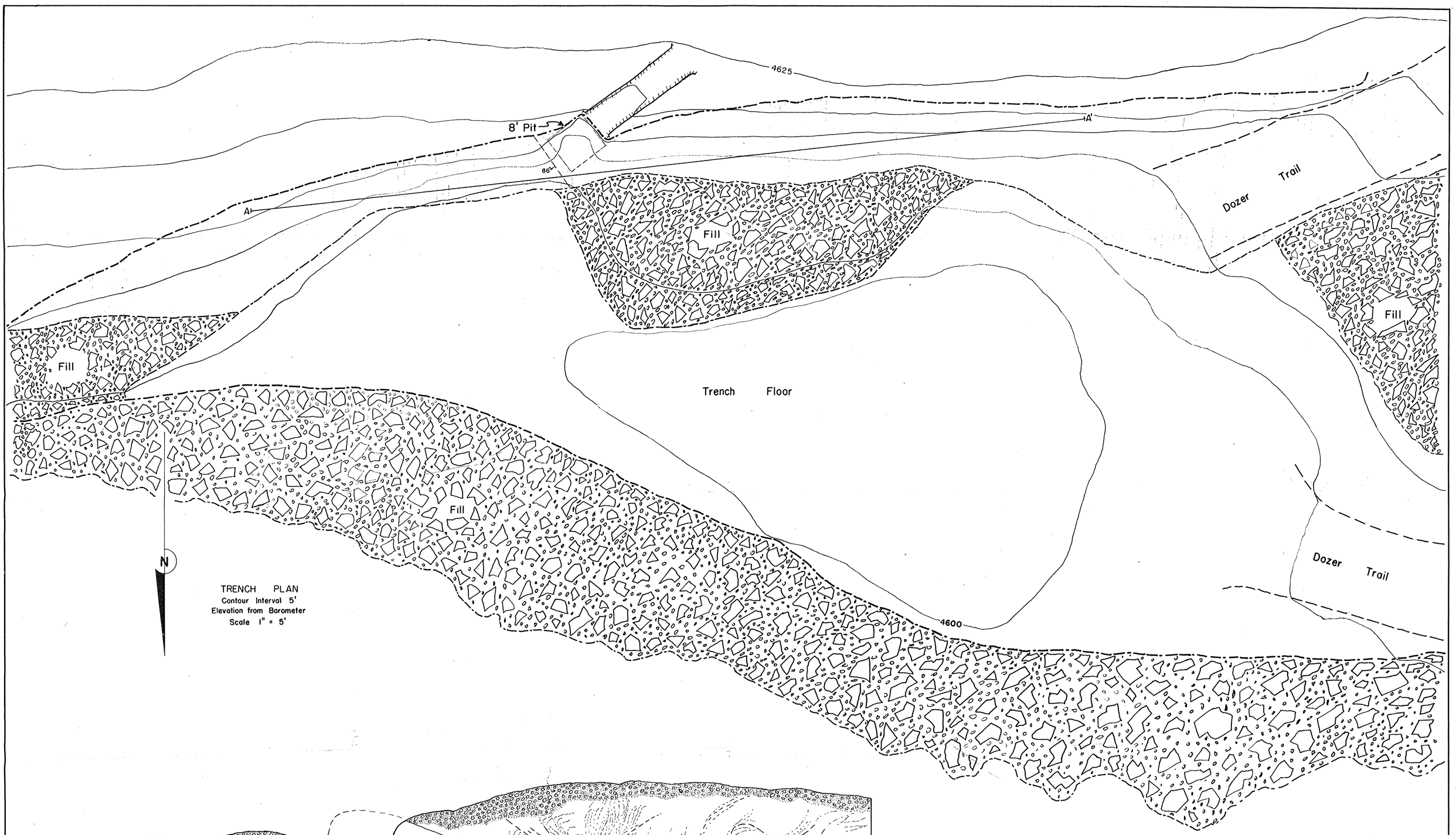
By Fred W. Twining

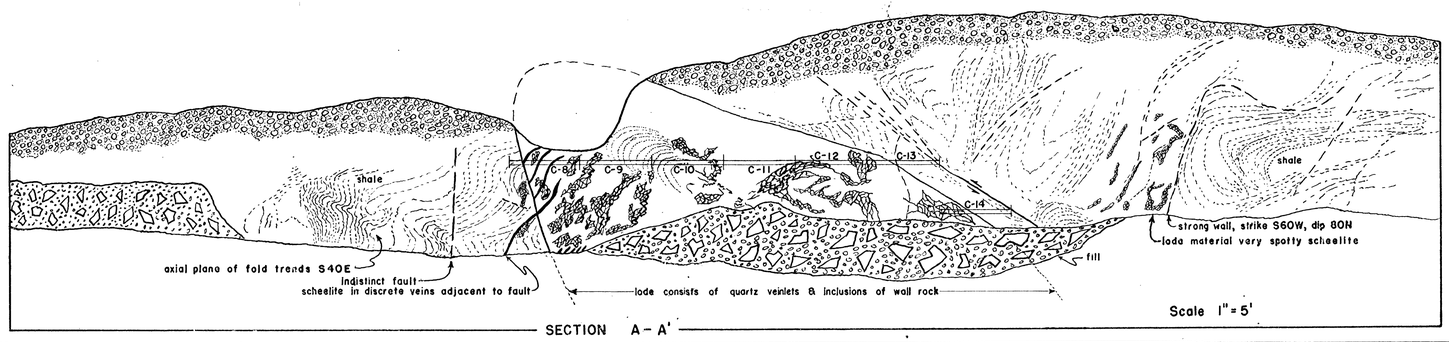
wt/md

SCIENTIFIC AFFILIATIONS OF PRINCIPALS

American Council of Commercial Laboratories, American Ceramic Society, American Chemical Society, American Foundrymen's Association, American Institute of Mining and Metallurgical Engineers, American Oil Chemist Society, American Public Health Association, American Society of Mechanical Engineers, American Society for Testing Materials, California Natural Gas Association and Society of Automotive Engineers.

MOOSE HILL TUNGSTEN MINE
LINCOLN COUNTY, MONTANA
J. C. FORKNER
FRESNO, CALIF.
Rte 13, Box 551





SECTION A – A'

Bureau of Mines Samples

No.	% WO_3/ton	oz. Au/ton	oz. Ag/ton
C-8	0.78	N. D.	0.26
C-9	0.06	N. D.	0.54
C-10	0.04	N. D.	0.10
C-11	0.02	N. D.	0.30
C-12	N. D.	N. D.	0.14
C-13	N. D.	N. D.	0.24
C-14	N. D.	0.04	0.16

U. S. DEPARTMENT OF THE INTERIOR

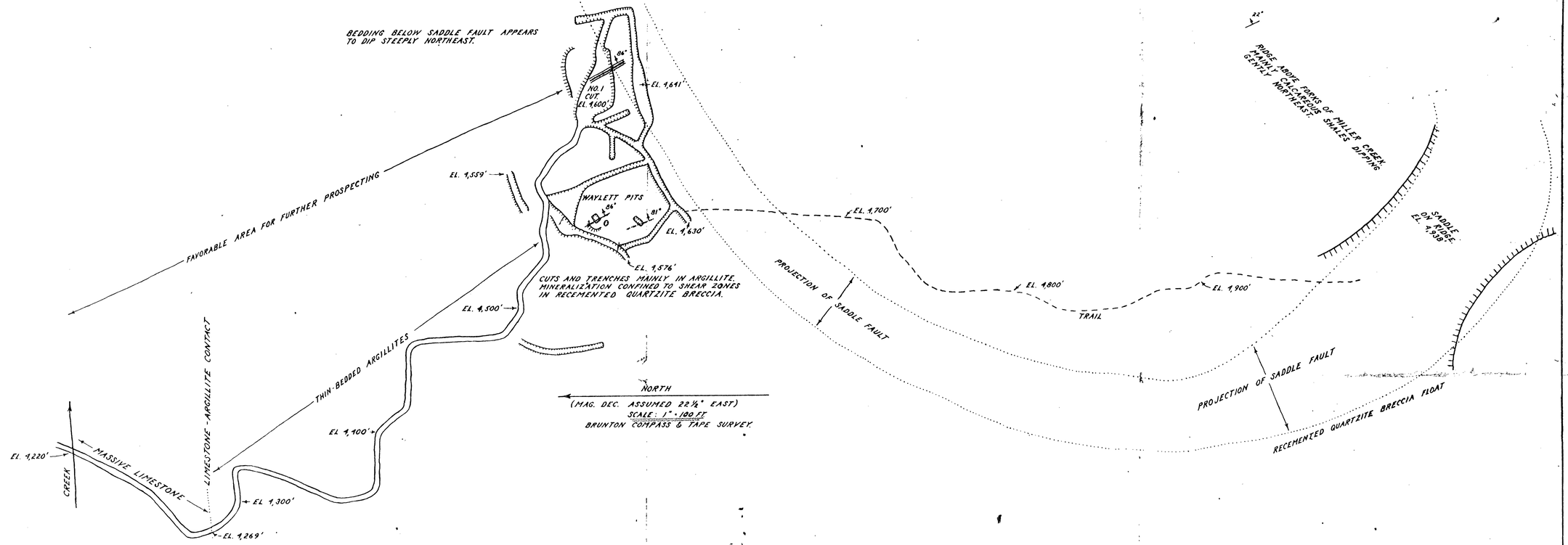
BUREAU OF MINES

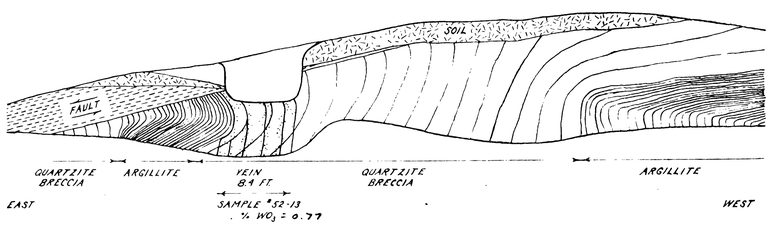
WAYLETT TUNGSTEN PROSPECT
(ROYAL TUNGSTEN)

LINCOLN COUNTY, MONT.

ENGR R. J. Hundhausen
TRACED L. Chichester

August 1952





FACE OF NO. 1 CUT.
SCALE: 1" = 10 FT.

MOOSE HILL
TUNGSTEN PROSPECT.
LINCOLN COUNTY,
MONTANA.

OCT, 1952

ENG'R: PETER TOEPFER
DRUMMOND, MONT.