Form 6-95

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REFERENCE SLIP

DATE 10-17-51

REFERRED TO:

1. Allemann PTC
2. McMillan WWM
3. Shaw
4. Frances
Dma

FOR:

..... Action	..... Recommendation
..... Approval	..... Record of .....
..... Comment	..... Referring to .....
..... Conference	..... Reply for signature of .....
..... Consideration	..... Rewriting
..... Filing	..... Signature
..... Instructions	..... Suggestions
..... Investigation	✓ Your information
..... Initials	
..... Mailing	
..... Previous correspondence	

REMARKS: .....

Check (X) before the items needing attention.

LL

Initials of sender.

GPO 16—51162-1

DMA

REGIONAL DIRECTOR'S OFFICE
REGION IV
OCT 16 1951
BUREAU OF MINES
DENVER, COLORADO

Ben Hur Mining Company
P. O. Box 1682
Miami, Arizona

Re: Docket No. DMA 459Y

Gentlemen:

In order to proceed with the processing of your application for Governmental assistance for the exploration of your property in Graham County, Arizona, we will need from you the following material:

1. A copy of the lease.
2. Six copies of executed Landlord's Subordination Agreement, Form MF-202, included herewith.
3. A description of the property on which the work is to be done.
4. The value of each piece of equipment that you intend to use on this project.

The maximum monthly cost allowance for the use of equipment on the project is determined on the basis of 60 month depreciation of value for each unit with the allowable monthly amount chargeable only for the months actually used for the benefit of the project.

We trust that you will supply us with this information at your earliest convenience in order that we may draw up the contract for your exploration project.

Sincerely yours,
SIGNED

MTE

C. O. Mittendorf, Director
Production Expansion Division

Enclosures-6
JWAlt/mch Typed: 10/11/51
cc to: Reports and Records
Adm. Reading File
Region IV (2)
Messrs. Mittendorf, Olund
Mr. Alt
Docket

Mining Division
Date Rec'd.
JUN 5 1952
BUREAU OF MINES
Denver, Colorado

JUN 5 1952

Mr. J. L. Liesemann
Sun Star Mining Company
P.O. Box 1582
Miami, Arizona

Re: Docket No. DMA 4798

Dear Mr. Liesemann:

With reference to our letter of February 11, 1952 advising you that the subject application will be held inactive, we have recently reviewed your project and have concluded that, in event you decide to explore, a new application should be presented.

We are of the opinion that work proposed at some future date would greatly modify the present proposal in cost and extent and, therefore, should be presented in conformance with the revised regulations and application forms. The above docket number also refers to the Defense Minerals Administration instead of the present Defense Minerals Exploration Administration filing system. We are, therefore, closing the above numbered docket.

Enclosed for your consideration and use are a copy of DMEA Order-1 and five copies of Form MF-103. We shall be pleased to consider your proposal at such time as you desire to present the application in proper form and content.

Sincerely yours,

D. E. Moulds

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

Enclosures-6

DEMoulds/mcf
6/5/52
cc to: Adm. R. File
Docket
Mr. Bishop
Mr. McKnight
Mr. Moulds
Region IV (2)

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

FEB 11 1952

OFFICE
REGION IV
FEB 13 1952
BUREAU OF MINES
DENVER, COLO.

Mr. J. L. Liessmann
Mining Engineer
Ben Hur Mining Company
P. O. Box 1682
Miami, Arizona

Re: Docket No. TWA - 459X

Dear Mr. Liessmann:

This is to acknowledge your letter of January 30, 1952, and to advise you that your application for Government assistance for your exploration project will be held inactive as you requested. You will be informed of any changes that may occur in the status of your application.

Please advise us when you desire to have your application placed on the active list and at that time kindly send us the requested information.

Sincerely yours,

D. E. Moulds

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

JWAlt/hmj
2-8-52
cc to: Adm. R. File
Docket File Copy
Mr. Bishop
Mr. McKnight
Region IV
Mr. Alt
Mr. Moulds

W.H.K.
MD

500

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

JAN 2 4 1952

Ben-Hur Mining Company
P. O. Box 1682
Miami, Arizona

Re: Docket No. DMA-459X

Gentlemen:

A review of the Defense Minerals Administration files indicates that on October 12, 1951, a letter over the signature of C. O. Mittendorf, Director, Production Expansion Division, was mailed to you relative to your application for aid in a Defense Exploration Project.

In order that we may determine the status of your application, we will appreciate receipt, at your earliest convenience, of the requested information, or your request to withdraw the application in the event you do not desire the exploration assistance under the requirements of Mineral Order 5, a copy of which is enclosed for your information.

Sincerely yours,

D. E. Moulds

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

Enclosure - 1

JWAlt/hmj
1-24-52

cc to: Adm. R. File
Docket File Copy
Mr. Bishop
Mr. McKnight
Mr. Alt
Mr. Moulds
Region IV

JTS.
W.H.K.

pstm

Mining Division
Data Rec'd.
DEC 21 1950
BUREAU OF MINES
Denver, Colorado

December 18, 1950

Mr. J. L. Liessman
Box 1682
Miami, Arizona

459

My dear Mr. Liessman:

In answer to your telephone call of last Friday, regarding a Government loan on your Ben Hur mine and other property, we have not received application blanks for mine loans as yet. We did borrow a few blanks from Mr. Charles Willis, Secretary of the Arizona Small Mine Operators Association in Phoenix, but we already have given all of these forms away.

We expect to have application blanks for mine loans (Form NSRB-146) within a few days, but would suggest that if you are in a hurry that you obtain blanks from Mr. Willis. I know that he would be glad to send you some, especially if you are a member of the Small Mine Operators Association.

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Branch

CC P. T. Allsman
462.1
DF

WRStorms:frj

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

DMA

OCT 8 1951

DMA-459
Ben Hur Mining Company
Arravaipa Mining District
Arizona Lead-Zinc

Mr. J. L. Liessmann
Ben Hur Mining Company
Box 1682
Miami, Arizona

REGIONAL DIRECTOR'S OFFICE
REGION IV
OCT 10 1951
BUREAU OF MINES
DENVER, COLORADO

Dear Mr. Liessmann:

This is to acknowledge your letter of September 24, 1951 and your suggestion has been noted.

An arrangement to put this exploration loan on a contract basis will be acceptable under our exploration program. However, the costs under such contract will have to be acceptable to the Government.

Very truly yours,

SIGNED

Tom Lyon, Director
Supply Division

TPBILLINGS:ks
10/2/51

cc: Administrator
Deputy Administrator
T. Lyon
Docket File DMA-459
Moon
2 copies to Mr. East Region IV
Mote
McKnight
Billings

Shaw - Note ??

routed

COPY

COPY

REGIONAL DIRECTOR'S OFFICE
REGION IV
OCT 10 1951
BUREAU OF MINES
DENVER, COLORADO

Ben Hur Mining Co.
Box 1682
Miami, Arizona

September 24, 1951

DMA-459X, Lead-Zinc
Exploration Loan, $18,250.00

Tom Lyon, Director
Supply Division
Washington, D. C.

Dear Mr. Lyon:

I would like to make a suggestion in regards to the participation loan for which we have applied. This suggestion is that the loan be put on a contract basis. That is to say, from your field engineer's report and our report derive at a cost figure per foot, then offer the loan relative to footage made. As an example, say we agree to a cost per foot of $35.00 raw drift and $45.00 timbered drift; the Government then extend a loan of $17.50 per foot of raw drift, and $22.50 per foot of timbered drift. The footage made being turned in at the end of each month.

Very truly yours,

/s/ J. L. Liessmann,

/t/ J. L. Liessmann, Engineer
Ben Hur Mining Company

routed

SEP 26 1951
SEP 26 1951

Airmail

Re: I-A-459X

REGIONAL DIRECTOR'S OFFICE REGION IV OCT 1 1951 BUREAU OF MINES DENVER, COLO.

Mr. J. L. Liessmann
Ben Hur Mining Company
Box 1682
Miami, Arizona

Dear Mr. Liessmann:

Before action can be completed on your application, it will be necessary to receive six (6) copies of your lease, and also six (6) signed copies of the "Landlord's Subordination Agreement" on Form 4F-202, attached. Your undated letter of late May states that Mr. Landsman, lessor, is willing to sign this subordination agreement. An extra copy of the form is enclosed for your file.

Very truly yours,

R. R. Billings, Chief
Lead-Zinc Branch

Enclosures 7

ETMcKnight:emp
G 9-24-51
Copies to: J. H. East, Jr. Region IV (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
O. Bishop
Directors r. files 4214 GSA
Br. r. files 4214 GSA
Administrators r. file
DMA docket fiels

Noted

MTE
WOM

July 27, 1951

Memorandum

To: Landon Strobel, Executive Secretary
Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 459, New Star Mining Company, Graham County, Arizona

We are forwarding herewith original and two copies of the report on Docket 459 as listed above.

The field examiners recommend the approval of a small exploration loan. There seems to be some question regarding the possibility of the company financing their share of the application. In the opinion of the examiners the proposed monthly rentals for equipment is unduly high. It is the opinion of the field team that this application be denied unless the company can arrange to finance the share of the project in a more logistic manner.

We return the documents herewith.

J. H. Smith, Jr.

A. H. Koschmann

Enclosures
One copy by Air Mail
Two copies by Regular Mail

AH
cmc DMA

Mining Division
Region IV

July 25, 1952

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: DMA Docket 499, Final Report, Pan Am Mining Company, Buffalo-Sundance Group, Aravaipa Mining District, Graham County, Arizona

The Pan Am Mining Company originally proposed to explore the lead-zinc properties at an estimated cost of $[illegible]. Later they submitted a modified proposal for the exploration of one of the properties at an estimated cost of $37,[illegible].

During the course of the examination this second proposal was again reduced to a total of $[illegible] for 200 linear feet of drifting, cross-cutting and raising, at this amount was in line with the company's ability to participate on a 50-50 basis.

The company apparently has only limited available capital as their participation in each is only 35 percent of their total participation.

The examiners recommend approval of the application, providing the proposed method of financing is acceptable.

It is our opinion that the proposed monthly rentals for equipment are unduly high, especially for the compressor, hoist and truck, although the report is looking at to details of these items, and that the application should be denied unless justification can be given for the proposed monthly rentals.

It is also to be noted that the report is lacking in sufficient information for Exhibits A to E of DM-200, and that additional field work will be necessary if the project is given favorable consideration by Washington.

F. T. Allman

Att
cc: [illegible]

224 New Customhouse
Denver, Colorado

June 18, 1951

Memorandum

To: W. R. Storms

(Through Chief, Mining Division)

Charles Anderson (with brochure)

From: DMA Field Team, Region IV

Subject: DMA 459, Ben Hur Mining Co., Mine in Aravaipa Distfict, Arizona

The enclosed brochure of the Ben Hur Mining Company includes a letter from Mr. Tom Lyon, Chairman, Coordinating Committee. You will note in the letter that if the geological set up seems favorable, the engineering phase should be check, such as rental of equipment.

Please make the necessary investigation.

This is not an exploration loan and may be postponed while you are acting on exploration requests.

J. H. East, Jr.

J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

Attachments

JHE/el
~~cc-Koschmann~~
Allsman
~~DMA~~ Files

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

REGIONAL DIRECTOR
INTERIOR
REGION IV
JUN 15 1951
JUN 18 1951
BUREAU OF MINES
DENVER, COLORADO

Docket DMA-459
Ben Hur Mining Co.
Mine in Aravaipa District
Arizona
Lead
Exploration loan

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team
Region IV
224 New Customhouse
Denver 2, Colorado

Dear Mr. East:

This project needs a geologic examination to see if the geologic setup is as represented in the application - are the applicant's assays reliable, or do they seem reasonable on the basis of what can be seen in the workings?

If the geologic setup is favorable, other phases of the application need investigation. The rental requested for equipment owned by the applicant looks high; also the need for a Foreman, Engineer, and Bookkeeper on this small operation would appear out of line.

Very truly yours,

Sam Lyon
Chairman
Coordinating Committee

Lowell B. Moon
For the Bureau of Mines

Olof E. Rove
For the Geological Survey

gte

REGIONAL ADVISORS
OFFICE
RECEIVED
APR 16 1951
DEFENSE
MATERIALS

April 13, 1951

The Ben Hur Mining Company
Box 1682
Miami, Arizona

In reply please
refer to DMA-459

Gentlemen:

One of the purposes of the Defense Production Act of 1950 is the encouragement of exploration, development and mining of strategic minerals and metals. Where an applicant has sufficient proven reserves of strategic materials, Federal aid in mining can be given through procurement contracts for such materials as are in short supply. On the strength of these contracts, the applicant can obtain private financing in most instances.

The program recently approved for encouragement of exploration of strategic materials calls for participation on the part of the applicant. For zinc, lead and copper deposits it will be necessary to match Government funds on an equal basis. Funds advanced by the Government will be considered a loan, to be repaid if the exploration is profitable, but to be canceled if unsuccessful. The details of the plan, explaining the projects that will be eligible for assistance, the terms and schedules of financing, repayment, and other pertinent information, are enclosed.

A review of your application (DMA-459) for financial aid in starting new production at the Ben Hur mine indicates that part of your proposal may be considered under this exploration program. Details concerning expenditures that will be considered chargeable to exploration aid will be subject to a final determination by negotiation, but as a preliminary appraisal, we believe that the program will apply to at least the $10,000 you request for diamond drilling, and possibly to some of the other items of expenditure you have listed. We believe that the exploration should be completed before the larger mining expenditures are made.

Before we can proceed further with consideration of your application, which may or may not require a field examination, please indicate your willingness to provide your share of the funds needed to carry out the proposed exploration. Any modification of your original proposal that you may wish to make will be considered, but you should be specific concerning the work you wish to undertake.

Very truly yours,

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Branch

ETMcKnight:emp G 4/13/51
Copies to: J. H. East, Jr.
Region IV (2)
Chief, Lead-Zinc. Br.
E. T. McKnight 4204 GSA
L. B. Moon
R. H. Mate
Enclosures

L. F. Strobel
C. O. Mittendorf
Files

Mining Division
Region IV

November 7, 1950

459

Mr. J. L. Liessmann
Ben Hur Mining Company
Box 1682
Miami, Arizona

Dear Mr. Liessmann:

Reference is made to your letter dated November 3, 1950, concerning a mining loan under the Defense Act of 1950.

The regulations governing the granting of development loans on mining properties have not been fully established. The attached form letter shows the type of information you should assemble if you propose to file for a Government loan under the Defense Production Act of 1950. More information may be required when the final regulations are issued.

It is realized that you might not be able to furnish all of the information shown on the form letter, but it is suggested that you assemble all pertinent information and forward it to this office.

Very truly yours,

W. H. King
For Paul T. Allsman
Chief, Mining Division

Enclosure 1

CC: WR Storms

Sub. File
Chron. File

FTM/

Mining Division
Date Rec'd.

NOV 6 1950

BUREAU OF MINES
Denver, Colorado

Ben Hur Mining Co.
Box I682
Miami, Arizona
Nov. 3, I950

Mr. Paul T. Allsman
U. S. Bureau of Mines
Denver, Colorado.

Dear Mr. Allsman: Lead-Zinc Property

We have under lease and option (five year lease) the Bullis-Landsman group of claims located in the Aravaipa mining district. A report of the district with mention of the Bullis-Landsman group can be found in the U.S.G.S. bulletin no. 763 Geology and ore deposits of the Aravaipa and Stanley mining districts, Graham County, Arizona, by C. P. Ross.

We have been operating on the property for the past eight months. For financial reasons mining has been limited to that part of the property accessible by road; our objective being to build up a sinking fund which would enable us to build roads to the more promising locations on the property. We have made three shipments thus far, the profits of which have gone back into our present operations and which were not enough to enable us to go ahead with our projected program.

We would like very much to have a government field man go over the property with us and together work out a development program which your office will approve and finance.

Yours respectfully,

J L Liessmann

J. L. Liessmann

REGIONAL DIRECTOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

July 27, 1951

Memorandum

To: Landon Strobel, Executive Secretary
Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 459, Ben Hur Mining Company, Graham County, Arizona

We are forwarding herewith original and two copies of the report on Docket 459 as listed above.

The field examiners recommend the approval of a small exploration loan. There seems to be some question regarding the possibility of the company financing their share of the application. In the opinion of the examiners the proposed monthly rentals for equipment is unduly high. It is the opinion of the field team that this application be denied unless the company can arrange to finance its share of the project in a more legitimate manner.

We return the brochure herewith.

J. H. East, Jr.

J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

Enclosures
One copy by Air Mail
Two copies by Regular Mail

ld
cc: DMA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

July 25, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: DMA Docket 459, Final Report, Ben Hur Mining Company, Bullis- Sandsman Group, Aravaipa Mining District, Graham County, Arizona

The Ben Hur Mining Company originally proposed to explore two lead-zinc properties at an estimated cost of $100,000. Later they submitted a modified proposal for the exploration of ore of the properties at an estimated cost of $37,600.

During the course of the examination this second proposal was again revised to a total of $18,250 for 400 lineal feet of drifting, cross-cutting and raising, as this amount was in line with the company's ability to participate on a 50-50 basis.

The company apparently has only limited available capital as their participation in cash is only 31 percent of their total participation.

The examiners recommend approval of the application, providing the proposed method of financing is acceptable.

It is our opinion that the proposed monthly rentals for equipment are unduly high, especially for the compressor, hoist and truck, although the report is lacking as to details of these items, and that the application should be denied unless justification can be given for the proposed monthly rentals.

It is also to be noted that the report is lacking in sufficient information for Exhibits A to E of MF-200, and that additional field work will be necessary if the project is given favorable consideration by Washington.

Paul T Allsman

P. T. Allsman

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

200 New Customhouse
Denver 2, Colorado

July 23, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: Geologic Report on DMA Docket 459, Ben Hur Mining Company, Graham County, Arizona

Enclosed are the original and 7 copies of the above report by C. S. Bromfield of the Geological Survey.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson, Arizona

July 13, 1951

Memorandum

To: Mr. A. H. Koschmann, Denver, Colorado

From: Mr. C. A. Anderson, Tucson, Arizona

Subject: Geologic Report on DMA Docket 459, Ben Hur Mining Company, Graham County, Arizona

Enclosed are 1 original and 7 copies of the above report by C. S. Bromfield of the Geological Survey. This report and the recommendation that a small exploration loan be granted have my approval.

The brochure is enclosed.

A. F. Shride for

Charles A. Anderson
District Supervisor
Arizona-New Mexico

Enclosures 8

JUL 1951
RECEIVED
U.S. Geological Survey
Mineral Deposits Branch
Denver

Mining Division
Date Rec'd.
JUL 12 1951
BUREAU OF MINES
TUCSON ARIZONA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
[redacted]
Box 4097
University Station

MINING DIVISION
REGION IV

July 10, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Final report, DMA Docket 459, Ben Hur Mining Co., Graham County, Ariz.

Enclosed are original and 7 copies of the section on Summary, Conclusions and Recommendations by T. M. Romslo of the Bureau of Mines and C. S. Bromfield of the Geological Survey, and the section on Engineering by Romslo for the above report.

This report has my approval.

Walter R. Storms

Walter R. Storms

CC P. T. Allsman (7)
C. A. Anderson
DMA 459
DF

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-459, Ben Hur Mining Co

Graham County, Ariz.

T. M. Romalo, Mining Engineer
U. S. Bureau of Mines

C. S. Bromfield, Geologist
U. S. Geological Survey

July 1951

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By T. M. Romslo[1] and C. S. Bromfield[2]

A lead property of the Ben Hur Mining Co., Graham County, Ariz., was examined late in June 1951 in connection with an application by the company for Governmental aid under the Defense Act of 1950. The examination was made by a Defense Minerals Administration team, under DMA Docket 459.

The company originally planned to explore two properties at an estimated cost of $100,000 but later submitted a modified proposal involving a $37,600 project with the work confined to one property. During the examination the applicant requested that this proposal be revised to a program that would be in line with the company's ability to participate, on a 50-50 basis, in the cost of the work. On this basis, the final proposal involved an exploratory program that could be completed at an estimated cost of $18,250.

The mine had been developed by a 115-foot shaft and 30 tons of high-grade lead-oxide ore had been produced prior to its operation by the Ben Hur Mining Co. in 1950. During 1950 this company produced 150 tons of ore containing 12.5 percent lead, 2.4 percent zinc, and 0.07 ounce and 1.3 ounces a ton of gold and silver, respectively. Production was terminated by the collapse of the shaft. The company

---

1/ Mining Engineer, Bureau of Mines
2/ Geologist, Geological Survey

then sunk a new shaft to a depth of 100 feet, drifted about 25 feet from the bottom of the shaft and drove an adit to connect with the caved section of the old shaft. Operations then were discontinued because of financial reasons.

The deposit occurs in a triangular-shaped crushed zone at the contact between limestone and a rhyolite dike. Two faults intersect to localize the deposit and form a trough that plunges steeply northwest. Cerrusite, anglesite and some galena occur as veins and irregular masses. The depth of oxidation is unknown. Cut-and-fill or glory-hole methods of mining the deposit will be required. The mine is dry.

Ore reserves are confined to a few thousand tons of 10 to 15 percent lead ore that is believed to have been indicated by old workings.

The company proposes to drive 400 lineal feet of drifts, crosscuts and raises, and construct a small building to house equipment and supplies. The underground exploratory work consists of a 200-foot drift, to be driven from the bottom of the new shaft to the old workings, and crosscuts and raises in favorable zones developed by the drift. The proposed work can be completed in 6 months.

The estimated cost of the project is $18,250. To finance the project the applicant proposes that the Government provide a loan of $9,125. The company will furnish equipment with a rental value of $6,240, and $2,885 in cash.

Geologic conditions are favorable for the extension of a deposit that may contain sufficient reserves of lead-oxide ore to justify a small scale operation.

The proposed program is designed to test the upper portion of the potential ore zone. Additional exploration will probably be carried out with private capital if the project findings are favorable.

The project can be completed in 6 months at an estimated cost of $18,250. The company proposes to finance its share of the project cost with equipment having a monthly rental value of $1,040 and a monthly cash expenditure not to exceed $461. This rental value is equal to 9.7 percent of the equipment's installed value as assessed by the writers.

It is recommended the Government participate with the Bed Hur Mining Co. in the exploratory program provided the proposed method of financing is acceptable.

BEN HUR MINING COMPANY
GRAHAM COUNTY, ARIZONA

Geology

Geology

By Calvin S. Bromfield
Geologist, U. S. Geological Survey

Geology

BEN HUR MINING COMPANY
GRAHAM COUNTY, ARIZONA

CONTENTS

	Page
General Geology	1
Ore Deposits	1
Ore Reserves	2
Conclusions	3

ILLUSTRATIONS

	To Follow Page
Fig. 1 Location map	See Engineering Report
Fig. 2 Geologic plan and sections	2

GENERAL GEOLOGY

The rocks in the vicinity of the Ben Hur Mine consist of Paleozoic quartzites and limestones which have a general southwesterly dip. They are intruded by a rhyolite dike which has a nearly vertical attitude.

These rocks are intersected by a fault striking N. 25° W. and having a nearly vertical dip, and this fault is in turn cut by a later fault trending N. 65° W. and dipping 75° to 80° northeast. The Ben Hur Mine is located at the intersection of these faults.

ORE DEPOSITS

From the apex of these intersecting faults a roughly triangular shaped brecciated zone containing limestone and rhyolite fragments extends northwesterly for 300 to 350 feet bounded on the northeast and southwest by the two diverging faults (fig. 2). This triangular shaped brecciated area is bounded on the northeast by rhyolite and on the southwest by rhyolite and Paleozoic limestone (fig. 2). The ore has been concentrated in the trough formed at the intersection of the two faults. This trough plunges steeply to the northwest. The ore deposit as presently known was developed from a shaft located near the apex formed by the junction of the faults. This shaft passes into the footwall of the N. 25° W. fault at a depth of 100 feet. The shaft, which is in badly brecciated ground, has caved.

The ore occurs as reticulating veins and veinlets and as irregular masses filling the interstices in the breccia. The gangue is largely drusy quartz with some flourite and specularite. The ore is composed largely of cerrusite with some anglesite and galena as well as small amounts of zinc oxides and some silver and gold. Malachite

stains were observed on the surface. Silicification of the brecciated zone is widespread.

ORE RESERVES

There are no measured ore reserves in the workings of the Ben Hur Mine.

According to a statement by J. L. Liessman there are 2000 tons of caved ore in and adjacent to the caved shaft. The applicants state that this material will run 10 percent plus in lead. Three shipments were made from the workings which were in and adjacent to the caved shaft as follows:

	Grade				
Tons	Pb	Zn	Ag(oz)	Au(oz)	Location
46.37	15%	3.1%	1.8	.095	60 feet level
52.22	11.97%	1.0%	1.1	.085	From shaft at 70'
55.49	10.7%	3.2%	1.0	.05	40 feet level

This 2000 tons is classed as indicated ore.

The volume of potential ore bearing ground is apparently limited by the triangular shaped brecciated ground confined between intersecting faults. How much of this will be of minable grade is not predictable. Lead and zinc mineralization was present in the new shaft (fig. 2) and the applicant states that the material extracted from the new shaft assays about 6 percent lead. The lateral extent of minable material away from the intersection has not been tested, and for lack of sufficient information a specific figure for inferred ore is not warranted. Exploration in this area may develop several thousand tons of ore, and further exploration below the 100 feet level would probably develop substantial additional tonnages.

CONCLUSIONS

Though this mine will probably never develop a large tonnage, a combination of a favorable confining structure which should persist with depth and a good grade of ore make this project a reasonable geologic risk to open a small ore body.

BEN HUR MINING CO.
GRAHAM COUNTY, ARIZ.

DMA-459 (Lead Project)

Engineering Report

By T. M. Romslo
Mining Engineer
U. S. Bureau of Mines

July 1951

Engineering

BEN HUR MINING CO.
GRAHAM COUNTY, ARIZ.
DMA-459 (Lead Project)

CONTENTS

Engineering report

	Page
Introduction	1
Location, topography and climate	2
Property and ownership	3
History and production	3
Description of the deposit	4
Ore reserves	4
Present status	5
Proposed exploration	6
Estimated cost of project	7
Proposed financing	7
Conclusions	8
Recommendations	9

ILLUSTRATIONS

Figure		Following Page
1	Location map	2
2	Geologic plan and sections (see Geological Report)	

INTRODUCTION

This report contains information obtained during the course of an examination of property held by the Ben Hur Mining Co., Graham County, Ariz. The examination was made in connection with an application by the company for Governmental aid under the Defense Production Act of 1951. It was conducted during June 1951 by a Defense Minerals Administration team, under docket DMA-459.

The original application contained a proposal to explore two properties at an estimated cost of $100,000 with the object of increasing reserves of lead ore. Later, the applicant submitted a modified proposal calling for exploration of one of the properties at an estimated cost of $37,600. During the examination, the applicant asked that this proposal be revised in line with the company's ability to participate on a 50-50 basis in the cost of the work. As revised the proposed exploratory work consisted of 400 lineal feet of drifts, crosscuts and raises that could be completed at an estimated cost of $18,250.

The examination was made June 26, 1951 by C. Bromfield, Geological Survey, and T. M. Romale, Bureau of Mines. J. L. Liessmann, one of the owners of the company, accompanied the engineers during the examination.

LOCATION, TOPOGRAPHY, AND CLIMATE

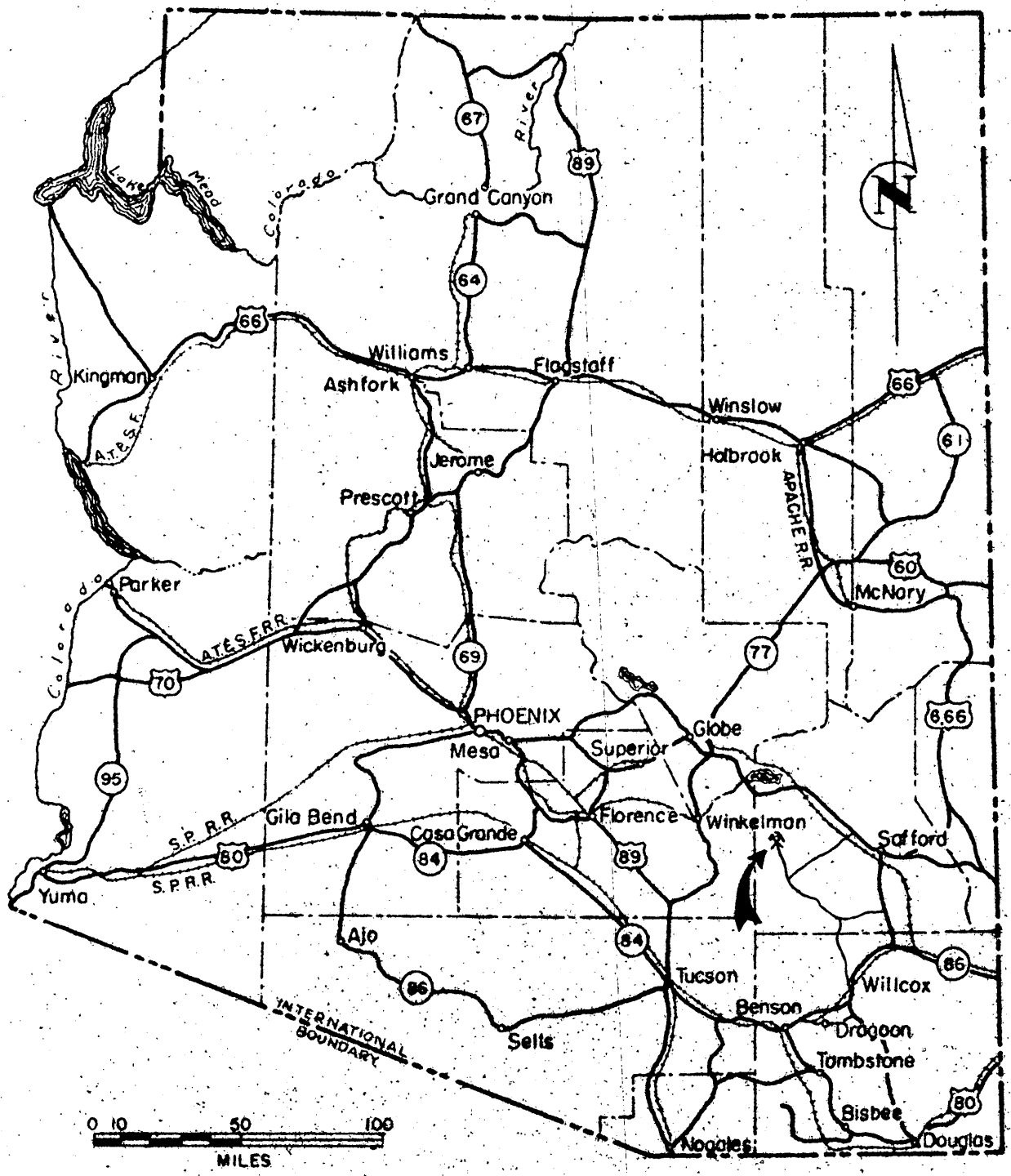
The property of the Ben Hur Mining Co. is about 40 miles northwest of Safford, Ariz., the closest large town (fig. 1). It may be reached from Safford by traveling northwestward for 14 miles on paved U. S. Highway 70 and thence 37 miles, via Klondyke, on a winding, graded gravel and dirt road to the mine.

The nearest railroad shipping point is a siding on the Globe Branch of the Southern Pacific Railroad at Graybar, about 10 miles northwest of Safford.

The property is in the western foothills of the Santa Teresa and Turnbull Mountains at an altitude of about 4,600 feet. The topography of the area is moderately rugged. Imperial Mountain, about 1 mile southeast of the property, has a peak elevation of 5,593 feet. There are no permanent streams in the area. Drainage is southwesterly to Aravaipa Creek.

The climate is typical of the semi-arid regions of southern Arizona. Temperatures range from 20 degrees in the winter to over 100 degrees in the summer. Annual precipitation at Klondyke is reported to be about 19 inches. Precipitation is confined mainly to periods of a few months during the summer and winter seasons with the heavier rainfalls occurring during July, August and September. A few very light falls of snow occur during the winter.

Vegetation consists of cacti and mesquite with some cottonwoods in the Aravaipa Valley. Light growths of scrub cedar and juniper occur at the higher elevations.



D.M.A. 459

Figure 1. - Location Map, BEN HUR MINE, GRAHAM COUNTY, ARIZONA

PROPERTY AND OWNERSHIP

The property of the Ben Hur Mining Co. consists of a group of 15 unpatented lode mining claims in the Aravaipa Mining District, Graham County, Ariz. The claims, known as the Bullis-Landsman group, are owned by Frank Landsman. They are held by the applicant under a 5-year lease and option agreement that calls for royalty payments of 10 percent of net smelter returns from ore produced from the property. Royalty payments apply to the purchase price of $50,000.

The Ben Hur Mining Co. is organized as a partnership. Herb Hatter and O. P. M. Bemsey, both of Klondyke, Ariz., own 51 percent of the enterprise and the remainder is owned by J. L. Liesmann and Ralph Henderson, both of Miami, Ariz.

The group of claims contains two lead deposits, known as the upper and lower deposits. The area of the lower deposit has been subleased to individuals who have started development work with private capital.

HISTORY AND PRODUCTION

There is little available information concerning the early history and production of the property. Prior to its operation by the Ben Hur Mining Co. in 1950 the mine had been developed by a 115-foot shaft and had produced 30 tons of ore, reported to have contained 30 percent lead.

During the recent operation production amounted to approximately 150 tons of ore containing about 12.5 percent lead, 2.4 percent zinc, and 0.07 ounce and 1.3 ounces a ton of gold and silver, respectively.

Production was terminated by the collapse of the old shaft. A new shaft then was sunk to a depth of 100 feet, a 25-foot drift was run from the bottom of this shaft, and an adit was driven and connected with the upper part of caved section of the old shaft. Operations were discontinued because of financial reasons.

DESCRIPTION OF THE DEPOSIT

The rocks in the vicinity of the Ben Hur Mine consist of limestones and quartzites intruded by a rhyolite dike. The ore deposit is localized in a triangular-shaped crushed zone included in the angle of the intersection of two faults. The intersection and the ore body plunge steeply to the northwest. The ore is largely oxidized. Depth of oxidation is not known. Veins, veinlets, and irregular masses of cerussite, anglesite and some galena occupy the interstices of the limestone-rhyolite breccia. Quartz makes up most of the gangue.

The ground is extensively shattered and contains numerous slips. Cut-and-fill or glory-hole methods of mining will be required. The mine is dry.

ORE RESERVES

The mine contains no measurable ore reserves.

The zone developed by the old workings probably contains a few thousand tons of ore. A few hundred tons above the adit level can readily be made available for mining.

The grade of the ore as indicated by 150 tons shipped to the American Smelting and Refining Co., El Paso, Texas, is 12.5 percent lead, 2.4 percent zinc, and 0.07 ounce and 1.3 ounces a ton of gold and silver, respectively. At present, ore of the above grade has a smelter value of $32.31 a ton and will show a smelter return to the shipper of $19.21, after all deductions including royalty. With a prevailing trucking cost of $3.50 a ton, this ore has a value of $15.71 before operating costs.

PRESENT STATUS

The mine workings are shown on figure 2 (this figure is included in the section on Geology.).

Structures on the property consist of two wood-framed buildings, each about 8 feet by 10 feet in size. One of these buildings is a hoist house and the other serves as living quarters for a watchman.

All major equipment, except a jackhammer and a stoper which were buried by the caving of the old shaft, is located near the new shaft. It consists of the following items:

1 Compressor, 115 C.F.M.
4 stopers
2 Air tugger hoists
3 jackhammers
1 Hoist, 1-ton capacity, single drum, gas engine drive
2 Mine cars
1 Air auger
1 Blower with gas engine
1 Water pump with gas engine
1 Ford truck, 1½-ton
1 Hand forge

The company also has on hand shaft and slusher buckets, 360 feet of rails, 700 feet of pipe, accessories for equipment, tools and miscellaneous supplies.

Power

Equipment powered with gasoline engines will be used.

Water

The small amount of water required for the project will be hauled by truck from Aravaipa Creek where the company has installed a small pump.

Manpower

The require workers can be obtained locally.

PROPOSED EXPLORATION

The proposed exploratory work, consisting of 400 lineal feet of drifting, crosscutting and raising, is designed to test for a lateral extension of the deposit. The work would be started from the bottom of the new shaft (fig. 2). A 200-foot drift would be driven from this point to intersect with a heading that has been driven from the old shaft. The potential ore zone then would be explored by crosscuts, drifts, and a few stub raises that would be located in favorable zones developed by the drift.

The applicant also has proposed that a small building, of shed-like construction, be built to house a compressor and miscellaneous supplies and equipment.

ESTIMATED COST OF PROJECT

The applicant has estimated that the project can be completed in 6 months at a cost of $18,250. The cost estimate was detailed as follows:

	Monthly Rate	Total
Supervision	$300	$1,800
Labor		
1 mucker	300	
1 miner	330	
1 miner-foreman	400	
	$1,030	6,180
Equipment rental @ $1,040		6,240
Supplies and materials @ $600		3,600
Storage shed		430
		$18,250

The proposal calls for the work to be carried out on a 1-shift basis, 6 days a week.

PROPOSED FINANCING

The applicant has proposed that the cost of the project be on a 50-50 basis with the Government providing a loan of $9,125. The company would supply equipment with a rental value of $6,240, and $2,885 in cash.

The rental value of equipment is based on data supplied the applicant by the Hagen Construction Co., Miami, Ariz. Equipment needed for the proposed work that is either owned or will be obtained by the company is included in the following estimate:

	Item	Rental Value Monthly	Rental Value 6 Months
1	Compressor, 315 c.f.m.	$430	$2,580
1	Drifter	55	330
1	Stoper	55	330
1	Jackhammer	40	240
1	Hoist	195	1,170
2	Mine cars @ $20	40	240
1	Blower, complete	40	240
1	Water pump, complete	40	240
1	Truck, 1½-ton, Ford	125	750
1	Hand forge	20	120
	Total	$1,040	$6,240

This monthly rental value is equal to 9.71 percent of the installed value of the equipment, as assessed by the writer.

Repayment of the loan is expected to be made from returns on the sale of ore.

CONCLUSIONS

The applicant has produced 150 tons of 12.5 percent lead-oxide ore from old workings, now inaccessible, that are believed to have indicated the presence of a few thousand tons of ore containing 10 to 15 percent lead,

Geologic conditions are favorable for an extension of the deposit that may contain sufficient ore to justify a small-scale operation.

The proposed exploratory program is designed to explore the upper portion of the potential ore zone and incidentally to make available for mining a part of the indicate ore reserves.

The proposed work can be completed in 6 months at an estimated cost of $18,250.

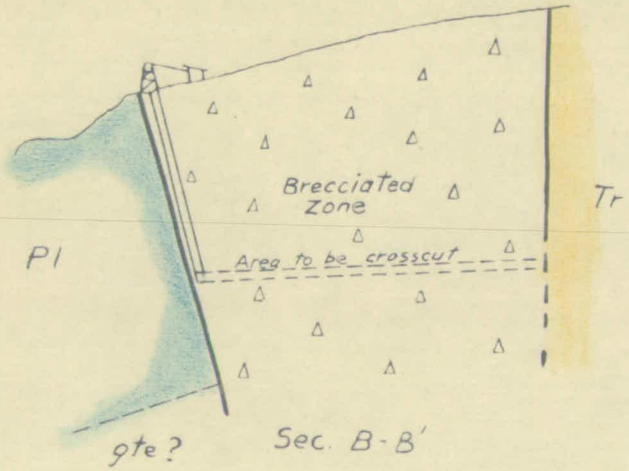
The company can be expected to share in the cost of the project in event its cash expenditures do not exceed $461 monthly. On this basis, the montly equipment rental value of $1,040 (equal to 9.7 percent of its value as assessed by the writer) must be accepted as the remainder of its share of the project costs. Under these conditions, the project must be conducted with a small working force.

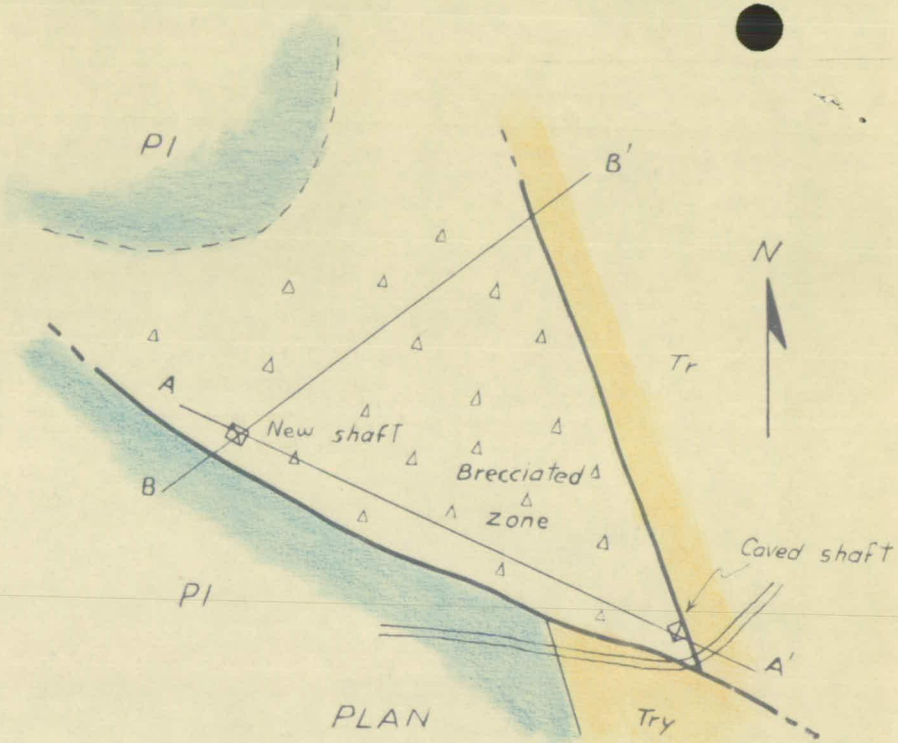
In event the project findings are favorable, the company intends to exploit the deposit and carry out additional exploratory work with private capital.

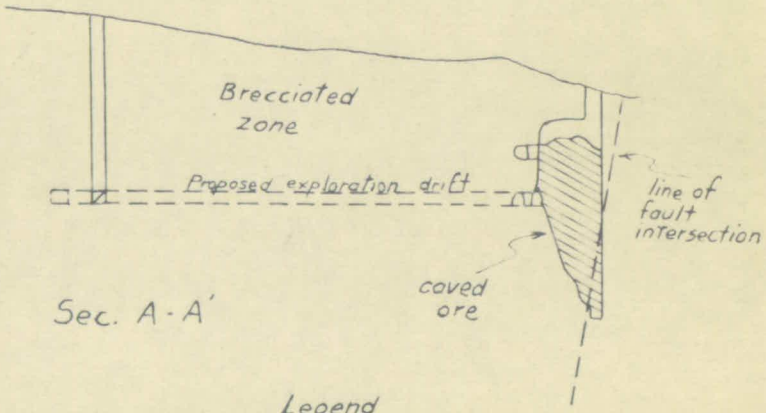
The proposed work will be supervised by two men, connected with the company. One of these men, Mr. Liessmann, is probably capable of handling the business and geological aspects of the operations. The mining phases of the operation will probably be supervised by Mr. Henderson, who is reported to have had considerable mining experience in Arizona.

RECOMMENDATIONS

It is recommended that the Government participate with the Ben Hur Mining Co. in an exploration project that can be completed in 6 months at an estimated cost of $18,250, provided the proposed method of financing the work is acceptable.







Legend
Tr - rhyolite
Pl - Paleozoic limestone

GEOLOGIC SKETCH MAP & SECTIONS
OF
BEN HUR MINING CO. AREA

Scale 1" = 100'

Fig. 2 DMA 459