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

2075

May 1, 1952

Air Mail

Sierra Coffee

Mr. Ronnie Smith
c/o Dallas Athletic Club
Dallas, Texas

Dear Mr. Smith:

After talking to you over the telephone today, I learned from the Defense Materials Procurement Agency that your production loan was recommended to RFC for denial on the basis of inability of reserves to justify the loan. However, after talking to Mr. Gowan of the Copper Committee, DMPA, and telling him of our recent resampling of the Donner mine shaft, DMPA is asking RFC to withhold final action pending receipt of forthcoming results of sampling the shaft and further study of the ore reserve situation.

I trust that I may have been helpful to some extent in your behalf. Glad to have heard from you. Best regards.

Sincerely yours,

Copy to Bradley 95

H. C. Miller

HCMiller:mfw

Copy to: H. C. Miller, San Francisco
Files

DEFENSE MATERIALS PROCUREMENT AGENCY
WASHINGTON 25, D. C.

APR 25 1952

Sierra Copper Company
920 Burchett Street
Glendale, California

Re: DMA 2075
Copper

Gentlemen:

This is to inform you that this Agency has completed its action on your application for a Government loan and that it is being referred to the Reconstruction Finance Corporation for further action. Any future correspondence concerning your application should be addressed to that Corporation, Washington 25, D. C. for the attention of Mr. S. A. Bingham.

Very truly yours,

TOM LYON
W.S.
Tom Lyon, Director
Domestic Expansion Division

RVWaugh:pk
4/16/52

Copy to: Mr. Gowen
Field Team III
DMPA Official File
DMPA Index File
DMPA Files

Copy to Bailey
May 2-52

SAN FRANCISCO OFFICE
MAY 1 10 1 1 52
RECEIVED
REGION III
BUREAU OF MINES
DEPARTMENT OF INTERIOR

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1952 MAY 1 PM 1:55

SAN FRANCISCO, CALIFORNIA

DEFENSE MATERIALS PROCUREMENT AGENCY
WASHINGTON 25, D. C.

APR 25 1952

Reconstruction Finance Corporation
811 Vermont Avenue
Washington 25, D. C.

Re: DMA 2075
Copper

Attention: Mr. S. A. Bingham

Gentlemen:

Enclosed herewith please find an application of the Sierra Copper Company for a Government loan on the Donner Mine.

It is recommended that the application be denied for the following reasons:

1. The value of the mineable ore at current prices is $7.85 a ton. The cost estimates for producing this ore is about $13.54 a ton. Therefore it is apparent regardless of the ore reserves the overall operation of producing copper at the Donner Mine cannot be a profitable venture unless subsequent exploration opens up extensive higher-grade ores.

2. The ore zone explored by the applicant's completed exploration program contains a maximum of 214,000 pounds of copper with a gross value of about $52,000 in ore with an average grade of 1.4% copper. Since the amount of the loan is $50,000 it is obvious that the applicant cannot hope to repay the loan.

3. The cost of exploration for additional ore pods as compared to the value of the mineable ore that might be found will be disproportionately high.

Transmitted herewith is the file consisting of the following:

1 Form MP-102 and supporting material
1 Assay Map

Very truly yours,

TOM LYON
W.B.
Tom Lyon, Director
Domestic Expansion Division

Enclosures

Copy to: Mr. Gowen
Field Team III
DMPA Official File
DMPA Index File
DMPA Files

RVWaugh:pk
4/16/52

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1952 MAY 1 PM 1:55

SAN FRANCISCO, CALIFORNIA

Office of
Executive Officer
DMEA Field Team
Region III

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

March 14, 1952

Memorandum

To: Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMA-2075, Sierra Copper Company, Donner Mine, Direct Loan $50,000 (Zinc-Copper)

Reference is made to the letter dated October 2, 1951, signed by Mr. Tom Lyon, Chairman, Coordinating Committee, DMA, recommending that the subject mine be examined "to determine if there is a sufficient tonnage of mineable grade to warrant the loan requested". The company had requested a $50,000 loan for mine equipment ($19,200); alteration and repair of Mt. King Mine ($4,500); sinking shaft 100 feet ($10,000) and mine development and working capital ($16,300).

At the time, and for some time after Mr. Lyon's request reached this office, the company was engaged in an exploration program under contract Idm-E104, dated July 11, 1951, costing $16,613. After the mine was mapped on November 10, 1951, by L. D. Clark and A. A. Stromquist of the Geological Survey, the exploratory work underway exposed additional evidence that at the time was thought might be of considerable significance. Accordingly, a more detailed examination was postponed until early in December, when W. P. Benson and E. H. Sheahan of the Bureau of Mines and A. A. Stromquist of the Geological Survey thoroughly sampled the property on December 5 - 8, and added new data to the previously prepared geologic report.

The engineers and geologist are in close agreement in that the ore exposed in the mine has a gross value of approximately $25,000. However, if the entire mineralized zone is to be mined, as the applicant's consulting engineer suggested, along with the material on the dump, the gross value as calculated by the geologist is $51,360, but, of course, the overall average grade of the ore will be less than that of the reserves which are estimated to have a value of $25,000.

Regardless of the basis for estimating reserves of ore suitable for treatment in the applicant's proposed rehabilitated mill,

the applicant's proposal still is unsound in that he is requesting a loan of $50,000 to treat ore valued at best at $51,360.

Both the engineers and the geologist agree that the value of the mineable ore at current prices is $7.85 a ton. The applicant in his application gives the combined cost of mining the ore, trucking the ore to the mill, milling, smelting, royalty, insurance and overhead as $13.54 a ton. As that cost estimate seems to be about right, it is apparent no matter what the reserves may be, the overall operation of producing copper at the Donner Mine cannot be a profitable venture unless subsequent exploration opens up some extensive high-grade areas.

The engineers and geologist agree that the quantity and grade of the ore developed in the mine do not warrant a production loan to mine and treat it. Bureau engineers, however, are of the opinion that because of its future ore possibilities the Donner area should be given every assistance and they recommend additional financial aid in the form of another exploration loan of $20,000. On the other hand, the Survey geologists conclude that it would be "unwise to grant the applicant additional funds for further exploration because the overall grade of the ore zone is far too low to permit it to be mined profitably, and that better parts are so small as to require disproportionately large expenditures to find them."

Mr. Bailey of the Survey and I have discussed the two conclusions and though we agree that further exploration might reveal the existence of numerous small pods or shoots a few hundred tons of mineable ore, the cost of finding such exposures would be too high to permit overall operations to be carried on at a profit. If the applicant's cost figures are accepted as approximately correct, it will be necessary for the mill heads to run $18 to $20 a ton for profitable operation and such ore doesn't seem to be in the cards.

✗ Attached are four copies of a report, "DMA-2075, Sierra Copper Company, Calaveras County, Calif. by Arvid A. Stromquist, Geologist, U. S. Geological Survey, dated March 7, 1952". Attached also are four copies of a report, "DMA-2075, Sierra Copper Company, Donner Mine, Calaveras County, California, by W. T. Benson and Benjamin H. Sheahan, Mining Engineers, U. S. Bureau of Mines, dated February 12, 1952".

✗ See reports filed under DMA-11317 - H.C.M.'s memo March 10 to Lucas.

These reports, though prepared for the purpose of determining whether the company should be granted a production loan, also should be considered final reports on the company's exploration project, Docket DMA-1131X, contract Idm-E104.

Subject docket is being returned herewith.

H. C. MILLER

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

Attachments

Copy to A. C. Johnson, Reno, Nev.
E. H. Bailey, USGS

HCMiller:ejs

Files
Chron

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

102 Old Mint Building
San Francisco 3, California

March 10, 1952

Subject: DMA 2075, Sierra Copper Company, Calaveras Co., Calif.

Mr. A. C. Johnson
U. S. Bureau of Mines
P. O. Box 1551
Reno, Nevada

Dear Mr. Johnson:

Enclosed is a copy of Stromquist's report dealing with the Sierra Copper Company's application for a development loan (DMA 2065) as requested in your letter of February 28. We ran out of copies of the assay map, but I believe you already have a copy which you can add to this report.

Roy Mead is to confer with Mr. Miller regarding this property today, and probably both the Survey and Bureau reports will be sent to Washington so that they will be informed as to the final conclusion reached by each agency.

Sincerely yours,

Edgar H. Bailey

Edgar H. Bailey

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
YOUR L. ICKES, SECRETARY

BUREAU OF MINES
[illegible]

REPORT OF INVESTIGATION BY FIELD [illegible]
[illegible]

DMS 2071, Sierra Copper Company
Calaveras County, California

Arvid A. Stromquist, Geologist
U. S. Geological Survey

March 7, 1942

Summary

An application (DMA-2075) for a direct loan of $50,000 has been submitted by the Sierra Copper Company to develop and bring into production their mine on the Lomar property in Calaveras County, California. This property was being explored under a DMEA contract (Idm 5104). In referring this production loan application to the field Mr. Tom Lyon requested (1) that the property be examined to determine if there is sufficient ore of minable grade to warrant the loan requested and (2) if there was insufficient ore, to consider the possibility that the additional work proposed by the applicant might be considered as worthwhile exploration to be done under a new DMEA contract.

The ore zone explored by the applicant's completed exploration program contains a maximum of 214,000 pounds of copper, with a gross value of about $52,000, in ore with an average grade of 1.4 percent copper. It is obvious that the applicant cannot hope to repay a loan of a nearly equal amount from the profits obtained by mining this block, and it is therefore recommended that his request for a direct production loan be denied.

Further exploration of the ore zone thus far explored can be expected to find "ore" similar in grade to that already discovered. Ore of this grade is calculated to contain about $7.00 worth of copper, $0.10 worth of gold and silver, and negligible zinc per ton - a total value of $7.10 a ton. Ore of this grade cannot be profitably mined along the Foothill Copper belt at current prices. According to the application (DMA-2075) submitted by Sierra Co. with the combined cost of mining ($3.00), trucking ore to mill ($1.75), milling ($3.00) copper smelter charge ($2.53), royalty, insurance, and overhead ($3.77) amount to an operating cost per ton of $13.54. The applicant's cost estimates appear to be reasonable for the size of mine that might be developed as a result of the proposed exploration, yet they amount to about twice the value of a ton of ore of the grade like that found by the exploration done so far. For this reason additional exploration to develop a large block of unminable "ore" cannot be recommended.

The ore zone, however, also contains small pods, with a total content of a few hundred tons, of ore that might be economic. Further exploration to find other similar pods might be successful, but the cost of the exploration as compared to the value of the minable ore that might be found will be disproportionately high.

It is therefore concluded that it is unwise to grant the applicant additional Government funds for further exploration because the overall grade of the ore zone is far too low to permit it to be mined profitably, and the better part are so small as to require disproportionately large expenditures to find them.

Introduction

The application, DMA 1075, by the Sierra Copper Company is a request for Governmental financial aid in carrying out a $50,000 production program for copper and zinc at the Homer Mine in sec. 33, T. 2 N., R. 11 E., Mount Diablo Base and Meridian, about 7 miles west of Copperopolis, in Calaveras County, California. The company previously had been granted an exploration loan of $15,612 (DMA 1131) to put down a shaft and do about 200 feet of drifting on the 100 level. It is on the results of this exploration program that the development loan is requested.

On November 10, 1951, L. [illegible] Clark and [illegible] A. Strauquist of the Geological Survey mapped, with an open sight alidade, the underground workings. During the period December 5-8, 1951, [illegible] Jenson, and D. H. [illegible]hanan of the Bureau of Mines, and [illegible] A. Strauquist of the Geological Survey, sampled the property and added new data to the geologic map.

General Geology

The rocks in the vicinity of the shaft consist of schistose greenstone, which strikes N. 30°-45° W. and dip steeply to the northwest concordant with the common structural trend of the Sierra Nevada. The ore minerals occur in a shear zone that cuts across the foliation of the greenstone, and is parallel to a nearby small quartz porphyry mass. The surface outcrop of the mineralized zone is a band of gossan, which is 10 to 15 feet wide and can be traced for more than 100 feet along the strike. Copper carbonates and cuprite were recognized in the oxidized zone, but there is no prominent zone of secondary enrichment. The primary sulfides consist chiefly of pyrite, with disseminated chalcopyrite and some bornite in the copper-rich parts of the ore zone. The part of the drift west of the shaft contains the most pyrite and also the better copper values.

Ore Shoots

The ore shoots have economic limits, are pod-shaped, and are more irregular and spotty than indicated on the sections in Fig. 1. They appear to be localized by divergent slips and changes in dip or strike.

Two ore shoots are indicated by the geologic relations and assay results shown in Fig. 1. One of these, which begins at a point about 40 feet west of the shaft, is partly controlled by a slip that roughly parallels the drift; most of the ore lies above the slip. Another was penetrated by the shaft. Apparently it pitches to the northwest passes through the first raise east of the shaft, and lenses out about 50 feet east of the shaft.

Ore Reserves

Chip samples were taken across the back at 10-foot intervals along the drift, and as far as possible, from back to floor in the shaft and raises. The locations, widths, and assay results, are indicated in Fig. 1.

Grab samples were taken from 1 to 3-foot deep holes around the perimeter of the dump at approximately 15-foot intervals on each 10-foot contour.

Calculations of the indicated ore in these blocks follows. The average widths and assay values were obtained by the usual procedure. A volume factor of 12 cubic feet of rock equals 1 ton has been used.

Ore shoot west of the shaft:

Width	Cu Cu	X x Cu
3.4	2.74	9.32
2.0	4.52	9.02
4.0	2.50	10.00
1.8	1.25	1.75
8.5	1.20	10.20
5.0	1.22	6.10
3.3	3.73	12.31
30.0		65.70

Average 4.2 ft. wide, 2.25 Cu.

If the ore shoot is assumed to have dimensions of 40 by 30 feet, or a little larger than is shown in fig. 1, the copper content is:

$$\left(\frac{40 \times 30 \times 4.2}{12}\right) \times .022 \times 2{,}000 = 20{,}300 \text{ lbs.}$$

Fig. 1 A is a sketch of the second ore shoot as seen in the plane of the vein. The area of 1206 square feet was determined with a planimeter. In measuring this area the shaft and a 10-foot zone on each side for pillars was included, as was also the raise west of the shaft.

Ore shoot penetrated by shaft and raise to east:

Width	Cu Cu	X x Cu
4.0	2.21	8.84
3.0	8.28	24.84
2.5	10.73	26.83
6.5	3.40	22.10
1.2	1.15	6.09
4.8	1.11	5.33
25.0		95.33

Average: 4.2 ft. wide, 3.8% Cu.

Copper content: $\frac{120' \times 1.2}{12} \times .030 \times 2{,}000 = 36{,}000$ lbs. Cu (approx.)

[illegible] surveys of the drift angling [illegible] copper. This [illegible] compared [illegible] the [illegible] working [illegible] that the [illegible] mineral, [illegible] were not [illegible] in the current [illegible]. The pump, however, contains 12,000 lbs. of copper, assuming that it contains approximately 1,000 tons of ore with a [illegible] of 2.1% copper.

On the above basis of a [illegible] mining the total reserves are:

Ore shoot west of shaft	20,000 lbs.
Ore shoot [illegible] of shaft	25,000
[illegible] to the west	
Pump	12,000
	57,000 lbs. of copper

[illegible] a gross value of [illegible] gold, silver and silver content of the ore is almost negligible.

Because the equipment prevented the sinking of the entire mineralized zone, rather than the ore shoot, the copper content of a block of ground extending from the west end of the 100 level to the second raise east of the shaft has also been calculated. Using a mining thickness of 10 feet, a length of 150 feet, and a height of 60 feet, which omits the [illegible], this calculation gives the volume of rock removed in driving the workings and 10 room-and-pillars 7,200 cubic feet of rock in [illegible]. The block is found to contain 172,000 lbs. of copper if one takes 11 cu. ft. to the ton and [illegible] copper, the average of all assays in the block. [illegible] the copper in the dump is also included, [illegible] 48,000 lbs. of copper in measured and indicated ore on the property.

Conclusion

Either [illegible] or [illegible], the measured and indicated tonnage of developed ore is only about 1,000 tons, with a total value of $1,000.00. This [illegible] warrant a government prospector loan or an expenditure equal to the value of the contained copper.

The value of the copper, gold, and silver in a ton of ore is equal in grade to the average of the mineralized zone in about 17.0% iron; the zinc content is negligible. The cost of mining, milling, [illegible], smelter treatment, and overhead as indicated by the [illegible] cost is $1.54. While a few pods or shoots containing a few hundred tons of ore of mineral grade doubtless might be found by further exploration, it would prove to grant the expense of more [illegible] and additional exploration of the Denver mine in the hope of finding these smaller [illegible] to [illegible] to allow even a near-economic operation.

PMA-2075

February 28, 1952

Mr. E. H. Bailey
U. S. Geological Survey
102 Old Mint Bldg
5th & Mission Streets
San Francisco 3, California

Dear Mr. Bailey:

The report on the Sierra Copper Company's property in Calaveras County, Calif., was discussed in great detail on our recent visit to the San Francisco office.

The report that was made in your office on this property was in connection with an application by the company for a DMA production loan. It was the consensus of the group present that sufficient ore had not been developed to warrant a development loan. It is assumed from the discussions, that your office will complete the report for submission to the Washington Office. It will be appreciated if you will make a copy of the report available for our files.

Very truly yours,

A. C. Johnson, Chief
Mining Division
Region III

ACJ:gh
cc: H. C. Miller
Files

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

Office of
Executive Officer
DMEA Field Team
Region III

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

February 21, 1952

Memorandum

To: A. C. Johnson, Bureau of Mines, Reno, Nevada

From: Executive Officer, DMEA Field Team, Region III

Subject: Exploration Project Contract Idm-E104, Sierra Copper Co., Docket DMA-1131X (Copper)

The five copies of the report, "DMA-2075, Sierra Copper Company, Donner Mine, Calaveras County, California," by W. T. Benson and Benjamin H. Sheahan, Mining Engineers, U. S. Bureau of Mines, and A. A. Stromquist, Geologist, U. S. Geological Survey, dated February 12, 1952, together with the five copies of the memorandum from W. T. Benson to you dated February 19, are being returned for the following reasons:

The report supposedly is a joint Bureau of Mines-Geological Survey Report, inasmuch as the names of two Bureau of Mines engineers and one Geological Survey geologist appear on the cover page. Mr. Bailey and I, however, find that Stromquist's report on the Sierra Copper Company, Donner Mine, virtually was ignored by the engineers in the preparation of the "joint" report.

A most glaring criticism of the so-called "joint" report is that your engineers recommended an additional $20,000 exploration loan, whereas the geologist recommended that further exploration on the property under DMEA is not warranted. I agree that different men may have different opinions, but inasmuch as the report is a joint one, we cannot give only one side and ignore the other, especially when the man on the other side is a joint author.

The matter of recommendations should have been settled by the engineers and geologist before the report was completed, or else the report should have stated that the geologist didn't concur with the conclusions of the engineers. His conclusions also should be presented in that case.

We note, also, that the geologist's estimate of ore reserves and his description of the geology were not made a part of the report so that it isn't a joint report afterall, and the geologist would have every right to ask that his name be removed from the cover page.

If, when a joint examination is made of a property no consideration is given to the findings of the geologist, or vice versa, as the case may be, there is no use of sending an engineer and a geologist to make an examination. Also, all differences of opinion should be reconciled in the field before the report is submitted to Washington. The Washington office looks to us for our recommendation and when two diametrically opposite conclusions are presented, Washington is no better off than it was before the examination was made. It is absolutely necessary for Mr. Bailey and me to make a recommendation to Washington, and it is up to the Bureau and the Survey to come up with one conclusion.

All the documents except your memorandum of February 19 are being returned herewith. Kindly give my request immediate attention, even if it may mean a trip to San Francisco for Benson to iron matters out with Mr. Stromquist.

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

Attachments

Copy to E. H. Bailey, USGS

HCMiller:ejs

Files DMA-1131X
DMA-2075

Chron

Refer to	Noted	Date
	Miller	2/4
Answered		

ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

February 2, 1952

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

Exploration Project Contract Idm E104
Sierra Copper Co. Docket DMA 1131X
Copper

Dear Mr. Miller:

This is to advise you that I visited the Donner Mine on January 30th, and took several samples for assay, the returns of which just reached me.

Since I talked with you in San Francisco on January 11th we made an important discovery in the northeast drift on the 100 level from the Donner shaft.

On January 17th we started to extend the north drift from the face, which was then 100 feet from the shaft, on a course about 10° to the east and struck a slip or gouge which we followed. At a point 110 feet from the shaft we struck a streak of chalcopyrite about 1 foot in width, which widened to four feet. The face of the drift is now 135 feet from the shaft and the face is all in ore. The following car samples representing the material taken out shows the copper values for each five feet:

Sample No.	% Copper
36-B	1.6
37-B	3.4
38-B	8.00
39-B	5.10
40-B	9.20
41-B	7.30
42-B	6.50

On January 30th I took cut samples across the ore which assayed as follows:

Sample No.	% Cu	% Zn	Description
1	5.7	6.7	At face ore 52" wide
2	13.6	Not tested	6.4' so. of No. 1 sample ore 50" wide
3	10.2	" "	11' so. of face 3' of ore bottom of drift
4	13.0	" "	Drillings from 18" hole left side of drift to hanging wall
5	14.1	" "	Ore on dump from North drift.

2 copies sent to Bailey, Lucas & Theon
to Lucas 2/5 also 2 copies
to map.

I am preparing a map showing the location of ore body and assays. I will mail you a print of the map Monday.

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1952 FEB 4 AM 9:21

SAN FRANCISCO, CALIFORNIA

Refer to	Noted	Date
Answered		

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

JAN 5 1952

Memorandum

To: Mr. H. C. Miller, Executive Officer, DMEA Field Team, Region III, San Francisco, California

From: Operating Committee, Defense Minerals Exploration Administration, Washington 25, D. C.

Subject: Docket No. DMA-2075, Contract Idm-E104, Sierra Copper Company, Donner Mine.
Direct loan $50,000 (Zinc-Copper)

Reference is made to your memorandum dated December 21, 1951, addressed to Mr. Mittendorf, in which you have reported the status of your reports on the above-captioned case.

You have advised that Mr. C. A. Rockwood, mining engineer for the RFC, has also written to you in the matter and you specifically request advice as to whether your field reports should be furnished directly to Mr. Rockwood, or whether they should be sent to the Operating Committee in Washington. The answer to your question is that all reports related to defense minerals dockets are to be sent to the Operating Committee here in Washington.

C O Mittendorf
Chairman, Operating Committee
Defense Minerals Exploration
Administration

APPROVED:

J. W. Hedges
For Bureau of Mines

T. P. Thayer
For Geological Survey

XMA-2075

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

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

Office of
Executive Officer
DMA Field Team
Region III

December 21, 1951

Mr. C. A. Rockwood
Mining Engineer
Loan Agency of the
Reconstruction Finance Corp.
417 South Hill Street
Los Angeles 13, California

Re: Sierra Copper Company
Docket DMA-400499

Dear Mr. Rockwood:

Replying to your letter of December 17, as stated in my October 31 letter to you, the U. S. Geological Survey examined the Sierra Copper Mine. However, the Region III field team was not satisfied with the results of the examination and ordered a reexamination made by the Survey in cooperation with the Bureau of Mines engineers.

Accordingly, two engineers from the Bureau of Mines and a geologist from the Survey reexamined the mine about two weeks ago. This second examination was a very ~~slow~~ thorough one, and the examiners are now awaiting the results of the assays of the many samples they took at that time.

The company's exploratory project has been completed and just as soon as we get the engineers' and geologist's report, we will know if the results will prove the existence of a commercial ore body or not. The company knows that action on its production loan is being held up pending the results of our second examination. You will hear from me again, just as soon as the report on the property comes to my desk.

Sincerely yours,

H. C. MILLER

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

HCMiller:ejs
Files
Chron

Copy to E. H. Bailey, USGS

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

Office of
Executive Officer
DMEA Field Team
Region III

~~Air Mail~~

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

December 21, 1951

Memorandum

To: C. O. Mittendorf, Administrator, Defense Minerals Exploration Administration, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMA-2075, Sierra Copper Company, Donner Mine, Direct loan $50,000 (Zinc-Copper)

Reference is made to the letter to me dated October 4 from Tom Lyon, requesting an examination of subject property to determine if there is a sufficient tonnage of ore of mineable grade to warrant the requested loan.

Shortly after the above request was received in this office, the Geological Survey examined the mine. Region III field team, however, was not satisfied with the results of the examination and ordered a reexamination made by the Survey in cooperation with engineers of the Bureau of Mines.

The examination was made several weeks ago and as soon as the results of the assays of the many samples taken are available, a report will be written and sent to you.

Sometime ago the Sierra Copper Company apparently also made application to the Loan Agency of the Reconstruction Finance Corporation in Los Angeles for a production loan. Letters from that agency to me referred to the loan as RFA-400499. Letters from Mr. C. A. Rockwood, mining engineer of that agency, indicates that RFC action on the loan application is being held up pending a report from us on the results of the exploratory work under contract Idm-E104.

Our reports on the engineers' and geologist's examination, of course, will be sent to you in Washington. However, what

I would like to know by immediate air mail reply is: Are we to work directly with Mr. Rockwood by furnishing him with copies of our reports and other information acquired as a result of our examination, or should our contribution to RFC be channeled through Washington?

H. C. MILLER

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

Copy to E. H. Bailey, USGS

HCMiller:ejs

√Files
Chron

Noted	Date
Answered	

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

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
OCT 4 - 1951
SAN FRANCISCO, CALIFORNIA

OCT 2 1951

Re: DMA-2075
Sierra Copper Co.
Donner Mine
Direct loan, $50,000
Zinc, copper

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

Dear Mr. Miller:

Attached is an application submitted by the Sierra Copper Company, 920 Burchett Street, Glendale, California, for a direct loan to develop and bring into production their mine on the Donner property in Calaveras County, California.

The work which the applicant wishes to undertake is:

1. Sink the existing shaft an additional 100 ft. to the 200 ft. level.
2. On the 200 ft. level drift 100 ft. each way from the shaft on the vein.
3. On the 100 ft. level drive raises 50 ft. apart, install pockets, and stope ore from the 100 ft. level to the surface.
4. Repair the Mountain King mill

The total estimated cost of the above is $50,000 to be expended as follows:

Mine equipment.....	$ 19,200
Alteration and repair of Mountain King mill	4,500
Sinking shaft 100 ft.....	10,000
Mine development and working capital.....	16,300
Total estimated cost.....	$ 50,000

The applicant has been granted a loan for an exploration program on this property, the total cost being $16,613. Previous to the granting of this loan the applicant had deepened the Donner shaft to 100 ft. Under the terms of the exploration contract, the company was to open up a station on the 100 ft. level, put in a 10 ft. sump, drive two drifts each 100 ft. long north and south from the shaft along or parallel to the vein, drive two 25 ft. crosscuts into the footwall, and drive a 75 ft. crosscut to a parallel vein.

As of the date of the application, the drifts on the 100 ft. level had been advanced less than 30 ft. north and south of the shaft and a raise had been driven about 30 ft. from one of the drifts.

As a result of the above work the applicant estimates that there are about 7,710 tons of measured ore and 27,350 tons of probable ore above the 100 ft. level. This includes both high and low grade ore with an average grade of 3.85% Cu and 7.8% Zn. In addition, there also are 580 tons of ore already mined and above ground.

It is recommended that the property be examined to determine if there is a sufficient tonnage of ore of minable grade to warrant the loan requested. If there is, the mining and milling methods and costs should be investigated. It is suggested that the report submitted by the Field Team be in the form of, or contain all the information requested in the "Outline for Report and Recommendation of Commodity Committee on Application for Government Assistance." In addition, the information requested in the enclosed memorandum from the Director, Supply Division to Branch Chief, Supply Division, should be included.

If the value of the ore already found is not great enough to warrant a loan of $50,000, possibility should be considered that the additional 100 ft. of sinking and the drifting on the 200 level might be considered as new exploration that would be eligible for assistance under the exploration program, and applicant might want to apply again under that program.

The attached docket contains the following:

1 copy of Form MF-102 with attached exhibits including itemized list of expenditures and analyses of operational costs and probable returns.
1 copy each of assignment and mill lease.
1 photostatic copy of topographic map.
1 map and section showing proposed work.
1 assay map.

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Lowell B. Moon
For Bureau of Mines

T. P. Thayer
For Geological Survey

Copy to Beasley 10/4

LOAN AGENCY
OF THE
RECONSTRUCTION FINANCE CORPORATION
417 SOUTH HILL STREET
LOS ANGELES 13, CALIFORNIA

December 17, 1951

Refer to	Noted	Date
Answered		

H. C. Miller, Executive Officer
D.M.A. Field Team, Region III
870 Market Street
San Francisco 2, California

Re: Sierra Copper Company
DMA-400499

Dear Mr. Miller:

In your letter of October 31 you stated that the U. S. Geological Survey had recently examined the mine of the above captioned applicant and you expected to be able to give me information regarding work accomplished to date on this project under the Exploration Contract.

The exploration or development work should be nearly completed by this time and any information you can give me on the project will be appreciated.

The data submitted in the application for a production loan are rather vague as to the nature of the ore occurrences and the tonnage of ore developed. Any reports you may have would be a decided help in processing this application.

Thanking you, I am

Very truly yours,

C. A. Rockwood
Mining Engineer

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1981 DEC 19 AM 9:01

SAN FRANCISCO, CALIFORNIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

102 Old Mint Building
San Francisco 3, California

Refer to	Noted	Date
	HCM	12/13
Answered		

December 12, 1951

Mr. W. T. Benson
U. S. Bureau of Mines
P. O. Box 1551
Reno, Nevada

Dear Mr. Benson:

Enclosed is the application (DMA 2075) submitted by the Sierra Company for a direct loan to develop their prospect on the Donner property in Calaveras County, California. In return, we would very much appreciate a copy of the results of the assays of samples from the Donner property as soon as available.

The results of the sampling together with a geologic map of the Donner prospect should indicate whether an ore reserve exists to justify a development loan, or whether the mineralization is sufficiently hopeful to warrant further exploration.

Sincerely yours,

Edgar H. Bailey

Enclosure
CC: H. C. Miller
F. C. Johnson

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1981 DEC 13 AM 8:52

SAN FRANCISCO, CALIFORNIA

Return to
Noted
Assigned

SENATOR GETTING
CONSULTANT TO THE CHAIRMAN
DEPARTMENT OF GEOLOGICAL SURVEY

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

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

Office of
Executive Officer
DMA Field Team
Region III

October 31, 1951

Mr. C. A. Rockwood
Mining Engineer
Loan Agency of the
Reconstruction Finance Corporation
417 South Hill Street
Los Angeles 13, California

Re: Sierra Copper Company
Docket DMA-400499

Dear Mr. Rockwood:

I have had your October 12 letter concerning mining loan application of the above-captioned applicant in my pending file ever since it arrived on October 15. The delay in answering your letter has been caused by my desire to furnish you with the latest possible information on the progress of the exploratory work now under way at the Donner mine under DMA exploration project contract Idm-E104.

The U. S. Geological Survey has recently examined the mine and is to report to me on the outcome of the exploratory work done to date. There has been an unavoidable delay in the completion of the survey report as the geologist's findings did not check the company's statements in certain respects. I believe, however, that I will be able to answer your letter in a few days.

Sincerely yours,

H. C. MILLER

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

Copy to: E. H. Bailey, USGS

HCMiller:ejs

Files
Chron

to	Noted	Date
Answered		

LOAN AGENCY
OF THE
RECONSTRUCTION FINANCE CORPORATION
417 SOUTH HILL STREET
LOS ANGELES 13, CALIFORNIA

October 12, 1951

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
OCT 1 5 1951
SAN FRANCISCO, CALIFORNIA

Mr. Harold C. Miller
Regional Office, U.S.B.M.
1415 Appraiser's Building
630 Sansome Street
San Francisco 11, California

Re: Sierra Copper Company
Docket No. DMA-400499

Dear Mr. Miller:

The Los Angeles Agency, RFC, has received an application for a mining loan from the above captioned applicant for the purpose of purchasing equipment for its Donner Mine in Calaveras County, sinking the shaft to the 200 foot level and developing ore above that level, and the purchase of mill equipment to change the flow sheet of the Mountain King Mill for differential flotation to produce separate copper and zinc concentrates.

Applicant states that it is presently developing ore above the 100 foot level under a DMA Exploratory Contract, Docket DMA 1131X and IDM-E104, and it appears to us that the proper consideration of this application should depend on the results of the Exploration Contract.

Undoubtedly engineers from your office have examined this property and we will appreciate receiving from you information regarding the present status of the Exploration Contract and particularly information regarding the ore body presently being developed.

10/18
DOS will search
info

Very truly yours,

C. A. Rockwood
Mining Engineer

ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

November 17, 1951

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

Refer to	No.	Date
Answered		

Subject: DMA-2075
Re: Loan Donner Mine

Dear Sir:

I hand you herewith copy of letter written to Mr. A. A. Stromquist regarding the sampling of the Donner Mine which is self-explanatory.

It would appear that Mr. Stromquist did not sample the ore developed in the Donner Mine but only the barren places in the drifts below the ore body, and that more consideration should have been given to the investigation.

In my opinion it would be unjust to condemn the property on such conflicting evidence as disclosed by our samples and those taken by Mr. Stromquist.

A large sum of money has been expended on the property and we have disclosed a sizable ore body which might yield considerable copper so essential to our country.

Perhaps you can give me some suggestions as to how to proceed from this point to clarify the controversy.

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm
Enc.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1951 NOV 19 AM 11:29

SAN FRANCISCO, CALIFORNIA

ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

November 17, 1951

Mr. Arvid A. Stromquist
U. S. Geological Survey
102 Old Mint Building
San Francisco 3, California

Subject: DMA-2075
Re: Loan Donner Mine

Dear Sir:

Your letter addressed to Mr. Ronnie B. Smith, President of Sierra Copper Company, has been referred to me and in reply thereto I wish to advise that I was at the Donner Mine on October 11th, the day after you made your inspection of the mine. After seeing the places where you took samples and the manner in which you sampled the dump I was not surprised to learn by your letter that the result of the assays of the samples that you took from the dump and the underground workings were not impressive.

A careful inspection was made by the writer the day after you inspected the property. I noted the spots on the walls of the drifts where your samples were taken but saw no evidence of sample cuts across the roof or back of either drift, neither did I observe any evidence of sample cuts in the two upraises where rich Chalcopyrite ore is in evidence. Knowing the mine as I do and the character of the ore body I can frankly say that the property is unjustly condemned by your method of sampling.

It has been my experience that a mine cannot be fairly judged unless the engineer has a thorough knowledge of the operator's program of development and his objective and without that knowledge an engineer is very likely to be mislead, especially where he hurriedly inspects a property where the workings are coated with a thin scale of mud formed by dust from the blasts settling on the damp walls and roof of the drifts, which was the condition of the Donner Mine at the time of your inspection.

The engineer should also know whether or not the material removed from the workings was the same as exposed on the walls and roof of the workings. In the case of the Donner Mine the walls of the drift were barren of either copper or zinc minerals. The engineer should also know whether or not the drifts and openings had been driven in the ore body. In the case of the Donner Mine the drifts from the shaft were under the ore body. The ore body was encountered in the upraise on the northwest 13 feet above the floor of the drift and 17 feet above the floor of the drift in the upraise from the southeast drift. Two cars of unsorted ore averaging 7.76% copper taken from the shaft and upraises had been shipped from the mine prior to your inspection.

All of the foregoing data could have been obtained had you communicated with me before you made your inspection, or from the man in charge had you made yourself known to him and stated the reason for the inspection.

An assay map of the mine showing where samples were taken and the percentage of copper and zinc at each location accompanied the application and should have been in your file when your inspection was made. The values shown on the map were from samples taken in the following manner by employees who were unbiased and under no instruction other than to obtain a representative sample.

The broken material in the drift was shoveled into the mine bucket and hoisted to the surface where it was dumped into a car. The topman then took a grab sample amounting to about five pounds which he put in a box with the samples taken from succeeding cars of material hoisted from that particular location. At the end of the day the composite sample, amounting to approximately 75 pounds, was tagged and marked as a car sample from the number of buckets hoisted. It was then crushed and quartered down with a Johnson sampler, given a number and sent to the assayer and the tag was mailed to me. Therefore the assayer did not know the location of the sample. After results were reported to me I then identified the assay with the sample location. The employee who took the sample only knew the location and was not advised as to the results. I had nothing to do with the taking of the sample or the assaying of the sample. In addition to the car sample the foreman occasionaly took cut samples across the face. These samples were given a number and the same procedure used as for the car samples.

When I visited the property I took cut samples, which were numbered by myself and a notation made in my notes as to the location. All of the assay data was then put on the assay map.

The assay data on the map shows very clearly that the drifts were run in low grade ore and that sections of the drifts were very low in copper and zinc values, also that the high grade assays were in the upraises.

After your inspection of the property I had the dump sampled by cutting trenches two feet deep at five foot intervals around the dump from top to bottom. Grab samples of about one pound were taken at two foot intervals from each trench. The composite sample amounting to approximately 1,000 pounds was then quartered down to about 200 pounds then cut to 100 pounds by means of a Johnson sampler. The 100 pound sample was then sent to the assayer. The results were as follows:

Gold	Trace
Silver	1.04 ozs.
Copper	3.3%
Zinc	7.0%

Since your inspection an ore body five feet in width has been encountered in the southeast drift 85 feet from the shaft. On November 16th I took a five foot cut sample on the east side of the drift which assayed 14.5% copper and a four foot cut sample on the west side which assayed 15.2% copper.

An ore body was also encountered in the northwest drift 95 feet from the shaft. A four foot cut sample taken by myself on November 16th assayed 11.5% copper.

I enclose photostatic copy of the two cars of ore shipped from the property. One was received at the smelter on August 22nd, the other on October 3rd.

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm
Enc.

c.c to Mr. H. C. Miller
Mr. Ronnie B. Smith

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

1951 NOV 13 AM 11 : 29

SAN FRANCISCO, CALIFORNIA

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
OCT 4 - 1951
SAN FRANCISCO, CALIFORNIA

Re: UMA-2075

OCT 2 1951

Mr. Bernie D. Smith, President
Sierra Copper Company
920 Merchant Street
Glendale, California

Dear Mr. Smith:

Your application for a lease to develop the Donner property in Calaveras County, California, has been reviewed. Because further information is required before final action can be taken on your application, it has been referred to Mr. H. G. Miller, Executive Officer, GSA Field Team, 1012 Flood Building, 870 Market Street, San Francisco 2, California.

Very truly yours,

SIGNED

Ben Lyon, Director
Supply Division

Copy to Bailey 10/4

EJLyons:emp
G 9-24-51
Copies to: H. G. Miller Region III (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
MMA docket files

C O P Y

Re: DMA-2075
Sierra Copper Co.
Donner Mine
Direct loan, $50,000
Zinc, copper

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

Dear Mr. Miller:

Attached is an application submitted by the Sierra Copper Company, 920 Burchett Street, Glendale, California, for a direct loan to develop and bring into production their mine on the Donner property in Calaveras County, California.

The work which the applicant wishes to undertake is:

1. Sink the existing shaft an additional 100 ft. to the 200 ft. level.
2. On the 200 ft. level drift 100 ft. each way from the shaft on the vein.
3. On the 100 ft. level drive raises 50 ft. apart, install pockets, and stope ore from the 100 ft. level to the surface.
4. Repair the Mountain King mill

The total estimated cost of the above is $50,000 to be expended as follows:

Mine equipment	$ 19,200
Alteration and repair of Mountain King mill	4,500
Sinking shaft 100 ft.	10,000
Mine development and working capital	16,300
Total estimated cost	$ 50,000

The applicant has been granted a loan for an exploration program on this property, the total cost being $16,613. Previous to the granting of this loan the applicant had deepened the Donner shaft to 100 ft. Under the terms of the exploration contract, the company was to open up a station on the 100 ft. level, put in a 10 ft. sump, drive two drifts each 100 ft. long north and south from the shaft along or parallel to the vein, drive two 25 ft. crosscuts into the footwall, and drive a 75 ft. crosscut to a parallel vein.

C O P Y

As of the date of the application, the drifts on the 100 ft. level had been advanced less than 30 ft. north and south of the shaft and a raise had been driven about 30 ft. from one of the drifts.

As a result of the above work the applicant estimates that there are about 7,710 tons of measured ore and 27,350 tons of probable ore above the 100 ft. level. This includes both high and low grade ore with an average grade of 3.85% Cu and 7.8% Zn. In addition, there also are 580 tons of ore already mined and above ground.

It is recommended that the property be examined to determine if there is a sufficient tonnage of ore of minable grade to warrant the loan requested. If there is, the mining and milling methods and costs should be investigated. It is suggested that the report submitted by the Field Team be in the form of, or contain all the information requested in the "Outline for Report and Recommendation of Commodity Committee on Application for Government Assistance." In addition, the information requested in the enclosed memorandum from the Director, Supply Division to Branch Chief, Supply Division, should be included.

If the value of the ore already found is not great enough to warrant a loan of $50,000, possibility should be considered that the additional 100 ft. of sinking and the drifting on the 200 level might be considered as new exploration that would be eligible for assistance under the exploration program, and applicant might want to apply again under that program.

The attached docket contains the following:

1 copy of Form MF-102 with attached exhibits including itemized list of expenditures and analyses of operational costs and probable returns.
1 copy each of assignment and mill lease.
1 Photostatic copy of topographic map.
1 map and section showing proposed work.
1 assay map.

SIGNED
Tom Lyon, Chairman
Coordinating Committee

For Bureau of Mines

For Geological Survey

EJLyons:emp G 9-24-51
Copies to: 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 files

C O P Y

DEFENSE MINERALS ADMINISTRATION

July 17, 1951

Memorandum

To: All Branch Chiefs, Supply Division

From: Director, Supply Division

Subject: Recommendations for Government Loans

The following is a copy of a memorandum dated July 12, from C. O. Mittendorf, Director, Production Expansion Division:

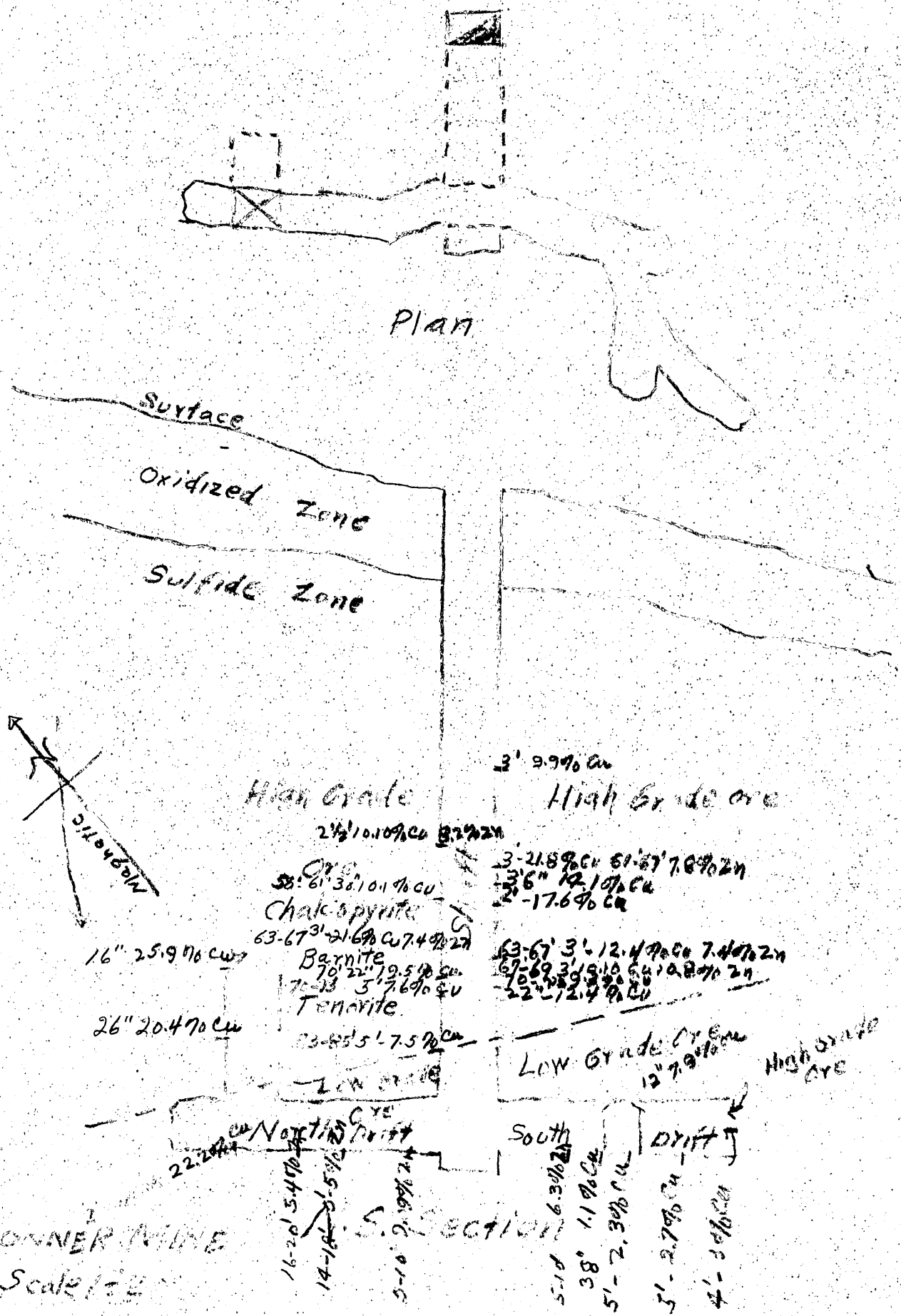
"Some of the recommendations for Government loans coming from the Supply Division do not have sufficient data on which the RFC can base suggestions for terms and conditions for the proposed laon, which is one of its functions. In this connection, the RFC requires information from DMA, unless RFC is to make a field examination as well as a credit investigation, specifically as follows:

1. Amount of laon recommended.
2. Purpose of laon recommended, and nature of expenditures in detail.
3. Estimate of ore reserves from which repayment of laon is to be made and rate of production.
4. Net returns per ton of ore produced.
5. Operating cost per ton of ore produced.
6. Profit per ton of ore produced available for repayment of loan.

"It is also necessary that on recommended loans we have three copies of the application and pertinent data and Field Team Report, since one copy of each of these papers is transmitted to RFC with request for a Credit Investigation, and one copy of each paper is transmitted to DPA if a loan is certified.

"The inclusion of the above-mentioned data as recommendations from the Supply Division will expedite the processing of loan applications by P.E.D. and RFC."

Tom Lyon


Plan
Surface
Oxidized Zone
Sulfide Zone
High Grade
High Grade ore
3' 9.9% Cu
2½' 10.10% Cu 8.2% Zn
Ore
Chalcopyrite
Barnite
Tenorite
16" 25.9% Cu
26" 20.4% Cu
Low Grade
Low Grade Ore
High Grade ore
North Drift
South
Drift
DONNER MINE
Scale 1" = 5'

Copy

MF-102
APPLICATION FOR GOVERNMENT LOAN
Not to Exceed $50,000
Under the Defense Production Act of 1950

Docket No. DMA-2075
9-13-51

Date of application
September 12, 1951

Amount of loan requested
$50,000.00

If you have already filed MF-100, give date filed May 1, 1951, type of assistance requested Necessity Certificate, DMA docket number 2075

General Statement. To block out copper and zinc ore in the Donner Mine from 100-foot level to surface for a distance of 100 feet on each side of the shaft. To repair the existing Mountain King Mill and concentrator so that separate concentrates of zinc sulphides and copper sulphides can be produced.

Nature of Expenditure	Amount
Mining Equipment (See detail attached - Item 12)	$19,200.00
Mill Repair (See detail attached - Item 12)	4,500.00
Sinking Shaft to 200' level	10,000.00
Mine Development and Working Capital	16,300.00
Total Amount Applied for	$50,000.00

2. Proposed Method for Repayment of Loan:
(See detail attached - Item 2)

3. Claims against Government:
$3411.80 Idm-E104

4. Employment:
Will loan result in an increase in the number of employees? Yes; 12

5. Insurance: (See detail attached - Item 5)

6. Recent Efforts to Obtain Credit: (Application to Bank of America refused; see detail - Item 6)

7. Necessity Certificates: (Item 7)

8. Ownership of Property: (See Item 8)

9. Legal Description of Property: (See Item 9)

10. Geology and topography: (See Item 10)

11. Existing Development: (See Item 11)

12. If Exploration or Development of Mine is Anticipated: (See Item 12)

13. Mining: (See Item 13)

14. Milling: (See Item 14)

15. Informative data (See Item 15)

16. Names and Address of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if a corporation:

Name and Address	Official Title If Director, indicate "D"	Annual Salary last fiscal yr.	Estimated Net Worth outside of Applicant	Number of shares held in applicant		Life Ins. carried	
				Common	Preferred	Amt	Net cash surrender after loan
Ronnie B. Smith Memphis, Tenn.	Pres. "D"	None	475,000	8050	430	None	
Roy G. Mead Glendale, Cal.	V-Pres. "D"	1950.	75,000	450	-	None	
Richard C. Bergen Los Angeles, Cal.	Sec-Treas. "D"	750.	50,000	100	10	None	
Fred S. Abney	Asst.Sec-Treas.	500.	20,000	100	10	None	
		3200.	xxxx	8700	450	xxxx	xxxx

COPY

C O P Y

CAPITAL STOCK ISSUES

Item	Authorized	Outstanding	Par Value	Number of shares outstanding
Common stock	$ 13,500	$ 13,500	$ 1.50	9000
Preferred stock	100,000	50,000	100.00	500

17. COMPENSATION SCHEDULE:

Instructions: The schedule shall show the amount of compensation being paid to all employees of applicant receiving compensation at a rate in excess of $5,000 per annum computed on a full-time basis. Any compensation in excess of this amount must receive Government approval.

18. COLLATERAL OFFERED AS SECURITY FOR LOAN:

Brief Description	Date acquired	Cost to Applicant	Present Net Book value	Appraised	State by whom appraised and date
Lease: Portions of Secs. 33 & 34, T2N,R11E, Calaveras Co.,Cal.	5/1/51	$63,500	$63,500		Roy G. Mead Glendale, Cal.
Buildings:					
Change Room	May 1951	1,500	1,500		
Powder House	May 1951	300	300		
Machinery, equip., exclusive of office furniture & fixtures:					
Mine Car	Apr.1951	100	100		
Sump Pump	Apr.1951	473.80	473.80		
Truck	May 1951	250	250		
Water Tank & Pipe Line	Apr.1951	500	500		

Future Production Description	Date expected to Reach full Production	Gross Value Estimated	Net value Estimated
100' level to surface minimum 100' each side of shaft and same at 200' level	Nov. 1, 1951	71,284 @ 35.21 per ton $2,509,978. (Ore in sight: 8,291 tons @ 14.16)	71,284 tons @ 14.16 per ton $1,013,698

19. CURRENT FINANCIAL STATEMENT:

ASSETS		LIABILITIES	
Current:		Current:	
1. Cash	$ 2821.25	1. Notes payable	$ None
2. Notes receivable Due 10/1/51	2500.00	2. Accounts payable	3881.55
3. Accounts receivable	5347.96		
4. Inventories Ore,Powder & Carbides	10892.00		
	21561.21		
Fixed and Other:		Fixed and Other:	
Lands		5. Mortgage debt	None
5. Plant Buildings	1800.00	6. Contracts.leases,royalty	832.97
Ores Cost of Lease	63500.00		
6. Machinery	1323.00	TOTAL	4714.52
TOTAL	88184.21	10. Contingent Accrued Preferred Stock Dividends	833.33

201 CONDENSED COMPARATIVE STATEMENT OF INCOME AND EXPENSES:

4. Other income Not applicable

21. NOTES PAYABLE, MORTGAGE DEBT, AND LIENS: None

22. (Item 22)

23.
September 1951

SIERRA COPPER COMPANY

By /s/ Ronnie Smith President

/s/ Fred S. Abney Asst. Secretary-Treasurer
Asst.Secy Treas

E X H I B I T "A"

PARAGRAPH 1 NATURE OF EXPENDITURES

Mine Equipment

1 - Fairbans Morse & Co. 25 horsepower Air driven hoist lifting capacity 1 ton	$ 3,000
250 Ft. of cable - Mine skip	700
1 - Ingersoll Rand #75 Deisel motor-Driven air compressor	5,000
2 - Air drills (Drifters)	750
2 - Drills - Stopers	750
1 - Air driven water pump	500
1 - Ingersoll-Rand sinking pump	500
Freight and installation of above machinery	2,000
1 - Head frame & ore bin Lumber and erection	2,500
1 - Blacksmith shop - Lumber and erection	1,000
1 - Hoist house - Lumber and erection	1,500
1 - Mine car and rails	1,000
	$19,200

ALTERATIONS AND REPAIRS AT MOUNTAIN KING MILL

1 - Ramp and road to ore bin	$ 1,500	
1 - Liner for ball mill	500	
Repair conditioner	1,200	
Repair of water tanks	500	
New launders	800	
	$ 4,500	
SUB-TOTAL		$23,700.00

DEVELOPMENT WORK

Sinking Donner shaft from the 100 foot level to the 200 foot level (an additional 100 feet including timbering)	$10,000	
TOTAL		$33,700.00

2. Proposed Method for Repayment of Loan:

It is proposed that this loan shall be repaid in monthly installments of $3570.00 per month, with accrued interest at a rate not to exceed 5%, with the first payment to be made March 1, 1952 and a like monthly payment to be made each month thereafter until repaid in full. This schedule of payments conforms with the term of the lease held by applicant on the Mountain King mill.

5. Insurance:

The applicant company will provide insurance on the Mountain King mill of $50,000 public liability and $25,000 property damage. Adequate workmen's compensation insurance will be carried to cover both the operation of the mill and the mining program. In addition, full fire insurance coverage will be carried on the Mountain King Mill to comply with the terms of the mill lease agreement.

Detail - Items 2 and 5

COPY

6. Recent efforts to Obtain Credit:

Bank of America
National Trust and Savings Association
Seventh and Flower Br. #344

Los Angeles, California,
September 7, 1951

Mr. Ronnie A. Smith,
President
Sierra Copper Company,
c/o Ned S. Abney,
M & W Tower Building
Dallas, Texas

Dear Mr. Smith:

This will confirm our conversation of a few days ago in which we indicated that we would be unable to assist you in the financing of you mining operations. We trust that you will be able to make other arrangements, as we realize that the activity in which you are engaged is very necessary to the Defense Program. Perhaps if we were more familiar with your type of business, we would look at this in a different manner.

Yours very truly,

/S/ H. L. HOMER

H. L. Homer,
Assistant Manager

HLH/im

Detail - Item 6.

7. Necessity Certificates:

Applicant herein made application for a Necessity Certificate under Sec. 124a of the Internal Revenue Code under date of January 23, 1951, which application was assigned File No. TA-1953. The total cost of the facilities on this application was $52,000.

A S S I G N M E N T

THIS ASSIGNMENT made and entered into this 1 day of May, 1951, by and between RONNIE B. SMITH and M. CARROLL SMITH, his wife, (hereinafter collectively referred to as "Assignors"), and SIERRA COPPER COMPANY, a Delaware Corporation, (hereinafter referred to as "Assignee"),

W I T N E S S E T H:

WHEREAS, on March 29, 1951, Herman L. Donner, as lessor, executed a certain mining lease (hereinafter referred to as "said lease") to Ronnie B. Smith, as lessee, which mining lease was recorded in the County of Calaveras, State of California, on April 4, 1951, in Book 66, Page 218, Official Records; and

WHEREAS, Assignors desire to assign to Assignee and Assignee desires to acquire the Lessee's interest under said lease of the leasehold estate created thereby.

NOW, THEREFORE, in consideration of the sum of ten dollars ($10.00) and other good and valuable consideration, Assignors do hereby sell, convey, assign, transfer and set over unto Assignee said lease and the leasehold estate created thereby and all other rights and interests vested in Assignors, or either of them, by the terms and provisions thereof. The land demised and affected by said lease and which is the sub-

ject of this assignment, is situated in the County of Calaveras, State of California, and is more particularly described as follows:

> Beginning at the SW cor. of the SE 1/4 of said Sec. 33, thence running northerly along the westerly boundary line of the E½ of said Sec. 33 to a point thereon formed by the intersection thereof with the northerly projection of the easterly line (being the 2nd course of the description therein) of that certain parcel of land described in and conveyed by the deed from George Callahan, et al., to Herman Lee Donner, dated July 24, 1942, and recorded on August 7, 1942, in Book 24 of Official Records at page 214, et seq., Calaveras County Records; thence S. 46° 54' E. to a point in the southerly boundary line of the SW 1/4 of SW 1/4 of said Sec. 34, being the point thereon formed by the intersection thereof with the southerly projection of the easterly line of said above mentioned parcel of land described in and conveyed by said above mentioned deed recorded on August 7, 1942, in Book 24 of Official Records at page 214, et seq., Calaveras County records; thence westerly along the southerly boundary line of said Secs. 33 and 34 to the point of commendement nad containing 120 acres, more or less, described in the above mentioned deed recorded in Book 24 of Official Records at page 214, et seq., Calaveras County Records.
>
> Together with all leads, lodes and veins of quartz and other rock in place that lie or apex therein and all the dips, spurs and angles thereof, including the right to follow the same extralaterally on their downward course into and under the adjoining premises as mentioned and provided in the deed to Herman Lee Donner recorded in Book 36 of Official Records at pages 377 & 378, Calaveras County Records.
>
> Also Together with all rights of ingress and egress owned by lessor over adjoining lands.

RESERVING AND EXCEPTING, however, unto Assignors the royalty of three per cent (3%) of the proceeds from copper and all precious metals recovered from all ores shipped from the said mine. The foregoing shall be based upon smelter recovery and shall be calculated and paid on the same basis, at the same

time and shall be subject to the same reductions and deductions as provided in said lease with respect to the royalty payable to the Lessor.

Assignors warrant and represent that except as above provided said lease and the land and other interests covered thereby are free and clear from any royalties, reservations, liens or encumbrances made or suffered by Assignors. Assignors agree to indemnify and to hold Assignee harmless of and from any loss, costs or expense incurred by reason of any breach of the foregoing warranty.

The terms "Assignors" and "Assignee" wherever used herein shall include, and all the terms and provisions hereof, shall bind and inure to the benefit of the legal representatives, successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this assignment as of the day and year first above written.

/s/ Ronnie B. Smith
Ronnie B. Smith

/s/ M. Carroll Smith
M. Carroll Smith
ASSIGNORS

SIERRA COPPER COMPANY

By /s/ Ronnie Smith, Pres.
ASSIGNEE

STATE OF Mich)
COUNTY OF Kent) SS.

On this 9th day of July, 1951, before me, the undersigned, a Notary Public in and for said County and State, personally appeared RONNIE B. SMITH, personally known to me to be the person described in and whose name is subscribed to the foregoing instrument, and that he duly acknowledged to me that he executed the same.

WITNESS my hand and official seal.

(SEAL) /s/ Frank J. Marsden
Notary Public in and for said County and State.

* * * * *

STATE OF Mich)
COUNTY OF Kent) SS.

On this 9th day of July, 1951, before me, the undersigned, a Notary Public in and for said County and State, personally appeared M. CARROLL SMITH, personally known to me to be the person described in and whose name is subscribed to the foregoing instrument, and that she dully acknowledged to me that she executed the same.

WITNESS my hand and official seal.

(SEAL) /s/ Frank J. Marsden
Notary Public in and for said County and State.

STATE OF California)
COUNTY OF Los Angeles) SS.

On July 10th, 1951, before me, the undersigned, a Notary Public in and for said County and State, personally appeared Ronnie Smith, known to me to be the President of the Corporation that executed the within Instrument, known to me to be the person who executed the within Instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the same.

WITNESS my hand and official seal.

(SEAL) /s/ Martin J. Kinvan
Notary Public in and for said County and State.

9. Legal Description of Property:

(a) Portions of Secs. 33 and 34, T. 2 N., R. 11 E., M. D. B. & M., in Calaveras County, California, and particularly described as follows:

Beginning at the SW cor. of the SE 1/4 of said Sec. 33, thence running northerly along the westerly boundary line of the E½ of said Sec. 33 to a point thereon formed by the intersection thereof with the northerly projection of the easterly line (being the 2nd course of the description therein) of that certain parcel of land described in and conveyed by the deed from George Callahan, et al., to Herman Lee Donner, dated July 24, 1942, and recorded on August 7, 1942, in Book 24 of Official Records at page 214, et seq., Calaveras County Records; thence S. 46° 54' E. to a point in the southerly boundary line of the SW 1/4 of SW 1/4 of said Sec. 34, being the point thereon formed by the intersection thereof with the southerly projection of the easterly line of said above mentioned parcel of land described in and conveyed by said above mentioned deed recorded on August 7, 1942, in Book 24 of Official Records at page 214, et seq., Calaveras County records; thence westerly along the southerly boundary line of said Secs. 33 and 34 to the point of commencement and containing 120 acres, more or less, inclusive of the parcel of land containing 40.230 acres, more or less, described in the above mentioned deed recorded in Book 24 of Official Records at page 214, et seq., Calaveras County, Records.

10. Geology and Topography:

The Donner property is located in the SW¼ of Section 33, T 2 N., R. 11 E., M. D. B. & M., Calaveras County, California, approximately seven miles due west of Copperopolis and four and one-half miles southwest of the Mountain King Mill. The property can be reached from Copperopolis via Highway No. 4 to the junction with the Quail Hill Mine road to the Quail Hill Mine from which point approximately one mile of road will be required. The distance from the property to the Mountain King Mill is approximately eleven miles.

The Donner property embraces a mineralized vein 6 feet wide striking S. 50° E. and dipping 63° to the West. The footwall is mainly an altered slate of Jurassic age belonging to the Meta-sediments of the foothill belt. The hanging wall is a Meta-Andesite of Jurassic age belongting to the Amador series. The vein material is quartz, iron pyrite and chalcopyrite, with occasional kidneys of manganese oxide. The surface exposure of the vein is an iron gossan.

11. Existing Development:

(a) The property has been partially developed by a shaft 100 feet deep dipping 63° to the west. A sample of ore containing chalcopyrite and pyrite taken across the vein for a width of three feet at a depth of forty feet assayed 9.97% copper, 70 cents gold and 36 cents silver per ton. A sample of the dump containing all the material from the shaft at that depth assayed 6.22% copper, $1.40 gold and $1.88 silver per ton. A sample of the dump containing material taken from the shaft at a depth of sixty feet assayed 4.75% copper.

At a depth of sixty feet the vein was five feet in width, two feet of which was high grade chalcopyrite ore on the hanging wall with three feet of low grade sulfide ore on the footwall. The high grade ore assayed 17.6% copper and the low grade ore assayed 2.5% copper, certificate dated February 26, 1951.

At a depth of 58-61 feet in the shaft, a cut sample across the vein 2½ feet wide assayed 10.10% copper and 8.2% zinc. At a depth of 61-67 feet in the shaft a vein over 5 feet wide is exposed, 3 feet of which assayed 21.8% copper. At a depth of 63-67 feet in the shaft the vein was more than 5 feet wide, 3 feet of which assayed 12.6% copper and 7.4% zinc. At a depth of 67-69 feet in the shaft a 3 foot section of the ore assayed 10.10% copper and 10.6% zinc. At a depth of 70 feet in the shaft, 22" of ore assayed 19.5% copper and sample of material taken from a section in shaft between the depth of 67-70 feet assayed 9.3% copper. Between the depths of 70-73 feet, the ore in the footwall under the high grade streak, assayed 7.6% copper. The high grade streak, above the low grade ore, 22" wide, assayed 12.4% copper. At depths between 72-75 feet all the ore from that section assayed 6.5% copper. All of the ore taken from the section in the shaft between the depths 83-85 feet assayed 7.65% copper.

At a depth of 85 feet the shaft passed out fo the high grade ore, into an altered Andesite containing large crystals of quartz. The ore chute was dipping to the northwest at an angle of approximately 12° from the horizontal.

A drift on the 100' level on the vein under the ore chute encountered the ore at a point 28 feet from the shaft. An upraise at this point is all in ore. The face of the upraise as of August 31 was 30 feet above the floor of the north drift. A sample taken of 2 feet of chalcopyrite ore 16 feet from the floor of the drift assayed 20.4% copper and a sample of a 6 inch seam of black material later identified as Tenorite assayed 33.3% copper. A 16 inch streak of chalcopyrite ore in the roof or back of the upraise 28 feet from the floor of the north drift assayed 25.9% copper. The south drift was driven in the footwall of the vein. All of the material encountered for a distance

11. Existing Development: Cont'd.

(a) cont'd.
of 36 feet from the shaft was slate impregnated with masses of pyrite, the copper tenor of which was about 1%. The drift was run under the high grade ore chute exposed in the shaft.
shoot
At a distance of 40' down the shaft, the content of the copper began to increase; specks of tenorite appeared between the pyrite crystals. An average sample of all the material taken from the drift from 42-44 feet assayed 2.5% copper and a cut sample of the face at 48 from the shaft assayed 3% copper. It is believed that an upraise at this point will encounter the high grade ore chute at approximately 18 feet above the top of the drift. shoot

(b) Assay certificate to be submitted when photostated.

(c) A two compartment shaft, inclination 63° to west from the horizontal, a level at 100 feet. A drift to the northwest on the vein 40 feet long, an upraise from northwest drift 28 feet from shaft, face 30 feet above floor of drift. A drift to the southeast face 48 feet from shaft, a cross cut to the west from south drift 12 feet in length. 100 feet along the depth of the vein 63° from surface to 100 foot level, all workings are open, in good condition and accessible.

12. If Exploration or Development of Mine is Anticipated:

(a) Proposed work - to drift on the vein 100 feet each way from the shaft and cross cut to the west 50 feet and to the north 50 feet. This work is being done under an exploration loan Docket DMA 1131X and Idm-E104. Under this application for a development laon it is proposed to sink the shaft an additional 100 feet and drift 100 feet each way from shaft on the vein, also to run up raises 50 feet apart on the 100 foot level, install pockets and stope ore from 100 foot level to surface. Make repairs on Mt. King Mill, install scales and build ramp for unloading - estimated cost $4500.00.

(b) See sketch of proposed work shown in red on attached map.

(c) See attached cost sheets.

13. Mining:

(a) Shaft sinking and drifting to be done with air drills. Mining to be done by under ground stoping methods.

(b) Shaft sinking including timbering $75,00 per foot, drifting $25.00 per foot.

(c) October 15, 1951.

14. Milling:

(a) Ore is to be milled at Mountain King Mill at Hudson, 6 miles east of Donner property. (See Map) Ball mill for crushing, concentration by selective flotation.

(b) Maximum capacity 500 tons per day, minimum 50 tons per day, 8 tons of ore into one ton of concentrates. Two separate concentrates to be made, zinc sulphides and copper sulphides.

(c) Milling costs estimated at $3.00 per ton, transportation cost mine to mill, estimated at $1.25 per ton.

(d) Tailings disposal - an existing tailing pond below and adjacent to mill.

(e) Source of water from existing storage reservoir adjacent and below mill; water to be pumped by electric motor to mill, head 75'.

(f) Copper concentrates to be marketed at plant of American Smelting and Refining Company at either Tacoma, Washington, or Salt Lake City, Utah. Zinc concentrates to be marketed at Amarillo, Texas. Estimated cost of transportation of copper concentrates and base smelting charges $2.53 per ton. Estimated cost of transportation of zinc concentrates and base smelter charges $7.50 per ton.

15. Additional Data not previously covered:

The following is an estimate of probable ore and ore in sight at the Donner Mine and the value of the copper and zinc content after concentration in the Mt. King Mill, and an estimate of the smelting and transportation charges thereon. This estimate was amde by Mr. Roy G. Mead, Consulting Engineer of Glendale, California.

Since July 13th drifts have been driven north and south from the shaft a distance of 22 feet which discloses the fact that the vein or mineralized zone is approximately 16½ feet in width of which 2½ feet is high grade copper ore, carrying approximately 1% zinc and 14 feet high grade zinc ore carrying 1½% copper. The calculated copper and zinc values being as follows: 3.85% copper and 7.8% zinc.

In order to economically process ore of the aforesaid character it would be necessary to make two types of concentrates, one containing copper sulphides and the other zinc sulphides. Such an operation can be accomplished in the Mt. King Mill by selective flotation thereby making a concentrate which can be reduced to copper at a smelter treating copper ores and a zinc concentrate which can be reduced to zinc at a smelter treating zinc ores.

In order to determine whether or not the aforesaid operation would be economical on the character of ore under consideration, an inspection was made of the Penn Mill at Compo Seco, 25 miles north of the Donner Mine where complex ores similar in character to those at the Donner Mine are being milled and concentrated at a profit.

The management of the Penn Mill permitted inspection of the mill operations and furnished data pertaining to the ore concentration, smelter charges and other pertinent data.

With the aforesaid data in hand, the following calculation showing milling losses, freight rates, base smelting charges and payments for copper and zinc was made.

It is believed that operations at the Mt. King mill on the Donner ore will result in a higher copper and zinc recovery than at the Penn Mill which would, of course, result in higher grade concentrates.

The Donner Mine is located on a mineralized copper and zinc belt extending from the Napoleon Mine located approximately 6 miles to the southeast to the Penn Mine located 25 miles to the

northwest through the Quail Hill Mine located one mile to the southeast. This mineralized belt is marked by outcropping iron gossan indicative of copper and zinc deposits below the surface at the Napoleon, Quail Hill and Penn mines. Gossan outcrops of oxidized iron occur for several hundred feet north and south of the Donner shaft.

Taking into consideration the highly mineralized gossan outcrop and the occurrence of high grade ore in the Donner shaft encountered 15 feet below the surface which extends to the present bottom of the shaft 100 feet below the surface, it is believed that probable ore of similar grade to that exposed in the Donner workings will be developed for more than 500 feet north and south of the Donner shaft.

Annexed hereto is a complete analysis of the cost of operation of the Donner mine, and the probable return to be expected from the operation thereof.

22. Agreement as to Compensation for Services Rendered or to be Rendered to Applicant in Connection with Application and/or Loan:

Services of the law firm of Johnson & Abney rendered in connection with the preparation of this application are to be compensated by issuance of stock in the applicant corporation.

/s/ Ronnie Smith, Pres.

TOTAL COSTS PER TON OF ORE INCLUDING MILLING AND SMELTER LOSSES

Mining	$ 3.00
Trucking ore to mill	1.25
Milling	3.00
°Copper concentrates	2.53
°Zinc concentrates	7.50
Royalty	2.77
Insurance and overhead	1.00
	$21.05

°These items include smelting charges, mill losses, penalties, R.R. freight from Farmington to smelter and trucking from mill to Farmington.

ESTIMATED TONNAGE OF PROBABLE ORE ABOVE 100 FOOT LEVEL

Width of ore body	$16\frac{1}{2}$ feet
Length of ore body	200 "
Vertical extent of ore body 15 feet below surface to 100 foot level	85 "

$$\frac{16\frac{1}{2} \times 85 \times 200}{8 \text{ cubic feet per ton}} = 35{,}062 \text{ tons}$$

Ore mined and now above ground	580 tons
	35,642 tons

Above tonnage when concentrated at ratio of 8 to 1 will result in 4,455 tons of copper concentrates and 4,455 tons of zinc concentrates.

PERCENTAGE OF COPPER AND ZINC IN PROBABLE ORE BASED ON CUT SAMPLES AVERAGED WITH CAR SAMPLES

High Grade Ore		Low Grade Ore
17% copper - 1% zinc / $2\frac{1}{2}$ feet in width	+	1.5% copper - 9% zinc / 14 feet in width

$$\frac{(17 \times 2\frac{1}{2}) + (14 \times 1.5)}{16\frac{1}{2} \text{ feet in width}} = 3.85\% \text{ copper}$$

$$\frac{(2\frac{1}{2} \times 1\%) + (14 \times 9\%)}{16\frac{1}{2} \text{ feet in width}} = 7.8\% \text{ zinc}$$

FORMULA FOR COMPUTING VALUE OF COPPER

Value of copper in 35,642 tons of ore before deducting any mining transportation or treatment charges and for which smelter settlement is made; determined by the following formula which is based on mill recovery at the Penn Mine and a smelting contract for treating copper and zinc concentrates under which the mine is now operating.

FORMULA

Tons of ore x 2,000 x 90% mill recovery x % copper in ore minus tons of copper in concentrates x deduction of 1/2 unit or 10 pounds of copper per ton of concentrates x price per pound of copper less 3 cents per pound deducted by smelter.

((35,642 x 2,000 x .90 x .0385) - (4,455 x 10)) $.215 = $521,470

$$\frac{\$521,470}{35,642 \text{ tons}} = \$14.63 \text{ per ton. Net value per ton before royalty}$$

FORMULA FOR COMPUTING VALUE OF ZINC BASED ON THE OPERATIONS AT PENNMINE AS SET UP IN THE COMPUTATION FOR COPPER

Tons of ore multiplied by percent of zinc in ore x 2,000 to reduce tons to pounds per ton x 80.5% mill recovery x 80% of zinc in concentrates pad for by smelter x price per pound of zinc

35,642 x .078 x 2,000 x.644 x 17.5 = $622,736

$$\frac{\$626,593}{35,642 \text{ tons}} - \$17.58 \text{ per ton of ore}$$

Gold and silver values recovered in concentrates @ $3.00 per ton of ore.

SUMMARY SHOWING GROSS VALUE OF METALS BEFORE ROYALTY

	Value 35,642 tons	Value Per Ton of Ore
Copper	$521,470 from page 2	$14.63
Zinc	626,593 " "	17.58
Gold and silver	106,926 " "	3.00
	$1,254,989	$35.21

TRANSPORTATION AND SMELTING CHARGES SUBJECT TO ROYALTY PARTICIPATION

COPPER CONCENTRATES:

Smelter charges including trucking, freight on concentrates and penalties.

Base smelting charge	$ 8.00 Per Ton Conc.
Transportation	12.27
R.R. freight to Tacoma, Wash. $10.32	
Trucking to Farmington $1.95	
	$20.27

4,455 tons of copper concentrates x 20.27 = $90,302

90,302 divided by 35,642 = $2.53 per ton of ore

ZINC CONCENTRATES:

Base smelter charge	$36.00 per ton fo Conc.
Transportation	16.37 "
R.R. freight to Amarillo, Texas $14.42	
Trucking to Farmington $1.95	
Miscellaneous penalties	7.63
	$60.00

4,455 tons of zinc concentrates x $60.00 = $267,300

$267,300 divided by 35,642 = $7.50 per ton of ore

COPY

ROYALTY DEDUCTIONS

Charges against copper concentrates	$ 90,302	$ 2.53 per ton of ore
" " zinc "	267,300	7.50 " " " "
	$357,602	$10.03
Gross value of copper and zinc concentrates including gold and silver in concentrates at smelter	$1,254,989	$35.21 per ton of ore
Deductions for transportation and base smelting charges	357,602	10.03 " " " "
	$ 897,387	$25.18 " " " "
Royalty 11%	98,712	2.77 " " " "
Net value before deducting mining and milling costs	$ 798,675	$22.41 " " " "
Mining, milling and trucking costs on 35,062 tons	289,261	8.25 " " " "
Milling and trucking costs on 580 tons	2,465	4.25 " " " "
Net profit before taxes	$ 506,849	$14.16 " " " "

ORE IN SIGHT

Since the above calculations were made ore was encountered at the face of both the north and south drifts 22 feet each way from the shaft by cross-cutting from the face of the drifts to the hanging wall along which the high grade ore was encountered in the shaft, also low grade copper ore containing zinc was encountered from the shaft to the face of each drift. Therefore, ore in sight for a distance of 22 feet on each side of the shaft and in the shaft from 15 feet below the surface to the 100 foot level has been established. The computation for ore in sight is as follows:

$$\frac{85 \times 16\tfrac{1}{2} \text{ feet} \times 44 \text{ feet}}{8 \text{ cu. feet per ton}} = 7{,}712 \text{ tons}$$

7,712 tons x $14.16 (net profit per ton of ore)	$109,200
Ore mined and above ground 580 tons at $18.41	10,677
Value of ore in sight and on the dump	$119,877
Estimated probable ore 35,062 tons plus 580 tons on dump	506,849
Ore in sight and on dump	119,877
Probable ore as of 8/4/51	$386,972

M I L L L E A S E

THIS AGREEMENT made as of the 6th day of December, 1950, by and between MT. KING MILL & MINE, a limited partnership, having its principal office at 410 Thorne Avenue, Fresno, California, (hereinafter called the "First Party"), and RONNIE B. SMITH, c/o Petroleum Reserve Corporation, Tower Petroleum Building, Dallas, Texas, (hereinafter called the "Second Party"),

W I T N E S S E T H:

In consideration of the mutual covenants and agreements contained herein and in further consideration of the sum of One Dollar ($1.00) paid by the Second Party to the First Party, receipt whereof is hereby acknowledged, the parties hereto for themselves, their successors, executors, administrators and assigns do hereby mutually covenant and agree as follows:

FIRST: First Party represents to Second Party that it has the right to lease the mill hereinafter described to the extent herein set forth, subject to confirmation thereof by the United States District Court for the Southern District of California, Central Division, by virtue of the following instruments:

(1) Agreement for Sale of Property between O.T. GILBANK, TRUSTEE FOR Jumbo Consolidated Mining Company, Bankruptcy 33788-J (D.C.S.D., California Cent. Div.)

and CHAS. W. STEWART: and

(2) Order made by the Referee in Bankruptcy for the U. S. District Court of the Southern District of California, Central Division, July 23, 1942, approving said Agreement of Sale of Property; and

(3) Assignment by said CHAS. W. STEWART to First Party dated October 3, 1942, which said assignment was approved and confirmed by the above mentioned court by an order entered in the Bankruptcy Estate above mentioned on the 2nd day of September, 1942; and

(4) An order of said Referee in Bankruptcy to be obtained confirming and authorizing this lease.

First Party agrees that promptly upon the execution hereof it will file or cause to be filed an appropriate petition before said Referee in Bankruptcy for an order confirming and authorizing this lease, and that it will diligently prosecute such petition.

SECOND: First Party hereby leases, grants and gives to Second Party the full right and title to use for the purpose of milling copper and other ores, excluding gold and silver ores, and for that purpose to take possession of, the mill described in the above mentioned Agreement for Sale of Property and known as the MT. KING MILL and located on the Mt. King Quartz Lode Mining Claim, designated as Lot 3604-A, constituting a portion of Sections 19 and 30, Township 2 North of Range 12 East, M.D.B.M., covered by patent dated

November 12, 1900 recorded December 20, 1900 in Book Four of Patents at Page 294 Et. Seq., in the Office of the Recorder for Calaveras County, California. First Party also grants to Second Party such rights-of-Way and other easements as are necessary to get access to and operate said mill.

THIRD: Second Party shall have the right to alter the said mill and adapt the same to its operations and to make any additions to said mill which shall be expedient for that purpose, but at the sole expense of the Second Party; providing however that the Second Party shall have the right at any time during the term of this lease and thirty (30) days thereafter to remove from said mill any and all machinery and equipment and properties heretofore or hereafter placed by the Second Party therein, but leaving the said mill in good order and condition. Within thirty (30) days of expiration or termination of this lease, Second Party shall place and restore the said mill in as good order and condition and arrange and rearrange, install and reinstall machinery and equipment of said mill so that same shall be in same location and condition as when taken over from First Party, damage by fire, earthquake or action of other elements, as well as ordinary wear and tear excepted; provided, however, that the exclusion of ordinary wear and tear shall not excuse CWS RBS the failure to return the machinery and equipment in substantially the same CN RBS condition. as same are on the date of execution hereof. CWS CN

FOURTH: Second Party agrees to pay the First

Party the sum of five hundred dollars ($500.00) per month as a standby charge for the use of the mill for the first ninety (90) days after the final order of the Referee in Bankruptcy confirming and authorizing this lease. Second Party shall do no milling prior to this final order being obtained.

Within this ninety (90) day period the Second Party shall have the option to cancel this contract. The aforementioned sums shall be paid First Party by Second Party on or before the first of each successive thirty (30) day period if Second Party has not theretofore cancelled this contract.

FIFTH: After the aforementioned ninety (90) day period, Second Party agrees to pay First Party as and for rental for the use of said mill a minimum monthly rental of one thousand dollars ($1,000.00) per month. Said minimum monthly rental shall cover milled tonnage up to an average tonnage during such month of fifty (50) tons per day. For milled tonnages in excess of an average of fifty (50) tons per day during each month, rental for said mill will be paid as follows with respect to tonnages between the figures indicated:

A monthly average of more than 50 tons, but less than 100 tons per day	1.50 per ton over 50 tons
A monthly average of more than 100 tons, but less than 200 tons per day	1.00 per ton over 100 tons
A monthly average of more than 200 tons, but less than 300 tons per day	.75 per ton over 200 tons
A monthly average of more than 300 tons, but less than 500 tons per day	.60 per ton over 300 tons

A monthly average of more than 500 tons and over per day ..... .45 per ton over 500 tons

CWS

The aforementioned minimum rental to be paid by check by Second Party to First Party on or before the first of each month. Any excess of the computed rental over the minimum rental to be paid by check by Second Party to First Party on or before the tenth of each month following the month for which payment is made. All payments will be supported by copies of scale weights and flow sheets on total tonnages hauled to said mill. First Party shall have the right to inspect the records of the Second Party for the purpose of ascertaining the quantity of ore milled at any reasonable time during business hours.

SIXTH: Second Party agrees to purchase all inventories of supplies, materials and chemicals now in possession of First Party which are suitable for use by Second Party in its milling operations. The purchase price shall be based on the current market value of said inventories with the present condition thereof to be taken into consideration. Said inventory shall be made and evaluated by representatives of both parties signatory hereto within thirty (30) days of the execution hereof, and payment by Second Party shall be accomplished within ten (10) days.

SEVENTH: Second Party agrees to keep the machinery and equipment of the mill in good order and repair as the

same are at the date of execution hereof, damage by fire, earthquake or action of other elements excepted, and also excepting ordinary wear and tear provided such machinery CWS CN and equipment are in substantially the same operative condition as same are on the date of execution hereof.

EIGHTH: Second Party agrees to keep said mill free from any claims for labor, materials and equipment pertaining to Second Party's operations hereunder; to provide Workman's Compensation Insurance and Liability Insurance and conduct all operations in a good and workmanlike manner so as not to be detrimental to the interests of the First Party.

NINTH: First Party agrees that Second Party shall have the right to use all water necessary from present facilities to conduct the necessary milling operations, and that the milling rights herein leased and granted to Second Party shall be exclusive during the continuance of this lease. First Party further agrees that provided Second Party performs his obligations hereunder, Second Party may quietly and peaceably enjoy the leased premises during the term hereof. Any additions to the present system of water supply shall, on termination of this lease remain in place and become the property of the First Party.

TENTH: Second Party agrees to take possession of all other properties comprising the MT. KING MINE properties; to operate the water pump in the mine of First Party on said

properties, but only to the extent required to keep the water at or near its level on date of execution hereof; to maintain a watchman on said properties at all times as required by First Party; to protect safely the said property and equipment thereon and to provide public liability insurance with limits of twenty-five thousand dollars ($25,000.00) and fifty thousand dollars ($50,000.00). The Second Party shall not in any way whatsoever be obligated to carry on any gold mining operations on the property, but will be required to maintain the timbering in the aforementioned mine and shaft down to the present water level in substantially the same order and repair as the same are on the date of execution of this agreement, but Second Party shall have no liability for any repairs or any collapse of any timbering below the present water level.

ELEVENTH: The term of this lease shall be for a period of one year after the final order of the Referee in Bankruptcy confirming and authorizing this lease. Second Party is hereby given the exclusive option to renew this lease for an additional period of one year on the same terms as herein provided for the first year except that during such second year, the minimum monthly rental shall be $1,250.00 per month, which minimum rental shall also cover milled tonnage of up to an average monthly tonnage of 50 tons per day; provided, however, this option shall be of no force or effect should the property leased hereby be sold on or before ten (10)

days prior to the expiration of the first yearly term hereof. Said option to be exercised on or before ten (10) days prior to the expiration of the first yearly term hereof by notice in writing to First Party.

TWELFTH: First Party agrees to maintain adequate fire insurance on the property leased hereby, and to devote the proceeds of any such insurance to the repair or replacement of any property affected. First Party agrees to pay all real and personal property taxes pertaining to the leased property; provided, however, Second Party shall pay all taxes on the personal property which he places on the leased premises and which he has the right to remove therefrom.

THIRTEENTH: Notwithstanding anything to the contrary herein contained, Second Party may at its option cancel this lease upon giving to First Party thirty (30) days' written notice of its intention to so do and upon payment to First Party of all rentals that are thereupon due and upon payment of one thousand dollars ($1,000.00), which shall allow the Second Party to operate until the end of said thirty (30) day period, pursuant to the terms and conditions of this lease. Upon such termination the Second Party shall return to First Party all machinery and equipment in as good condition as same are on the date of execution hereof, or shall replace the same with like equipment in equally good condition, damage by fire, earthquake or action by other elements excepted, and

also excepting ordinary wear and tear provided such machinery
CWS CN RBS
and equipment are in substantially the same operative condition as the same are on the date of execution hereof.

FOURTEENTH: First Party agrees to prepare as soon as practicable detailed schedule of machinery and equipment constituting the mill, and a separate detailed schedule of other machinery and equipment on said properties and present same to Second Party. When approved by Second Party (which approval will not be unreasonably withheld) such schedules shall then and thereafter be binding upon the parties hereto
RBS CWS CN
for the purpose of this lease. Said schedules to be approved by Second Party within Ten (10)days of the date of completion of the schedules.

FIFTEENTH: Second Party agrees to pay all expenses of operating and to indemnify First Party against any liability therefor.

SIXTEENTH: In the event Second Party shall violate any condition, covenant or provision hereof on his part to be kept, observed or performed, then and in such event First Party shall in addition to all other rights and remedies provided by law, have the right to cancel this agreement upon thirty (30) days' written notice to Second Party; provided, however, such notice of cancellation shall not be effective if within ten (10) days of the receipt of such notice Second Party commences and thereafter diligently prosecutes the remedying of the default. Such cancellation shall not, however, relieve the Second Party from the obligation of performing any such covenant, condition or provision which should have been performed prior to such breach. Nothing herein contained

COPY

to be construed to limit or qualify the right of the Second Party to remove any and all properties belonging to Second Party under the terms and conditions of this lease herein provided.

SEVENTEENTH: Upon the termination of this lease Second Party shall have the right to remove any and alloof its machinery or equipment that may have been installed or used on the premises in connection with its operations. Said removal to be accomplished within thirty (30) days of the termination of this agreement.

EIGHTEENTH: It is understood that this lease and/or any of the rights or privileges granted hereunder are not to be sold, assigned or hypothecated by the Second Party without the written consent of the First Party; provided, however, Second Party may without such consent transfer this lease in its entirety to a corporation in which Second Party owns a majority of the common capital stock, RCS CWS CN No. such transfer however, shall relieve Second Party of his obligations and liabilities hereunder.

NINETEENTH: It is understood that First Party has outstanding an offer to sell the leased property at the price and on the terms and conditions set forth in a letter to Roy G. Mead dated November 7th, 1950. First Party agrees

that, during the term of this lease, he will not sell or offer
RBS CWS CN
to sell the leased property for less money or on more favorable conditions without giving Second Party written notice that First Party proposes to sell the leased property on reduced terms, and giving Second Party the prior right and option to purchase the leased property on such reduced terms by notification to First Party within ten (10) days of the receipt of such notice. In the event Second Party does not exercise such
RBS CWS CN
option within the ten (10) day period, First Party may sell the leased premises but not at a lesser price or more favorable conditions unless Second Party is given a further notice and option to purchase as herein provided.

TWENTIETH: All notices by First Party to Second Party shall be given by mailing written notice, registered mail, receipt requested, to Ronnie B. Smith, c/o Petroleum Reserve Corporation, Tower Petroleum Building, Dallas, Texas. All notices by Second Party to First Party shall be given by mailing written notice, registered mail, receipt requested, to First Party, P. O. Box 886, Fresno, California.

IN WITNESS WHEREOF, this agreement has been executed by the parties hereto at Fresno Cal. the day and year first hereinabove written.

FIRST PARTY: MT. KING MILL & MINE

BY /s/ Chas W. Stewart
General Partner

BY /s/ Claude Nuss
General Partner

SECOND PARTY: /s/ Ronnie B. Smith
Ronnie B. Smith

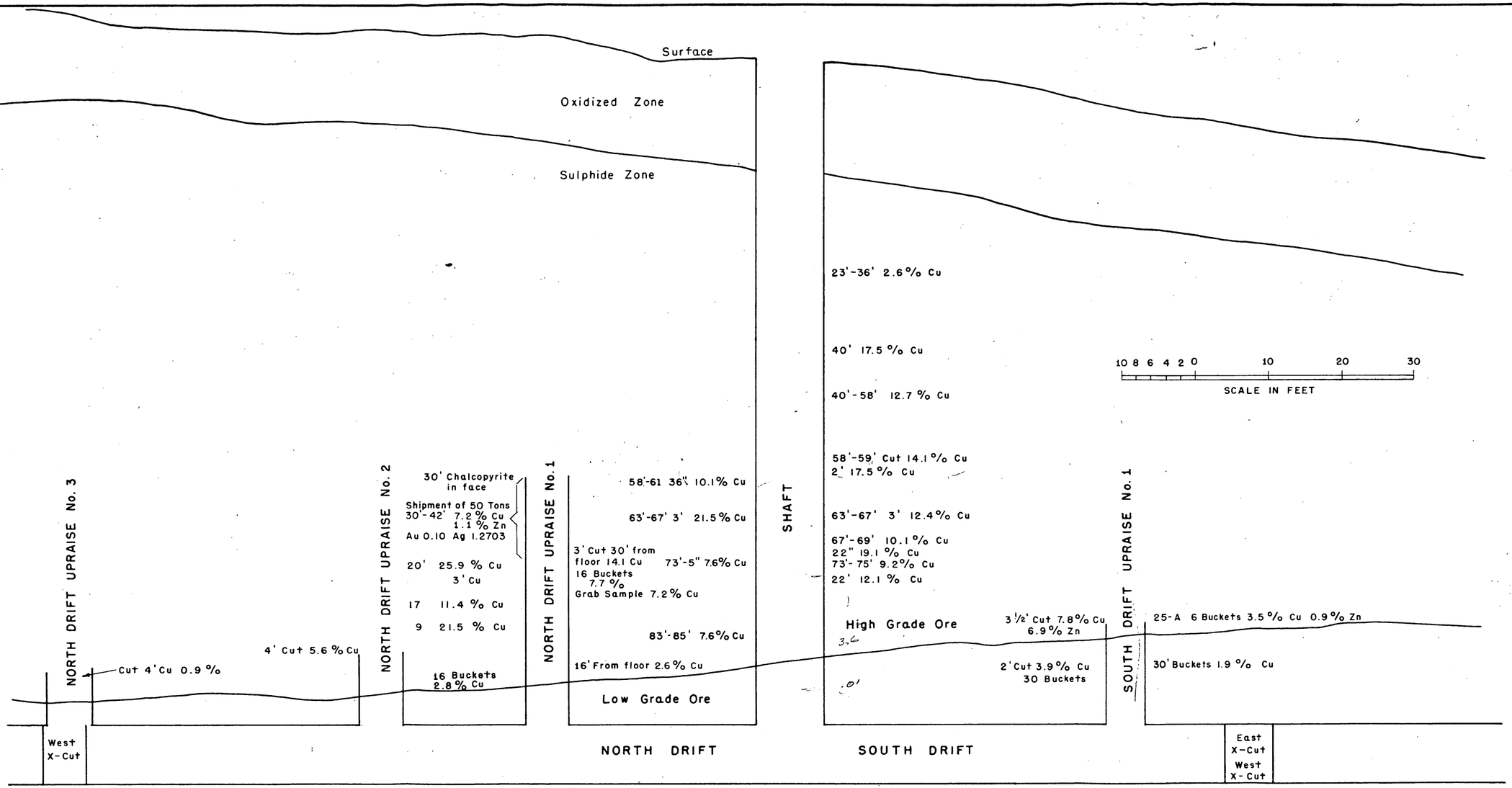
STATE OF CALIFORNIA,)
) SS.
County of Fresno)

On this Sixth day of December in the year one thousand nine hundred and Fifty before me, D. W. McIntire a Notary Public in and for said County and State residing therein, duly commissioned and sworn, personally appeared Chas. W. Stewart and Claude Nuss known to me to be the person s described in, whose name s are subscribed to and who executed the within instrument, and acknowledged that they executed the same.

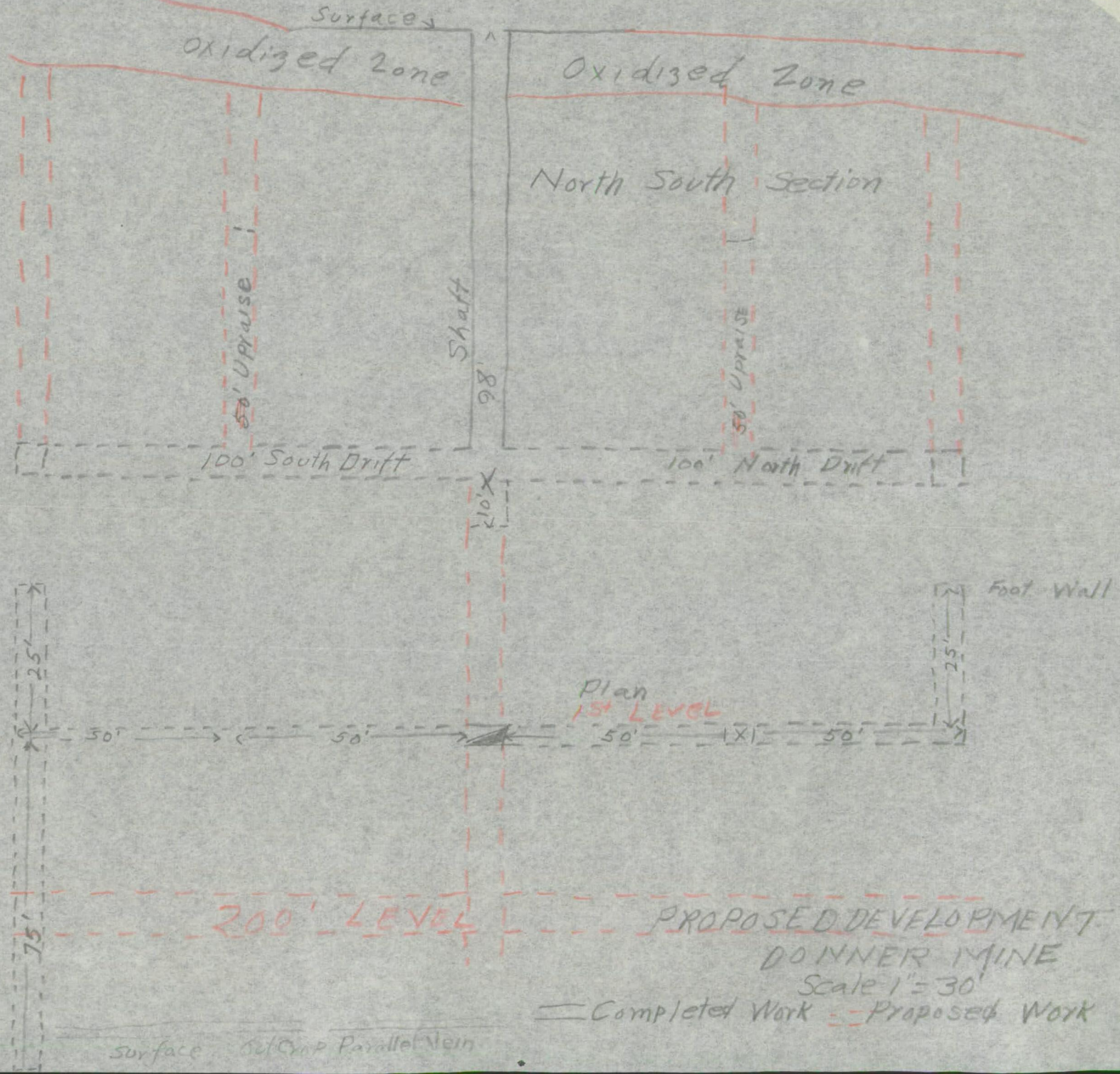
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in said County, the day and year in this Certificate first above written.

/s/ D. W. McIntire
Notary Public in and for said County and State
MY COMMISSION EXPIRES DEC. 9, 1950

Kilner Stationery & Office Equipment
1335 Fulton St., Fresno



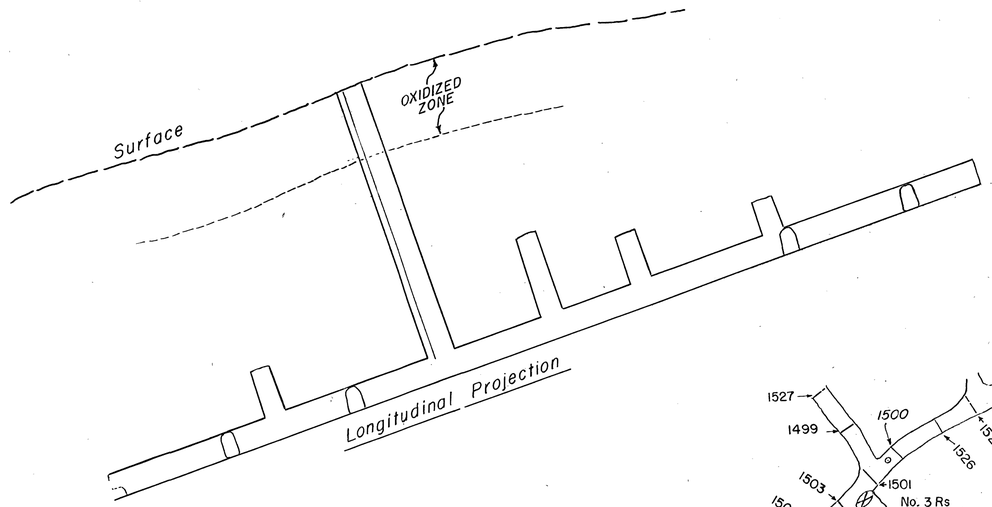
DRAWN Stan Pruss	NORTH - SOUTH SECTION DONNER MINE	
TRACED Stan Pruss	S.E. 1/4, SEC. 33, T. 2 N., R. 11 E., M.D.M.	CALIFORNIA
APP'D.	THE RALPH M. PARSONS COMPANY LOS ANGEL	871-AE2
DATE		REV. 0

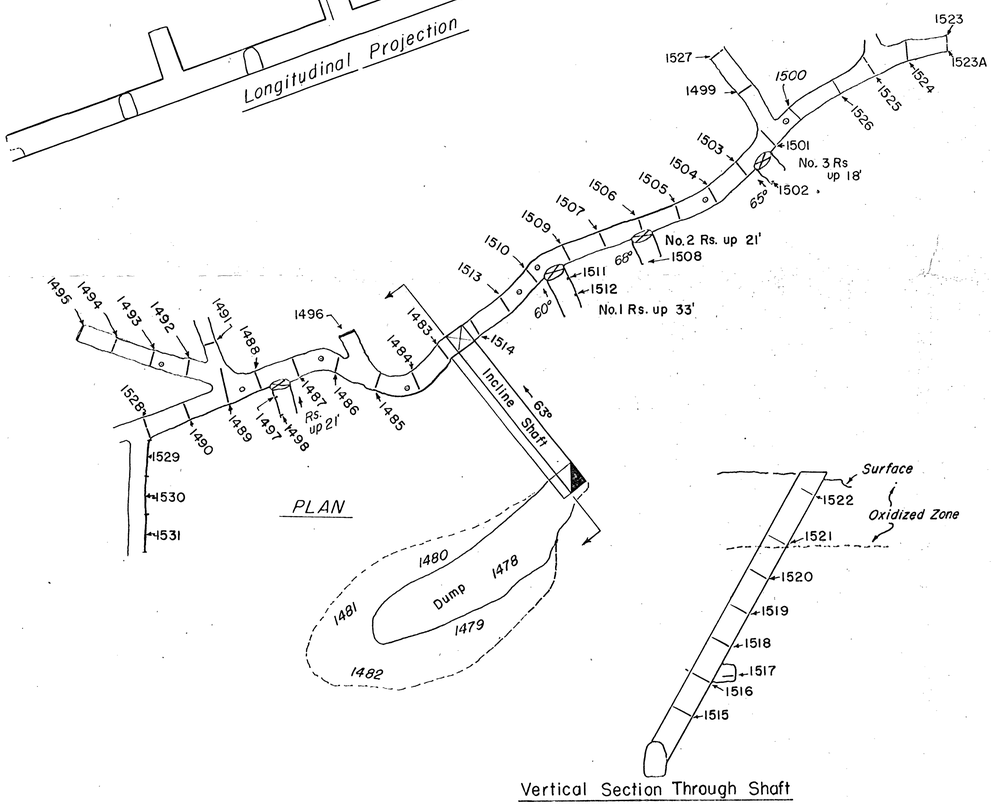

Surface
Oxidized Zone
Oxidized Zone
North South Section
Shaft
98'
50' Uprise
50' Uprise
100' South Drift
100' North Drift
10'
Foot Wall
25'
25'
Plan
1st LEVEL
50'
50'
50'
50'
200' LEVEL
75'
PROPOSED DEVELOPMENT
DONNER MINE
Scale 1" = 30'
Completed Work
Proposed Work
Surface Outcrop Parallel Vein

ASSAYS

Sample Number	Width	% Cu.	% Pb	% Zn	Au. Oz./T	Ag. Oz./T	Remarks
1478		2.15	*0.1	0.2	0.005	0.40	Dump
1479		3.23	*0.1	0.3	0.005	0.60	Dump
1480		2.83	*0.1	0.2	0.005	0.60	Dump
1481		0.60	*0.1	0.2	Tr.	0.20	Dump
1482		1.71	*0.1	0.2	Tr.	0.30	Dump
1483	4.0	0.06	*0.1	0.1	Tr.	Tr	
1484	4.5	0.14	*0.1	0.2	Tr.	Tr	
1485	6.3	0.39	*0.1	0.2	Tr	0.20	
1486	4.2	0.27	*0.1	0.2	Tr	Tr	
1487	3.4	2.74	*0.1	0.2	0.01	1.10	
1488	3.8	1.25	*0.1	0.2	Tr.	Tr.	
1489	8.5	1.20	*0.1	0.2	0.005	0.40	
1490	5.0	1.22	*0.1	0.4	0.005	0.40	
1491	3.5	0.40	*0.1	0.3	Tr.	Tr.	
1492	3.3	3.73	*0.1	0.4	0.01	0.50	
1493	4.7	0.46	*0.1	0.3	Tr.	Tr.	
1494	3.6	0.14	*0.1	0.4	Tr.	Tr.	
1495	6.3	0.41	*0.1	0.5	Tr.	Tr.	
1496	2.5	0.06	*0.1	0.5	Tr.	Tr	
1497	2.0	4.51	*0.1	0.4	0.01	0.65	
1498	4.0	3.50	*0.1	0.4	0.01	0.45	
1499	4.5	0.11	*0.1	0.6	Tr.	Tr.	
1500	4.3	0.25	*0.1	0.5	Tr.	Tr.	
1501	6.0	0.09	*0.1	0.4	Tr.	Tr.	
1502	4.2	0.09	*0.1	0.3	Tr.	Tr.	
1503	4.2	0.34	*0.1	0.3	Tr.	0.20	
1504	4.7	0.16	*0.1	0.2	Tr.	Tr	
1505	5.0	0.14	*0.1	0.2	Tr.	Tr.	
1506	3.5	0.10	*0.1	0.2	Tr.	Tr.	
1507	4.0	2.21	*0.1	0.2	0.005	0.50	
1508	3.5	0.14	*0.1	0.2	Tr.	Tr.	
1509	5.4	0.98	*0.1	0.2	0.005	0.25	
1510	5.3	0.78	*0.1	0.2	Tr.	0.20	
1511	2.5	8.28	*0.1	1.1	0.015	1.50	
1512	3.0	10.73	*0.1	2.6	0.02	2.20	
1513	4.4	0.27	*0.1	0.3	Tr.	Tr.	
1514	3.8	*0.02	*0.1	0.3	Tr	Tr.	
1515	4.9	0.10	*0.1	0.2	Tr	Tr.	
1516	6.5	3.60	*0.1	0.3	0.005	0.50	
1517	3.0	0.12	*0.1	0.3	Tr.	Tr.	
1518	4.2	1.45	*0.1	0.3	0.005	0.25	
1519	4.8	1.11	*0.1	0.2	0.005	0.30	
1520	3.8	0.35	*0.1	0.3	Tr	Tr	
1521	4.0	0.30	*0.1	0.1	0.005	Tr	
1522	2.0	0.03	*0.1	0.2	Tr.	Tr.	
1523	2.0	1.53	*0.1	0.5	0.005	0.30	
1523A	2.0	0.07	*0.1	0.4	Tr.	Tr.	
1524	4.0	0.93	*0.1	0.4	Tr	0.20	
1525	6.0	4.07	*0.1	0.8	0.005	0.40	
1526	5.0	11.73	*0.1	1.7	0.01	1.30	
1527	4.0	0.10	*0.1	0.4	Tr.	Tr.	
1528	4.5	0.20	*0.1	0.4	Tr.	Tr.	
1529	10.0	1.17	*0.1	0.7	Tr.	Tr.	
1530	10.0	0.15	*0.1	0.2	Tr.	Tr.	
1531	10.0	0.05	*0.1	0.3	Tr.	Tr.	

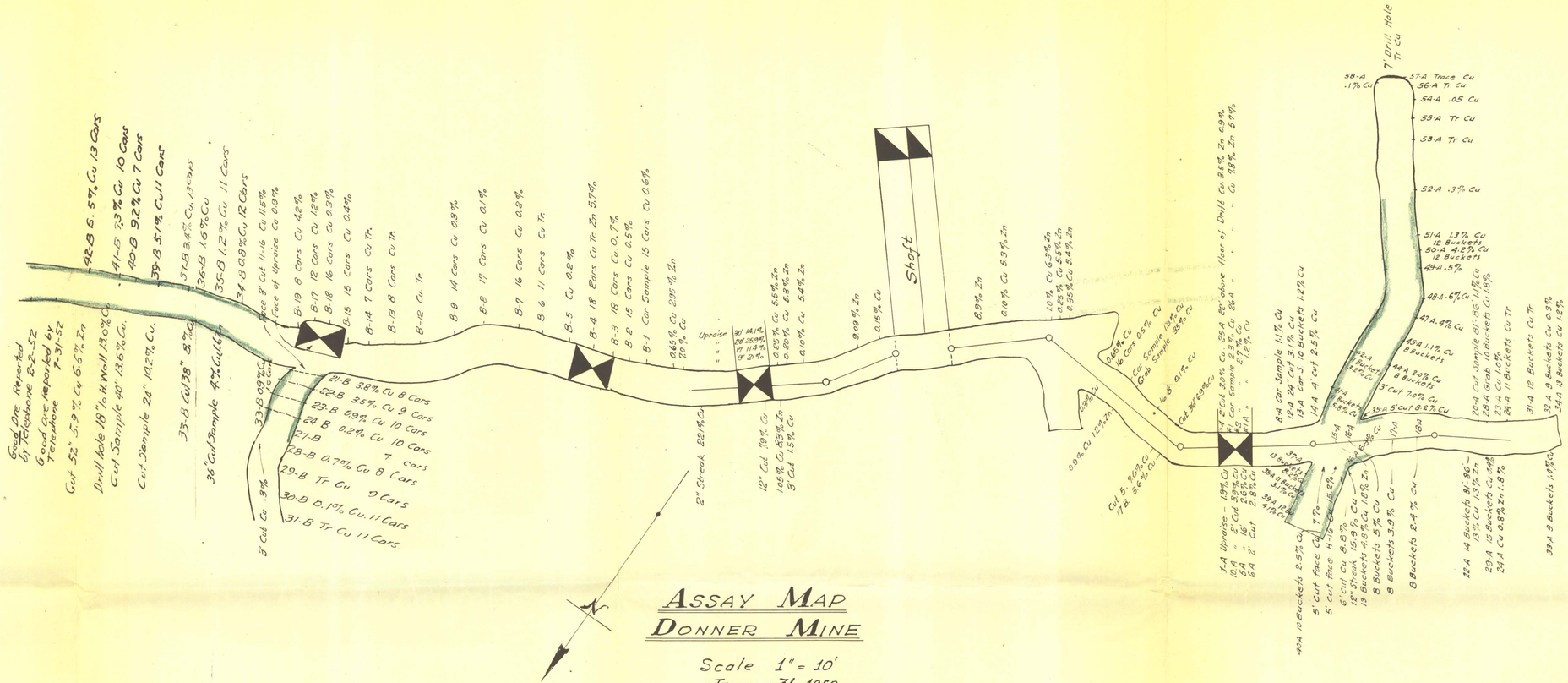
Note: Less than *0.01





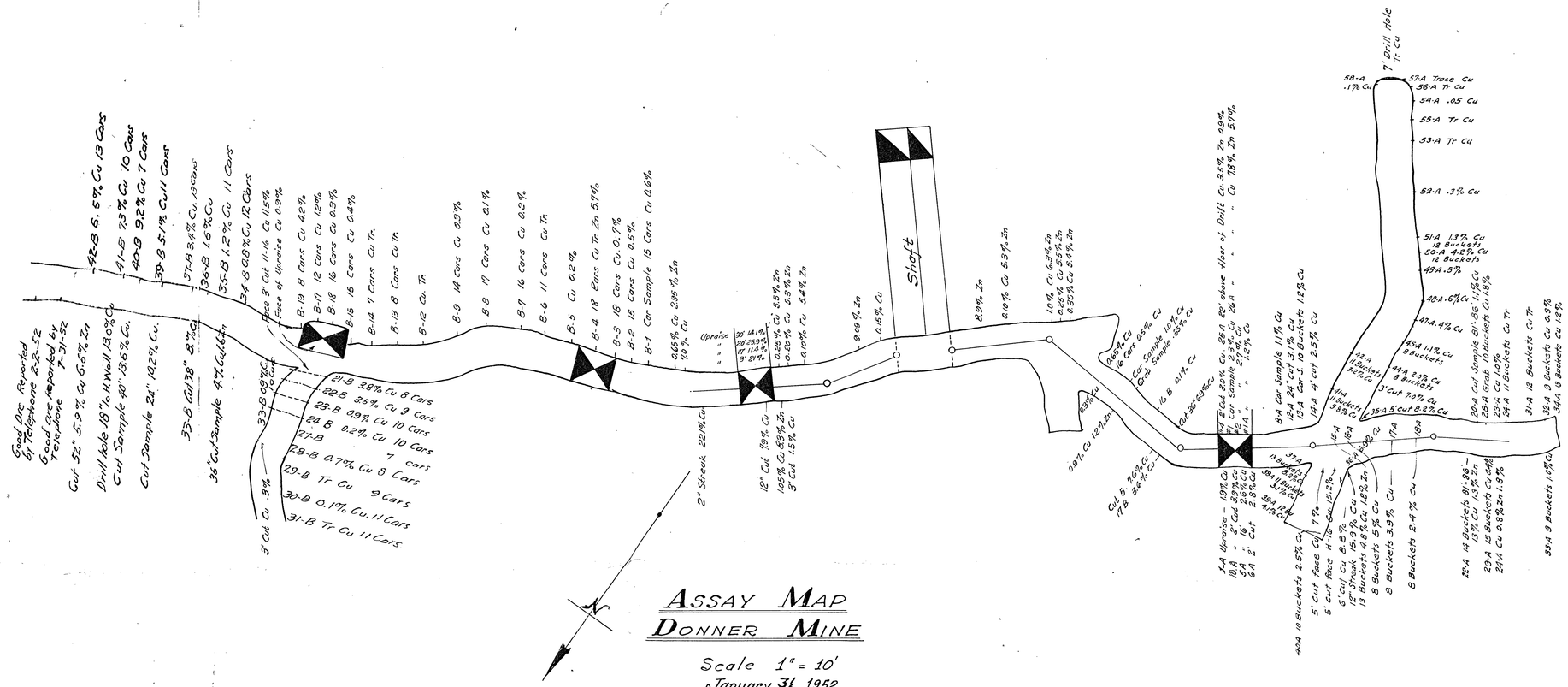
March 5, 1952

SIERRA COPPER CO., Calaveras County, California



ASSAY MAP
DONNER MINE

Scale 1" = 10'
January 31, 1952


Good Ore Reported by Telephone 2-2-52
Good Ore Reported by Telephone 7-31-52
Cut 52" 5.9% Cu 6.5% Zn
Drill hole 18" to H.Wall 13.0% Cu
Cut Sample 40" 13.6% Cu
Cut Sample 24" 10.2% Cu
33-B Cut 38" 2% Cu
36" Cut Sample 4% Cut Cu
42-B 6.5% Cu 13 Cars
41-B 7.3% Cu 10 Cars
40-B 9.2% Cu 7 Cars
39-B 5.1% Cu 11 Cars
37-B 3.4% Cu 13 Cars
36-B 1.6% Cu
35-B 1.2% Cu 11 Cars
34-B 0.8% Cu 12 Cars
Face 3' Cut 11-14 Cu 11.5%
Face of Upraise Cu 0.9%
33-B 0.8% Cu 10 Cars
3' Cut Cu .9%
21-B 3.8% Cu 8 Cars
22-B 3.5% Cu 9 Cars
23-B 0.9% Cu 10 Cars
24 B 0.2% Cu 10 Cars
27-B 7 cars
28-B 0.7% Cu 8 Cars
29-B Tr Cu 9 Cars
30-B 0.1% Cu 11 Cars
31-B Tr Cu 11 Cars
19-B 8 Cars Cu 4.2%
17 12 Cars Cu 1.2%
18 16 Cars Cu 0.9%
15 15 Cars Cu 0.4%
14 7 Cars Cu Tr.
13 8 Cars Cu Tr.
12 Cu Tr.
9 14 Cars Cu 0.9%
8 17 Cars Cu 0.1%
7 16 Cars Cu 0.2%
6 11 Cars Cu Tr.
5 Cu 0.2%
4 18 Cars Cu Tr Zn 5.7%
3 18 Cars Cu 0.7%
2 15 Cars Cu 0.5%
1 Car Sample 15 Cars Cu 0.6%
0.65% Cu 2.95% Zn
7.0% Cu
Upraise 30' 14.1%
20' 25.9%
17' 11.4%
9' 2.1%
0.25% Cu 0.5% Zn
0.20% Cu 0.3% Zn
0.10% Cu 5.4% Zn
9.00% Zn
0.15% Cu
2" Streak 22.1% Cu
12" Cut 7.9% Cu
1.05% Cu 0.83% Zn
3' Cut 1.5% Cu
Shaft
8.9% Zn
0.10% Cu 5.3% Zn
1.0% Cu 6.3% Zn
0.8% Cu 5.5% Zn
0.35% Cu 5.4% Zn
0.65% Cu
16 Cars 0.5% Cu
Car Sample 1.0% Cu
Grab Sample .35% Cu
16 8 0.1% Cu
Cut 36" 0.09% Cu
0.09% Cu
0.09% Cu 12.1% Zn
Cut 5' 7.5% Cu
17A 3.6% Cu
14 2' Cut 3.0% Cu 22A 22' above floor of Drill Cu 3.5% Zn 0.9%
10 Car Sample 3.9% Cu 26A " " " Cu 7.8% Zn 5.9%
6 " 16 2.6% Cu 27A " "
5A " Cut 2.8% Cu
1-A Upraise - 1.9% Cu
10-A " 2' Cut 3.9% Cu
5A " 16 2.6% Cu
6A " Cut 2.8% Cu
8-A Car Sample 1.1% Cu
12-A 34' Cut 3.1% Cu
15-A Car 3 10 Buckets 1.2% Cu
14-A 4' Cut 2.5% Cu
404 10 Buckets 2.5% Cu
5' Cut Face H-16 Cu 15.2%
7%
6' Cut Cu 8.8%
12" Streak 15.9% Cu
13 Buckets 4.8% Cu 1.8% Zn
8 Buckets 5% Cu
8 Buckets 3.9% Cu
8 Buckets 2.4% Cu
12-A 14 Buckets 81-86 - 13% Cu 1.3% Zn
23-A 18 Buckets Cu dust
24-A Cu 0.8% Zn 1.8%
33-A 9 Buckets 1.8% Cu
7' Drill Hole Tr Cu
58-A .1% Cu
57-A Trace Cu
56-A Tr Cu
54-A .05 Cu
55-A Tr Cu
53-A Tr Cu
52-A .3% Cu
51-A 1.3% Cu 12 Buckets
50-A 4.2% Cu 12 Buckets
49-A .5%
48-A .6% Cu
47-A .4% Cu
45-A 1.1% Cu 8 Buckets
44-A 2.0% Cu 8 Buckets
3' Cut 7.0% Cu
35-A 5' Cut 8.2% Cu
42-A 11 Buckets 1.2% Cu
41-A 11 Buckets 5.8% Cu
15-A
16-A
20-A Cut Sample 81-86 1.1% Cu
28-A Grab 10 Buckets Cu 1.5%
23-A Cu 1.0%
24-A 11 Buckets Cu Tr
31-A 12 Buckets Cu Tr
32-A 9 Buckets Cu 0.5%
34-A 9 Buckets Cu 1.2%
17-A
18-A
37-A 13 Buckets 8.5% Cu
38-A 8 Buckets 8.5% Cu
39-A 12 Buckets 5.1% Cu
40-A 10 Buckets 7.3% Cu
ASSAY MAP
DONNER MINE
Scale 1" = 10'
January 31, 1952