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325 Heard Building
Phoenix, Arizona
June 15, 1944

"Mammoth Mine"

AIRMAIL

RAIT - Chief - Mining Section RFC - Washington 25, D. C.

Re: William A. Hooton - Docket No. ND-5875

I am enclosing herewith two copies of my report on the captioned project together with a copy of the application and supporting data.

These papers are being forwarded air mail because of the low state of finances of the project. The operator will be out of funds after meeting pay roll and a portion of his supply bills covering the first half of June. He is, however, continuing the operation, having made arrangements to let his bills run for a short time.

Mr. Gohring shares my good opinion of this property and in the event that the Washington office concurs in my recommendation to grant the loan we would appreciate any special attention which might expedite disbursement of the loan.

I understand that the Premium Quota Committee has under consideration the applicant's request for an additional 5¢ special copper premiums (the property now receives 1.4¢ special copper premium). The granting of this extra premium would permit less selective mining and therefore lower costs and a greater rate of production. I would suggest that the Quota Committee be contacted regarding this matter.

TRAVIS P. LANE
Supervising Engineer

RECONSTRUCTION FINANCE CORPORATION
MINING DIVISION
REPORT OF SUPERVISING ENGINEER

Docket No. ND-5875
Date of Examination - June 9, 1944
Date of Report - June 14, 1944

NAME AND ADDRESS OF APPLICANT

William A. Hooton
Old Pueblo Club
Tucson, Arizona

The project was examined and reported upon by Supervising Engineer C. A. Rasor (see report dated October 30, 1943), and a loan was recommended in the amount of $20,000 and granted in the amount of $15,000 (on January 24, 1944). The following report concerns the Borrower's application for an additional loan in the amount of $10,000 for the purpose of continuing development and ore production pending the completion of additional facilities for treating the ore at the Sahuarito plant of the Eagle-Picher Company.

I examined the property on June 9, 1944, and later in Tucson, discussed with the Borrower and Mr. Morton, manager of the Sahuarita plant of the Eagle-Picher Company, an agreement recently entered into by these parties relative to the handling of the ore at the Sahuarita plant.* Payment for metals under the agreement is based upon actual recoveries and receipts. A schedule showing returns to shipper and purchaser in accordance with the sliding scale provisions of the agreement for various recovered ore values is attached to this report. The purchaser's return covers the cost for loading from bins or stockpile at the mine and all transportation and treatment costs. The term of the agreement is the term of the property lease. The mill will accept up to 150 tons of ore per day.

Mr. Crabtree, metallurgist for the Eagle-Picher Company at the Sahuarita plant has worked out a factor for roughly determining the net value of the ore, within the range of the anticipated grades of ore, basing the calculations upon the present mill performance on company ore and upon premiums granted to Mr. Hooton's property ($.064 per lb. Cu and $.055 per lb zinc). These factors are $2.50 per per cent of copper in the mill feed and $1.40 per per cent of zinc. Mr. Hooton's ore contains ~~no~~ little pyrite and has proven by tests and by results from past shipments to custom plants to be quite simple to treat, and it is expected that recoveries will be about 90% for each of the metals rather than 83% as used in the calculation of the above factor. However, for purposes of conservative estimation the above factors will be used in this report in calculating net values for various grades of ore.

Some recoverable values of gold and silver are present although the data available are not sufficiently definite to permit inclusion of income from this source, in advance of initial milling results, in the calculation of net values per ton of ore. Mr. Hooton has told me that he received payment for silver in practically all of his smelter shipments, and that he realized returns of some $.20 per ton for gold upon shipments to custom mills. He believes that between $.50 and $1.00 per ton for gold and silver (combined)

*Copy of agreement is attached to the application.

will be realized from his shipments to the Eagle Picher Plant.

Operations have been handicapped by a serious labor shortage in the area, and anticipated income from shipments has not yet materialized because of unforseen delays in making the Sahuarita plant ready to accept the ore. The labor situation appears to be on the way toward at least partial solution by reason of the transfer to the property of a number of men who worked at the Orizaba Mine prior to its recent closing down. The former superintendent of the Orizaba Mine is negotiating with Mr. Hooton regarding a contract for mining his ore and it seems likely that he will take charge of production.

I discussed at length with Mr. Morton the situation at the mill and the probable date at which his company could begin accepting Mr. Hooton's ore. The mill is being enlarged and necessary facilities added for handling custom ore. It was expected that this work would be completed on July 1, but because of delays in delivery of flotation machines, and rails and timber for construction of a short railroad spur and ore bins the probable date of completion has been advanced to September 1. Mr. Morton feels this date can be reasonably safely counted upon and perhaps shortened depending upon deliveries of the equipment and materials. Mr. Morton stated, as his opinion, that if the mill were not ready by September 1, the company would, if necessary, make advances against ore stockpiled at the mine. It is probable that the mill additions will be completed ahead of the railroad spur job and in that event the borrower proposes to truck his ore in for a time at an increased cost of about $1.50 per ton.

The borrower at the time of my visit had hoisted 676 tons of ore. Grab samples were taken from the cars the assays for which are shown on the attached sheets. An estimated 10% of this material was sorted out as waste. Approximately 400 tons of the ore is stored in two bins near the shaft collar and the balance is on the ore dump. The average of the sampling is 5.10% Cu and 3.86% Zn., before sorting.

There is available on the ore dump an estimated 1000 to 1200 tons of ore. Most of this material was put on the dump during previous development operations by the Coronado Copper and Zinc Company, and according to car samples taken by that company it assays 2.76% Cu. and 4% Zn.

The value of the above ore using the factors noted above is as follows:

Ore in Bin (400 tons)			
	5.10% Cu x $2.50 =	$12.75	
	3.86% Zn x 1.40 =	5.40	
		$18.17	
	Less return to purchaser (see schedule)	7.14	
		$11.03	
	Less 10% Royalty	1.10	
	Net value to shipper	$ 9.93 per ton x 400 tons =	$ 3972.00
Dump Ore (1000 tons minimum)			
	2.78% Cu x $2.50	$ 6.95	
	4.00% Zn x 1.40	5.60	
		$12.55	
	Less returns to purchaser	5.78	
		$ 6.77	
	Less 10% royalty	.68	
	Net value to shipper	$ 6.09 per ton x 1000 =	$ 6,090.00
		Total	10,062

The above calculations for the value of the ore in the bins are based upon car sampling before the sorting out of a considerable amount of waste and value of this ore, therefore, ought to exceed the above figure. Also, the calculations for both classes of ore do not include recoverable gold and silver values which while indeterminate at the present time are probably appreciable. If account is taken of these factors it will be seen that the value of the ore will exceed by a considerable amount the total value shown above. In addition, the calculations are based upon lower than expected recoveries. Since the purchasing agreement provides for loading or picking up the ore and trucking, freight and treatment cost the above value would represent clear profit to the shipper and would be a quickly realizable asset as soon as the mill is able to accept ore from the property.

The borrower is slabbing ore on the 213 foot level east and the major portion of the ore in the bin was derived from this working place. (See area No. 1 circled in red on attached map of Mammoth)

Ore breaking is being carried on here with one machine on two shifts and the ore is of excellent grade as evidenced by car sampling of recent dates, which see. The applicant proposes to sink a winze on the ore at this point and to raise into the stope at the bottom of the Mammoth No. 2 Incline. The proposed work is shown dotted red on the attached map of the Mammoth Hill area. It seems probable that the raise will be in ore at least a part of the way to the connection with the stope, and when completed the raise will provide much needed ventilation and a second exit from the mine. The location of drill hole No. 17 with good zinc assays near and somewhat lower than this working place suggests that the ore now being mined might be found to extend a considerable distance in this direction, or that, more probably, another ore shoot will be found to exist here. As regards the low copper values shown in No. 17 drill hole it is worth noting that an excellent grade of copper ore is being broken in the area adjacent to drill hole No. 12, which drill hole shows comparatively low copper values. The No. 17 drill hole ore showing might be found to represent an extension in depth of the shoot which was mined in the Mammoth No. 2 incline.

A drift is being driven northwesterly from a point in a raise just below the shaft (see green circled area on attached map of Mammoth Mine). The objective here is to open a working level immediately under the area of good assays in the stope above. The drift is now in 21 feet and is beginning to show good ore in the back and is expected to yield ore from this point forward.

Mr. Rasor estimated tonnage and grade of ore in the shaft shoot above the 213 ft. level west as follows:

Tons	Width	% Cu	% Zn
25,312	8.1	2.51	5.7

The value of this ore, using the Sahuarita Mill factors described above, would be:

2.51 x 2.50	=	$6.28
5.70 x 1.40	=	7.98
		$14.26
Less Purchaser's return (see schedule)		6.22
		$ 8.04
Less 10% Royalty		.80
		$ 7.24

The ore body on the 213 ft. level east has not been sufficiently developed to permit appraisal of its worth. However, the size of the body on the level

and the grade of the ore being mined suggests that a valuable shoot or ore exists here.

Mining cost for the ore produced to date has been quite high chiefly due to a shortage of labor which has prevented making any substantial volume of output. Also, the production has been made by slabbing and mucking on the level floor rather than by the use of stoping methods. The work of driving the northwest drift described above aims at preparing the area above it for stoping, and when stoping is in progress here costs ought to be quite low, probably not over $3.00 per ton. Mining cost in the ore body on the 213 foot level east will be high until further development permits the use of a stoping method. The ore here, however, promises to be higher grade than that shown in the block of ore above the 213 ft. level west. I believe that when a production of 50 tons a day or more is attained the over-all mining and development cost ought not to exceed $5.00 per ton. The indicated profit therefore is $2.24 per ton. With a sustained large volume of production, dependent, of course, upon an adequate supply of labor, I believe that it would be possible to reduce mining and development costs substantially below $5.00 per ton.

There remains in the depository account at the present time $2,038.60. This amount will suffice only to cover Payroll to June 15, and a portion of the outstanding bills (Total bills approximately $2,500.00)

Comments of Supervising Engineer

The amount of the additional loan requested is to be used to continue mining and development, stockpiling the production, until the Sahuarita plant is able to accept ore for treatment, probably before September 1, of this year.

Ore already stored in the mine bins and stockpile has a net value, clear of further cost, equal to the amount of the loan requested and this value will be realized almost immediately upon shipment of the ore. Also, ore produced pending completion of the mill will be paid for at about the same time. Income from these sources will thus provide working capital which will render the project self-sustaining from that time forward.

The operation has been efficiently conducted to date except as effected by the inadequacy of labor, a situation which has recently shown considerable improvement.

A substantial tonnage of ore is fairly safely blocked out in the mine at the present time, and the project promises upon further development to make a large eventual production.

In view of the above I recommend that the loan be granted.

TRAVIS P. LANE
Supervising Engineer

Proposed Ore Schedule Returns

Ore Value	Shipper Percent	Shipper Dollars	Purchaser Percent	Purchaser Dollars
$10.00	50%	$5.00	50%	$5.00
11.00	51-1/2	5.665	48-1/2	5.335
12.00	53	6.36	47	5.64
13.00	54-1/2	7.085	45-1/2	5.915
14.00	56	7.840	44	6.16
15.00	57-1/2	8.625	42-1/2	6.375
16.00	58-1/2	9.360	41-1/2	6.64
17.00	59-1/2	10.115	40-1/2	6.885
18.00	60-1/2	10.890	39-1/2	7.11
19.00	61-1/2	11.685	38-1/2	7.315
20.00	62-1/2	12.50	37-1/2	7.50
21.00	63-1/2	13.335	36-1/2	7.665
22.00	64-1/2	14.19	35-1/2	7.81
23.00	65-1/2	15.065	34-1/2	7.935
24.00	66-1/2	15.96	33-1/2	8.04
25.00	67-1/2	16.875	32-1/2	8.125
26.00	68-1/2	17.81	31-1/2	8.19
27.00	69-1/2	18.765	30-1/2	8.235
28.00	70-1/2	19.74	29-1/2	8.26
29.00	71-1/2	20.735	28-1/2	8.265
30.00	72-1/2	21.75	27-1/2	8.25
31.00	73-1/2	22.785	26-1/2	8.215
32.00	74-1/2	23.84	25-1/2	8.16
33.00	75	24.75	25	8.25
34.00	75	25.50	25	8.50
35.00	75	26.25	25	8.75
36.00	75	27.00	25	9.00
37.00	75	27.75	25	9.25
38.00	75	28.50	25	9.50
39.00	75	29.25	25	9.75
40.00	75	30.00	25	10.00

R-F-C

Mining Division

Report of Supervising Engineer

Docket No ND-5875
Date of Examination June 9, 1944
Date of Report - 6-14-44

Name and Address of Applicant

Name Wm. A. Horton
Address Old Pueblo Club
Tucson, Arizona

The project was examined and reported upon by Supervising Engineer C.A. Raso (see report dated Oct. 30, 1943), and a loan was recommended in the amount of $20,000 and granted in the amount of $15,000 (on Jan 24, 1944). The following report concerns the borrower's application for an additional loan in the amount of $10,000 ~~pending~~ for the purpose of continuing development and ore production pending the completion of ~~facilities will additions and~~ additional facilities, including the on at the Sahuarita plant of the Eagle-Picher company.

I ~~visited~~ examined the ~~mine~~ property on June 9, ~~and~~ 1944 ~~examined the workings and the ore stored in the bins, and~~ and later in Tucson, discussed with the borrower and Mr. Morton, manager of the Sahuarita plant of the Eagle-Picher Company, an agreement recently entered into by these parties relative to the ~~the~~ handling of the ore at the Sahuarita plant. ~~A copy of this agreement accompanies the application.~~

Payment for metals under the agreement is based upon actual recoveries and receipts. A schedule showing returns to shipper and purchaser in accordance with the sliding scale provisions of the agreement for various recovered ore values is attached to this report. The purchaser's return covers the cost for loading from bins or stock pile at the mine and all transportation and treatment costs. The ~~agreement~~ term of the agreement is the term of the property lease. The mill will accept at least 100 tons of ore per day.

Mr. Crabtree, metallurgist for the Eagle-Picher Company at the Solvanita plant has worked out a factor for roughly determining the net value of the ore, within the range of the anticipated grades of ore, basing the calculations upon the present mill performance on company ore and upon premiums granted to Mr. Hinton's property ($.065 per lb. Cu and $.055 per lb zinc). These factors are $2.50 per ~~per~~ per cent of copper ~~and~~ in the mill feed and $1.40 per per cent of zinc. ~~[illegible]~~ Mr. Hinton's ore contains no pyrite and has proven by tests and by results from ~~shipping to other~~ past shipments to custom plants to be quite simple to treat, and it is expected that recoveries will ~~will~~ be about 90% for each of the metals rather than 83% as used in the calculation of the above factor. However,

~~14~~

For purposes of conservative estimation ~~and~~ the above factors will be used in ~~arriving at~~ mining and calculating net values ~~of ore~~ for various grades of ore. Some ~~value~~ recoverable values of gold and silver are present although the ~~cannot be definitely~~ data available are not sufficiently definite to permit inclusion of income from this source, in ~~the~~ advance of initial milling results, in the calculation of ~~recoverable~~ net values per ton of ore. Mr. Hooton has told me that he received payment for silver in practically all ~~of the lots of crude smelter~~ of his ~~shipments of crude~~ smelter shipments, and returns ~~that he realized~~ of some $.20 per ton ~~realized~~ for gold ~~realized~~ upon shipments to custom mills. We believe that between $.50 and 1.00 ~~for gold~~ per ton ~~will be realized~~ for gold and silver (combined) will be realized ~~from his~~ shipments to the Eagle Picher plant.

~~Recent~~ ~~Operations from the start have been seriously hampered by~~ a shortage of labor, and delays in the completion of the additions to the Sahuarita plant have necessitated stock piling of the ore at his mine on the dump with the result that anticipated income has not been forthcoming. Balance remaining in the depository as of this date is $2,028.60 and after meeting payrolls and supply bills for the first half of June the loan funds will be exhausted.

Operations have been handicapped by a serious labor shortage in the area, and anticipated income from shipments has not yet materialized because of ~~unexpected~~ unforeseen delays in making the Solvanite plant ready to accept the ore. ~~The~~ ~~company in the depositary bank at the present time $42,038.60 and this amount is barely sufficient to enable pay roll and supplies to June 15th.~~

~~Operations from the start~~

~~Operations have been hampered from the start by a serious shortage of labor, and the expected income from shipment to the Sohamia mill has not materialized because of delays in completion of the enlargement of facilities the capacity of that plant.~~

~~As regards the labor situation~~

The labor situation appears to be on the way toward ~~pa~~ at least partial solution by ~~reason~~ ~~cause of~~ the transfer to the property of a number of men ~~to the property from~~ who ~~formerly~~ worked at the Arizona mine prior to its recent closing down. The former superintendent ~~of~~ the Arizona mine is negotiating with Mr. Horton regarding a contract for mining this ore and it seems likely that he will take charge of production.

I discussed at length ~~the mill situation~~ with Mr. Morton the situation at the mill and the probable date at which his company could begin ~~to~~ accepting Mr. Horton's ore. ~~The~~ Mill ~~essentially~~ is being enlarged and necessary facilities added for handling custom ore. It was ~~expected that this~~ work was to be completed on July 1, but because of delays in delivery ~~and~~ of flotation machinery and rails and timber for construction of a short railroad spur and ore bins, ~~the~~ the ~~date probable date~~ probable date of completion has been advanced to Sept 1. Mr. Morton feels ~~that having~~ this date can be reasonably safely counted upon and perhaps shortened depending upon delivery of the equipment and materials. He Morton stated, as his opinion, that

NLS TP

It ~~seem~~ is probable that the mill addition will be completed ~~before~~ ahead of the railroad spur job and in that event the bronco proposes to truck his ore in for a time at an increased cost of about $1.50 per ton.

(return to page 5)

~~If it is his opinion that the company could make advances against if needed~~

If the mill were not ready by Sept 1, the company would, if necessary, ~~forward~~ make advances against ore stockpiled at the mine.

5A

The borrower ~~has finished~~ ~~some~~ at the time of my visit had hoisted 676 ~~tons~~ ~~cars~~ of ore. ~~Daily~~ Grab samples were taken from the cars ~~and~~ the daily assays for which are shown on the attached sheets. An estimated 10% of this material was sorted out as waste. ~~and~~ Approximately 400 tons ~~of~~ of the ore is stored in two bins near ~~at~~ the shaft collar and the balance ~~was put~~ is on the ore dump. The average of the sampling is 5.10% Cu and 3.86% Zn, before sorting.

There is available on the ore dump an estimated 1000 to 1200 tons of ~~material~~ ore. Most of this material was put on the dump during previous development operations by the Coronado Copper and Zinc Co., and according to ore samples taken by that company ~~the ore~~ it assays 2.76% Cu and 4% Zn.

The value per ton of the above ore ~~after all transportation and treatment charges~~ using the factors noted above is as follows:

~~Ore in~~ Bin

~~5.10% Cu × 2.50~~ #

3.86% Zn × 1.40

Value ~~per ton~~

~~less~~ Return to shipper

(see schedule)

Ore in Bin (400 tons)

5.10% Cu × $2.50 =	$ 12.75
3.86% Zn × 1.40 =	5.40
	18.17
Less return to purchaser (see schedule)	7.14
	11.03
Less 10% royalty	1.10
Net Value to shipper	9.93 per ton × 400 tons = 3972

Dump Ore (1000 tons MINIMUM)

2.78% Cu × $2.50	$ 6.95
4.00% Zn × 1.40	5.60
	12.55
Less return to purchaser	5.78
	6.77
Less 10% Royalty	.68
Net Value to shipper	6.09 per ton × 1000 = 6,090
	10,062
Total	11,133.50

The above calculations for the value of the ore in the bins are based upon ~~same assay~~ car sampling before the sorting out of a considerable amount of waste and value of this ore, therefore, ~~ought to exceed the above figure, but is somewhat higher than calculated above~~. Also, the calculations for both classes of ore ~~above~~ ~~values~~ do not include recoverable gold and silver values which while indeterminate at the present time are ~~not~~ probably appreciable. If account is taken of these ~~two~~ factors it will be seen that the value of the ore will exceed by a considerable ~~the~~ amount the total value shown above. In addition, the calculations are based upon lower than expected ~~recovery~~. Since the purchasing agreement optionides for ~~picking up the ore~~ loading or picking up the ore and trucking, ~~and~~ freight and treatment cost the above value would represent clear profit to the shipper and would be ~~an quick~~ asset

a quickly realizable asset as soon as the ~~ore was hoisted out~~ shipped mill is able ~~is in position~~ to ~~take the ore~~ accept ore from the property.

The bunker is stoping ore on the 213 foot level east and the major portion of the ore in the bin was derived from this working place. (See area No 1 circled in red on attached map of Mammoth). ~~Ore machine~~ Ore breaking is being carried on here with one machine on two shifts and the ore is of excellent grade as evidenced by car sampling of recent dates, which see.

~~A drift is being carried north from a raise below point in a raise immediately below the shaft. here is~~

No P The applicant proposes to sink a winze on the ore at this point and to raise into the stope at the bottom of the Mammoth No 2 incline. The proposed work is shown ~~in~~ dotted red on the attached map of the Mammoth Hill area. It ~~is believed below~~ seems probable that the raise will be in ore ~~all the way~~ at least a ~~large~~ part of the way to the connection with the stope, and when completed the raise will provide much needed ventilation and a second exit from the mine. The location of drill hole No 17 with ~~near this place~~ ~~[illegible]~~ good zinc assays near and somewhat below this ~~place suggest that~~ working place suggests that the ore being mined ~~shoot~~ might be found to extend a considerable distance in this direction or that, more probably ~~[illegible]~~

another ore shoot (~~the ore shoots occur in pipes or chimney forms~~ commonly) will be found to exist here. As regards the low copper values shown in ~~the~~ No. 17 drill hole ~~as~~ it is worth noting that an excellent grade of copper ~~values~~ ore is being broken in the area adjacent to drill hole No. 12 which drill hole ~~also~~ showed ~~very poor~~ ~~very poor~~ compatively low copper values.

the drill hole ore shown will be found to ~~be~~ represent an extension in depth of the shoot which was mined in the Mammoth No. 2 incline.

A drift is being driven northwesterly from a point in a raise just below the shaft (see green circled area on attached map of Mammoth mine). The objective here is to open a working level immediately under the area of good assays in the stopes above. ~~The shift at the top of the raise is above~~ The ~~[illegible]~~ drift is ~~at~~ now in 21 feet and is beginning to show good ore in the back and is expected to yield ore from this point forward.

Mr. Rasor estimated ~~for~~ tonnage and ~~values~~ grade of ore in the shaft shoot above the 215 Ft. level next as follows:

tons	width	% Cu	% Zn
25,312	8.1'	2.51	5.7

The value of this ~~ore, of the ore~~ ore, using the Salvanita Mill factors described above, would be:

2.51	x	2.50	= $ 6.28
5.70	x	1.40	= 7.98
			$ 14.26
less Purchaser's return (see schedule)			6.22
			$ 8.04
less 10% Royalty			.80
			$ 7.24

9A <

Mining cost for the ore produced to date has been quite high. ~~Lack~~ Shortage of labor which has prevented ~~making~~ ~~[illegible]~~ any substantial volume of output. ~~and the~~ Also, the production has

No P

The ore body on the 213 ft. level east has not been sufficiently developed to permit ~~estimate~~ appraisal of ~~[illegible]~~ its worth. ~~[illegible]~~ However, the size of the body on the level and the grade of the ore being mined suggests that a valuable shoot of ore exists here.

(return to page 9)

been made by slabbing and muckin on the level floor rather than by the use of stoping methods. The work of driving the ~~drift~~ northwest drift described above aims at preparing the ~~ground~~ ore above it for stoping, and when stoping is in progress here costs ought to be quite low, probably ~~until the use of~~ not over $3.00 per ton. Mining cost in the ore body on the 213 foot level east will be high until further development ~~has~~ permits the use of a stoping method. The ore here promises to be higher grade than that shown in the block of ore above the 213 ft. level east. I believe that when a production of 50 tons a day or more is attained the over-all mining and development cost ought not to exceed $5.00 per ton, ~~The indicated profit therefrom is $2.24 per ton.~~

~~adequate supply of labor this figure could~~ With a sustained large volume of production, dependent, of course, upon an adequate supply of labor, I believe that it would be possible to reduce mining and development costs substantially below 5.00 per ton.

~~Figuring here the deposits at the present time are~~

There remains in the depositary account at the present time $2038.60. This ~~amount~~ amount will suffice only to cover payroll to June 15, and a portion of the outstanding bills (actual bills approximate $2570). ~~The amount of these additional loans requested is to be used to~~

~~Comments of Superintendent Engineer~~

~~maintain production and development at the maximum rate made possible by~~

Comments of Superintendent Engineer

The amount of the additional loan requested is to be used to continue mining and development, stockpiling the production, until the Salvador plant is able to accept ~~[illegible]~~ ore for treatment, ~~[illegible]~~ probably before Sept 1, of this year.

~~Ore already stored in the mine bins and the stockpile has a net value, clear of further cost, equal to the amount of the loan requested. Additional ore produced will be stockpiled between now and the time the mill will be ready will be stockpiled and [illegible] will be able to accept a greater shipment not as soon as possible.~~

~~Current ore production will be stockpiled and shipped out as soon~~

Ore already stored in the mine bins and stockpile has a net value, clear of further cost, equal to the amount of the loan requested and

~~and~~ this value will be realized ~~as soon as the mill~~ almost immediately upon shipment of the ore. Also, ore produced ~~while stockpiled and when shipped its value~~ pending completion of the mill will ~~provide~~ be paid for at about the same time. Income from these sources ~~at that~~ will thus provide working capital which will render the project self-sustaining from that time forward.

The operation has been efficiently conducted to date except as affected by the inadequacy of labor, a situation which is ~~now considerably~~ ~~was~~ which has recently shown considerable improvement.

~~I recommend~~
~~I herewith the also and the amount~~
~~of~~

~~I believe that this project~~

~~A substantial tonnage of ore is fairly well blocked out in the mine and the mill prospect for making a large essential production from the project appears~~

~~project promises to make a large essential production~~

A substantial tonnage of ore is fairly safely blocked out in the mine at the present time, and the project promises upon further development to make a ~~very~~ large essential production.

In view of the above I recommend that the loan be granted.

[illegible]

RECONSTRUCTION FINANCE CORPORATION

MINING SECTION

PROGRESS REPORT OF SUPERVISING ENGINEER

Docket No. ND-5875 - William Hooton
Date of Visit: Sept. 21, 1944
Date of Report: Sept. 26, 1944

I visited the captioned mining project on the afternoon of September 21 and next morning visited the mill of the Eagle Picher Co. at Sahuarita, to which the ore is being shipped, and discussed with officials of that company the results being obtained in milling the ore, the probable future tonnage rate of acceptance of ore, etc. These matters are commented upon as follows:

The mine work is being capably handled by the mine superintendent, Mr. Brock, formerly the superintendent of the Orizaba Mining Co. (RFC loan project.) No difficulty is being experienced in getting and holding labor, and the present crew consists of 16 men.

Stoping is in progress near the shaft above the northwesterly drift from it, described in my report dated June 14, 1944, and located by the green circled area on the map which accompanied that report. The drift was carried in for a distance of 60 feet and two chutes installed and a shrinkage stope started. The ore bed is quite thick here and a high duty per working shift is being realized. The face of the drift is in ore and when the stope is well started and furnishing ore regularly the drift will be advanced and additional chutes installed so long as the ore continues. No sampling has been done in the stope. However the material being broken can be seen to contain a fair amount of metal and sampling in the stopes above indicates the presence of commercial material here.

Stoping is in progress also in the west end of the 213 ft. level. I do not have a general map of the mine at hand but would identify the block being stoped by referring to sample numbers on the map which was sent in with my report, referred to above. The block is some 120 feet in length on the level and extends between samples No. 1135 and D.D.Hole No. 8. The weighted average of the level samples including the assays in D.D. Hole No. 8 is 6.67 feet width, 1.77% cu, 5.29% zn. This is the lowest grade portion of the indicated ore reserves in the mine. However, based upon anticipated mill recoveries the ore will net the borrower approximately $6.50 and ought therefore to return a modest profit after mining costs. Four chutes have been installed in the west end of the shoot and a stope shrinkage has been carried to an average height of 30 feet above the level for a length of some 50 feet. Additional chutes will soon be installed in the east end of the block now that the stope is well started and producing regularly.

In addition to the stoping described above a fair amount of ore is being derived from a raise which is being driven in large section from the east end of the 213 ft. level. The raise is now up 45 feet above the level and has been in ore all the way with ore continuing in the face. The raise is expected to connect with the bottom of an old shaft and stope some 85 feet above the present face. In the event that the raise passes into waste it will nevertheless have to be carried to completion in order to comply with state mine regulations which require a second exit from the mine.

The above described working places are shown on the attached sketches and their relative position may be seen by superimposing the sketches on the large general map which accompanied my previous report.

The program at the mine has been handicapped by delays in the date of acceptance of the first ore at the Eagle-Picher mill and the borrower has obtained advances amounting to date to $16,700.00; the last advance ($2050.00) covering payroll due September 15th. At the time of my visit the mill was running the first lot of ore from the mine amounting to 1100 tons of mixed dump and mine ore. The run was being made on Hooton ore alone in order to determine ore characteristics, recoveries, etc. The borrower has been told that 10 more carloads of ore will be accepted beginning Sept. 27th. Normally the mill will blend this ore with their own ore and other custom ore. Settlement will be made once a month and payment will be made on the basis of the general average monthly recovery on ores from all sources milled during the month rather than upon the basis of parallel laboratory tests upon each shipper's ore.

The first four cars shipped contained a considerable amount of coarse waste material from the basal perimeter of the dump. The assay of these cars was 1.39% cu. - 2.9% zn. The borrower bears half the expense of picking up the dump material. The mill feed on Sept. 21 assayed: 0.4 oz ag - 2.32% cu - 2.9% zn.

Because of a contract obligation to handle 100 tons of Phelps Dodge ore per day along with the Eagle Picher mine output (the San Xavier Mine) the plant must limit tonnage from other shippers according to the plant capacity. This capacity has been 300 tons per day but with the newly installed smaller ball mill in operation it is expected to be 450 tons per day. The Company hoped to have this additional grinding unit in operation within the next several days after my visit and from that time forward the mill ought to be able to handle capacity output of all present shippers.

The borrower counts upon mining and shipping 50 tons per day and perhaps increase this rate when he is able to draw down his first shrinkage stope. Meanwhile he hopes that the mill will be able to take his accumulated dump ore (estimated at 1500 to 2000 tons) at a considerably faster rate. This schedule appears reasonable and I believe that he will eventually be able to achieve rather low mining costs.

T. P. LANE
Supervising Engineer

325 Heard Building
Phoenix, Arizona
January 17, 1944

VIA AIR MAIL

Rait - Chief-Mining Section - R. F. C. - Washington, D. C.

Re: William A. Hooton - Docket No. ND-5875

Our file on the applicant reveals that Mr. Gohring sent to Mr. Tully on January 6th, 1944, Mr. Hooton's application for reconsideration of the adverse decision, together with a letter from Mr. Hooton to Mr. Gohring stating, "I shall ship my ore to the American Smelting and Refining Company smelters at Hayden and El Paso and to the mill or stockpile of the same company at Hanover, New Mexico.....Upon request I have notified the W. P. B. of this change in plans to ship to the A. S. & R. instead of to the Shattuck-Denn Mill at Bisbee, for their information looking to the prompt payment of premiums. The lower milling and smelting rate will offset the higher freight rates and will result in a saving per ton of ore treated".

Your telegram of January 15, 1944, concerning concentrate, freight, treatment charges and processing fee of applicant's ore to Shattuck-Denn can have little bearing on your decision when the applicant has already notified you of a change in plans. I feel certain your Engineer Examiner has read Mr. Hooton's letter to Mr. Gohring and could recast the calculations. In answer to your telegram, I believe the concentrate, freight and treatment charges were taken care of in the 90% extraction and the $4.00 milling charge. Actually, Shattuck-Denn does not take off 10%. The milling charge is $3.25 plus the deductions for freight and treatment charges on concentrates. I did not add the processing fee because Mr. Hooton told me Shattuck-Denn would not charge him the processing fee because of his previous shipment. Nevertheless, I should have added it, but now these calculations have little bearing because of his change in plans.

As I have not contacted Mr. Hooton since my examination, I do not know what his plans are except what he writes, but I can set up some calculations based on the grade of ore he intends to ship. Originally, I estimated 25,312 tons of 2.51% copper and 5.7% zinc, but if Mr. Hooton intends to sort the ore to a copper ore and a zinc ore; namely 6-7% copper and 1-1/2% zinc and a zinc ore approximating 8-10% zinc and 1.5 to 2% copper, probably the tonnage will be reduced to 12,000 tons of which 9,000 tons will be 8.0% zinc and 2% copper and 3,000 tons of 5% copper. I have taken these figures because they appear to be reasonable. Thus the zinc ore which he intends to ship to the Hanover Mill will bring the following value:

Rait - Chief - Mining Section R.F.C. January 17, 1944
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8% Zn = 160 lbs. x .03468 cents = $5.55
Per cent of total metals paid for
70% = $3.89
This includes deductions for combined freight and smelting charge on concentrate
Bonus on zinc = 160 lbs. x 77% =
123.2 lbs x .055 cents = $6.78
Mill will not pay for copper content but Metals Reserve will.
Bonus on 2.0% cu = 40 lbs. x 87% =
34.8 lbs. x 11.4 cents = $3.97

Total pay value $14.64

Deductions:

Mill Treatment..... $3.79
Freight Dragoon to Hanover.... 3.00
Mining..... 4.00

Applicant told Mr. Frisbie, Supervising Engineer that Longtin Company had contracted to break down the ore for $1.00 per ton; that he could muck and sort ore for $2.00 per ton. I have added another $1.00 per ton.

Hauling..... .70
Royalty $15.64 - 6.79 = $8.85 x
10%... .89
Taxes..... .20

$12.58
$12.58

Net Value Per Ton..... $2.06

9,000 tons x $2.06 = $18,540

The sorted copper ore which the applicant proposes to ship to El Paso or Hayden will bring the following value, assuming the ore will assay 5.0% copper:

5% = 100 lbs. less 8 lbs = 92 x 95% = 87.4 lbs x .0905 = $ 8.91
Bonus = 100 lbs. x 97% = 97 lbs. x 11.4 cents = 11.06

Total Pay Value..... $ 19.97

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Brought Forward - Total Pay Value..... $ 19.97

Deductions:

Smelter Treatment.....	$ 3.50	
Applicant Claims $2.50		
Freight.....	1.90	
Mining.....	4.00	
Hauling.....	.70	
Royalty $19.97 -$5.40 =$14.57 x 10%....	1.46	
Taxes.....	.20	
	$ 11.76	
Net Value to Shipper.....		$ 11.76
		$8.21

3,000 tons x $8.21 = $24,630

Total Value to Shipper $43,170

Thus there is more than sufficient returns to repay the loan.

The applicant is thoroughly familiar with this ore as he has mined and shipped previously to Shattuck-Denn and elsewhere and graded the ore by sorting. I have personally examined the channel cut and noted the pronounced banding of the ore into copper rich and zinc rich bands. These bands are also reflected in the assays if you care to examine them closely. The copper rich bands are in the roof and the zinc rich in the floor or footwall. Thus there can be little difficulty encountered in sorting this ore. I have personally examined this ore microscopically when I was working as a mineral microscopist for American Cyanamid and examined also the ore dressing engineer's results on recovery.

There will be no difficulties on the milling of this ore.

The only question I can see concerning your decision will be whether or not the applicant can grade up his ore as outlined. The chalcopyrite and sphalerite are not so intimately intergrown but what a rough sorting can grade up the ore as outlined. On the basis of my figures, the applicant should receive favorable consideration and I recommend a loan.

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CHARLES A. RASOR
Supervising Engineer

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RE CONS TRUCTION FINANCE CORPORATION
MINING SECTION
REPORT OF SUPERVISING ENGINEER

Docket No. Phoenix
Date Authorization for E x.:
-October 18, 1943 -
Date of E x amination :
-October 21, 1943 -
Date of Report:
-October 30, 1943-

1. Name and address of applicant:

W. A. Hooten
Old Pueblo Club
Tucson, Arizona

C orrespondent -

2. Character of Project

To mine copper and zinc ore after installing machinery.

3. Location of Mine:

In Sec. 23 and 26 T. 15 S. R. 22 E. Johnson Mining District, Cochise County, Arizona. The nearest railway station is Dragoon, Arizona, about 8 miles south. Road conditions are poor but serviceable during the year.

4. Applicant:

Applicant and operating personnel are competent to handle loan.

5. Loan requested:

$20,000
Loan recommended

6. Description of Project:

A. General Features

1. No mine workings, mill or other appurtenances which are not confined within applicant's ownership.

2. Proposed project will comply with S tate C ompensation or safety-first statutes.

3. No legal discrepancies which are not covered.

4. No impeded right-of-way facilities.

5. No surface or sub-surface trespass during project.

B. Existing Development

1. Shaft mine:

Mine is opened by 520 foot incline shaft and 800 feet of drifting-crosscutting and raising.

(a) The attached maps of underground workings were obtained from applicant and photo-stated. The maps were prints obtained from the Mudd Interests who own the property and the Republic mine.

(b) Sampling and assay data.
Samples were not taken as the mine has been thoroughly sampled by the owners and data recorded on the maps. Sample channels were examined, and showed a cut six inches wide, one to two inches deep and the length of the mineralization. It was not difficult to observe the banding of the sulfides in the garnet gangue.

(c) Condition and accessibility of mine workings:
All mine openings are easily accessible and in excellent condition.

(d) General features of deposit:

The mineralized zone in the Johnson area of the Cochise Mining District, occupies the easterly flank of an antichinal fold, of which the Little Dragoon Mountains form the longitudinal axis. The predominating rocks are sedimentary, consisting of thick beds of limestone, limy shale, and quartzite lying upon a schist. The schist is probably pre-Cambrian in age, but the overlying sedimentary rocks range from Cambrian to Mississippian.

Through the action of folding and subsequent intrusion by the Texas Canyon Granite the overlying sedimentary rocks have been tilted to an angle of between 35 and 50 degrees dipping generally to the northeast. The strike of the beds is N. 50° W. The uplift and intrusion caused considerable shearing, and block faulting throughout the general area and probably had some influence in the localization of the ore bodies. The release of pressure caused numerous tension cracks throughout the broad fold which evidently tapped the source of the ore solutions and allowed them to move upward, but because of some physical or chemical nature of certain beds in the Cambrian series replaced those beds in preference to others higher in the series.

Erosion has exposed the edges of the uptilted strata containing the ore and the available openings of the various mines afford an excellent opportunity to view the relationships between the various formations.

The ore bodies are replacements in the lower thin bedded Cambrian shales and lie just above and in places in the thick garnet zone. The garnetized mineral zone is easily traceable for two miles to the southeast, from the Mammoth mine, thru the Copper Chief, Republic and Keystone. Other strata, higher up in the series, namely Devonian and Mississippian have produced an appreciable amount of high grade ore, namely the Peabody mine; but so far, the more permanent ore bodies have been found at the Contact between the less altered beds of limestone and the beds of metamorphosed and heavily garnetized impure limestone and lime shale. The outcropping strata of the ore zone varies in thickness from a few feet to several tens of feet throughout the length.

In the Mammoth mine the ore is blocked out and sampled, (see map). This work was done by the Mudd interests who own the mine and are actively operating the Republic property. I personally examined most of the channel cuts and observed the banding of massive sulfide minerals of sphalerite and chalcopyrite in the garnet gangue. Very little pyrite is present in this ore. I also examined the numerous diamond drill cores of the ore cut in the Republic mine. Apparently a large quantity of ore has been developed. The developed replacement ore bodies and mantos are usually outlined by tight fissures, ore lenticular in shape and parallel to the stratification.

C. Proposed Development

1. Recommended plan of development.

Applicant does not plan to do any development as that part of the work is already done. Applicant proposes to do only mining except to raise on ore at east end of workings to a surface stope, thus complying with Arizona mining laws of two openings when ore is in process of being mined. This raise will be 120 feet long.

2. Recommendations concerning applicant's mining method:

None. Applicant proposes to mine ore by open stopes supported by pillars.

3. Expected capacity at operation:

a. Mining, 50 tons per 24-hour day
b. Drift development, none
c. Cross-cut development, none
d. Raise development, 4 feet per day
e. Milling - not applicable
f. not applicable
g. not applicable
h. not applicable
i. Local wage scale

Miners	$7.00	Ore sorter	$6.00
Hoistmen	7.00	Foreman	10.00
Compressormen	7.00	Shift boss	8.00
Top men	6.00	Tramjers	6.50
Blacksmith	7.00		

D. Equipment

1. Underground workings are equipped with air and water pipe, track and cars.
On surface there is a hoist and cable.

2. not applicable
3. not applicable
4. Mine equipment recommended for purchase:

a.	Compressor	$3500.00
b.	Drill sharpener	500.00
c.	5 Machines	1800.00
d.	3 tons of steel	1000.00
e.	Lumber	700.00

5. not applicable
6. not applicable
7. None recommended
8. None recommended

E. Cost Estimation

1. Ledge

a.	Mining (stoping)	$ 1.70 per ton
b.	Drifting, none	
c.	Cross-cutting, none	
d.	Raising ($10.00 per foot)	
e.	Winze, none	
f.	Shaft sinking, none	
g.	Milling	4.00 per ton
h.	Haulage mine to Dragoon	.70
i.	Freight to Bisbee	1.10
j.	Not applicable	
k.	Royalty	1.05
l.	Timber	50.00 per M.
m.	Total cost per ton	$ 8.55

F. Ore Reserves

The mine has been adequately sampled along the stope and on the lower level where work will start. These samples were taken and assayed by the Mudd Interests. I have taken 51 samples as shown on the assay map to calculate the grade of ore and thickness of the deposit. The samples used are listed below and can be checked against the map.

Stope Sample Lower Side

Sample No.	Width Feet	% Cu	% Zn	Width x % Cu	Width x % Zn
1172) 1173)	6.6	1.46	5.5	9.636	36.30
1169) 1170) 1171)	9.6	2.74	6.2	26.304	59.52
1166) 1167) 1168)	9.6	3.39	8.7	32.544	83.52
1162) 1163) 1164) 1165)	12.2	1.94	4.3	23.668	52.46
1158) 1159) 1160) 1161)	11.3	2.13	5.8	24.069	65.54
1155) 1156) 1157)	11.2	4.05	8.1	45.360	90.72
1149) 1150)	2.1	3.04	6.7	6.384	14.07
1151) 1152)	3.0	2.29	6.1	6.870	18.30
1153	1.8	5.81	4.0	10.458	7.20
1222) 1223) 1154)	10.4	2.25	5.0	23.400	52.00
1224) 1225) 1226)	6.9	2.21	4.7	15.249	32.43
1207	7.0	0.53	2.3	3.710	16.10
1197) 1198) 1199)	9.2	3.52	6.1	32.384	56.12
1195) 1196)	9.7	1.48	4.6	14.356	44.62
1234) 1235) 1236)	11.7	2.65	6.1	31.005	71.37
1231) 1232) 1233)	10.8	1.44	6.3	15.552	68.04

Stope Sample Lower Side

Sample No.	Width Feet	% Cu	% Zn	Width x % Cu	Width x % Zn
1227) 1228) 1229) 1230)	10.2	2.66	6.8	27.132	69.36
1185) 1186) 1187) 1194)	8.7	1.47	3.5	12.789	30.45
1181) 1182) 1183) 1184)	8.4	1.67	6.8	14.028	57.12
1177) 1178) 1179) 1180)	10.9	2.09	6.6	22.781	71.94
1145) 1146) 1147)	5.7	2.09	5.1	11.913	29.07
1142	4.8	4.09	4.7	19.632	22.56
1144	2.4	2.77	7.1	6.648	17.04
1143	6.5	5.15	9.8	33.475	63.70
318	5.9	1.86	4.75	10.974	28.03
317	6.7	1.02	1.7	6.834	11.39
315) 316)	10.4	9.18	4.6	95.472	38.48
314	8.1	1.5	3.7	12.150	29.97
312) 313)	11.8	3.85	5.2	45.430	61.36
310) 311)	13.0	2.22	6.4	28.860	83.20
307) 308) 309)	18.7	3.37	7.5	63.019	140.25
305) 306)	13.7	1.58	7.2	21.646	98.64
303) 304)	9.3	1.79	4.9	16.647	45.57
301) 302)	11.8	4.81	4.0	56.758	47.20
1127) 1128)	6.1	0.31	6.4	1.891	39.04
1125) 1126)	5.3	1.46	7.7	7.738	40.81

			Stope Sample		Lower Side
Sample No.	Width Feet	% Cu	% Zn	Width x % Cu	Width x % Zn
1121) 1122) 1123) 1124)	6.5	2.48	9.9	16.120	64.35
1109) 1110) 1111) 1112)	10.1	3.29	5.1	33.229	51.51
		W - 213 ft. Level			
1135	5.4	0.13	5.1	0.702	27.54
332) 333)	5.2	1.13	6.6	5.876	34.32
336) 337) 338) 339) 340) 341) 342)	7.5	3.82	3.6	28.650	27.00
343)	6.5	1.68	6.1	10.920	39.65
344 to 347	7.7	0.45	3.2	3.465	24.64
348 to 351	8.8	2.73	3.0	24.024	26.40
356 to 358	6.8	10.18	3.0	69.224	20.40
352 to 355	7.0	0.66	9.6	4.620	67.20
361 to 363	5.7	0.18	3.9	1.026	22.23
366 to 368	5.9	0.30	5.4	1.770	31.86
369-374	5.6	0.16	8.4	0.896	47.04
375	5.9	0.00	4.2	0	24.78
DDH #8	8.6	0.2	7.6	1.720	65.36
51 sample	414.7			1039.008	2367.77

56.6 152.893 458.42

6.66 1.77 5.29

Average thickness of ore = $\frac{414.7}{51}$ = 8.1 feet

Average assay of copper = $\frac{1039.008}{414.7}$ = 2.51 %

Average assay of Zinc = $\frac{2367.77}{414.7}$ = 5.7%

The average length of ore body along dip is 250 feet.

The average width of ore body is 150 feet.

The average thickness of ore body is 8.1 feet.

Total of tons developed equals

$$\frac{250 \times 150 \times 81}{12} = 25,312 \text{ tons}$$

The ore will be shipped to the Shattuck-Denn mill near Bisbee, Arizona, and from the records we have on this mill the shipper will receive the following returns on 2.51% copper and 5.7% zinc.

2.51% cu = 50.2 lbs. per ton
5.7 % zn = 114 lbs. per ton
On 90% extraction the shipper will get 45.2 lbs. of copper and 102.6 lbs of zinc

The mill pay for 50% of the copper at .0559 cents

45.2 x 50% x .0559 = $1.26 copper

102.6 lbs. zn x 90% x 75% x .0796 cents = 6.13

Net mill value to shipper $ 7.39

Copper Bonus =	50.2 x 87% x .05 =	2.18
Zinc Bonus =	114 x 77% x .0275 =	2.40
	Total	$11.97

It is understood that the Mudd Interests have been granted a "B" Bonus on the Republic and Mammoth ore. If this is the case another $2.40 can be added. Thus the total value of the ore will be $14.37.

Total value of ore		$ 14.37
Costs:		
Mining	$ 5.52	
Hauling	.70	
Freight	1.10	
Milling	4.00	
Royalty	1.74	
	12.06	12.06
Profit per ton =		$ 2.31

With only a $1.00 profit per ton on 25,000 tons of ore developed, the applicant can easily repay the loan.

7. Employment:

A. No men now employed on property.
B. 18 men are to be employed as follows:
   8 miners and muckers
   2 hoist and compressor men
   2 top men
   1 ore sorter
   1 foreman
   1 shift boss
   2 trammers
   1 blacksmith

C. Two shifts are contemplated.

8. Objections to Project:
   None

9. Time Schedule:

A. Applicant claims to have the mine producing ore within 30 days after the money has been deposited.

B. Length of operating season, twelve months.

C. Applicant believed he could start repaying loan within six months. I would say it will take 18 months to repay the loan.

10. Estimated Cost of Project:

A. Total mining		
3 months wages $3500 per month		$10,500.00
B. Purchase of Equipment		
Compressor	$3500	
Drill sharpener	500	
5 Machines	1800	
3 Tons of steel	1000	
Lumber	700	
		7,500.00
C. Construction - none		
D. General Expense		
Supervision and contingencies		2,000.00
Total		$20,000.00

11. Nature and Sources of Revenue:

A. How and when loan will be repaid.

1. Loan is expected to be repaid from proceeds of mining ore in $5,000 semi-annual notes. Project should be on self-sustaining operation.

12. Comments of Supervising Engineer:

I have personally visited the district in which the Mammoth mine is located a number of times during the past eight years, and I have always been favorably impressed. The Coronado Copper and Zinc Company since they have taken over the Mammoth-Republic properties have developed by drifting and diamond drilling a considerable quantity of zinc and copper ore. They have leased the Mammoth mine to the applicant who now proposes to mine the developed ore by a loan from the Reconstruction Finance Corporation. The mine has been developed and fully sampled and I personally examined the channel cuts and from the assay map prepared a table of assays showing the average grade of ore. The grade of ore approximates closely the grade shipped by the applicant to the Shattuck-Denn mill previously.

This mine is the only one I have seen where the ore is developed sufficiently for a sustained mining operation. However, the grade is low and lacks gold and silver values and cannot show a profit without bonus premiums on copper and zinc. Nevertheless, a substantial amount of both copper and zinc can be obtained toward the war effort within a short period of time, and because of this I recommend a loan.

CHARLES A. RASOR
Supervising Engineer

Attachment:
Photostat of assay maps.

Shipment from April 15 – June 8th 1944

	Cu	Zn
676 Cars	5.10%	3.86%

2.50
5.1
2.50
1250
1250 Cu
12.750
5.40
$18.15 Recoverable

3.86
14
1544
386
5.404

$9.000.

.15 69
.07 2.05

Cu 3%
2.76 – 4%

6
4

18.15
7.11
11.04

SHIPMENTS
DRAGOON, ARIZONA

P. O. BOX 607
TUCSON, ARIZONA

MAMMOTH MINE

W. A. HOOTON

Ore in Bins

400 - 500 @ 5.10 % Cu - 3.86 % Fe

18.15 Recoverable

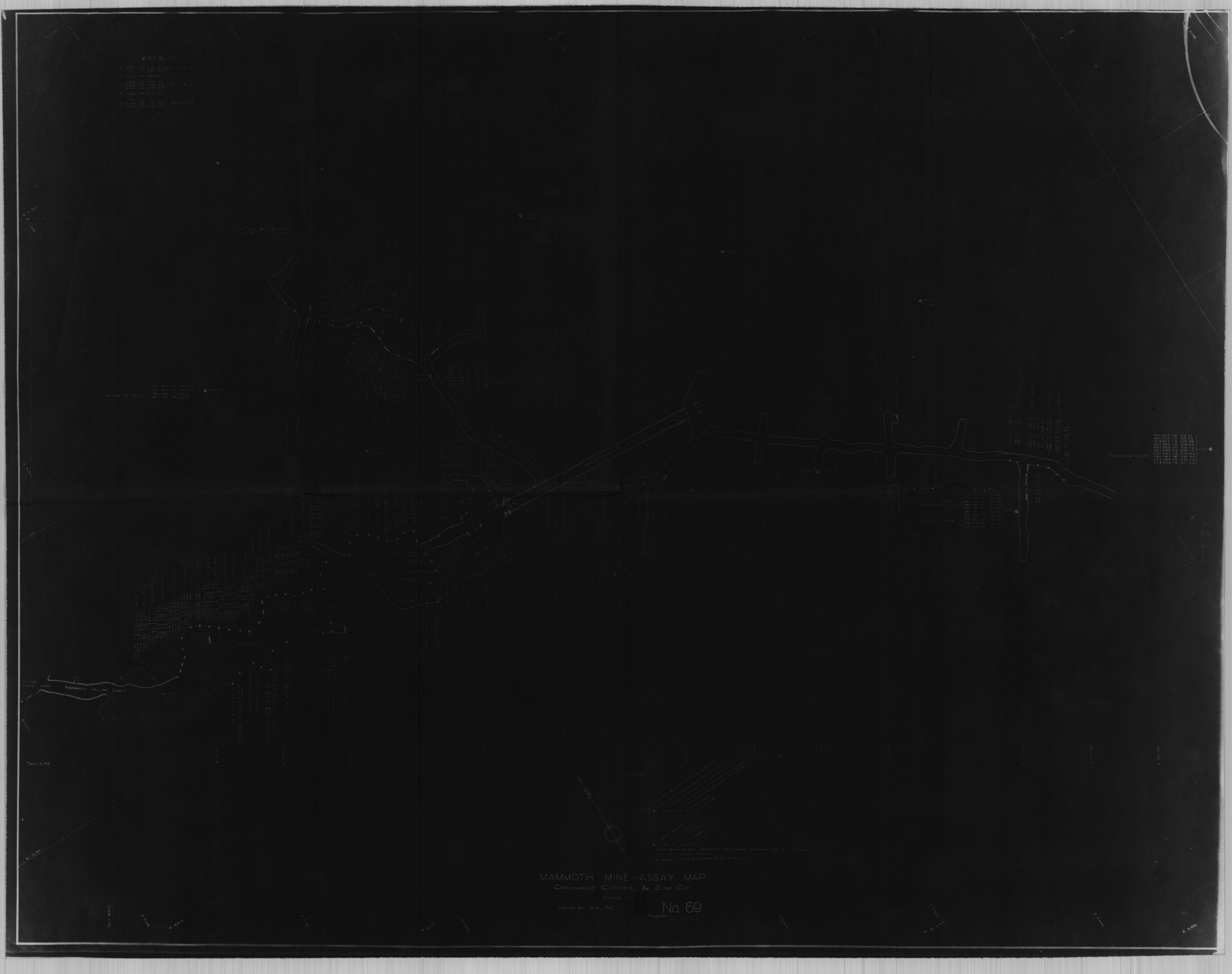
11.04 To Mine

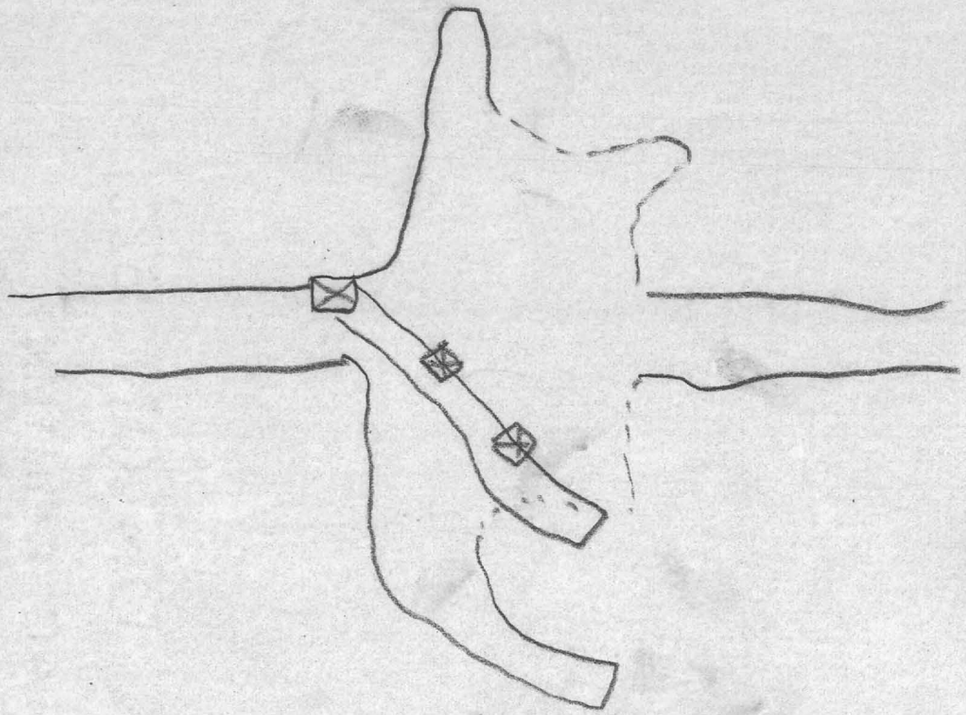
Ore on Dump

1000 @ 2.76 % Cu - 4 % Fe

.50

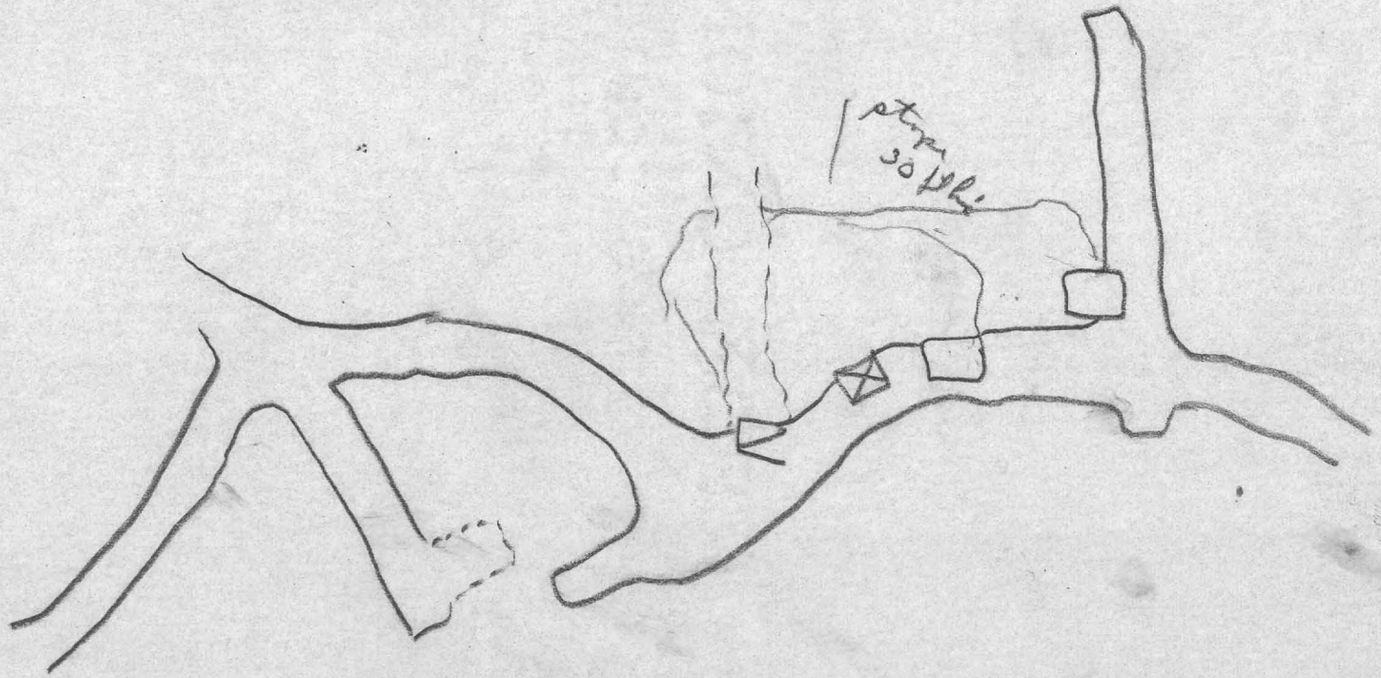
1.80

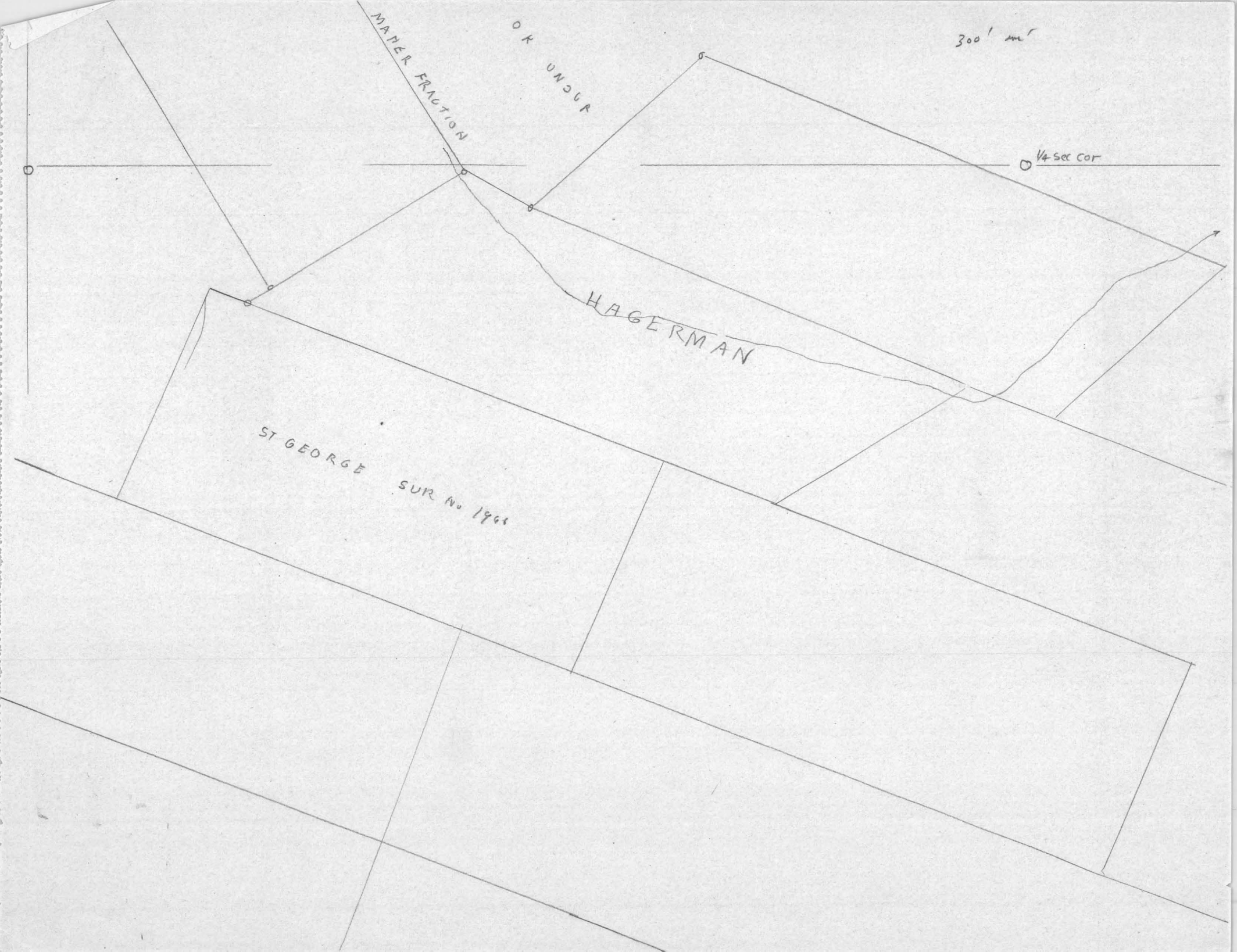

Mammoth Incline Shaft
Cross Line
Legend
MAMMOTH MINE-ASSAY MAP
Coronado Copper & Zinc Co.
No. 69



200 FT

400 SE

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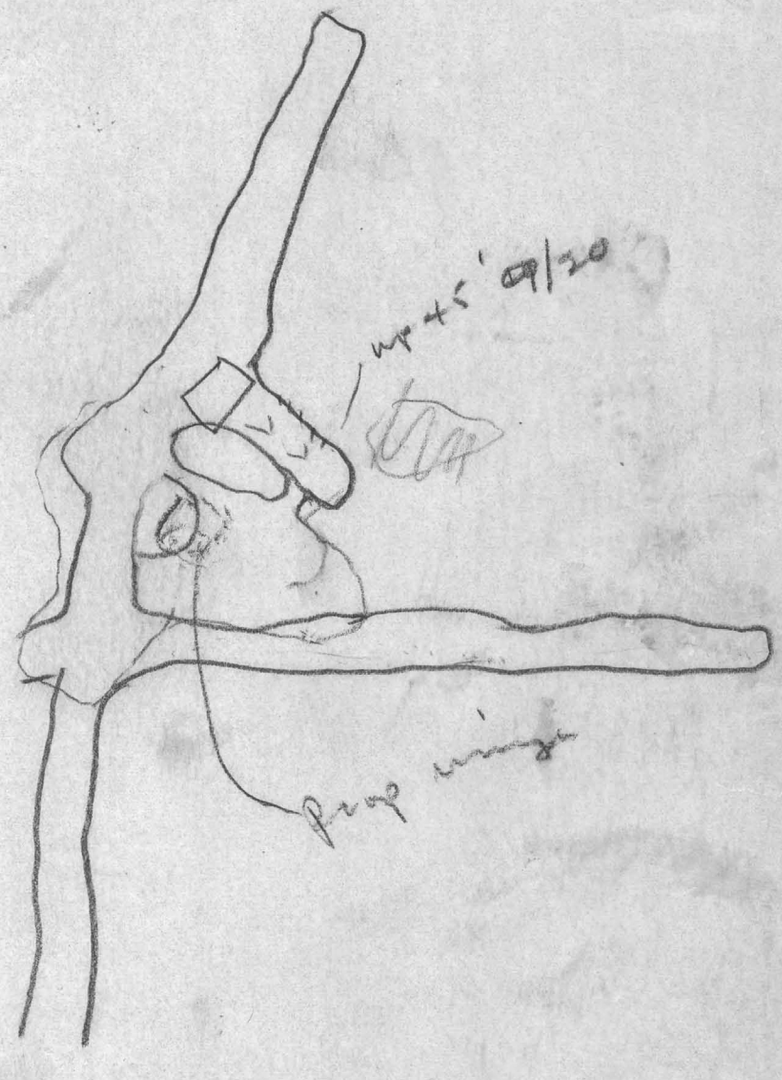

Hooton

		Original Bills	Paid Jan 29 Sub. Req 22	Due	Paid Feb 27 Sub. Req 24	Due	Paid March 31 Sub Req 25	Balance Due	Paid May 17 Sub Req 26	Balance Due	Sub May 27		Lot no.	Nick Dayn	Corrado Copp.	Royalty to RFC Not S.	prem.
1	Bob Barrett	10.37 ✓	10.37	—			—	—	—	none			1	90.68	11.33	11.33	
2	Chas. Boice	102.94		102.94			20.58	82.36	37.06	45.30			2	68.52	8.57	8.57	92.26
3	J. G. Biggs	5.07	5.07	—			—	—	—	none			3	422.57	52.82	52.82	
4	Chicago Pneumatic	59.24 ✓		59.24			19.42	39.82	19.42	20.40			4	616.36	77.05	77.05	
5	Pima Electric	29.00 ✓		29.00			29.00	—	—	none							
6	Ed Holderness	186.06	(1,300.00)				—	56.71 ✓	34.40	22.31							
7	P.D.O.C.	46.94	46.94	—			—	—	—	none							
8	Sears Roebuck	20.30	20.30	—			—	—	—	none							
9	A. Steinfeld	327.45 ✓					81.87	245.58		245.58	81.87	paid in full					
10	Standard Oil Company	627.10 ✓ 1,555.85	20.00 4.00 1,42.00	42.00			116.92	350.78		350.78							
11	Tucson Machine & Eng. Co.	48.40 ✓					24.20	24.20		24.20							
12	Trojan Powder Co.	285.60 ✓					57.12	228.48	85.68	142.80							
13	Western Foto	1.15	(1.15)				—	—	—	none							
14	Jules Vermeersch	127.50	127.50	—			—	—	—	none							
15	N.B. Whitmire	5.33	5.33				—	—	—	none							
16	Wilcox Service Station	34.97 ~~27.57~~ ✓					11.21	23.66		23.66							
17	Wilcox Lumber Co.	37.55 ✓					12.25	41.00	15.38	25.62							
18	Wagner Co.	64.44 ✓					19.33	45.11		45.11	21.84						
19	J. Walker House Rent	60.00 ✓					20.00	40.00	15.00	25.00	25.00	paid					
20	Jacobs Assay	30.05 ✓			10.50	20.05	—	20.05		20.05							
21	Insurance	103.48 ✓					51.74	51.74		51.74							
22	Demurrage	180.26 ✓	+18.70		18.70	171.30	—	171.20		171.30	170.36						
23	Collector of Int Rev.	70.87	70.87	—	—	—	—	—	—	none							
24	G.F. Crane	10.91 ✓			10.91	—	—	—	—	none							
25	J.H. Smith	10.61 ✓			10.61	—	—	—	—	none							
26	Independent Pipe & Machinery	~~484.82~~ ~~460.00~~ ✓				484.82	100.00	384.82		384.82							
		3,300.37						2,071.00									
							1,229.37										
			Sub 114 23														
	Earle Pitcher Mining	176,06.50	84,69.82		8584.66 on ck Jan 25, 1945												
Paid	April 11, 1945				917.00	7270 ck smaller refund											

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Mammoth Mine

					Au	Ag	Cu	Zn	Ins	SiO2	Al2O3	S	Fe	CaO	Tons	Ag	Zn	Cu	Shipper	Bonus	Royalty Cor.	RFC Royalty	Royalty w/Bonus	Equipt Sold
6-26	44	1	Hayden	493	-	.27	4.88	8.1	66.0	41.1	8.1	5.6	5.8	12.0	44,890.5	25.6	727.3	43.82	49.78					
6-29	44	2		476	-	.38	2.90	7.3	63.3	43.3	7.3	4.2	4.2	14.1	43,110.0	17.9	687.8	27.32	-93.38					
10-23	"	3		675	-	.51	5.53	1.8	68.8	43.8	11.2	6.1	6.8	9.6	47,051.5	37.1	1715	52.70	71.43		4.55			
10-23	"	4		679	-	.54	5.17	1.8	69.7	44.3	11.0	6.0	6.3	9.5	49,023.9	26.5	1765	50.69	49.56		2.25			
10-26	"	5		683	-	.33	2.32	3.5	73.5	43.8	8.7	4.2	3.3	12.7	51,667.0	17.1	3017	23.97	+1,200.80		20.42			
10-28	"	6		684	-	.34	4.68	2.3	67.7	43.5	10.6	6.0	6.0	10.7	48,801.55	25.9	2209	44.94	14.46		.84			
10-30	"	7		686	-	.37	3.58	2.1	67.0	46.4	10.0	5.0	5.1	12.5	53,050.5	19.8	2253	38.41	-87.87		13.62			
11-6	"	8		701	-	.42	3.91	2.5	71.8	42.7	10.7	5.1	5.6	13.1	190,576.0	80.0	952.7	149.03	-272.80		—			
11-13	"	9		707	-	.51	4.35	2.5	69.1	43.5	11.8	5.2	4.5	11.2	87,981.45	45.8	449.1	78.14	-67.34		—			
11-16		10		713	-	.53	4.80	2.3	68.0	45.2	11.3	6.2	5.7	8.7	91,830.15	48.7	422.3	88.13	35.39		—			
		Eagle Acber																						
Sept		1-2			-	-	2.23	2.98							1,111,203.5		662.18	500.89	-2,522.10	7773.14	286.72			
Oct		3-4			-	-	2.05	3.36							1,048,590.0		704.52	429.40	-1,647.36	7242.45	449.68			
		P.D.																						
11-6	44	1		1807	M	.40	4.02	2.19						11.3	132,054	59.7	89.74	106.65	128.68		68.54			
12-14	"	2		1941	M	.57	5.25	2.35							178,129	101.5	83.72	117.060	515.58		166.26			
12-21	"	3		1975	M	.54	5.37	2.50							132,322	71.4	66.11	142.54	486.22		74.34			
12-28	"	4		2007	M	.53	4.53	2.20						11.7	176,961	104.4	86.66	178.45	337.39		197.26			
1-25	"	5		2014	M	.57	4.99	2.20						10.9	48,760	28.9	21.54	48.86	132.41		41.03			
1-11	45	6		2056	M	.58	5.22	2.12						10.8	140,350	81.4	61.75	140.83	485.46		300.1			
1-4	"	7-9		47	M	.47	4.38	2.9						11.8	133,745	62.9	77.57	117.76	324.84	12,975.61	81.40			
															3,837,224	846.6	229.232	245.833	-2,298.15	30789.74	1,437.74			
																				12.2 tons				
2-24	45	1		222	M	.52	4.47	2.5							44,936	23.4	22.47	40.17	90.68		11.33	11.33	7.26	225.00 Hanson
2-28	"	2		242	M	.44	4.16	2.7							45,419	20.0	24.63	27.79	68.52		8.57	8.57	458.68	10.00 water tank
3-7	"	3		268	M	.47	4.36	2.65							230,775	113.1	99.22	201.24	422.57		52.82	52.82	320.30	
3-26	"	4		372	.005	1.48	4.83								132,924	256.5	—	181.036	616.36		77.05	77.05	692.70	
4-5	"	5		421	M	.60	5.23								95,893	57.5	—	100.30	316.19		39.53	39.53	828.31	
4-20	"	6		508	M	.46	4.14	2.4							211,567	97.5	101.70	175.43	320.94		40.05	40.05	852.84	
5-17	"	7		638	M	.51	4.38								157,222	77.1	—	121.27	293.72		36.72	36.72		
5-24	"	8		690	M	.45	3.96								204,028	91.8	—	161.57	260.51		32.56	32.56		
5-30	"	9		725	M	.35	2.77	2.35							253,673	88.8	119.24	140.05	-194.41		—	—		
5-31	"	10A		257A	M	.30	3.03	2.9							92,834	274.9	144.53	151.32	-30.03		—	—		
6-1	"	10B		257B	M	.30	3.03	2.9							156,877				-57.81		—	—		
6-15	"	11		813	M	.53	4.90	—							228,834	121.3	—	224.36	634.60		79.33	79.33		
6-20	"	12		845	M	.74	7.21	—							43,895	24.5	—	63.30	284.70		35.21	35.21		
6-27	"	13		910	M	.78	6.82	2.2							137,513	107.3	60.51	139.02	821.38		102.70	102.70		
7-17	"	14		978	M	.72	6.25	—							172,558	124.5	—	216.07	852.46		106.56	106.56		
7-19	"	15		986	M	.72	5.80	3.85							86,177	62.0	66.36	99.97	345.64		43.21	43.21		
8-3	"	16		1049	Hr	.69	5.84	3.00							241,829	166.9	241.90	282.09	896.38		105.80	105.80		
															2,591,525			2,212,159						
8-14	"	17		1088	M	.66	5.93	2.90							74,285	62.2	54.69	111.82	403.06		50.38	50.38		
8-25	"	18		1135	M	.67	6.06	2.90							74,242	51.1	42.95	89.74	330.70		41.34	41.34		
		Under Royalty & RFC,				.60	4.47								2,760,079	1657.4		257.354	6683.66	30691.91	864.12	864.12	3,261.49	
																					1724.44		864.12	
																							4,125.61	
																							259.76	
		Total,				.38	3.93	2.48							6,597,206	2594.0	327.02	505.187	9,327.51	61,491.65			4,415.27	
																			89.36 27					
																			9,237.73					

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