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DEFENSE MINERALS ADMINISTRATION
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DMEA ~~DMA~~ Docket No. 2513

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FILE COPY
500
SURNAME:

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

Keating
Mittendorf
Hodges
Thayer
Ferguson

SEP 15 1952

Mr. John J. McIntyre
1244 Box Elder Street
Casper, Wyoming

Re: Docket No. DMEA-2513
Worthing - Kaufman Mine, Idaho

Dear Mr. McIntyre:

The Government has made a careful study of the data submitted in your application together with all the geological and field reports available. We have been unable to marshall sufficient evidence to permit us to reach a conclusion that the program of exploration work you propose might be successful.

Further consideration has been given to the possibility of determining an alternative plan, but we have been unable to reach any favorable conclusion regarding such a program. Under the circumstances it has become necessary to advise you that your application for exploration project assistance is denied.

We wish to express our appreciation of the opportunity you have given us to consider your defense exploration project, and it is with regret that we have to inform you of an unfavorable decision regarding your request.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

AGKeating-mb
September 10, 1952
Copy to: Docket
Adm. R. File
Operating Comm.
Mr. Keller (2)
Mr. Keating
Mr. Bishop
Mr. McKnight
Region II (2)

FILE COPY
500 SURNAME:

Keating

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

September 10, 1952

Memorandum

To: Administrator

From: Chief, Base Metals Division

Subject: Recommendation for denial of application for exploration assistance. Docket No. DMEA-2513 - John J. McIntyre, Worthing - Kaufman Mine, Lemi County, Idaho

The above-numbered application was submitted May 5, 1952, and proposes work consisting of driving a 900 foot adit tunnel 100 feet below the present "Bell" main tunnel, at an estimated total cost of $24,850.00. Of this amount, $9,350.00 is required for buildings and equipment, and $15,500.00 for labor and materials. The purpose of this work is to explore the possible downward extensions of three lead-zinc-silver ore occurences which have been exposed by shallow workings near the surface.

The ore occurs in irregular small pods and pipe-like deposits in limestone. Apparently much of the output has come from such pods within individual pipes and the irregular character of the ore occurrences make them difficult exploration targets. The total production from these workings during a period from 1906 to 1945 resulted from intermittent operation and is estimated to be only a few hundred tons of hand sorted shipping grade ore.

The main tunnel "Bell", driven 1000 feet to probe the same target as it is now proposed, failed to find ore. It is likely that small pods, similar to those mined in the past might be discovered, but there is small chance that any appreciable tonnage could be developed. Therefore, further consideration of the application is not warranted at this time, and it is recommended that the request for aid be denied. The Field Team and the Washington members of the USGS and USBM concur in a recommendation for denial.

H. F. Keller 9/15

H. F. Keller

AGKeating-mb
September 10, 1952
Copy to: Docket
Adm. R. File
Oper. Comm.
Mr. Keller (2)
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Mr. Bishop
Mr. McKnight

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DEFENSE MINERALS EXPLORATION ADMINISTRATION
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H. F. Keller

IN REPLY REFER TO:

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

August 29, 1952

Memorandum

Re: DMEA-2513
Worthing-Kaufman Mine
Birch Creek District
Lemhi County, Idaho
$20,000

To: Mr. H. F. Keller

From: E. L. Newcomb, USGS
O. M. Bishop, USBM

Subject: Concurrence with field team denial

The applicant proposes to drive a 900 foot crosscut tunnel to explore the downward projection of three known lead-zinc veins.

The field team recommends that the application be denied.

Over 5,000 feet of underground development has been driven since the mine was opened in 1906. Total production during this period of intermittent operation is estimated to be only a few hundred tons of hand sorted shipping grade ore.

The Bell tunnel, which lies above the level of the proposed tunnel, has previously explored the proposed target area for over 1,000 feet but has failed to cut any ore.

Mineralization occurs in irregular pipe-like ore shoots in dolomitic limestone. The oreshoots are parallel to the northeasterly strike of the limestone and follow the bedding which dips gently northwesterly.

Although most of the workings are now inaccessible, there are sufficient exposures on the property to indicate that most of the past production has been obtained from small pods of ore within the flat-lying pipe-like ore shoots. Additional small pods might be discovered by further exploration, but it is unlikely that a significant tonnage of ore would be developed by the proposed exploration at depth.

We concur with the field team's recommendation that the application be denied.

E. L. Newcomb
E. L. Newcomb
Geologist

O. M. Bishop
O. M. Bishop
Mining Engineer

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

August 29, 1952

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E. L. Newcomb
Geologist

O. M. Bishop
Mining Engineer

SD

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

1201 N. Division St.
Spokane 2, Wash.

August 14, 1952

MEMORANDUM

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

From: Field Team, Region II

Subject: DMEA Docket No. 2513 (lead), Worthing-Kaufman Mine, Lemhi County, Idaho

An examination report concerning the captioned property prepared by T. E. Howard, Mining Engineer, U. S. Bureau of Mines, and J. Quinlan, Geologist, U. S. Geological Survey, is forwarded herewith for review.

The Field Team, in accord with the examiners, considers the proposed exploration unsound in that the magnitude of the work required is not commensurate with the ore reserves likely to be indicated.

It is recommended, therefore, that the applicant's request for exploration assistance be denied.

By Field Team, Region II

Glenn C. Reed

For M. E. Volin, Acting Exec. Off.
(Bureau of Mines)

S. Warren Hobbs

S. Warren Hobbs, Acting Member
(Geological Survey)

Enclosure

OFFICE OF THE ADMINISTRATOR

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

WASHINGTON 25, D. C.

1201 North Division Street
Spokane 2, Washington

August 6, 1952

Reviewed by
DMEA OPERATING COMMITTEE
8-22-52
(date)

MEMORANDUM

To: Field Team, DMEA, Region II

From: James Quinlan and E. H. Roseboom, U. S. Geological Survey, and T. E. Howard, Mining Engineer, U. S. Bureau of Mines.

Subject: Field examination of Worthing-Kaufman Mine, Lemhi County, Idaho, Docket No. 2513 (lead)

INTRODUCTION

The subject examination was made July 8, 1952, in connection with an application for exploration assistance made by John J. McIntyre of Caspar, Wyoming. The examining team was accompanied by Roger Rising, Harold Bolstad, and W. F. Barrett, applicants, and F. G. Worthing, part owner of the property.

RECOMMENDATIONS

It is recommended that the application be denied. The proposed program consisting of driving a long crosscut designed to intersect known ore bodies at depth is considered geologically unfeasible.

LOCATION AND ACCESS

The principal mine workings, on the south side of Worthing canyon, are on the west flank of the Beaverhead range at an altitude of 8300 feet. Access to the mine from paved State Highway No. 28 is by 7 miles of unimproved mountain road, the last 2 miles of which is steep and narrow. This road joins the highway about 22 miles south of the small town of Gilmore, Idaho. Roberts, Idaho, the nearest shipping point, is 61 miles south of this junction.

Snowfall in the area normally is light, allowing the mine road to be kept open with little difficulty.

PROPERTY

The property, a part of the Worthing-Kaufman claim group, consists of six and one-half unpatented claims, the Dew Drop Nos. 1 and 2, Cabin Nos. 2 and 3, Quartzite Nos. 1 and 2, and the south half of the Cabin No. 1 in Sec. 33 and 34, T. 10 N., R. 30 E., Boise Meridian in the Birch Creek mining district.

The claims are owned by Frank G. and Jessie Worthing of Dubois, Idaho, Kenneth and Zora Kaufman of Idaho Falls, Idaho and Wallace and Helen Kaufman of Wendell, Idaho. They are held under a 5-year lease with option to purchase by R. C. Rising and Harold Bolstad of Dubois, Idaho, two of the applicants. Bolstad and Rising will assign their lease to the new partnership consisting of themselves, John J. McIntyre and M. F. Barrett in the event .. a DMEA contract is approved

FINANCIAL AND ADMINISTRATIVE COMPETENCE OF APPLICANT

Bolstad and Rising are young, energetic men whose mining experience has been largely in small leasing operations. These men would perform the project work while the remaining partners would supply the required funds.

The partnership is considered competent to conduct the proposed program. However, outside technical assistance would be required.

HISTORY AND PAST PRODUCTION

The original claims of the Worthing-Kaufman mine were located by John Weaver and Edward Kaufman in 1904. Little work, however, was done until 1906 when the property was leased to Robert N. Bell and associates. Although the Bell adit was driven below the rich surface showing, no commercial ore was found.

Worthing has shipped one or two cars of ore annually since obtaining the property in 1913. According to Shaffer,[1] Mr. Worthing estimated the total production from 1904 to 1945 at at least $35,000. Mr. Worthing has stated that several cars of ore have been shipped since 1945.

MINE WORKINGS

About 5000 feet of drifts, crosscuts, raises, shafts and winzes have been driven to prospect and develop the property. These workings are shown on the accompanying map.

At the time of the examination only about 100 feet of the Upper workings, a small part of the Carbonate workings in the vicinity of the Zook incline, and the new work northwest of the Bell tunnel were accessible for examination.

GEOLOGY

The geology of the Worthing-Kaufman mine is described by Umpleby,[2] Shenon,[3] Anderson, and Wagner.[4] Because of the inaccessibility of many of the workings it has been necessary to rely on these reports for much of the general geologic setting of the deposit.

1/ Shaffer, L. E., The Worthing-Kaufman Mine, Lemhi and Clark Counties, Idaho, U.S.B.M. War Mineral Report, 1945

2/ Umpleby, J. B., Ore deposits of the Mackay region, Idaho; USGS Prof. Paper 97, 1913.

3/ Shenon, P. J., Geology and ore deposits of the Birch Creek district, Idaho; Idaho Bureau of Mines and Geology Pamphlet 27, 1928.

4/ Anderson, A. L., and Wagner, W. R., Lead-zinc-copper deposits of the Birch Creek district, Clark and Lemhi Counties, Idaho; Idaho Bureau of Mines and Geology Pamphlet 70, 1944.

The geologic map and sections submitted with this report are quite adequate and accurate, as far as could be checked by the examining team. This map and sections were prepared by Shaffer 5/ for the War Minerals report. The examining team has made a few additions to the map showing the new workings northwest of the Bell tunnel and also the applicant's proposed crosscut.

Ore at the Worthing-Kaufman mine occurs in upper Devonian magnesian limestone which overlies quartzite of Cambrian or Ordovician age. According to Anderson and Wagner 6/ the contact between the magnesian limestone and quartzite is a fault contact resulting in the omission of Lower and Middle Devonian strata. In general, the dip of the bedding does not exceed 30° but rapid changes in strike are common due to faulting and minor folds. Locally, steeply dipping and highly contorted beds were observed.

The ore occurs as irregular pipe like shoots in the more siliceous or sandy limestone members of the Upper Devonian magnesian limestone. Two separate and nearly parallel ore bodies, known as the Upper and Carbonate ore bodies have been developed.

The Upper ore body is reported by Shenon 7/ to have averaged 4 feet in width. This body consists of irregular pipe like bodies which split and rejoin up the dip. The shoots are elliptical in cross section, the long axis of the elipse being parallel to the strike of the bedding.

The Carbonate ore body is reported by Anderson and Wagner 8/ to average several feet in thickness, where mined, with bulges up to 20 feet thick. These pipe like ore bodies are reported to be thickest on the flanks of the small anticlines in the bottom of the minor syncline.

The ore mined most recently by Mr. Worthing, who shipped about 60 tons and the applicants, who have shipped about 100 tons, came from the new workings northwest of the Bell tunnel portal. The small pods exposed there, apparently not connected to either of the above described ore bodies, might indicate the existence of another parallel ore occurrence. The structure is similar, though even more irregular. The principal ore minerals are cerrusite, anglesite, and galena.

The currently accessible workings attests to the irregular pipe like nature of the ore shoots. Apparently much of the output has come from rich pods within individual pipes. It is doubted that more than a few cars of ore have been shipped from such individual pods.

Mr. Worthing reported that in many instances resuing was employed to recover narrow bands of rich "sand carbonate". Most of the mine output has been hand sorted underground to bring it up to shipping grade.

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EVALUATION OF PROPOSAL

The applicant proposes to drive a 900-foot crosscut at an elevation 100 feet below the ore occurrence northwest of the Bell tunnel portal, to intersect at depth the downward extension of this ore and the downward extensions of the Upper and Carbonate ore bodies.

At the time of the examination about 60 feet of crosscutting being driven 62 feet higher to cut the first ore body had been completed. The applicant wishes to extend this heading another 60 feet before entering into an exploration contract.

The irregular, pipe like character of the ore bodies make them difficult exploration targets. The Bell tunnel, driven 1000 feet to probe the same target, failed to cut ore. Therefore, it appears that future prospecting should be confined to headings driven on structures. It is likely that additional small pods, similar to those mined in the past, could be discovered and mined in this manner. However, as no appreciable tonnage could be developed, it is felt that further consideration of the applicant's request is not warranted at this time.

cc: USGS, Spokane
4 cys -- Wash.
M/D
Albany
DMEA

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

August 14, 1952

MEMORANDUM

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

From: Field Team, Region II

Subject: DMEA Docket No. 2513 (lead), Worthing-Kaufman Mine, Lemhi County, Idaho

An examination report concerning the captioned property prepared by T. E. Howard, Mining Engineer, U. S. Bureau of Mines, and J. Quinlan, Geologist, U. S. Geological Survey, is forwarded herewith for review.

The Field Team, in accord with the examiners, considers the proposed exploration unsound in that the magnitude of the work required is not commensurate with the ore reserves likely to be indicated.

It is recommended, therefore, that the applicant's request for exploration assistance be denied.

By Field Team, Region II

For M. E. Volin, Acting Exec. Off.
(Bureau of Mines)

S. Warren Hobbs, Acting Member
(Geological Survey)

Enclosure

CC: 3-Wash

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
1201 North Division Street
Spokane 2, Washington

August 6, 1952

MEMORANDUM

To: Field Team, DMEA, Region II

From: James Quinlan and E. H. Roseboom, U. S. Geological Survey, and T. E. Howard, Mining Engineer, U. S. Bureau of Mines.

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INTRODUCTION

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RECOMMENDATIONS

It is recommended that the application be denied. The proposed program consisting of driving a long crosscut designed to intersect known ore bodies at depth is considered geologically unfeasible.

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cc: USGS, Spokane
4 cys -- Wash.

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

June 24, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 30 1952

Mr. H. F. Keller
Acting Chief
Base Metals Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Dear Mr. Keller:

This will acknowledge receipt of your letter of June 18, 1952, giving cover to a second copy of the John J. McIntyre application, DMEA-2513, Lead. A field examination will be made as soon as practicable.

Sincerely yours,

A. E. Weissenborn

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

cc: USBM

FILE COPY
SURNAME:

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

JUN 18 1952

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

Re: Docket No. DMEA 2513
John J. McIntyre - lead

Dear Mr. Weissenborn:

As per your request, we are transmitting herewith the application, together with all supporting data, on the subject docket.

This material was not enclosed with our letter of referral of May 22, since our records show that a set of the application forms was sent to your office. Apprently our letter containing the set of application forms was lost enroute, as your office has no record of their arrival.

Sincerely yours,

Signed (mef)

H. F. Keller, Acting Chief
Base Metals Division

P.N.
6-18-52

Enclosures

HFKeller/mef/mb
6/18/52
cc to: Adm. R. File
Docket File
Mr. Keller
Region II

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

June 11, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 16 1952

Mr. Donald E. Moulds
Chief, Lead-Zinc Branch
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-2513
Don J. McIntyre - Lead

Dear Mr. Moulds:

On May 22 a referral on the subject docket was received by this office. The application, together with supporting maps and papers which was to accompany the referral, has not been received.

Please see that we receive this material as soon as possible to facilitate a field examination.

Sincerely yours,

K H Gray

Kathryn Gray
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

500 FILE COPY
SURNAME:

Keating
Moulds

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

MAY 19 1952

Mr. A. E. Weissenborn
Executive Officer, Region II
DMEA Field Team
South 157 Howard Street
Spokane 8, Washington

Re: Docket No. DMEA 2513
John J. McIntyre - Lead

Dear Mr. Weissenborn:

The above numbered application has recently been submitted to this office, a copy of which, together with supporting maps and papers, has been forwarded to you. A review of the docket indicates that a field examination will be required. Should the results of the examination warrant further consideration of the project and evidence the possibility of worthwhile Government participation, the following information and data should be available to us for proper consideration of a contract.

1. A detailed description of the proposed program of work.

2. A map of the reported surface showings and plan of the exploration work with the location and extent of the proposed tunnel.

3. A more detailed analysis of estimated costs of the work to include a list with estimated cost of each item for materials and supplies, and such other items of cost as may come under this category.

4. Six executed copies of "Owner's Consent to Lien".

This, and any other information you feel will assist us in the consideration of the application will be appreciated.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
Defense Minerals Exploration
Administration

APPROVED:

J. H. Hedges
Member, Bureau of Mines

D. M. Lemmon
Member, Geological Survey

AGKeating/hmj 5-14-52
CC to: Adm. Reading File Docket Fil
Operating Committee Mr. Bishop
Mr. McKnight Region II
Mr. Moulds Mr. Keating

JN. 5-19-52

500

FILE COPY
SURNAME:

Moulds

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

MAY 19 1952

Mr. John McIntyre
1244 Box Elder Street
Casper, Wyoming

Re: Docket No. DMEA 2513
Lead-Zinc

Dear Mr. McIntyre:

Your application for Government assistance, Docket No. 2513, has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration, and has been referred to Mr. A. E. Weissenborn, Executive Officer, Region II, DMEA Field Team, South 157 Howard Street, Spokane 4, Washington, for a field examination.

The Region Office will contact you at their earliest opportunity in regard to your project.

Sincerely yours,

D. E. Moulds (mef) J.N. 5-19-52

D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration
Administration

DEMoulds/mef
cc to: Docket File Copy
Adm. R. File
Mr. Moulds
Region II

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

May 12, 1952

Re: DMEA-2513
Lead-Zinc
John J. McIntyre
1244 Box Elder St.
Casper, Wyoming

Memorandum

To: D. E. Moulds, DMEA

From: O. M. Bishop, USBM

Subject: Application for an exploration loan of $24,850

This application is for an x-cut tunnel 900 feet long to cut three ore-bearing veins. The estimated cost of this project is given. However, we require a field team's report on the property before we can offer an opinion on the merits of the application.

The field team should tell us what the planned work is and give us a map showing the reported surface showings and the location of the work to be done by the proposed tunnel and their opinion of its success. They should also give more complete costs than are given in the application. They should also procure subordination agreements from the owners of the property.

O M Bishop

O. M. Bishop
Base Metals Branch

May 12, 1952

Re: DMEA-2513
Lead-Zinc
John J. McIntyre
1244 Box Elder St.
Casper, Wyoming

Memorandum

To: D. E. Moulds, DMEA

From: O. M. Bishop, USBM

Subject: Application for an exploration loan of $24,850

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O. M. Bishop

O. M. Bishop
Base Metals Branch

IN REPLY REFER TO:

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

May 9, 1952

Memorandum

Re: DMEA-2513
McIntyre Claims
Birch Creek District
Lemhi County, Idaho
$20,000

To: Mr. D. E. Moulds

From: E. L. Newcomb

Subject: Geological recommendation

The applicant requests exploration assistance to explore the possible downward extensions of three lead-zinc-silver vein deposits, which have produced a limited amount of oxidized ore from extensive shallow workings. A proposed 1,100-foot adit is planned to intersect the deposits below the present workings. However, the application lacks pertinent geologic maps and sections for determining the relationship of the proposed work to the old workings.

The property has produced intermittently over the past 50 years. The last reported production was 100 tons of lead-silver shipping ore in 1950. The applicant states that the average grade of the deposits is 12-30% lead, 12% zinc, and about 3 oz. of silver per ton. Several neighboring mines, the Gilmore, Viola, Scott, and Hilltop have been substantial producers of lead and silver.

It is quite possible that the proposed exploration might intersect sulfide ore below the old workings, but without further geologic data we are unable to determine the feasibility of the proposed work.

We recommend that the application be referred to the field for an examination of the property.

E. L. Newcomb
E. L. Newcomb
Geologist

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

May 9, 1952

Memorandum

Re: DMEA-2513
McIntyre Claims
Birch Creek District
Lemhi County, Idaho
$20,000

To: Mr. D. E. Moulds

From: E. L. Newcomb

Subject: Geological recommendation

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It is quite possible that the proposed exploration might intersect sulfide ore below the old workings, but without further geologic data we are unable to determine the feasibility of the proposed work.

We recommend that the application be referred to the field for an examination of the property.

E. L. Newcomb
E. L. Newcomb
Geologist

EXPLORATION

Subject: DMEA-2513
Re: Exploration Loan
Dew Drop Nos. 1 and 2, etc.
May 6, 1952

Mr. John J. McIntyre
1244 Box Elder Street
Casper, Wyoming

My dear Mr. McIntyre:

This will acknowledge receipt of your application dated April 28, 1952 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2513 and referred to the Base Metals Division.

Kindly refer to DMEA-2513 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Administrative Officer

7862

DMEA-253

John J. McIntyre
Lawyer

Consolidated Royalty Building
Casper, Wyoming

April 28, 1952

United States Department of Interior
Defense Minerals Administration
Interior Building
Washington 25, D.C.

Gentlemen:

We herewith submit to you Form MF-103 - Application for Aid - and MF-100 - General Technical Data together with attachments pursuant to Mineral Order No. 5, under Defense Production Act of 1950.

If we have failed to comply with the instructions in filling out the enclosed forms or if any additional information is needed, we will be glad to supply any information as requested.

Yours very truly,

John J. McIntyre

John J. McIntyre

Enclosures
M:r

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 5 1952

UNITED STATES SMELTING, REFINING & MINING COMPANY
NINTH FLOOR NEWHOUSE BUILDING

Pay Utah Ore Sampling Co. Salt Lake City, Utah, July [illegible] 1920

Ore Frank Worthing Lot No. 1 Class
Sampled by Received Sampled Assayed 7/1
Metal Quotations—Silver Copper, N. Y. S. L. Lead, N. Y. S. L. Zinc

ASSAYS	GOLD OZS. PER TON	SILVER OZS. PER TON	PER CENT COPPER WET	PER CENT LEAD	PER CENT INSOLUBLE	PER CENT IRON	PER CENT ZINC	PER CENT SULPHUR	PER CENT	PER CENT
U. S. S. Co.	.01	6.90		50.7						
	.01	6.90		50.3						
Umpire										
Settlement Assay	.01	6.90		50.5	12.8	8.6				

CAR NOS.		METAL VALUES			WORKING CHARGE	
U 32443		Gold				
		Silver			Insoluble	
		Copper			Zinc	
		Lead			Sulphur	
					Speiss	
Total Wet Weight	80880					
Sacks						
Net Weight					Total Debit	
Less H_2O 4.14 %	3346	Gross Value			Iron	
		Less Working Charge			Net Working Charge	

Dry Weight, lbs. 77474

A charge of Five Dollars made for sampling on all lots of ore containing less than ten tons, dry weight. Rates subject to change without notice when not under contract or for specified tonage.

Payment for [illegible] tons @ 58.00 per ton				2246.75
Freight advanced @ 10.70 per ton		4[illegible]2.39		
War Tax on Freight		12.77		
Assay Charges				
Sampling Charges Difference a/c Ag. price 90¢		21.69		467.05

Checked by
Approved by

Payment

UNITED STATES SMELTING, REFINING & MINING COMPANY
NINTH FLOOR NEWHOUSE BUILDING

Pay Frank G. Worthing, Gilmore, Idaho Salt Lake City, Utah, Sept.30,1920.

Ore Lot No. 2 Class
Sampled by UOS Received 9/23 Sampled 9/24 Assayed 9/27
Metal Quotations—Silver 99625 Copper, N. Y. S. L. Lead, N. Y. 800 S. L. Zinc

ASSAYS	GOLD OZS PER TON	SILVER OZS PER TON	PER CENT COPPER WET	PER CENT LEAD	PER CENT IRON	PER CENT INSOLUBLE	PER CENT ZINC	PER CENT SULPHUR	PER CENT	PER CENT
U. S. S. Co.										
Settlement Assay		8.0		42.5	2.4	23.2	1.5	1.4		

CAR NOS.	WET WEIGHT	METAL VALUES			WORKING CHARGE	
UP 21314		Gold			Treatment	2.75
		Silver	7.13		Insoluble	2.78
		Copper			Zinc	
		Lead	45.90		Sulphur	.35
					Speiss	
Total Wet Weight	87540					
Sacks					Total Debit	5.88
Net Weight		Gross Value	53.03		Iron	.52
Less H_2O 6.44 %	5625	Less Working Charge	5.36		Net Working Charge	5.36

Dry Weight, lbs. 81715

A charge of Five Dollars made for sampling on all lots of ore containing less than ten tons, dry weight. Rates subject to change without notice when not under contract or for specified tonage.

Payment for 40.8575 tons @ 47.47 per ton			1947.88
Freight advanced @ 10.425 per ton		463.98	
War Tax on Freight		13.92	
Assay Charges			
Sampling Charges		26.20	
Diff. a/c Ag. price 93¢		20.02	524.13
Net Payment			1423

Checked by
Approved by

C. C. CRISMON
PRESIDENT

P. M. CRISMON
VICE-PRESIDENT

ORRIN FISHER
SECRETARY

R. R. CASTO
TREASURER

CRISMON & NICHOLS

ASSAYERS AND CHEMISTS

229-231 SOUTH WEST TEMPLE STREET

PHONE 3-7417

P. O. BOX 1708

SALT LAKE CITY, UTAH July 5, 1951

SHIPPER Roger Rising & E. Dalstad LOT NO. 2

CLASS SAMPLED BY United States Smelting Co.

ASSAY PER TON 2000 POUNDS

	GOLD—OZS.	SILVER—OZS.	LEAD % WET	COPPER %	INSOLUBLE % SILICA %	IRON %
	none 0.01	3.50 3.10	25.10 24.4			
	ZINC %	SULPHUR %	LIME %	MANGANESE %		

Smelter's results in pencil

CHARGES $ 4.00

CRISMON & NICHOLS

BY

C. C. CRISMON
PRESIDENT

P. M. CRISMON
VICE PRESIDENT

ORRIN FISHER
SECRETARY

R. R. CASTO
TREASURER

CRISMON & NICHOLS

ASSAYERS AND CHEMISTS

229-231 SOUTH WEST TEMPLE STREET

PHONE 3-7417

P. O. BOX 1708

SALT LAKE CITY, UTAH November 22, 1950

SHIPPER Roger Rising LOT NO. 1

CLASS SAMPLED BY United States Smelting Co.

ASSAY PER TON 2000 POUNDS

	GOLD—OZS.	SILVER—OZS.	LEAD % WET	COPPER %	INSOLUBLE % SILICA %	IRON %
	0.01	10.70	34.80			
	ZINC %	SULPHUR %	LIME %	MANGANESE %		

CHARGES $ 4.00

CRISMON & NICHOLS

BY C. C. Crismon

C. C. CRISMON
PRESIDENT

P. M. CRISMON
VICE PRESIDENT

ORRIN FISHER
SECRETARY

R. R. CASTO
TREASURER

PHONE 3-7417

CRISMON & NICHOLS

229-231 SO. WEST TEMPLE ST.

P. O. BOX 1708

CERTIFICATE OF ASSAY

SALT LAKE CITY 12, UTAH October 11, 1950

Roger Rising

WE HAVE ASSAYED YOUR one SAMPLES AND FIND it TO CONTAIN AS FOLLOWS:

DESCRIPTION	NO.	OZS. GOLD PER TON	OZS. SILVER PER TON	PER CENT LEAD	PER CENT COPPER	PER CENT INSOL.	PER CENT IRON	PER CENT ZINC	PER CENT	VALUE OF GOLD PER TON
	1			15.40						

REMARKS:

CHARGES $ 1.00 Paid

CRISMON & NICHOLS

BY P. M. Crismon

13 bags

686.8
247
4398

13) 439.

686
4991
192

15
13) 192
13
62

TELEPHONE 3-3302

Hand Sample Serial 16583

Mine U.S. 914 Ragnar Ri[illegible]

Dubois, Idaho

April 16, 1951

ASSAY REPORT

UNION ASSAY OFFICE, Inc.

J. V. SADLER, President
A. C. SELBY, Vice-Pres. & Treas.
A. C. SELBY, JR., Secretary

Salt Lake City 11, Utah

RESULTS PER TON OF 2000 POUNDS

NO.	GOLD Ozs. per Ton	SILVER Ozs. per ton	LEAD Per Cent Wet	COPPER Per Cent	INSOL. Per Cent	ZINC Per Cent	SULPHUR Per Cent	IRON Per Cent	LIME Per Cent	Per Cent	Per Cent	VALUE GOLD
	None	1.9	19.2									

upper incline
poor sample galena

Remarks

Charges $

TELEPHONE 3-3302

Hand Sample Serial 18609

Mine U.S. 63 Hogan Diggings Dubois - Idaho

RESULTS PER TON OF 2000 POUNDS

July 9, 1951

ASSAY REPORT

UNION ASSAY OFFICE, Inc.

J. V. SADLER, President
A. C. SELBY, Vice-Pres. & Treas.
A. C. SELBY, JR., Secretary

Salt Lake City 11, Utah

NO.	GOLD Ozs. per Ton	SILVER Ozs. per ton	LEAD Per Cent Wet	COPPER Per Cent	INSOL. Per Cent	ZINC Per Cent	SULPHUR Per Cent	IRON Per Cent	LIME Per Cent	Per Cent	Per Cent	VALUE GOLD
	Trace	1.6	16.6									

Remarks

A. C. Selby Jr.

Charges $

FORM C.O. 77-2

UNITED STATES SMELTING REFINING AND MINING COMPANY

NINTH FLOOR NEWHOUSE BUILDING

PROVISIONAL SETTLEMENT 1-4 — Salt Lake City, Utah, NOVEMBER 27, 1950

Purchased From ROGER REDING AND HAROLD HALSTAD

Pay ROGER REDING AND HAROLD HALSTA, PURCELL, IDAHO

SP: [illegible], IDAHO

Ore CRUDE(KAUFFMAN MINE) Lot No. 1 Gold License No.

Sampled by MIDVALE Received 11/17/50 Sampled 11/21/50 Assayed 11/22/5

Metal Quotations—Gold - Silver 90.00 Copper, N. Y. - Lead, N. Y. 17.00 Zinc

ASSAYS	GOLD OZS. PER TON	SILVER OZS. PER TON	PER CENT COPPER WET	PER CENT LEAD	PER CENT INSOLUBLE	PER CENT IRON	PER CENT ZINC	PER CENT SULPHUR	PER CENT LIME	PER CENT
U. S. S. R. & M. Co.	-	10.60		34.70						
C&W	.01	10.70		34.80						
Umpire				34.75 mkg.						
Loss				1.50						
Settlement Assay	.005	10.65	-	33.25	34.00	10.40	.80	.80	.30	

CAR NOS.	WET WEIGHT
Truck	
2 Loads	
UT 64012	
Weight to be used for hauling purposes is 34760#	
Total Wet Weight	
Sacks	
Net Weight	34500
Less H_2O 3.5 %	2932

METAL VALUE	
Gold 100% @ -	-
Silver 95 % @ 90.00	9 11
Copper	-
Lead	89 78
Zinc	
Gross Value	98 89
Less Working Charge	8 68

WORKING CHARGE	
Treatment Base 30% Lead	6 15
Credit Acc't Over 30% Pb.	33
Debit Acc't Under 30% Pb.	
Insoluble	3 48
Zinc Charge, excess over 6%	-
Sulphur Charge, excess over 2%	-
Arsenic Charge, excess over 2%	
Total Debit	9 30
Iron Credit	62
Net Working Charge	8 68

Dry Weight, lbs. 31568 Payment for 15.784 tons @ 90 21 per ton 1423.87

Freight advanced @ per ton		
Assay Charges	4.00	
Sampling or Watching Charges		
Hauling Charges as billed	196.69	
Federal Tax 3% - M Taylor, Terreton, Idaho	5.90	
Royalty 50% of 15% of $1217.08 - Frank O. Worthing, Dubois, Idaho	91.28	
Royalty 25% of 15% of $1217.08 - Wallace Kaufman, Mendell, Idaho	45.64	
Royalty 25% of 15% of $1217.08 - Kenneth Kaufman, Idaho Falls, Idaho	45.64	389 35
TOTAL NET PROCEEDS		1034 52
Amount Withheld Pending Receipt of Silver Affidavit		16 10
NET PROCEEDS PROVISIONAL		1018 42

FORM C.O. 77-2

UNITED STATES SMELTING REFINING AND MINING COMPANY

NINTH FLOOR NEWHOUSE BUILDING

PROVISIONAL SETTLEMENT 1-7

Salt Lake City, Utah, FEBRUARY 13, 1951

Purchased From ROCKY BEETLE AND [illegible] LIMITED

Pay ROCKY BEETLE AND [illegible] DRIVE, DUBOIS, IDAHO

[illegible], IDAHO

Ore CRUDE (PRIMARY & [illegible] ORE) Lot No. 2 Gold License No.

Sampled by MILVALE Received 12-3-51 Sampled 12-6-51 Assayed 12-10-51

Metal Quotations—Gold Silver 80.00 90.00 Copper, N. Y. Lead, N. Y. 10.00 Zinc

ASSAYS	GOLD OZS. PER TON	SILVER OZS. PER TON	PER CENT COPPER WET	PER CENT LEAD	PER CENT INSOLUBLE	PER CENT IRON	PER CENT ZINC	PER CENT SULPHUR	PER CENT LIME	PER CENT
U. S. S. R. & M. Co.	.015	3.90		21.60						
C & F	.01	3.10		22.30						
UNION Umpire				22.60	Imp.					
~~[illegible]~~ Lead				1.50						
Settlement Assay	.0075	3.00	.35	20.80	11.20	32.10	2.00	.60	1.20	

CAR NOS.	WET WEIGHT	METAL VALUE			WORKING CHARGE		
TRUCK - 2 Loads		Gold 100% @			Treatment Base 30% Lead	6	15
		Silver 11½oz @ 90.0	9	25	Credit Acc't Over 30% Pb.		
		Copper			Debit Acc't Under 30% Pb.		92
		Lead	63	27	Insoluble	1	32
Weight to be used for hauling purposes is 27960#		Zinc			Zinc Charge, excess over 6%		
					Sulphur Charge, excess over 2%		
					Arsenic Charge, excess over 2%		
Total Wet Weight							
Sacks					Total Debit	8	19
Net Weight	27960	Gross Value	65	52	Iron Credit	2	23
Less H_2O 15.2 %	4524	Less Working Charge	6	26	Net Working Charge	6	26

Dry Weight, lbs. 25236	Payment for 12.618 tons @	59	26	per ton	727.74	
~~[illegible]~~ Hauling @ $11.50 per ton - [illegible] Taylor, Terreton, Idaho				160.77		
Federal Tax 3%				4.82		
Assay Charges				4.00		
~~[illegible]~~ Royalty-50% of 15% of $578.15 Frank Hartling, Dubois, Idaho				43.36		
Royalty-25% of 15% of $578.15 Wallace Kaufman, Lowell, Idaho				21.68		
Royalty-25% of 15% of $578.15 Kenneth Kaufman, 434 - 12th Street, Idaho Falls, Idaho				21.68	256	32
TOTAL NET AMOUNTS					471	43
Amount Withheld Pending Receipt of Silver Affidavit						63
NET PROCEEDS PROVISIONAL ~~Net Payment~~					470	80

FORM C.O. 77-2

UNITED STATES SMELTING REFINING AND MINING COMPANY

NINTH FLOOR NEWHOUSE BUILDING

FINAL SETTLEMENT L-4 — Salt Lake City, Utah, NOVEMBER 29, 1950

Purchased From ROGER REDING AND HAROLD HALSTAD

Pay ROGER REDING AND HAROLD HALSTAD, DUBOIS, IDAHO

SP. DUBOIS, IDAHO

Ore CRUDE (KAMPMAN MINE) Lot No. 1 Gold License No.

Sampled by MILVALE Received 11/17/50 Sampled 11/21/50 Assayed 11/22/50

Metal Quotations—Gold Silver 90.0C Copper, N. Y. Lead, N. Y. Zinc

ASSAYS	GOLD OZS. PER TON	SILVER OZS. PER TON	PER CENT COPPER WET	PER CENT LEAD	PER CENT INSOLUBLE	PER CENT IRON	PER CENT ZINC	PER CENT SULPHUR	PER CENT LIME	PER CENT
U. S. S. R. & M. Co.		10.60								
C&B		10.70								
Umpire										
Non-Sulphide										
Settlement Assay		10.65								

CAR NOS.	WET WEIGHT	METAL VALUE			WORKING CHARGE		
		Gold 100% @			Treatment Base 30% Lead		
		Silver % @			Credit Acc't Over 30% Pb.		
		Copper			Debit Acc't Under 30% Pb.		
		Lead			Insoluble		
		Zinc			Zinc Charge, excess over 6%		
					Sulphur Charge, excess over 2%		
					Arsenic Charge, excess over 2%		
Total Wet Weight							
Sacks					Total Debit		
Net Weight		Gross Value			Iron Credit		
Less H_2O %		Less Working Charge			Net Working Charge		

Dry Weight, lbs.	Payment for 15.784	tons @	1 02	per ton	16.10
Freight advanced @	per ton				
Assay Charges					
Sampling or Watching Charges					
Hauling Charges					
	FINAL SILVER PAY PER TON $9.11				
	PROV. " " " " 8.02				
	1.02				
				Amount Withheld Pending Receipt of Silver Affidavit	
				Net Payment	16 10

FORM C.O. 7[illegible]2

UNITED STATES SMELTING REFINING AND MINING COMPANY

NINTH FLOOR NEWHOUSE BUILDING

Salt Lake City, Utah, JUL 13, 1951

Purchased From [illegible]

Pay [illegible], IDAHO

[illegible], IDAHO

Ore [illegible] Lot No. [illegible] Gold License No.

Sampled by [illegible] Received 6/27/51 Sampled 7/3/51 Assayed 7/5/51

Metal Quotations—Gold Silver [illegible].16 Copper, N. Y. Lead, N. Y. 17.00 Zinc

ASSAYS	GOLD OZS. PER TON	SILVER OZS. PER TON	PER CENT COPPER WET	PER CENT LEAD	PER CENT INSOLUBLE	PER CENT IRON	PER CENT ZINC	PER CENT SULPHUR	PER CENT LIME	PER CENT
U. S. S. R. & M. Co.	—	3.10		24.40						
GM	.01	3.5		25.10						
Union Umpire				25.30 Up						
[illegible] Non-Sulphide				1.90						
Settlement Assay	.005	3.30	.30	23.60	8.70	21.60	1.40	1.30	6.60	

CAR NOS.	WET WEIGHT	METAL VALUE			WORKING CHARGE		
Truck - 3 Loads - [illegible]		Gold 100% @			Treatment Base 30% Lead	6	15
		Silver [illegible] @ [illegible].16	2	[illegible]	Credit Acc't Over 30% Pb.		
Weight to be used for hauling purposes is 41510 lbs.		Copper			Debit Acc't Under 30% Pb.		64
		Lead	63	65	Insoluble		09
		Zinc			Zinc Charge, excess over 6%		
					Sulphur Charge, excess over 2%		
					Arsenic Charge, excess over 2%		
Total Wet Weight							
Sacks					Total Debit	7	68
Net Weight	41100	Gross Value	66	15	Iron Credit	1	33
Less H_2O 2.0 %	1000	Less Working Charge	6	06	Net Working Charge	6	76

Dry Weight, lbs. 40132	Payment for [illegible].016 tons @	60 09	per ton	1[illegible],76
Freight advanced @	per ton			
Assay Charges			4.00	
Sampling or Watching Charges				
Hauling Charges 11.50 Ton - [illegible] Taylor, Jerrston, Idaho			2[illegible].00	
Federal Tax 3%			7.36	
ROYALTY - 50% of 15% of [illegible] - Frank Lathing, Ibdale, Idaho			71.22	
ROYALTY - 25% of 15% of [illegible] - Allison Larsen, Lorsoll, Idaho			35.76	
ROYALTY - 25% of 15% of [illegible] - Kenneth Larsen, [illegible] Street Idaho Falls, Idaho			35.75	3[illegible] 78
Amount Withheld Pending Receipt of Silver Affidavit				
Net Payment				8[illegible] 98

DMEA-2513

P. O. BOX 1980

UNITED STATES SMELTING REFINING AND MINING COMPANY

NEWHOUSE BUILDING

SALT LAKE CITY 10, UTAH

November 13, 1950

Mr. Roger Rising
Dubois,
Idaho

Dear Mr. Rising:

Your two samples show pretty fair values as you will see from the attached certificate. No. 1, of course, is the better sample and has a metal value of $113.49 per ton, based on today's metal prices. On the same basis No. 2 has a metal value of $46.86. Treatment and transportation charges are yet to come from these figures but both of them would stand shipping.

We are glad to hear that you are sending some of this ore between the 10th and 15th of November. Settlement will be made as soon as possible after the shipment arrives at Midvale.

Yours very truly,

Blaine Watts

Blaine Watts
Ore Buyer

BW:ds
Attach. 1

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bur

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2513
Metal or Mineral
Date Received 5-5-52
Amount $
Participation (Government %)

John J. McIntyre
1244 Dox Elder Street
Casper, Wyoming

Name and address of applicant

April 28, 1952

Date

enclosed herewith

If you have already filed MF-100, give date filed ....., type of assistance requested Cash,

DMA Docket Number (if available) .....

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

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Defense Minerals Administration
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MAY 5 1952

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

nation requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this ll be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into e Government.

ER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER H COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list 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.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

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

Roger Rising
(Name of company)

By Harold Bolstad
(Signature of authorized official)

John J. McIntyre
(Date)

M. F. Barrett
(Title)

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—64067-2

Attachment to Form MF-103

1. (a) Dew Drop No. 1, Dew Drop No. 2 - and the South and one-half of the Cabin No 1 mining claim being 750 feet in length and 600 feet in width. Cabin No. 2, Cabin No. 3, Quartzite No. 1, Quartzite No. 2, All in Birch Creek Valley, Lemhi County, Idaho.
   (b) Copy of Lease attached.
   (c) Same area as described in (a)

2. (a) Lead, zinc, silver
   (b) Copy of Report by Robert N. Bell attached.

3. (a) Frank G. Worthing, one of the present owners and former operator of the mine, sank on a vein five feet thick, exposing it for a width of fifteen feet. This ore was 19% lead, with some silver. Lead then was worth $3.75. His operation was caved in. We propose to drop down to a 100 feet lower level and to drive a drift into the hill, contacting this vein. We estimate the vein will be reached within 200 feet or less, but the drift will be continued on in under two other exposed bodies of ore. Within a total distance of 400 feet the drift will bring us under a known lead-zinc body (12% lead, 12% zinc - upper level) and within another 500 feet (or a total of 900 feet) we should contact the east-west vein, where we expect to hit main body of ore which runs 30% to 60% in lead at the upper level. Our estimate for the cost of this operation is $20,000 as itemized in connection with paragraphs 6, 8, and 9.
   (b) Project can be commenced as soon as funds are available, and completed within one year.

4. Map attached.

5. Compressor house, living quarters, gallis frame, all in operable condition.

6. Ore bin and compressor house - $1,250.00

7. (a) None
   (b)

Compressor	--	$3500.00
Tracks	--	1000.00
Cars	--	500.00
Tools	--	400.00
Hose	--	200.00
Pipe and fitting	-	2000.00
Hammers	--	500.00

   (c) Miscellaneous tools - not to be charged as a cost.

8. Miners - 4 at $15 per day -- $13,000; no supervisors.

9. Powder, caps, fuses, and usual materials and supplies -- $2500.00

10. (a) $12,425.00
    (b) Yes

11. No other conditions.

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA FOR USE UNDER THE DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2513

Date received 5-5-52

John J. McIntyre
1244 Box Elder Street
Casper, Wyoming

Name and address of applicant

Date April 28, 1952

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   ☐ Owner.
   ☐ Lessee.
   ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

John J. McIntyre
Casper, Wyoming

Attachment to Form MF-100

GENERAL TECHNICAL DATA

1. (a) Lead and zinc
   (b) Silver

2. (a) 250 feet - Shaft
   (b) 800 feet - drifts + crosscuts
   (c) 1500 feet tunnels or adits
   (d) Stripping cuts 20x20x125; 20x10x400; 15x30x60; 15x8x40; No water

3. (a) 73 miles northwest of Roberts, Idaho
   (b) Birch Creek
   (c) Section 33, Township 10 North, Range 30 East
   (d) Lemhi County, Idaho

4. (a) Property is now in operation by Rising and Bolstad
   (b) Lessee

5. In production off and on for 50 years

6. Partners have had from five to twenty-five years' experience in mining business.

7. (a) Most of previous work was with hand tools; suspended when ore prices were low.
   (b) Neighboring mines:
   Viola, has produced about $13,000,000 worth of lead at 3 to 4 cents.
   Gilmore, has produced around $30,000,000 worth of lead and silver.
   Scott, has produced a considerable amount of high grade lead and silver.
   Hilltop, has produced about $200,000 worth of lead and silver, now in operation.
   (Skull Canyon Copper, has produced a considerable amount of copper.
   (c) Copy of Report by Robert N. Bell attached. This report was made about 20 years ago.

8. Roger Rising, Dubois, Idaho, Partner; Annual Salary, Com.,etc. - None; Est. Net Worth - $10,000; Life Ins. - None.
   Harold Bolstad, Leadore, Idaho, Partner; Annual Salary, Com,etc. - None; Est. Net Worth - $10,000; Life Ins. - None.
   M. F. Barrett, Leadore, Idaho, Partner; Annual Salary, Com.,etc. - None; Est. Net Worth - $12,000; Life Ins. - None.
   John J. McIntyre, Casper, Wyoming, Partner; Annual Salary,Com.,etc. - None; Est. Net Worth - $25,000; Life Ins. - None.

9. No Answer

10. 1. (a) Lead; (b) 60 tons; (c) 60 tons; (d) 100 tons; (e) None now
    2. None
    3. (a) Lead; (b) 60 tons; (c) 60 tons; (d) 100 tons; (e) None now

11. Not producing now; but plan to put into full scale operation.

12. (a) Vein over one foot thick, width unknown, exposed for 40 feet in depth, 30% lead, and over 3 ounces in silver. Also a lead and zinc vein with 12% lead & 12% zinc and some silver, exposed for 50 feet (3 feet thick), width not known but opened up for 6 feet in width. Also another vein 5x15 with 19% lead, and numerous other leads.
    (b) 1. None available
        2. Reserves not computed.
    (c) No

13. Six miles good dirt road and 67 miles oil road.

14. At Birch Creek, six miles. Water hauled for drilling.

15. No power

16. No labor hired

17. Compressor house, living quarters, gallis frame, and tools.

18. We have very good showings here and know that this property will be valuable if developed.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

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

Roger Rising
(Name of company)

By Harold Bolstad
(Signature of authorized official)

John J. McIntyre
(Date)

M. E. Barrett
(Title)

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—63792-1

INTRODUCTORY REPORT

on the

WORTHING LEAD MINE.

INTRODUCTION

This report is made as a result of two recent visits to the property, and a previous experience over twenty years ago in driving a development tunnel on the ground, a thousand feet long, at which time, owing to the low metal markets and remoteness from transportation, the enterprise was dropped before a determination of its merits was made. Since then railway transportation has been extended through a branch of the Northern Pacific Railway, to the Gilmore District only 25 miles distant over an excellent road with little grade. The demand for lead, and the metallurgical progress that has since transpired makde this property decidely attractive to investors, and justifies serious consideration as a probably big tonnage resource of oxidized lead ore that would be especially amenable to treatment by one of the new solution processes to a finished product on the ground.

LOCATION AND PROPERTY

This property consists of a contiguous group of sixteen lode mining claims covering the strike of the deposit for about a mile and a half in length, by about 1200 feet in width, and totaling about 320 acres. These claims were held by possessery right in full compliance with the law over a period of 25 years, without interruption or conflict, and carry enough development to justify patent proceedings if desired.

The property is situated on the west slope of Birch Creek Valley. This valley is a broad desert valley bordered by high mountain ranges and is ten miles wide, including its long steep talus slopes. The mine is situated about 1000 feet vertically above the talus crest. It is accessible over an excellent road 25 miles long from the terminus of the Gilmore and Pittsburg railway at Gilmore. Another excellent desert road with no steep grades extends to Dubois, a motive power division point on the Butte branch of the Union Pacific Railway, 65 miles distant.

The north slopes of the canyon immediately above the mine are well timbered with desirable red fir, and the main valley bottom, four miles below the mine, carries one of the lost rivers of the region which originates at that point in a thousand springs and develops a mile below its source, 4000 inches of water which is a constant flow throughout the year on a fair grade, and travels down the valley 20 miles and sinks into the desert, but along the first two miles of its course presents a feasible power site of about 800 H.P. The snow fall in the winter on the high ranges is usually heavy, but the precipitation is light in the valley, and hauling conditions usually good throughout the year. There is a rural post office called Reno, within 4 miles of the mine, which has a tri-weekly mail service.

HISTORY

The history of this property dates back to a regional mining excitement in the early 80's when the then famous Viola Mine was discovered at a point about 8 miles air line distance to the north of this property, on the same quartzite limestone contact. The Viola was a noted discovery of lead ore. It produced and shipped sixty thousand tons of clean sand carbonate of lead, carrying average values of 60% lead and 6 ounces silver, from a flat dipping bedded deposit about 900 feet long and up to 30 feet thick. This big production was made as crude ore without any treatment. The property was subsequently equipped with a 100 ton blast furnace and its total production is estimated at Six Million Dollars. Its operation under the Cleveland administration, when lead was selling at 3½¢ a pound and the product all had to be hauled 75 miles to the railway at that time, discouraged the further exploitation of the deposit when it was abruptly cut off by vertical faults, and it has since remained an unsolved geologic problem, but is attracting considerable interest at this time.

The Worthing property under discussion was discovered at that time and its initial claims have since been carried and are represented by an original locater. It proved of much lower grade than the ore of the Viola, and uncommercial until about 12 years ago when a new owner extended the development and found better grade ore.

The Viola operation terminated about 1889, when its manager Mr. Ralph Nichols, who had come from Leadville, Colo. and had been in charge of the property for several years, acquired a half interest in a prospect at Gilmore 15 miles distant on the opposite side of the valley, then went to West Australia for the English Company owners of the Viola and was away twenty years. He returned and found some prospecting interests in the Gilmore district and some railway transportation prospects. He bought his partner's half interest in the Latest Out Claim, a single location. The railway branch came in 1910 and he has since mined and shipped Two Million Five Hundred Thousand Dollars worth of ore which is conservatively believed to have paid him a net profit of Seven Hundred Fifty Thousand.

The adjoining Pittsburg-Idaho Mine has been operated throughout the same period by a stock jobbing company of Pittsburg Operators until about three years ago when it was taken over by the U. S. Smelting Company, and for the past two years has been working a crew of a hundred men and shipping a carload a day of crude ore. These two mines are opened on a series of narrow parallel fissures in limestone, accompanied by porphyry dikes. Their ores have always been shipped crude and average about 30% lead and 15 ounces silver per ton, with high associated fluxing values in iron oxide. They are both developed to a depth of 700 feet at which horizon the ore is still almost completely oxidized, and the total production of the two properties has approximated Eight Million Dollars.

Directly west of the Worthing Mine at a distance of about 20 miles and on the opposite slope of the opposite range near the valley of Little Lost River, the Wilbert Mine, owned by Stoneham, the sportsman broker of New York, has produced about One and a Half Million Dollars worth of clean lead ore. It is a flat dipping fissure in Cambrian quartzite very near the limestone contact and has been developed a 1000 feet deep on a short but persistent ore shoot. This ore is steel galena and up to a year ago carried very low silver values, about 5 or

6 ounces per ton. Recently the 1100 foot level has been opened from a long adit tunnel where the ore shoot has intercepted a blind porphyry dike and is showing better strength and a remarkable increase in silver values. The mine is producing about a carload a week of concentrates and crude ore and the recent carload shipments have averaged 80 ounces silver per ton.

The Scott Mine about 20 miles south of the property under discussion, near the edge of the Birch Creek Valley, is a splendid prospect with strong cindery surface gossans carrying light values in lead carbonate and has shipped three thousand tons of selected ore carrying 60% lead and 6 or 7 ounces silver per ton. It is developed 200 feet deep with three levels, through a vertical shaft near the same quartzite contact but in the limestone formation. Its more detailed description is covered in an accompanying report.

GEOLOGY

In its geologic setting and mineral manifestations the Worthing Mine has many points of practical comparison with other noted mines and districts of the great mineral province in which it occupies a north-south central position.

This mine is situated near a major movement plain of one of the series of block faulted mountain ranges or spurs extending in a southeasterly direction from the main Idaho mountain plateau area, and central granite batholith.

These rugged mountain spurs, with elevation ranging from twelve thousand feet down to about six thousand feet, where they terminate in the broad expanse of the Snake River lava plains, embrace the Saw Tooth range, the Big Lost River range, the Little Lost River range, and the Birch Creek range, all of which are of the Nevada type of block faulted mass mountain uplifts. The prevailing formations are relatively pure, heavy bedded limestones of Paleozoic age, with interbedded horizons of shale and quartzite, and a basal member of pure Silurian or Cambrian quartzite of great thickness.

The prevailing strike of these formations is northwest and the prevailing dip, northeast at low angles.

The most noted mineralized areas of these great mountain spurs are invariably associated with local folding, faulting and fissuring, resulting from the intrusion of igneous dikes and stocks that vary from narrow intrusive dikes to considerable centers of eruptive, intrusive granite or monzonite. The prevailing dike rocks are of the basic variety, and decidedly favorable as a genetic source of lead, zinc and copper minerals. And ores of this class are the most predominant of the region.

The Birch Creek range is a direct spur of the main continental divide, from which it originates two or three miles east of the Viola Mine, and the Worthing Mine is situated almost midway on the length of this spur at an elevation of 8000 feet.

Locally the ore of this deposit occurs at or near the main basal quartzite contact of the range but in the limestone beds immediately overlying it.

The quartzite horizon is exposed at the surface for several miles south to the Weimer Copper Mine, a notable occurence of oxidized copper ore that has produced several hundred cars of clean shipping mineral running from 10% to 40% copper, which was derived from the limestone and was from feeding fissures in the underlying quartzite. This quartzite horizon strikes northwesterly with a flat dip of about 20° to the northeast. It terminates abruptly at the north end of the Worthing property, either by a down fold or fault, and appears again on the mountain side at the same elevation three miles further north, extending continuously to the Viola Mine where the contact carried that famous lead ore body. The immediate overlying limestones are soft, blue and phosiliferous and the ore deposit apparently a direct replacement of these limestone beds, probably originating from underlying feeding fissures that have not yet been exposed.

A confusing local condition is the fact that the main ore bed of this property has a flat dip of about 20° to the southwest and towards the quartzite. It is probable from some surface evidence of strong patches of quartzite east of the ore deposit, that this condition is a result of a local over-thrust fold and a replica of an identical condition at the Wilbert Mine 20 miles further west, which afforded a notable day-light quarry stope.

DEVELOPMENT

The development of this property so far is shallow but of considerable lineal extent. The surface is covered with soil and short sagebrush, and the rock exposures, except for the quartzite horizon, are inconspicuous. The ore occurs under this condition underlying a steep lateral trench in the mountain and has been opened by a series of shallow vertical shafts and one adit tunnel 1000 feet long, known as the Bell tunnel. Gossan ore containing some lead carbonate has been found in actual open cut exposures, or as floats throughout the full length of the group. The main development is at a horizon about 50 feet deep under the surface that has explored the main ore bed for a length of 800 feet, by a dip depth of about 100 feet, and a notable body of iron gossan is exhibited in the face of the long tunnel that is a hundred feet thick but only carries light values in silver, as its importance in relation to the main ore showing has not yet been worked out.

The main development from the series of shallow shafts consists of drifts and stope raises which the owner has driven in a very regular manner but practically all connected and following a band of rich lead carbonate ore that has varied from a few inches to several feet in thickness and has produced twenty-five 40 ton carloads of crude shipping mineral averaging 40% lead and about 6 ounces silver per ton. One of these openings exhibits a bed of sand carbonate ore 12 feet thick that averages 20% lead and seems to be a distinct and separate bed from the one on which most of the extensive gouging development work has been expended. This particular bed is the best present ore exhibit in the mine and its lineal extent is undetermined beyond a length of about 100 feet. It was too low grade to ship crude and has been left in tact with considerable crosscutting and incline development work. This ore consists of a soft sandly gangue almost white in color and looks like decomposed sandstone. It, however, carries a series of stringers of pure grey lead carbonate ore. The richer stringers in the other workings are all accompanied by a thick body of gossany brown iron ore which at one or two points carries lead values up to 10% through a width of 8 feet, independent of the rich pay streak. The full width of this body of

gossan is in no place definitely determined by sufficient crosscutting. In fact the meandering development for 800 feet in length has been done solely with a view to gouging the rich pay streak and without any regard to systematic crosscutting. The ore is almost completely oxodised and the actual ore itself in the form of sandy grey carbonate of lead with occasional pebbles, and once in awhile a boulder up to 50 pounds of pure steel galena. The crude ore shipping receipts are varied in silicate contents up to 12% and as low as 2% depending upon the association of the sandy gangue. The thick bed of 20% ore seems to be a replacement of silicious matrix but is as soft as a sand bank and can all be mined with a pick.

In addition to the 1000 foot development tunnel known as the Bell Tunnel, which is probably off the course of the ore bed most of the way, there is on the main mountain slope toward the valley, a direct crosscut tunnel 600 feet long driven through broken limestone, which is probably normal fault material below the main quartzite outcrop horizon. This tunnel has shown a sprinkle of galena in the broken quartzite formation which was soft and easily run. At the face, however, it is driven into the solid heavy bedded white quartzite formation which is very hard.

The face of this lower development crosscut is probably 200 feet below the level of the Bell Tunnel and this lower crosscut is the likeliest point of attack for the permanent development of the deposit. Its advantages could only be determined by a transit survey, but it seems likely that its extension for 200 feet further to the east would bring it directly under the main mineral development and after passing through the quartzite into the overlying limestone beds drifting in the softer and more replaceable formations north and south would likely discover the feeding fissure or trunk channel of this lineal extensive mineralization and should in my opinion, find the ore in a normal attitude to the quartzite dipping east like the Viola did.

These formations above the quartzite horizon in which the ore occurs are soft and friable and would make easy ground to drive in drifts, crosscuts, and raises, which could be contracted in this ground, less the permanent improvements, for not over $8 per foot, and could probably be driven at that cost including all necessary improvements, under days pay by a good stiff-necked engineer who knew his business.

It is difficult to estimate the amount of ore proven in this property due to the irregularity of its development in shape, and the uncertainty of the length of the best 12 foot bed of 20% ore. But it seems from the showings available reasonable to estimate a very probable resource of Twenty thousand tons of 10% lead values. The silver value in the ore so far encountered has been uniformly low, ranging from 3 to 6 ounces per ton, but there are some open cuts 1000 feet back of the main exposure in the direction of the dip that indicate vertical narrow fissures containing high grade selected lead ore samples, with silver ratios up to 35 ounces and it is evident that there is a good deal to be learned about this deposit.

In age, structural and geological relations, this deposit very closely resembles the replacement deposits of the Park City District in Utah, and the Ophir Hill Mine also in Utah. It presents, to my mind, a splendid opportunity for a development campaign with the possibility and probability of providing an extensive tonnage resource of clean oxidized lead ore with the attractive

chance of duplicating the famous bed of clean sand carbonate that was mined in the Viola, 8 miles distant, forty years ago, which would have doubled the value of that noted ore body at present metal prices.

The ore seems to be entirely free from objectionable associated minerals. The shipping receipts have all been very low in sulphur and practically free from zinc and arsenic, and while it is a fact that such ore is difficult to clean by gravity methods of concentration, it is already roasted by nature and ideally adapted to the new solution processes like the Tainton process or the Ford process now being developed, which I believe will prove a big economic improvement over the Tainton process.

The ground in which the ore occurs is dry, far above the drainage level and no water troubles can be anticipated. There are no igneous rocks observable in close association with the ore deposit, the nearest being a series of lava dikes striking in its driection from the Birch Creek narrows four miles distant, but obscured as they extend to the mine by an alluvial fan several miles wide. There is no water on the ground even for domestic purposes, which to date has been hauled from Birch Creek or obtained from melting snow. There is, however, in one of the canyons immediately back of the mine a seep where a bed of lime shale crosses the canyon, at which point a spring for domestic water supplies might be obtained.

CONCLUSION

I heartily endorse the justification of a moderate outlay in the further development of this property, after a thorough survey and more detailed study of its local geology. I think that with a small gas driven compressor plant of one drill capacity, including a camp establishment that should not cost over $2000.00 that the permanence and intrinsic merits of the deposit could be determined at an outside cost of about Twenty-five Thousand, as all the work would be by cross-cutting, drifting and raising in easy ground, after the quartzite was passed through.

ROBERT N. BELL (Signed)

LEASE AND OPTION TO PURCHASE

This lease and option to purchase made this 1st day of May, 1952, by and between Frank G. Worthing and Jessie Worthing, his wife, of Dubois, Idaho and Kenneth Kaufman and Zora Kaufman, his wife, Idaho Falls, Idaho, and Wallace Kaufman and Helen Kaufman, his wife, of Wendell, Idaho, parties of the first part (hereinafter designated Lessors), and R. C. Rising and Harold Bolstad, both of Dubois, Idaho, parties of the second part (hereinafter designated Lessees).

WITNESSETH: That Lessors, for and in consideration of one dollar, in hand paid, receipt of which is hereby acknowledged and the royalties, covenants and agreements hereinafter set out, has demised, leased and let with a contingent option to purchase unto the said Lessees, all of Lessors right, title and interest in and to all its property embraced within that certain group of mining claims in Birch Creek Valley in Lemhi County, Idaho, covering the following named claims only: Dew Drop No 1, Dew Drop No 2 - and the South and one-half of the Cabin No 1 mining claim being 750 feet in length and 600 feet in width.

Cabin No 2
Cabin No 3
Quartzite No 1
Quartzite No 2

For a more particular and definite description of said mining claims, reference is hereby made to the location certificates thereof as appears on the County records of Lemhi County, Idaho. Said lease to run for a period of five years from date hereof, unless sooner forfeited or terminated because of Lessee's failure to keep and perform the covenants and agreements to be kept and performed by Lessees under this contract, otherwise to remain in full force and effect, so long as Lessees faithfully perform all covenants and agreements and make the payments under the lease and option to purchase said property, all as hereinafter provided.

LESSEES COVENANT AND AGREE:

1. To enter upon the possession of said property in person or by agent on this 1st day of May, 1952, and on that date to commence and guarantee the completion of at least 200 feet of underground work each and every year during the life of this lease. Said 200 feet of work to be completed by April 15th each year during life of this lease. It is mutually understood and agreed by the parties hereto that lessees shall do the annual assessment work here required on said claims each year and that said Lessees shall make and file proper affidavits of assessment with the County Recorder when due.

2. To post and keep continously posted in a conspicuous place near the workings of each operated mine on said property, notice to employees and to those who may furnish supplies and materials, to the effect that said property is being operated under a lease and option to purchase and that said Lessers are not in any way liable for work done, or for supplies or material furnished, or for damages for injuries sustained by employees while employed upon said property, and Lessees agree they will indemnify and hold Lessors harmless from all claims and demands of every description that shall be made by their employees for damages resulting from injuries received while employed on the property while same is in the possession of the Lessees.

3. To surrender peacefully, possession of said property to Lessors on the 1st day of May, 1957, or at any other termination of this contract, with the buildings and mining rails placed on the property during the life of this option by Lessees. It is further agreed and understood that the Lessees shall have the right to remove all machinery and pipe-lines pertaining to said machinery that they may have installed during the life of this lease.

4. To permit Lessers or their agents to have access to the property at any time and the right to examine same and in the making of any such examination, Lessees agree to give all reasonable assistance.

5. Lessees agree to keep at all times the drifts, shafts, tunnels and other workings in which the Lessees operates or which are used or occupied by them thoroughly drained and clear of loose rock, debris and rubbish and in good workable condition.

6. Lessees agree that they will comply with the provisions of the Workman's Compensation Act of the State of Idaho and at all times keep their employees insured as provided in said Act.

7. Upon the violation of any covenant or covenants hereinbefore reserved upon the part of the Lessees to be performed, the termination of this contract shall, at the option of the said Lessors, expire, and the same and said premises, with the appurtenances, shall become forfeited to the said Lessors without further notice.

LESSORS GRANT TO LESSEES:

a. The right to mine, mill and ship ore or concentrates from any of the said properties and sell the same to an established custom smelter, it being specifically understood and agreed that Fifteen per cent (15%) of the net smelter returns of all minerals shipped shall be paid as royalties to Lessors, after first deducting only freight and treatment charges; said royalties to be paid to the Lessors together with a duplicate copy of the smelter returns sheet of each lot of ore disposed of. It is further specifically understood and agreed between the parties hereto that all royalties are to apply on and become a part of the purchase price on the property herein specified.

The Lessees agree to give all proper and necessary instructions to the smelter to which ore has been shipped, to furnish duplicate smelter returns direct to said Lessors.

Any and all royalties which shall or may be made by the Lessees shall be made by the said smelter or smelters direct to the Lessors; as follows:

Fifty (50) per cent of the royalties to be mailed to Frank G. Worthing, Dubois, Idaho; twenty five (25) per cent mailed to Wallace Kaufman, Wendell, Idaho; and twenty five (25) per cent mailed to Kenneth Kaufman, Idaho Falls, Idaho.

The Lessees shall give to the smelter or smelters to which any ores are shipped proper instructions in writing as to the payment of said royalties to the Lessors.

Lessees are granted the exclusive right and option to purchase the above described property on or before the 1st day of May, 1957, for the full sum of Forty Five Thousand Dollars ($45,000.00) less the amounts that may be paid as royalties prior to that date. Lessors agree to sell, transfer, assign and convey unto said Lessees a quit claim deed, free and clear of all encumbrances, together with an abstract of the same, upon the full payment of the said purchase price. Fifty (50) per cent of the final payment of said purchase price to be paid to Frank G. Worthing and twenty five (25) per cent to Kenneth Kaufman and twenty five (25) per cent to Wallace Kaufman.

Time and the prompt payment of the purchase price under the option herein granted are the essence of this contract and it is mutually agreed, if the Lessees fail to make the payment as herein provided, then all payments heretofore made as royalties or otherwise shall be retained and treated as the agreed and liquidated damages that Lessors will sustain by reason of being deprived of the temporary use and possession of the property by Lessees.

The provisions of this contract shall be binding upon the successor, personal representatives, heirs and assigns of the parties hereto.

FRANK J. WORTHING (Signed)

JESSIE WORTHING (Signed)

KENNETH P. KAUFMAN (Signed)

ZORA KAUFMAN (Signed)

WALLACE KAUFMAN (Signed)

HELEN KAUFMAN (Signed)

Lessors.

R. C. RISING (Signed)

Harold Bolstad (Signed)

Lessees.

STATE OF IDAHO) ss.
COUNTY OF LEMHI)

On this 1st day of May, 1952, before me, the undersigned, a notary public in and for the State of Idaho, personally appeared Frank G. Worthing and Jessie Worthing, his wife, and R. C. Rising and Harold Bolstad, known to me to be the persons whose names are subscribed to the above and foregoing instrument, and acknowledged to me that they executed the same.

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

(SEAL)

MAY V. STONE (Signed)
Notary Public
Residing at Leadore.

STATE OF IDAHO)
COUNTY OF BONNEVILLE) ss

On this 20th day of May, 1952, before me, the undersigned, a notary public in and for the State of Idaho, personally appeared Kenneth Kaufman and Zora Kaufman, his wife, known to me to be the persons whose names are subscribed to the above and foregoing instrument, and acknowledged to me that they executed the same.

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

(SEAL)

JOSHUA T. EVANS (Signed)
Notary Public
Idaho Falls, Idaho
My commission expires Dec. 1st, 1953

STATE OF IDAHO)
COUNTY OF GOODING) SS

On this 16th day of Feb., 1952, before me, the undersigned, a notary public in and for the State of Idaho, personally appeared Wallace Kaufman and Helen Kaufman, his wife, known to me to be the persons whose names are subscribed to the above and foregoing instrument, and acknowledged to me that they executed the same.

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

(SEAL)

G. D. MacQUINCY (Signed)
Notary Public
Residing at Wendell, Ida.

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2513
Metal or Mineral
Date Received 5-5-52
Amount $
Participation (Government %)

John J. McIntyre
1244 Box Elder Street
Casper, Wyoming

Name and address of applicant

Date April 28, 1952

If you have already filed MF-100, give date filed enclosed herewith, type of assistance requested Cash,

DMA Docket Number (if available)

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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MAY 5 1952

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list 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.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

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

Roger Rising
(Name of company)

By Harold Bolstad
(Signature of authorized official)

John J. McIntyre
(Date)

M. F. Barrett
(Title)

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—64067-2

Attachment to Form MF-103

1. (a) Dew Drop No. 1, Dew Drop No. 2 - and the South and one-half of the Cabin No 1 mining claim being 750 feet in length and 600 feet in width. Cabin No. 2, Cabin No. 3, Quartzite No. 1, Quartzite No. 2, All in Birch Creek Valley, Lemhi County, Idaho.
   (b) Copy of Lease attached.
   (c) Same area as described in (a)

2. (a) Lead, zinc, silver
   (b) Copy of Report by Robert N. Bell attached.

3. (a) Frank G. Worthing, one of the present owners and former operator of the mine, sank on a vein five feet thick, exposing it for a width of fifteen feet. This ore was 19% lead, with some silver. Lead then was worth $3.75. His operation was caved in. We propose to drop down to a 100 feet lower level and to drive a drift into the hill, contacting this vein. We estimate the vein will be reached within 200 feet or less, but the drift will be continued on in under two other exposed bodies of ore. Within a total distance of 400 feet the drift will bring us under a known lead-zinc body (12% lead, 12% zinc - upper level) and within another 500 feet (or a total of 900 feet) we should contact the east-west vein, where we expect to hit main body of ore which runs 30% to 60% in lead at the upper level. Our estimate for the cost of this operation is $20,000 as itemized in connection with paragraphs 6, 8, and 9.
   (b) Project can be commenced as soon as funds are available, and completed within one year.

4. Map attached.

5. Compressor house, living quarters, gallis frame, all in operable condition.

6. Ore bin and compressor house - $1,250.00

7. (a) None
   (b)

Compressor	--	$3500.00
Tracks	--	1000.00
Cars	--	500.00
Tools	--	400.00
Hose	--	200.00
Pipe and fitting	-	2000.00
Hammers	--	500.00
		8100.00

   (c) Miscellaneous tools - not to be charged as a cost.

8. Miners - 4 at $15 per day -- $13,000; no supervisors.

9. Powder, caps, fuses, and usual materials and supplies -- $2500.00

10. (a) $12,425.00
    (b) Yes

11. No other conditions.

Form MF-100
(May 1951)

U.S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA FOR USE UNDER THE DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2513

Date received 5-5-52

John J. McIntyre
1244 Box Elder Street
Casper, Wyoming

Name and address of applicant

Date April 28, 1952

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.

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Defense Minerals Administration
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4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   ☐ Owner.
   ☐ Lessee.
   ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

John J. McIntyre
Casper, Wyoming

Attachment to Form MF-100

GENERAL TECHNICAL DATA

1. (a) Lead and zinc
   (b) Silver

2. (a) 250 feet
   (b) 800 feet
   (c) 1500 feet
   (d) Stripping cuts 20x20x125; 20x10x400; 15x30x60; 15x8x40; No water

3. (a) 73 miles northwest of Roberts, Idaho
   (b) Birch Creek
   (c) Section 33, Township 10 North, Range 30 East
   (d) Lemhi County, Idaho

4. (a) Property is now in operation by Rising and Bolstad
   (b) Lessee

5. In production off and on for 50 years

6. Partners have had from five to twenty-five years' experience in mining business.

7. (a) Most of previous work was with hand tools; suspended when ore prices were low.
   (b) Neighboring mines:
   Viola, has produced about $13,000,000 worth of lead at 3 to 4 cents.
   Gilmore, has produced around $30,000,000 worth of lead and silver.
   Scott, has produced a considerable amount of high grade lead and silver.
   Hilltop, has produced about $200,000 worth of lead and silver, now in operation.
   (Skull Canyon Copper, has produced a considerable amount of copper.
   (c) Copy of Report by Robert N. Bell attached. This report was made about 20 years ago.

8. Roger Rising, Dubois, Idaho, Partner; Annual Salary, Com.,etc. - None; Est. Net Worth - $10,000; Life Ins. - None.
   Harold Bolstad, Leadore, Idaho, Partner; Annual Salary, Com,etc. - None; Est. Net Worth - $10,000; Life Ins. - None.
   M. F. Barrett, Leadore, Idaho, Partner; Annual Salary, Com.,etc. - None; Est. Net Worth - $12,000; Life Ins. - None.
   John J. McIntyre, Casper, Wyoming, Partner; Annual Salary,Com.,etc. - None; Est. Net Worth - $25,000; Life Ins. - None.

9. No Answer

10. 1. (a) Lead; (b) 60 tons; (c) 60 tons; (d) 100 tons; (e) None now
    2. None
    3. (a) Lead; (b) 60 tons; (c) 60 tons; (d) 100 tons; (e) None now

11. Not producing now; but plan to put into full scale operation.

12. (a) Vein over one foot thick, width unknown, exposed for 40 feet in depth, 30% lead, and over 3 ounces in silver. Also a lead and zinc vein with 12% lead & 12% zinc and some silver, exposed for 50 feet (3 feet thick), width not known but opened up for 6 feet in width. Also another vein 5x15 with 19% lead, and numerous other leads.
    (b) 1. None available
        2. Reserves not computed.
    (c) No

13. Six miles good dirt road and 67 miles oil road.

14. At Birch Creek, six miles. Water hauled for drilling.

15. No power

16. No labor hired

17. Compressor house, living quarters, gallis frame, and tools.

18. We have very good showings here and know that this property will be valuable if developed.

(*b*) If deposit is other than pl[illegible]:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, even or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

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

Roger Rising
(Name of company)

By Harold Bolstad
(Signature of authorized official)

John J. McIntyre
(Date)

M. F. Barrett
(Title)

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—63792-1

LEASE AND OPTION TO PURCHASE

This lease and option to purchase made this 1st day of May, 1952, by and between Frank G. Worthing and Jessie Worthing, his wife, of Dubois, Idaho and Kenneth Kaufman and Zora Kaufman, his wife, Idaho Falls, Idaho, and Wallace Kaufman and Helen Kaufman, his wife, of Wendell, Idaho, parties of the first part (hereinafter designated Lessors), and R. C. Rising and Harold Bolstad, both of Dubois, Idaho, parties of the second part (hereinafter designated Lessees).

WITNESSETH: That Lessors, for and in consideration of one dollar, in hand paid, receipt of which is hereby acknowledged and the royalties, convenants and agreements hereinafter set out, has demised, leased and let with a contingent option to purchase unto the said Lessees, all of Lessors right, title and interest in and to all its property embraced within that certain group of mining CLAIMS, IN Birch Creek Valley in Lemhi County, Idaho, covering the following named claims only: Dew Drop No 1, Dew Drop No 2 - and the South and one-half of the Cabin No 1 mining claim being 750 feet in length and 600 feet in width.

Cabin No 2
Cabin No 3
Quartzite No 1
Quartzite No 2

For a more particular and definite description of said mining claims, reference is hereby made to the location certificates thereof as appears on the County records of Lemhi County, Idaho . Said lease to run for a period of five years from date hereof, unless sooner forfeited or terminated because of Lessee's failure to keep and perform the covenants and agreements to be kept and performed by Lessees under this contract, otherwise to remain in full force and effect, so long as Lessees faithfully perform all covenants and agreements and make the payments under the lease and option to purchase said property, all as hereinafter provided.

LESSEES COVENANT AND AGREE:

1. To enter upon the possession of said property in person or by agent on this 1st day of May, 1952, and on that date to commence and guarrantee the completion of at least 200 feet of underground work each and every year during the life of this lease. Said 200 feet of work to be completed by April 15th each year during life of this lease. It is mutually understood and agreed by the parties hereto that lessees shall do the annual assessment work here required on said claims each year and that said Lessees shall make and file proper affidavits of assessment with the County Recorder when due.

2. To post and keep contineously posted in a conspicuous place near the workings of each operated mine on said property, notice to employees and to those who may furnish supplies and materials, to the effect that said property is being operated under a lease and option to purchase and that said Lessors are not in any way liable for work done, or for supplies or material furnished, or for damages for injuries sustained by employees while employed upon said property, and Lessees agree they will indemnify and hold Lessors harmless from all claims and demands of every description that shall be made by their employees for damages resulting from injuries received while employed on the property while same is in the possession of the Lessees.

3. To surrender peacefully, possession of said property to Lessors on the 1st day of May, 1957, or at any other termination of this contract, with the buildings and mining rails placed on the property during the life of this option by Lessees. It is further agreed and understood that the Lessees shall have the right to remove all machinery and pipe-lines pertaining to said machinery that they may have installed during the life of this lease.

4. To permit Lessors or their agents to have access to the property at any time and the right to examine same and in the making of any such examination, Lessees agree to give all reasonable assisstance.

5. Lessees agree to keep at all times the drifts, shafts, tunnels and other workings in which the Lessees operates or which are used or occupied by them thouroughly drained and clear of loose rock, debris and rubbish and in good workable condition.

6. Lessees agree that they will comply with the provisions of the Workman's Compensation Act of the State of Idaho and at all times keep their employees insured as provided in said Act.

7. Upon the violation of any covenant or covenants hereinbefore reserved upon the part of the Lessees to be performed, the termination of this contract shall, at the option of the said Lessors, expire, and the same and said premises, with the appurtenances, shall become forfeited to the said Lessors without further notice.

LESSORS GRANT TO LESSEES:

a. The right to mine, mill and ship ore or concentrates from any of the said properties and sell the same to an established custom smelter, it being specifically understood and agreed that Fifteen per cent (15%) of the net smelter returns of all minerals shipped shall be paid as royalties to Lessors, after first deducting only freight and treatment charges: said royalties to be paid to the Lessors together with a duplicate copy of the smelter returns sheet of each lot of ore disposed of. It is further specifically understood and agreed between the parties hereto that all royalties are to apply on and become a part of the purchase price on the property herein specified.

The Lessees agree to give all proper and necessary instructions to the smelter to which ore has been shipped, to furnish duplicate smelter returns direct to said Lessors.

Any and all royalties which shall or may be made by the Lessees shall be made by the said smelter or smelters direct to the Lessors; as follows:

Fifty (50) per cent of the royalties to be mailed to Frank G. Worthing, Dubois, Idaho: twenty five(25) per cent mailed to Wallace Kaufman, Wendell, Idaho and twenty five (25) per cent mailed to Kenneth Kaufman, Idaho Falls, Idaho.

The Lessees shall give to the smelter or smelters to which any ores are shipped proper instructions in writing as to the payment of said royalties to the Lessors.

Lessees are granted the exclusive right and option to purchase the above described property on or before the 1st day of May, 1957, for the full sum of Forty Five Thousand Dollars ($45,000.00) less the amounts that may be paid as royalties prior to that date. Lessors agree to sell, transfer, assign and convey unto said Lessees a quit claim deed, free and clear of all encumbrances, together with an abstract of the same, upon the full payment of the said purchase price. Fifty (50) per cent of the final payment of said purchase price to be paid to Frank G. Worthing and twenty five (25) per cent to Kenneth Kaufman and twenty five (25) per cent to Wallace Kaufman.

Time and the prompt payment of the purchase price under the option herein granted are the essence of this contract and it is mutually agreed, if the Lessees fail to make the payment as herein provided, then all payments heretofore made as royalties or otherwise shall be retained and treated as the agreed and liquidated damages that Lessors will sustain by reason of being deprived of the temporary use and possession of the property by Lessees.

The provisions of this contract shall be binding upon the successor, personal representatives, heirs and assigns of the parties hereto.

Frank G Worthing
Jessie Worthing
Kenneth O. Kaufman
Zara Kaufman
Wallace Kaufman
Helen Kaufman

Lessors.

G C Gissing
Harold Bolstad

Lessees.

STATE OF IDAHO)
County of Lemhi) ss.

On this 1st day of ~~May~~ Mch, 1952, before me, the undersigned, a notary public in and for the State of Idaho, personally appeared Frank G. Worthing and Jessie Worthing, his wife, and ~~A.W.Reid~~, R.C. Rising and Harold Bolstad, known to me to be the persons whose names are subscribed to the above and foregoing instrument, and acknowledged to me that ~~he~~ they executed the same.

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

Mary V. Stone
Notary Public
Residing at; Leadore

STATE OF IDAHO,)
County of Bonneville) ss.

On this 20th day of May, 1952, before me, the undersigned, a notary public in and for the State of Idaho, personally appeared Kenneth Kaufman and Zora Kaufman, his wife, known to me to be the persons whose names are subscribed to the above and foregoing instrument, and acknowledged to me that they executed the same.

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

Joshua G. Edwards
Notary Public
Residing at; Idaho Falls

NOTARY PUBLIC
IDAHO FALLS, IDAHO
Commission Expires Dec. 1st, 1953

STATE OF IDAHO,)
County of Gooding) ss.

On this 16th day of ~~May~~ Feb., 1952, before me, the undersigned, a notary public in and for the State of Idaho, personally appeared Wallace Kaufman and Helen Kaufman, his wife, known to me to be the persons whose names are subscribed to the above and foregoing instrument, and acknowledged to me that they executed the same.

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

G. D. McQuiney
Notary Public
Residing at; Wendell, Ida.

INTRODUCTORY REPORT

on the

WORKING LEAD MINE.

INTRODUCTION

This report is made as a result of two recent visits to the property, and a previous experience over twenty years ago in driving a development tunnel on the ground, a thousand feet long, at which time, owing to the low metal markets and remoteness from transportation, the enterprise was dropped before a determination of its merits was made. Since then railway transportation has been extended through a branch of the Northern Pacific Railway, to the Gilmore District only 25 miles distant over an excellent road with little grade. The demand for lead, and the metallurgical progress that has since transpired makes this property decidedly attractive to investors, and justifies serious consideration as a probably big tonnage resource of oxidized lead ore that would be especially amenable to treatment by one of the new solution processes to a finished product on the ground.

LOCATION AND PROPERTY

This property consists of a contiguous group of sixteen lode mining claims covering the strike of the deposit for about a mile and a half in length, by about 1200 feet in width, and totaling about 320 acres. These claims were held by possessory right in full compliance with the law over a period of 25 years, without interruption or conflict, and carry enough development to justify patent proceedings if desired.

The property is situated on the west slope of Birch Creek Valley. This valley is a broad desert valley bordered by high mountain ranges and is ten miles wide, including its long steep talus slopes. The mine is situated about 1300 feet vertically above the talus crest. It is accessible over an excellent road 25 miles long from the terminus of the Gilmore and Pittsburg railway at Gilmore. Another excellent desert road with no steep grades extends to Dubois, a motive power division point on the Butte branch of the Union Pacific Railway, 65 miles distant.

The north slopes of the canyon immediately above the mine are well timbered with desirable red fir, and the main valley bottom, four miles below the mine, carries one of the best rivers of the region which originates at that point in a thousand springs and develops a mile below its source, 4000 inches of water, which is a constant flow

throughout the year on a fair grade, and travels down the valley 20 miles and sinks into the desert, but along the first two miles of its course presents a feasible power site of about 800 H.P. The snow fall in the winter on the high ranges is usually heavy, but the precipitation is light in the valley, and hauling conditions usually good throughout the year. There is a rural post office called Reno, within 4 miles of the mine, which has a tri-weekly mail service.

HISTORY

The history of this property dates back to a regional mining excitement in the early 80's when the then famous Viola Mine was discovered at a point about 8 miles air line distance to the north of this property, on the same quartzite limestone contact. The Viola was a noted discovery of lead ore. It produced and shipped sixty thousand tons of clean sand carbonate of lead, carrying average values of 60% lead and 6 ounces silver, from a flat dipping bedded deposit about 900 feet long and up to 30 feet thick. This big production was made as crude ore without any treatment. The property was subsequently equipped with a 100 ton blast furnace and its total production is estimated at Six Million Dollars. Its operation under the Cleveland administration, when lead was selling at 3½¢ a pound and the product all had to be hauled 75 miles to the railway at that time, discouraged the further exploitation of the deposit when it was abruptly cut off by vertical faults, and it has since remained an unsolved geologic problem, but is attracting considerable interest at this time.

The Worthing property under discussion was discovered at that time and its initial claims have since been carried and are represented by an original locator. It proved of much lower grade than the ore of the Viola, and uncommercial until about 12 years ago when a new owner extended the development and found better grade ore.

The Viola operation terminated about 1889, when its manager Mr. Ralph Nicholls, who had come from Leadville, Colo. and had been in charge of the property for several years, acquired a half interest in a prospect at Gilmore 15 miles distant on the opposite side of the valley, then went to West Australia for the English Company owners of the Viola and was away twenty years. He returned and found some prospecting interests in the Gilmore district and some railway transportation prospects. He bought his partner's half interest in the Latest Out Claim, a single location. The railway branch came in 1910 and he has since mined and shipped Two Million Five Hundred Thousand Dollars worth of ore which is conservatively believed to have paid him a net profit of Seven Hundred Fifty Thousand.

The adjoining Pittsburg-Idaho Mine has been operated throughout the same period by a stock jobbing company of Pittsburg operators until about three years ago when it was taken over by the U.S. Smelting Company, and for the past two years has been working a crew of a hundred men and shipping a carload a day of crude ore. These two mines are opened on a series of narrow parallel fissures in limestone, accompanied by porphyry dikes. Their ores have always been shipped crude and average about 30% lead and 15 ounces silver per ton, with high associated fluxing values in iron oxide. They are both developed to a depth of 700 feet at which horizon the ore is still almost completely oxidized, and the total production of the two properties has approximated Eight Million Dollars.

Directly west of the Worthing Mine at a distance of about 20 miles and on the opposite slope of the opposite range near the valley of Little Lost River, the Wilbert Mine, owned by Stoneham, the sportsman broker of New York, has produced about One and a Half Million Dollars worth of clean lead ore. It is a flat dipping fissure in Cambrian quartzite very near the limestone contact and has been developed a 1000 feet deep on a short but persistent ore shoot. This ore is steel galena and up to a year ago carried very low silver values, about 5 or 6 ounces per ton. Recently the 1100 foot level has been opened from a long adit tunnel where the ore shoot has intercepted a blind porphyry dike and is showing better strength and a remarkable increase in silver values. The mine is producing about a carload a week of concentrates and crude ore and the recent carload shipments have averaged 80 ounces silver per ton.

The Scott Mine about 20 miles south of the property under discussion, near the edge of the Birch Creek Valley, is a splendid prospect with strong cinders surface gossans carrying light values in lead carbonate and has shipped three thousand tons of selected ore carrying 60% lead and 6 or 7 ounces silver per ton. It is developed 200 feet deep with three levels, through a vertical shaft near the same quartzite contact but in the limestone formation. Its more detailed description is covered in an accompanying report.

GEOLOGY

In its geologic setting and mineral manifestations the Worthing Mine has many points of practical comparison with other noted mines and districts of the great mineral province in which it occupies a north-south central position.

This mine is situated near a major movement plain of one of the series of block faulted mountain ranges or spurs extending in a southeasterly direction from the main Idaho mountain plateau area, and central granite batholith.

These rugged mountain spurs, with elevation ranging from twelve thousand feet down to about six thousand feet, where they terminate in the broad expanse of the Snake River lava plains, embrace the Saw Tooth range, the Big Lost River range, the Little Lost River range, and the Birch Creek range, all of which are of the Nevada type of block faulted mass mountain uplifts. The prevailing formations are relatively pure, heavy bedded limestones of Paleozoic age, with interbedded horizons of shale and quartzite, and a basal member of pure Silurian or Cambrian quartzite of great thickness.

The prevailing strike of these formations is northwest and the prevailing dip, northeast at low angles.

The most noted mineralized areas of these great mountain spurs are invariably associated with local folding, faulting and fissuring, resulting from the intrusion of igneous dikes and stocks that vary from narrow intrusive dikes to considerable centers of eruptive, intrusive granite or monzanite. The prevailing dike rocks are of the basic variety, and decidedly favorable as a genetic source of lead, zinc and copper minerals. And ores of this class are the most predominant of the region.

The Birch Creek range is a direct spur of the main continental divide, from which it originates two or three miles east of the Viola Mine, and the Northing Mine is situated almost midway on the length of this spur at an elevation of 8000 feet.

Locally the ore of this deposit occurs at or near the main basal quartzite contact of the range but in the limestone beds immediately overlying it. The quartzite horizon is exposed at the surface for several miles south to the Weimer Copper Mine, a notable occurrence of oxidized copper ore that has produced several hundred cars of clean shipping mineral running from 10% to 40% copper, which was derived from the limestone and was from feeding fissures in the underlying quartzite. This quartzite horizon strikes northwesterly with a flat dip of about 20° to the northeast. It terminates abruptly at the north end of the Northing property, either by a down fold or fault, and appears again on the mountain side at the same elevation three miles further north, extending continuously to the Viola Mine where the contact carried that famous lead ore body. The immediate overlying limestones are soft, blue and phosilipherous and the ore deposit apparently a direct replacement of these limestone beds, probably originating from underlying feeding fissures that have not yet been exposed.

A confusing local condition is the fact that the main ore bed of this property has a flat dip of about 20° to the southwest and towards the quartzite. It is probable from some surface evidence of strong patches of quartzite east of the ore deposit, that this condition is a result of a local over-thrust fold and a replica of an identical

condition at the Wilbert Mine 20 miles further west, which afforded a notable day-light quarry stope.

DEVELOPMENT

The development on this property so far is shallow but of considerable lineal extent. The surface is covered with soil and short sagebrush, and the rock exposures, except for the quartzite horizon, are inconspicuous. The ore occurs under this condition underlying a steep lateral trench in the mountain and has been opened by a series of shallow vertical shafts and one adit tunnel 1000 feet long, known as the Bell tunnel. Gossan ore containing some lead carbonate has been found in actual open cut exposures, or as floats throughout the full length of the group. The main development is at a horizon about 50 feet deep under the surface that has explored the main ore bed for a length of 800 feet, by a dip depth of about 100 feet, and a notable body of iron gossan is exhibited in the face of the long tunnel that is a hundred feet thick but only carries light values in silver, as its importance in relation to the main ore showing has not yet been worked out.

The main development from the series of shallow shafts consists of drifts and stope raises which the owner has driven in a very regular manner but practically all connected and following a band of rich lead carbonate ore that has varied from a few inches to several feet in thickness and has produced twenty-five 40 ton carloads of crude shipping mineral averaging 40% lead and about 6 ounces silver per ton. One of these openings exhibits a bed of sand carbonate ore 12 feet thick that averages 20% lead and seems to be a distinct and separate bed from the one on which most of the extensive gouging development work has been expended. This particular bed is the best present ore exhibit in the mine and its lineal extent is undetermined beyond a length of about 100 feet. It was too low grade to ship crude and has been left in tact with considerable crosscutting and incline development work. This ore consists of a soft sandy gangue almost white in color and looks like decomposed sandstone. It however, carries a series of stringers of pure grey lead carbonate ore. The richer stringers in the other workings are all accompanied by a thick body of gossany brown iron ore which at one or two points carries lead values up to 10% through a width of 8 feet, independent of the rich pay streak. The full width of this body of gossan is in no place definitely determined by sufficient crosscutting. In fact the meandering development for 800 feet in length has been done solely with a view to gouging the rich pay streak and without any regard to systematic crosscutting. The ore is almost completely oxodized and the actual ore itself in the form of sandy grey carbonate of lead with occasional pebbles, and once in awhile a boulder up to 50 pounds of pure steel galena.

The crude ore shipping receipts are varied in silicate contents up to 18% and as low as 2% depending upon the association of the sandy gangue. The thick bed of 20% ore seems to be a replacement of silicious matrix but is as soft as a sand bank and can all be mined with a pick.

In addition to the 1000 foot development tunnel known as the Bell Tunnel, which is probably off the course of the ore bed most of the way, there is on the main mountain slope toward the valley, a direct crosscut tunnel 600 feet long dirven through broken limestone, which is probably normal fault material below the main quartzite outcrop horizon. This tunnel has shown a sprinkle of galena in the broken ~~[illegible]~~ formation which was soft and easily run. At the face, however, it is driven into the solid heavy bedded white quartzite formation which is very hard.

The face of this lower development crosscut is probably 200 feet below the level of the Bell Tunnel and this lower crosscut is the likeliest point of attack for the permanent development of the deposit. Its advantages could only be determined by a transit survey, but it seems likely that its extension for 200 feet further to the east would bring it directly under the main mineral development and after passing through the quartzite into the overlying limestone beds drifting in the softer and more replaceable formations north and south would likely discover the feeding fissure or trunk channel of this lineal extensive mineralization and should in my opinion, find the ore in a normal attitude to the quartzite dipping east like the Viola did.

These formations above the quartzite horizon in which the ore occurs are soft and friable and would make easy ground to drive in drifts, crosscuts, and raises, which could be contracted in this ground, less the permanent improvements, for not over $8 per foot, and could probably be driven at that cost including all necessary improvements, under days pay by a good stiff-necked engineer who knew his business.

It is difficult to estimate the amount of ore proven in this property due to the irregularity of its development in shape, and the uncertainty of the length of the best 12 foot bed of 20% ore. But it seems from the showings available reasonable to estimate a very probable resource of Twenty thousand tons of 10% lead values. The silver value in the ore so far encountered has been uniformly low, ranging from 3 to 6 ounces per ton, but there are some open cuts 1000 feet back of the main exposure in the direction of the dip that indicate vertical narrow fissures containing high grade selected lead ore samples, with silver ratios up to 35 ounces and it is evident that there is a good deal to be learned about this deposit.

In age, structural and geological relations, this deposit very closely resembles the replacement deposits of the Park City District in Utah, and the Ophir Hill Mine also in Utah. It presents, to my mind, a splendid opportunity for a development campaign with the possibility and probability of providing an extensive tonnage resource of clean oxidized lead ore with the attractive chance of duplicating the famous bed of clean sand carbonate that was mined in the Viola, 8 miles distant, forty years ago, which would have doubled the value of that noted ore body at present metal prices.

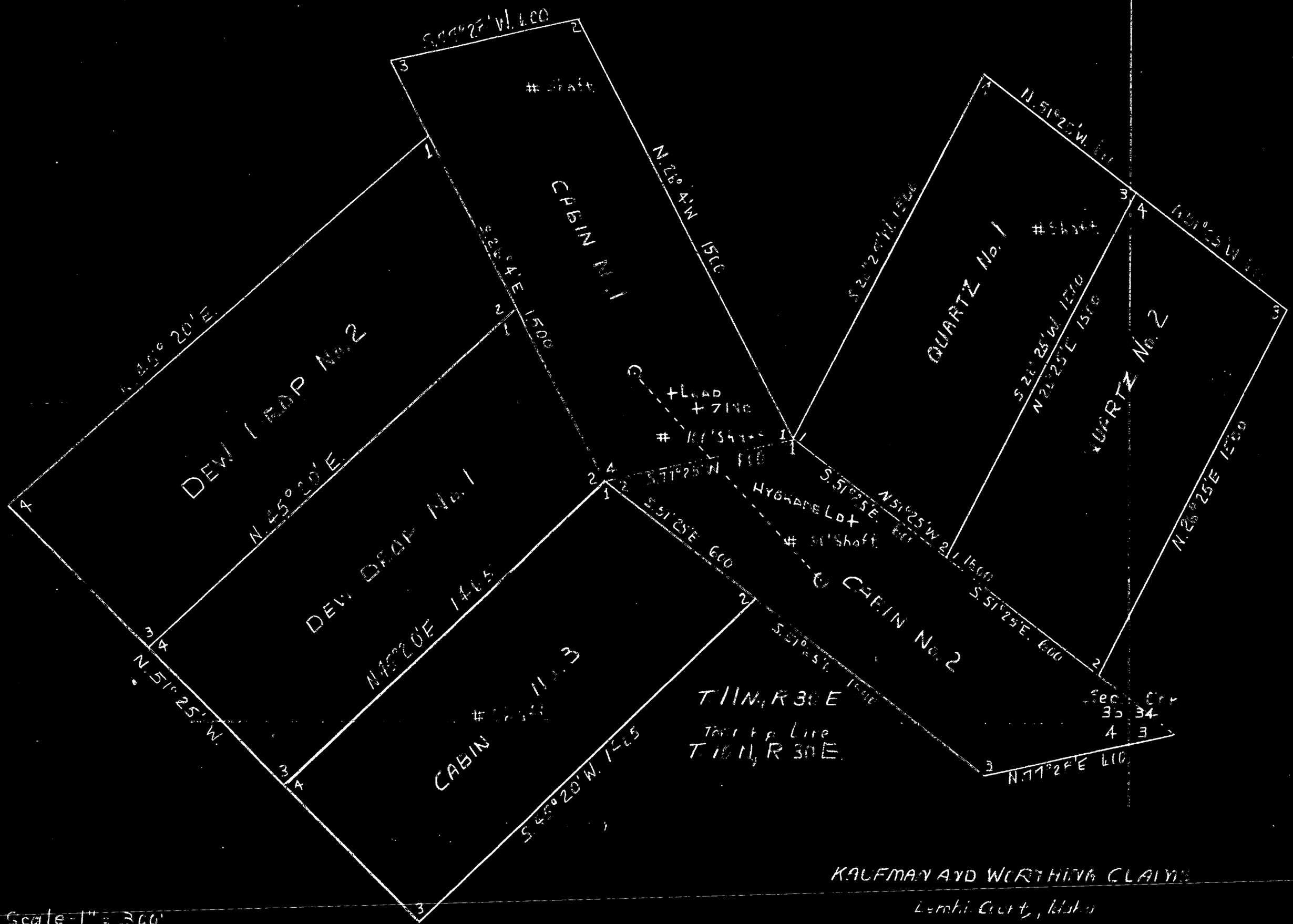
The ore seems to be entirely free from objectionable associated minerals. The shipping receipts have all been very low in sulphur and practically free from zinc and arsenic, and while it is a fact that such ore is difficult to clean by gravity methods of concentration, it is already roasted by nature and ideally adapted to the new solution processes like the Tainton process or the Ford process now being developed, which I believe will prove a big economic improvement over the Tainton process.

The ground in which the ore occurs is dry, far above the drainage level and no water troubles can be anticipated. There are no igneous rocks observable in close association with the ore deposit, the nearest being a series of lava dikes striking in its direction from the Birch Creek narrows four miles distant, but obscured as they extend to the mine by an alluvial fan several miles wide. There is no water on the ground even for domestic purposes, which to date has been hauled from Birch Creek or obtained from melting snow. There is however, in one of the canyons immediately back of the mine a scap where a bed of lime shale crosses the canyon, at which point a spring for domestic water supplies might be obtained.

CONCLUSION

I heartily endorse the justification of a moderate outlay in the further development of this property, after a thorough survey and more detailed study of its local geology. I think that with a small gas driven compressor plant of one drill capacity, including a camp establishment that should not cost over $2000.00 that the permanence and intrinsic merits of the deposit could be determined at an outside cost of about Twenty-five Thousand, as all the work would be by crosscutting, drifting and raising in easy ground, after the quartzite was passed through.

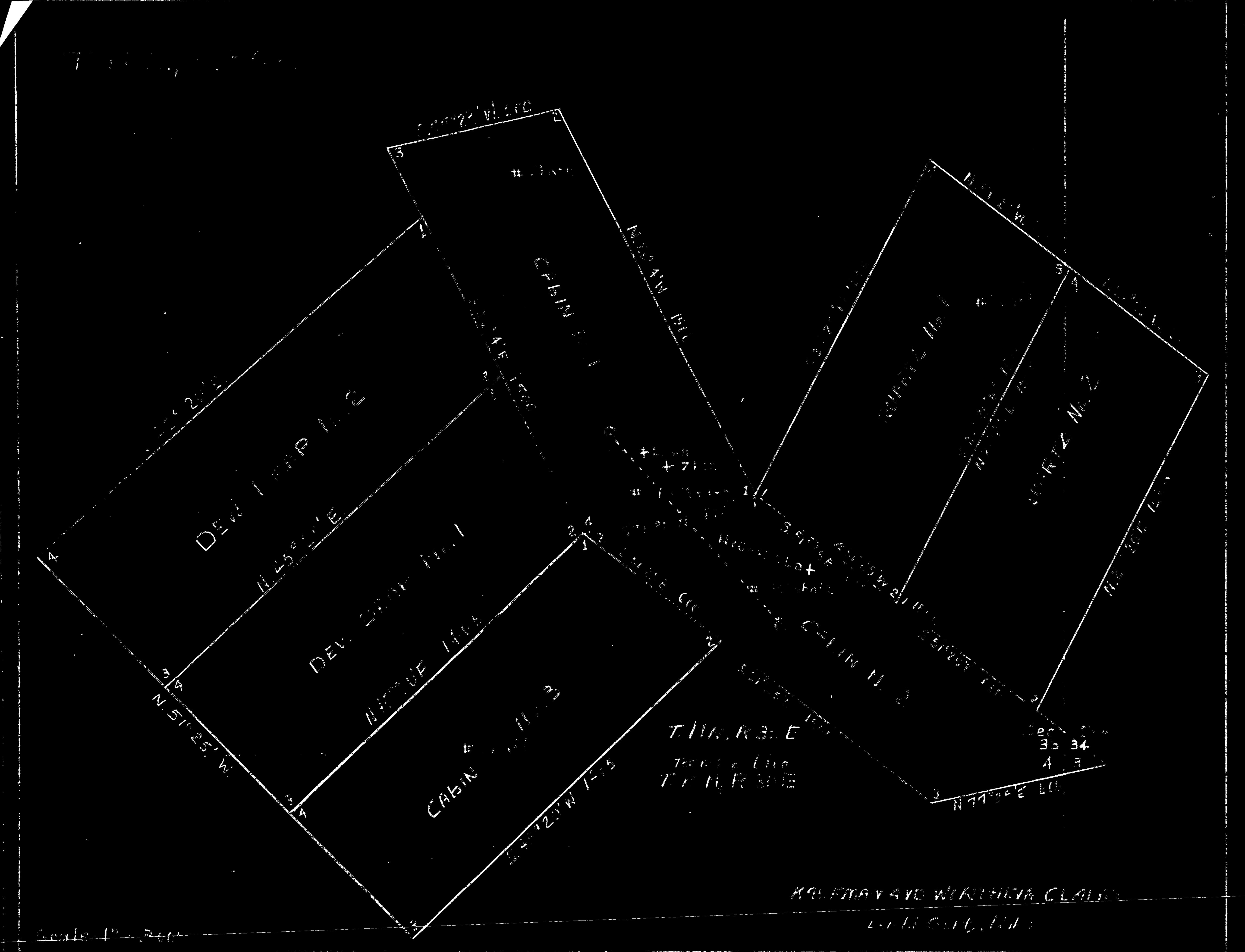
Robert M. Ball



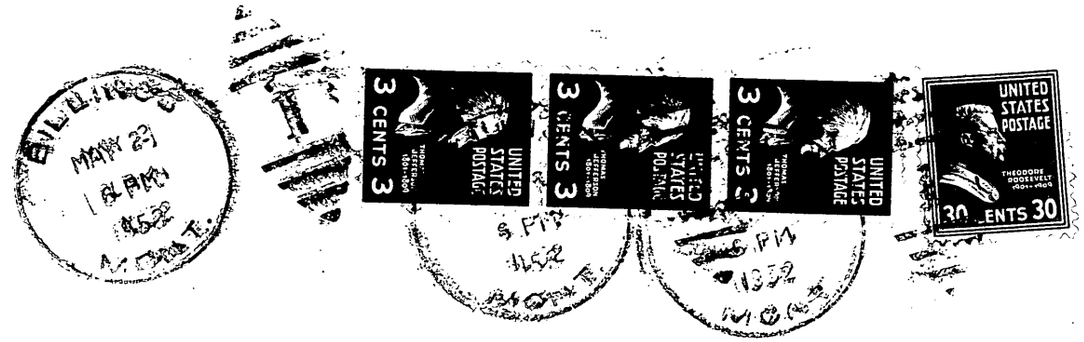
KAUFMAN AND WORTHING CLAIMS

Lemhi County, Idaho

Scale - 1" = 300'


DEW DROP No. 2
DEW DROP No. 1
CABIN No. 1
CABIN No. 2
CABIN No. 3
QUARTZ No. 1
QUARTZ No. 2
N. 51° 25' W.
T. 11 N., R. 3 E.
Township Line
33 34
4 3
CLAIMS

Prem-2513



First Class

First Class

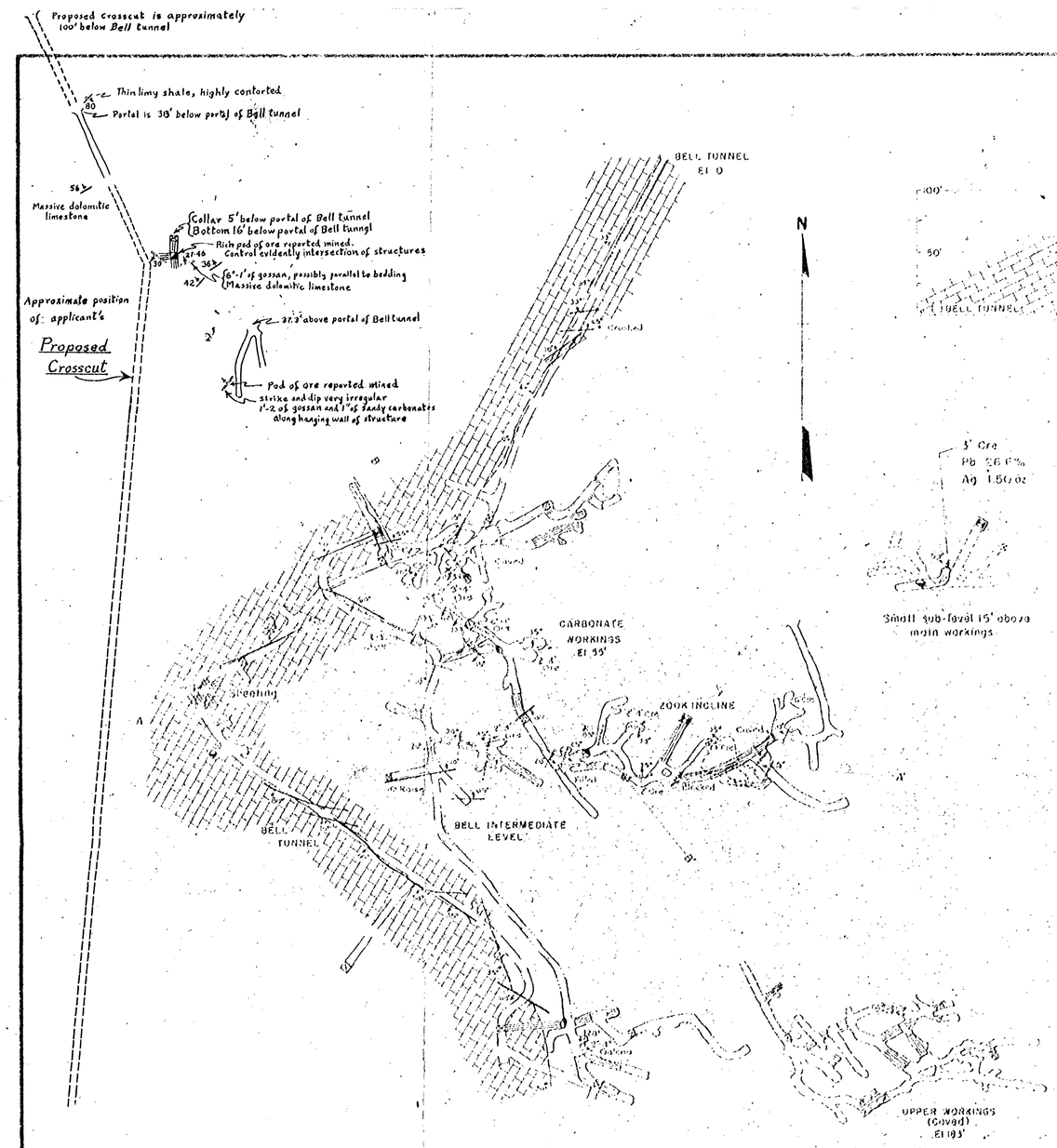
FROM John J. McIntyre
1244 Box Elder Street
Casper, Wyoming

CONTENTS: MERCHANDISE - FOURTH CLASS MAIL - POSTMASTER: This parcel may be opened for postal inspection if necessary. RETURN POSTAGE GUARANTEED

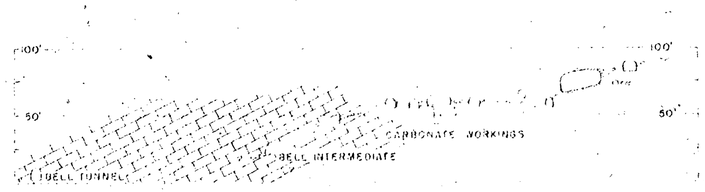
To UNITED STATES DEPT. OF INTERIOR
Defense Minerals Administration
Interior Building
WASHINGTON 25, D.C.

FORM 2430

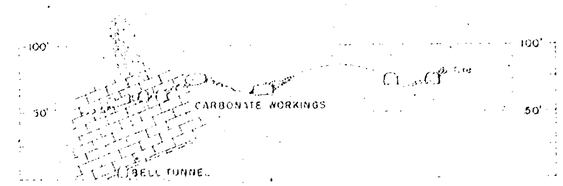
Docket No. D.M.A.-2513



COMPOSITE PLAN OF WORKINGS

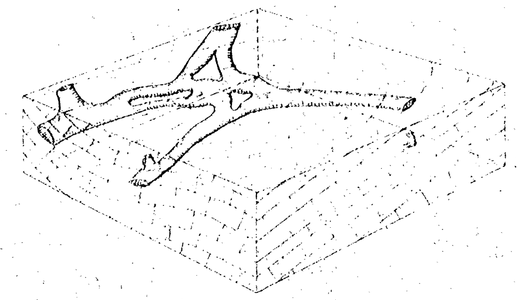


SECTION A-A'
Looking North



SECTION B-B'
Looking Northeast

Small sub-level 15' above main workings



BLOCK DIAGRAM
After Shenon-Idaho Bur. Mines & Geol. Pamphlet 27

LEGEND

LIMESTONE		WINZE	
QUARTZITE		INCLINE	
ORE	Dip 30°	BELL TUNNEL	
FAULT	60°	BELL INTERMEDIATE LEVEL	
SHAFT		CARBONATE WORKINGS	
RAISE		UPPER WORKINGS	

50 0 50 100 150
Scale — Feet

Adapted from Idaho Bur. Mines & Geology Pamphlets 27 & 70

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

THE
WORTHING-KAUFMAN MINE
BIRCH CREEK MINING DISTRICT
LEMHI COUNTY, IDAHO

ENGR: R.C. Shaffer
DRAWN: R.C. Shaffer 8-10-44
CHECKED:
DATE: 8-11-44
File No. C-832

Additions by T.H.E., J.J.Q., and E.H.R. 1952