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325 Heard Building
Phoenix, Arizona
April 18, 1945

RAIT - Chief - Mining Section, RFC - Washington 25, DC

Re: R. P. M. Davis - Docket No. ND-5305

When recently the final repayment was made cleaning up the loan to the above Borrower it occurred to me that it would be illuminating to make an analysis and overall picture of a successful loan. I discussed this with our Mr. Rasor, who is a good statistician, and he accordingly made an analysis of the operations under this loan and a record of the repayment. I submit this to you and I am sure you will find it interesting.

It should be remembered that the management on this job was completely competent, much more so than on the average loan. The cost of supervision and management was excessive, we always thought, but nevertheless it was efficient, and I believe this particular loan was as fairly administered and carried out as one could expect. Mr. Rasor's figures also emphasize the importance of the Government bonus of premiums on metals in enabling these small mines to operate.

W. B. COHRING
Supervising Engineer

WBG:sbm

Enc:
3c - Report

XXXXXXXXXXXXXXXXXX

325 Heard Building
Phoenix, Arizona
April 16, 1945

MEMORANDUM:

TO: W. B. Gohring, Supervising Engineer

FROM: Charles A. Rasor, Supervising Engineer

SUBJECT: R. P. M. Davis, RFC Loan on Hackberry Mine

I submit herewith a breakdown and an analysis of the operation of R. P. M. Davis under a Reconstruction loan of $40,000.

The original loan of $20,000 for development was approved November 20, 1942, but provided that $5,000 plus interest of $53.42 be deducted to repay loan of $5,000 on the Boggs mine, an operation under the same Borrower. On February 17, 1943 a loan of $40,000 was approved of which $20,000 was in exchange for the notes on the original loan of $20,000. Deducted from the second $20,000 was the interest charges of $178.09 on the first $20,000. The loan was repaid fully as follows:

Date	Amount	Interest
January 1, 1943		$ 51.12
July 1, 1943		473.42
January 1, 1944	$10,000.00	806.58
July 1, 1944	5,000.00	604.93
September 1, 1944	5,000.00	33.97
January 1, 1945	10,000.00	408.77
April 2, 1945	10,000.00	99.73
Total:	$40,000.00	$2,478.52

After the return of capital of $34,768.49 there was a profit on the ore of $22,168.50. From the profit the following charges were deducted:

Profit on ore		$22,168.50
Interest Charges on Loan	$2,478.52	
Reimbursable Charges to RFC	202.56	
Loan on Boggs plus Interest	5,231.51	
	$7,912.59	$ 7,912.59
Returns to Borrower from Trust Fund:		$14,255.91

The following tables show the breakdown of production and costs:

Re: R. P. M.Davis
Hackberry Mine

Table 1

Analysis of Metal Production and Returns from 10,156.11 Dry Tons

Total Metal	Average Assay per Ton	Gross Mill Value	Average Value Per Ton	Premiums	Total Gross Value	Total Average Value Per Ton
1,101.929 ounces Gold	.11 ounces	$27,716.39	$2.73		$ 27,716.39	$2.73
51,809.3 ounces Silver	5.1 ounces	27,199.56	2.68		27,199.56	2.68
1,827,194 pounds Zinc	9.0 %	32,264.22	3.18	$108,962.82	141,227.04	13.91
696,515 pounds Lead	3.43 %	9,709.01	.95	32,367.22	42,076.23	4.14
372,948 pounds Copper	1.83 %	13,206.32	1.30	30,793.87	44,000.19	4.33
		$110,095.50	$10.84	$172,123.91	$282,219.41	$27.79

Table 2

Analysis of Operating Costs in Mining and Milling 10,363.342 Wet Tons

Mining and Development	Total Cost	Per Cent of Total	Cost Per Ton
Labor	$118,353.35	57.09	$11.42
Super. & General Expense	28,398.28	13.70	2.74
Supplies & Equipment	20,573.74	9.92	1.99
Compensation Insurance	11,576.38	5.58	1.12
Electric Power	10,677.27	5.15	1.03
Timber	10,030.50	4.84	0.97
Unemployment Ins. & O.A.B.	3,933.14	1.90	0.38
Royalty	3,750.00	1.82	0.35
Total Mining and Development:	$207,292.68	100.00	$20.00
Custom Milling Expense:			
Trucking to Mill	16,840.43		1.62
Mill Treatment	35,918.80		3.47
Total Milling Expense:	$ 52,759.23		$5.09
Total Mining and Milling:	$260,051.91		$25.09

Re: R. P. M. Davis
Hackberry Mine

April 16, 1945

Total Gross Proceeds from Ore	$282,219.41
Total Mining and Milling Costs	$260,051.91
Profit on Production	$ 22,168.50

The mine was a replacement vein of quartz and sulfides of a complex nature in schist. The vein had an average width of three feet and dipped steeply. The area mined was roughly 100 feet laterally and 600 feet in length. Ore was hoisted through a steeply inclined shaft. Poor walls made mining difficult.

CHARLES A. RASOR
Supervising Engineer

CAR:sbm

325 Heard Building
Phoenix, Arizona
February 28, 1944

Mr. L. L. Farnham
Mayer, Arizona

Re: R.P.M. Davis -
N.D. 5305

Dear Mr. Farnham:

The Washington office has requested me to submit a report on your operation of the Hackberry Mine, and in order to give them a clear picture, I think it advisable to have a longitudinal sketch of the mine.

I wonder if it would be possible for you to send me a rough pencil sketch to scale of the various ore bodies in the mine. The sketch should show the shape of the ore bodies, the amount of stoping done by the former operator of the mine, the size and shape of the stoping done by you, and the amount of development work done under loan funds. If you could cross-hatch the various work done under the different operations of the mine, I will make a tracing of your map in this office.

Also, I notice we do not have Progress Reports from you for the months of January and July, 1943, so I wonder if you could briefly indicate the amount of development work you did during those months and the tons of ore stoped from the various ore bodies.

I hope that you had a good visit in California and that the mine has developed some good ore on the lower level.

Sincerely,

William B. Maitland,
Supervising Engineer.

SUPERVISING ENGINEER'S

PROGRESS REPORT

R. P. M. DAVIS, Applicant
Docket N D-5305
September 6, 1943

On September 1, 1943 I visited the above captioned docket in order to inspect the progress being made.

This project is now on a sustained shipping basis and production more than meets operating expenses. Effective June 1, 1943 the W. P. B. has revised the premiums so that now the mine has a Zero quota on all metals and an extra 4.7¢ premium on copper, A and B on lead and an A, B, and C on zinc.

The applicant engineer has estimated that under this new quota the following premiums are still due from Metals Reserve:-

June - additional premium under new quota	$1732.94
July - additional premium under new quota	1436.61
July - old premium still not paid	7911.67
Total still due	$ 11,081.22
The bank balance as of September 1,,1943	295.53
Total funds available	$11,376.75

The property started to ship ore in the period February 15 to 30 but only for the last two months has it been producing between 600 and 700 tons per month. The bottle neck now is the inability of the Iron King Custom Mill to receive all of the ore that this project can produce.

For the period February 15 to August 1, the expenditures have been:-

Payroll- - - - - - -	$29,710,06	
Sub-requisitions - -	19,263,13	
Total Expenditures		$48,973.19
Shipments for period		45,187.31
Net loss for period		$3,785.88

These figures actually do not indicate the true condition as at the first part of this period, development expenditures were large and production small but the tempo of monthly shipments has gradually increased while the development expense has been maintained recently at about $1800 per month.

In the future the applicant engineerestimates that the net profit per ton will be about $4 per ton and the monthly production 700 tons or a total net of $2800 per month.

Following is an estimation of the ore to be mined between the 450 and the 600 foot levels:-

ORE BETWEEN 450' LEVEL & 600' LEVEL (ESTIMATED)

Ore Body	Average stope Length	Average width	Approx. Tonnage	Estimated Net Profit $4 per ton	Remarks
1	-	-	-	-	Not found yet on 600 level
2	25	7	2300tons	$9200.00	
3	50	3.6	1600	6400.00	
4	-	-	-	-	Not found yet on 600 level
5	25	1.5	500	$2000.00	
6	30	1.50	600	2400.00	

The significant factors in the above figures is the fact that the ore is extending to depth and there should be about $20,000 profit in mining the ore between the two levels. It is my opinion that this Corporation should discuss with the applicant at this time some plan of amortization of the loan. Unless some part of the indicated net profit per ton is set aside for the loan repayment there will be a tendency for the applicant to do too much development and prospecting work with this net profit and since apparently the market for this ore is limited by the capacity of the custom mill I believe it preferable for partial loan repayments to be made and if additional deeper development work is warrented in the future a further loan could be granted to do this work. Handling the project in this manner will tend to apply a brake on too large expenditures and give this Corporation a closer control of the mine.

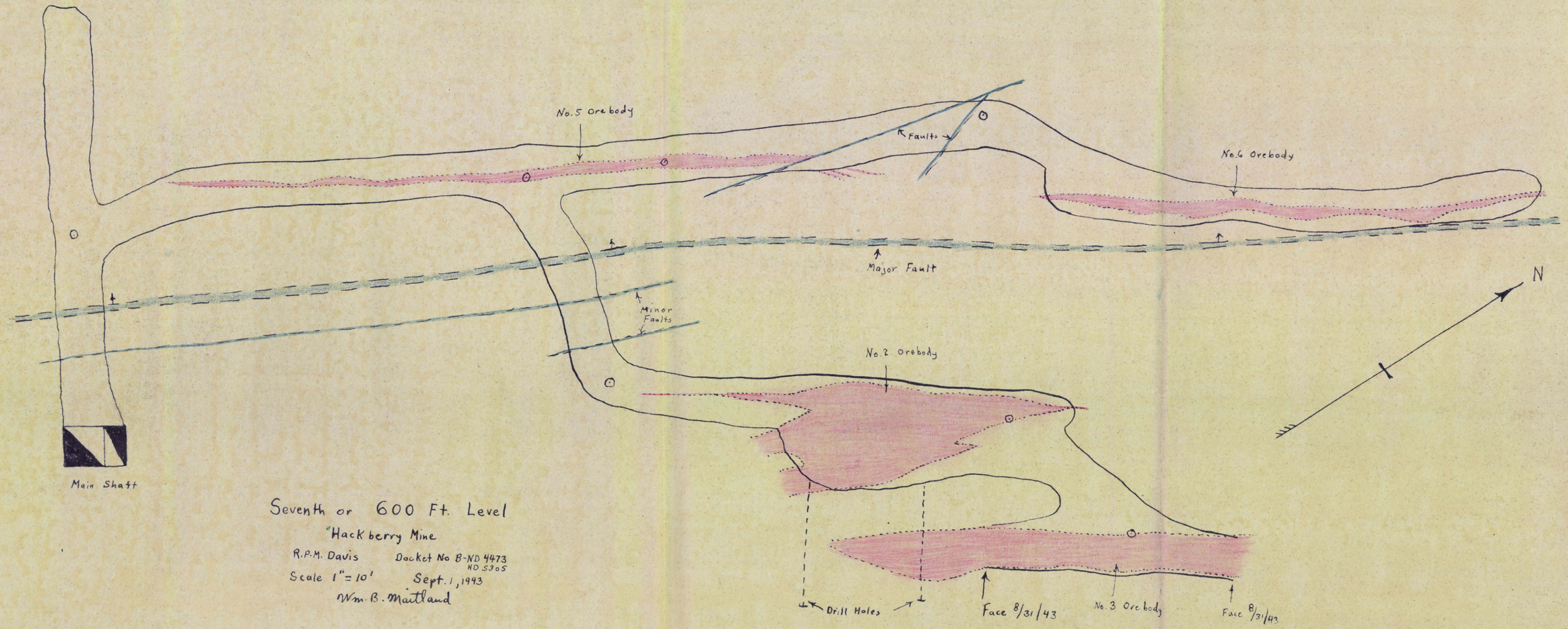
This operation has made a considerable contribution to the War Effort as shown by the following figures:-

Production Jan. 1 to July 31, 1943.

2327.35 tons of ore sold for $45,187.31
and containing 66.44 tons of lead metal
177.2 tons of zinc metal
44.06 tons of copper metal

Attached hereto is a map of the 600 foot level. Work at this project is progressing satisfactorily and the superintendent Mr. Farnham has stated that his sole desire is to establish the record of repaying two consecutive R. F. C. loans on two separate properties which would be an enviable record.

WM. B. MAITLAND
Supervising Engineer



Seventh or 600 Ft. Level

"Hackberry Mine

R.P.M. Davis Docket No B-ND 4473
ND 5305

Scale 1" = 10' Sept. 1, 1943

Wm. B. Maitland

HACKBERRY MINE -- (ND - 5305)

April 10, 1943

Summary of work accomplished during March, 1943.

100 ft. Level:

The dirft on No. 2 ore body was timbered and lagged, a chute installed and a filled stope with cribbed raise was carried up 20 ft. above the top of the drift. The length stoped averaged 20' along the strike and produced about 75 tons of ore.

150' Level:

No. 5 Ore body - during the silling out and timbering preparatory to starting a filled stope, some 9 tons of ore were recovered.

200' Level

No. 5 Ore body: The drift here was silled out and lagged, a chute and filled stope with cribbed raise was carried up some 12' above the back of the drift with a length of about 23'. Some 48 tons of ore were produced from this work.

Shaft sinking:

450 Level to 600' Level: The main shaft was sunk from 55' below the 450' level to 117' or a distance of 62'. Extremely soft caving walls which necessitated carrying the timbers to the very bottom of the excavation, plus considerable water, made the progress very slow and costly.

During the month about 122 tons of ore was shipped to the Iron King Mill which after deducting freight and treatment charges had a net value of approximately $1,700 with premiums, or about $14.00 per ton net.

Since Jan. 17, 1943, to April 1, 1943, about 470 tons of ore ore, chiefly from development work has been shipped to the Iron King mill. This ore has had an average mill net value of $13.50 per ton.

L. L. F.

Arango
Edwards 440 60 cycle
Camp
property S of Joy

File

Hackberry Mine (ND-5305)

March 7,1943.

Summary of work accomplished during February,1943.

450 Ft.Level;

The raise on No.2 orebody was advanced 43 feet; namely from 53 ft above the 450 level to 166 ft,where it holed thru into the 350 ft level.The last 40 ft of this raise passed thru continuous ore,of excellent grade,having an average width of about 3 feet.About 100 tons of ore,coming from this raise, averaged 0.16 Au; 4.6 Ag; 1.33 % Cu; 3.1 % Pb;8.7 % Zn.This ore netted $14.35 per ton at the Iron King Mill.

450 Ft.Level;

The raise on No.6 orebody was advanced 20 feet; namely,from 83 ft above the level to 103 ft where it holed thru into the 350 ft level.The ore disclosed in this raise was a disappointment.For some 25 feet immediately above the 450 level an average of 2.5 feet of good ore was found but from that point to the level above the ore was narrow and made up of small discontinous lenses.

450 Ft.Level;

The winze on No.2 orebody was sunk some 25 feet below the level at which point the ore was cut off by a strike fault,so that it seemed in advisable to continue sinking here. After abandoning above winze it was decided to sink on NO.6 orebody under the raise recently completed.After rigging up and sinking some 6 feet in this latter winze,a heavy fault gouge,cutting the ore,was encountered,so that further sinking here was also deemed in advisable and in-stead the sinking of the main shaft was started.

A concrete dam was built across the main drift near the shaft on the 450 ft level to serve as a sump for the shaft sinking.The old sump of the shaft was cleaned out,retimbered and the shaft advanced to 55 feet below the 450 level.Three shifts,seven days per week are employed in this work with the hope of completing the shaft to the 600 ft level,within the next 30 days.

350 Ft.Level;

During February some 6 feet of drifting was done to the north on No.5 orebody.Owing to the necessity for and the scarcity of timber,this work was temporarily stopped until more timber is available.

250 Ft.Level;

The drift south on No.4 orebody was advanced some 50 feet;namely from 31 ft to 81 ft south of the shaft x cut. This 80 feet of drift on No.4 orebody disclosed a lense of good ore some 58 feet long with an average width of 1.5 feet.

200 Ft.Level;

This level north from the shaft to No.5 orebody was cleaned up and retimbered.A raise (#305)on No.5 orebody,some 55

feet northeast of the shaft,was started and completed thru to the level above,a distance of 48 feet.This raise disclosed a continous strand of good ore having an average width of about 2.0 feet.Some 55 tons of ore ,resulting from driving this raise, was shipped to the Iron King Mill.

150 Ft.Level;

This level north of the shaft for 50 feet was cleaned and retimbered and a raise started on No.5 orebody. This raise was advanced some 10 feet on fair ore.

Summary of Development work for February,1943.

Drifts	----------	56 feet
Raises	-----------	121 "
Winzes	----------	31 "
Shaft	----------	45 "
Total	---	253 "

During February some 253 tons of ore,coming from above development work,was shipped to the Iron King Mill.This ore has an estimated net value,after deducting freight and treatment charges,of approximately $3200.00 (settlement figures on last lot of 44 tons not yet available) or a net value per ton of about $12.64.

RECONSTRUCTION FINANCE CORPORATION
MINING DIVISION
PROGRESS REPORT OF SUPERVISING ENGINEER

Borrower: R.P.M. Davis
Docket No: B-ND-4473
Date of Report: July 4, 1944

On June 23, 1944, I examined the Hackberry Mine under the above-captioned borrower. This mine is steadily producing ore, and has produced every month since January, 1943. Following is the production Record:

		ASSAYS						
Year	Dry Tons	Oz. Gold	Oz. Silver	% Lead	% Copper	% Zinc	Net Mill Payment	MRC Bonus
1943 - 12 mo.	5522.87	0.09	4.36	2.74	1.59	7.96	$26,120.99	$73,116.93
June, 1943 to June, 1944	7427.98	0.09	4.51	2.94	1.54	8.16	$35,036.29	$105,147.72

	Total Payment	Net Returns per ton Before Mining Cost	Tons Per Mo.	Net Returns Per Month -
1943 - 12 mo.	$99,237.92	$17.97		
June, 1943 to June, 1944	$150,184.01	$18.87	437	$8246.12

Up to June 1, 1943, the mine has produced under loan funds:

697.13	oz. gold
33,468.72	oz. silver
437,296	lbs. lead
229,750	lbs. copper
1,212,676	lbs. zinc

Stoping operations are now being carried on between the 600 foot and 450 foot levels on the No. 6 ore body, and between the 600 foot and 700 foot levels on the No. 2 orebody. It is expected that the balance of the ore in the mine, with the exception of the No. 1 orebody, will be exhausted some time after the first of July.

Mr. Farnham has broken down at various places ore from the No. 1 orebody and apparently the ore is not as badly oxidized as was first thought. Therefore an attempt will be made to mine this ore between the first and fifth levels. Mr. Farnham estimates that he can obtain 2,000 tons of ore from the No. 1 orebody that should net $4 per ton profit. Following is a recapitulation of the probable outcome of the mine, provided the No. 1 orebody can be successfully mine and milled:

Cash in Bank, June 28	$14,000	
Due on April premiums	1,023	
Due on May premiums	1,411	
Estimated June premiums	7,000	
Estimated June mill returns	3,000	
Estimated net profit on No. 1 orebody	8,000	
Estimated liquidations value of equipment	3,600	
Total Income	$ 38,034	
Advances on June premiums		$ 1,700
Estimated Payroll June 15-30		2,500
Estimated supplies for June		1,500
Estimated Soc. Sec. & Payroll taxes to June 1		734
Loan repayment July 1		5,000
Interest on loan		600
Total Expenses		$12,034

Estimated net profit			$26,000
Original loan		$40,000	
Principal paid	$10,000		
Principal (to be paid July 1)	5,000		
Total Loan Payments to July 1		15,000	
Balance due on loan			$25,000
Balance estimated after loan repayment			$ 1,000

Mr. Farnham is making every effort to repay this loan although Mr. R. P. M. Davis has lost interest in the outcome of the mine. It is interesting to note that ore averaging $18.72 before mining cost will pay enough profit only to barely amortize the mining plant investment. Mining conditions at the Hackberry are difficult, but the chief factor causing high costs is the inefficiency and high price of labor.

Wm. B. Maitland
Supervising Engineer

WBM:cm

Progress Report

Borrower: R. P. M. Davis

Contract No.: BND 4473

Date of Report: June 28, 1944

On June 23, 1944 I examined the Harkberg mine under the above captioned borrower. This mine is steadily producing ore and has produced every month since Jan 1943. Follow is the production record.

Year	Dry Tons	Assays: oz Gold	oz Silver	% Lead	% Copper	% Zinc	Net Mill Payment	MRC Bonus	Total Payment	Net returns per ton Before Mining cost	Tons per Month	Net returns per month.
1943-12 mo.	5522.87	0.09	4.36	2.74	1.59	7.96	$26,120.95	$73,116.93	$99,237.92	$17.97		
Jan 1943 to June 1944	7427.98	0.09	4.51	2.94	1.54	8.16	$35,036.29	$105,147.72	$140,184.01	$18.87	437	$8246.12

Up to June 1st 1943 the mine has produced under loan funds -

697.13 oz gold

33,468.72 oz silver

437,296 lbs lead

229,750 lbs copper

1,212,676 lbs zinc

Stoping operations are now being carried on between the 600' + 450' levels on the No 6 ore body and between the 600' and 700' levels on the No 2 orebody. It is expected that the balance of the ore in the mine with the exception of the No 1 Orebody will be exhausted some time after the first of August. July

Mr Farnham has broken down at various places ore from the No 1 orebody and

~~proved~~ ~~but~~ apparently the ore is not as badly oxidized as was first ~~as~~ thought. Therefore an attempt will be made to mine this ore between the 1st and 5th levels. Mr Farnham estimates that he can obtain 2000 tons of ore from the No 1 orebody that should net $4 per ton profit. Following is a recapitulation of the probable outcome of the mine provided the No 1 Orebody can be successfully mined + milled:-

Cash in Bank June 25th	$14,000	
Due on April premiums	1,023	
" " May "	1,411	
Estimated June premiums	7,000	
" " mill returns	3,000	
" net profit on No 1 orebody	8,000	
" liquidation value of equipment	3600	
Total income	$38,034	
advances on June Premiums		$ 1,700
Estimated payroll June 15-30		2500
" supplies for June		1500
" Soc. Sec. + payroll taxes to June 1st		734
Loan repayment July 1st		5000
Interest on loan		600
Total expenses		$12,034
Estimated net profit		$26,000
Original loan	$40,000	
Principal paid	$10,000	
" (to be paid July 1)	5,000	
Total loan payments to July 1st	15,000	
Bal due on loan		$25,000
Balance estimated after loan repayment		$1,000

Mr Farnham is making every effort to repay this loan altho Mr R P M Davis has lost interest in the outcome of this ore mine. It is interesting to note that ore averaging $18.87 before mining cost will not pay enough profit only to barely amortize the mining plant investment. Mining conditions at the Packberry are difficult but the chief factor causing high costs is the ~~over~~ processing and high price of labor.

Wm B Maillard
Sup Engr

RECONSTRUCTION FINANCE CORPORATION

MINING DIVISION

PROGRESS REPORT OF SUPERVISING ENGINEER

Docket No. B-ND-4473 - R. P. M. Davis
Date of Examination: February 22,1944
Date of Report: February 28,1944

On February 22, 1944, I visited the Hackberry Mine in order to examine the progress being made. Stoping is being continued on the 450' and 600' levels and they are now crosscutting on the 700' level (winze). The winze from the 600' to the 700' level has been completed and the drift to the north from the bottom of the winze is now in 10 feet and they are starting to crosscut to the No. 3 ore body. The winze followed the No. 2 ore body but at the 700' level it was found that this ore shoot had pinched to about two feet in width. Consequently the whole future of the mine depends upon the size and metal content of both the No. 3 and No. 6 ore bodies on the 700' level. The accompanying sketch will show these relationships and we are now preparing a more detailed map of the mine showing the original stopes and development work in the mine, the work done under the loan funds, and the new work to be done.

The winze was started on the No. 2 orebody because on the 7th level the ore was wide and winze working conditions were good. However, from the enclosed map it is apparent that the No. 2 ore shoot has extended nearly the whole depth of the shaft, so by comparison with the other ore shoots a lean spot is to be expected. On the other hand, ore shoots No. 3 and 6 which will be crosscut from the bottom of the winze, started a short distance above the collar of the winze so it is possible that they will extend well below the bottom of the winze.

About one month's ore supply remains in the stopes above the 7th level not including the shaft ore body (No. 1). Due to the high mining cost considerable ore included in the original estimates will not pay to mine. Mr. Farnham informs me that the Iron King Mill will not handle the number 1 ore as the copper is slightly oxidized due to the shaft following the ore all the way. Since the Iron King have all of their own ore they can handle they do not feel they should bother with any ore that might upset their mill operation. I believe this ore could be milled if some care were taken in the flotation of the copper. At the time of my first examination I did not realize that the No. 1 orebody was sufficiently oxidized to prevent its extraction.

I have discussed the future of the mine with Mr. Farnham and he feels as we do that the prime future object is to repay as much of the loan as possible before closing the mine. Since all development and stope preparation has been completed above the 7th level, the profitable ore now exposed in the No. 6, 5 and 3 orebodies is being extracted and this work will be completed within a month. Within a week's time we will know whether the No. 3 and No. 6 orebodies will pay to mine. Due to the narrow width they do not intend to stope the No. 2 orebody in which the winze is located. Also the amount of funds available in the loan account are just sufficient to complete the proposed development work on the 8th level so if ore is not found at this depth the project must be closed for lack of money.

Following is an analysis showing that it would not be profitable to ship the ore from the No. 1 orebody to the Clarkdale smelter.

NO. 1 ORE BODY (SHAFT)
Analysis if shipped to Clarkdale Smelter

Surface to 375' - 6040 tons probable ore averaging:

0.07% Au
3.3 oz Ag
1,7 % Cu
2.7 % Pb
7.1 % Zn

Smelter Payment for Metals

0.07 oz Au x $32.1195/oz	equals	$ 2.25	$2.25
3.3 oz Ag x 0.70625	"	2.33	2.33
1.7% Cu x 2000 = 34 lbs - 10 = 24 lbs x $0.09275	=		$2.23
Lead and zinc, no payment			
Total smelter payment			$6.81

Premiums

1.7% Cu x 2000 x 97% x $0.05	Regular	1.65
1.7% Cu x 2000 x 97% x $0.047	Special	1.55
Total Premium Payments		3.20
Total Ore Payments		$10.01

Marketing Charges

Silver deduction - 10% of Payment.....	$0.23	
Smelting Charge Base	3.50	
Excess - None	----	
Zinc Penalty 7.1 -2.0 = 5.1 x $0.15	0.77	
Freight, Mayer to Clarkdale	1.00	
Tax on freight and hauling	.06	
Truck hauling	1.00	
Total marketing charges		$6.56
Net Profit before mining cost		3.45
Estimated mining cost based on past operation		14.17
Estimated net loss per ton.....		10.72

Following is a list of Unit costs for 1943:

Shaft sinking (150', 2 compartment, timbered, wet)	$75.53/ft
Drifting and crosscutting (392 feet, 5x8, timbered)	17.96/ft
Winzing (84', 6x9, 1 compartment, timbered, wet)	65.47/ft
Raising (153' in ore, 5x10, 2 compartment, timbered)	10.00/ft
Stoping (5525 tons, labor, supervision, supplies)	14.16/ton
Stoping (5525 tons, labor, supervision, supplies, development)	18.87/ton

TOTAL AND UNIT COSTS

	Item	1942 Total	1942 % of total	1943 Total	1943 Per ton ore	1943 % of Total
1	Stoping Mine and surface labor			$43,818.09	$ 7.93	40%
2	Stoping Supervision			6,404.88	1.16	5
3	Stoping Total Labor (No. 1 & 2)			50,222.97	9.09	45
4	Stoping Supplies & overhead (no equip)			28,022.66	5.07	25
5	Stoping Total Direct Cost (No. 3 & 4)			78,245.63	14.16	70
6	Development cost	$7888.64	98	25,999.26	4.71	24
7	Actual Stoping Cost (No. 5 and 6)			104,244.89	18.87	94
8	Tonnage ore produced (dry, short)			5,525.23	---	--
9	Receipts from ore (after trucking & milling Cost)			98,427.07	17.81	--
10	Net profit (No. 9 less No. 5)			20,181.44	3.65	--
111	Net profit (No. 9 less No. 7)			- 5,817.82	- 1.05	--
12	Equipment cost	$150.00	2	6,196.48	1.12	6
13	Total Overall Expenditures (No. 7, 12)	8038.64	100	110,441.37	19.99	100
14	Net profit or loss on total expenditures (No. 13 less No. 9)			-12,014.30	-2.17	--

Amount of original loans	$ 34,946.58
1st Loan Repayment	10,000.00
Loan Balance	24,946.58
Balance of funds on hand Feb. 21st	3,703.96
Less estimated resale value of equipment	4,000.00
Net loss on project as of Feb. 21	17,242.62

During 1943 the mine produced:

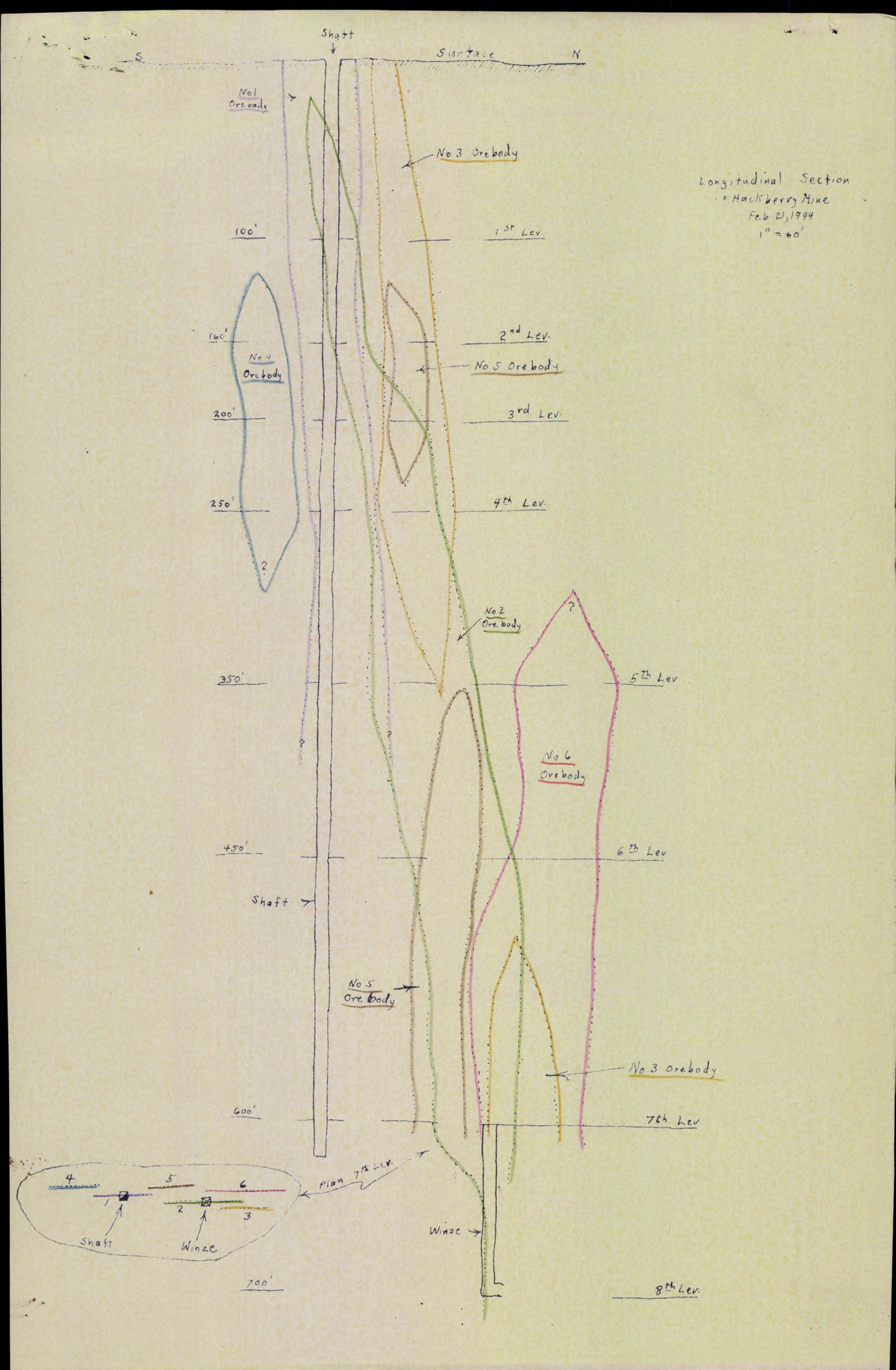
512.27	oz gold
24,305.68	oz silver
302,965	lb lead
177,152	lb copper
886,648	lb zinc

Docket No. B-ND-4473
R. P. M. Davis
Progress Report

It is my opinion that the lack of success on this project to date has been caused by the following:

1. Inefficient and high cost labor
2. High development cost
3. Difficult mining conditions
   a. Considerable water
   b. Strike faults following the veins
   c. A series of 6 ore shoots instead of one large shoot
   d. Vein follows schistosity making "slabby" walls
   e. Ore is harder than schist walls
   f. Ore shoots not continuous down the dip
   g. Narrow veins
   h. Ore shoots are en echelon
   i. Ore shoots are pipes with short horizontal dimensions

WILLIAM B. MAITLAND
Supervising Engineer


Shaft
S
Surface
N
No1 Orebody
No 3 Orebody
Longitudinal Section
Hackberry Mine
Feb 21, 1944
1" = 60'
100'
1st Lev.
160'
2nd Lev.
No 4 Orebody
No 5 Orebody
300'
3rd Lev.
250'
4th Lev.
?
No 2 Orebody
350'
5th Lev
No 6 Orebody
450'
6th Lev
Shaft
No 5 Orebody
No 3 orebody
600'
7th Lev
4
5
6
1
2
3
Plan 7th Lev.
Shaft
Winze
Winze
700'
8th Lev.

RECONSTRUCTION FINANCE CORPORATION
WASHINGTON 25, D. C.

Gohring - Sup. Eng. - Phoenix - February 11, 1944

Re: R. P. M. Davis - Docket No. B-ND-4473

Enclosed please find a copy of a letter dated January 24, 1944 received from Mr. Davis, in which he states that the work on the captioned project will probably be discontinued some time within the next two or three months. A copy of our reply is also enclosed.

Mr. Farnham reports for the month of January 1944 a production of 524 tons of ore which had a net value, including premiums, after deducting haulage and treatment, of $9,390.86, or $17.92 per ton. He also reports that the winze below the No. 7 level was advanced 45 feet during the month on ore less than 2 feet in width at a cost of $3,100.00, or $69.00 per foot. This indicates a development cost of from $3.50 to $4.00 per ton of ore produced after deducting the net returns from the ore extracted from the winze. In view of this information, we are in some doubt as to the advisability of doing any additional development work on this exposure, because it does not appear that the narrow section of the oreshoot could be mined at a profit.

Reference is also made to Mr. Maitland's report on the property, dated February 1, 1943, in which it is stated that Mr. Farnham estimates that there are 15,267 tons of partly developed ore valued at $17.70 per ton remaining in the old stopes and in the shaft oreshoot which were not included in the original estimate. While this grade of ore by itself may not pay to ship, it could be mined concurrently with the better grade ore, thereby reducing the average value to a point where the operations could be extended for a longer period of time without showing much profit. This procedure would, of course, add to the production of strategic metals but would not result in any appreciable amount being repaid on the loan. Also it may be possible that a portion of the lower grade ore remaining in the old stopes and the shaft ore body could be mined at a small profit if the stope preparation work is not too costly and provided further that it did not have to support any development

FOR VICTORY
BUY UNITED STATES WAR BONDS AND STAMPS

expenditures. The foregoing ideas have occurred to us here as possibilities, which we submit for your further consideration.

However, in view of the fact that the positions of strategic metals are presently satisfactory, we are primarily concerned at this time with the work on this project being conducted in such manner as to result in as much of the loan funds being repaid as possible. Unless you have already done so, we, therefore, think that it is advisable to have Mr. Maitland or one of your other engineers make an examination of the property and confer with Mr. Davis and Mr. Farnham to ascertain the actual cost of mining at present and the cost likely to apply during the next few months. The tonnage of developed ore available for mining that assays better than the estimated cut-off grade should be determined in order to ascertain the approximate life of the mine and the amount of net proceeds to be realized from working the remaining ore to best advantage.

After making such a study of the mine, it will be appreciated if you will forward us a copy of the report, showing the working costs and cut-off grade estimates and an ore estimate showing the grade and location of the blocks, together with your comments and recommendations.

Such a study will, of course, be of no value to anyone unless we can obtain the cooperation of Mr. Davis and Mr. Farnham in operating the mine only so long as it is definitely showing a profit and in stoping the remaining ore blocks in such manner as to leave the greatest net return to be applied toward loan repayment, even though by so doing a substantial quantity of sub-marginal material may remain unmined.

You may have already made such a study of the operation and may now be working under an arrangement similar to the suggestions outlined herein. If so, we will appreciate receiving a report on the plan being followed and advising whether or not satisfactory cooperation from the Borrower is now being obtained.

D. M. Rait

D. M. RAIT
Chief, Mining Section

12

325 Heard Building
Phoenix, Arizona

June 28, 1943

Tully - Ass't Chief - Mining Section - Washington

Re: R. P. M. Davis - Docket No. B-ND-4473

On June 11, I visited the above property in order to inspect the work being done. This project has now practically exhausted all of its loan funds and is producing about 25 tons of ore per day, which is being milled at the Iron King Custom Mill. On this basis, Mr. Farnham estimates the property can produce a profit from operations.

Attached to this Progress Report is a summary of all of the shipments made up to June 18, 1943. Mr. Farnham informed me that they had obtained an additional premium on their lead and zinc retroactive to May 1. The premium is a straight "B" bonus on lead and zinc, with an additional "C" bonus on the latter metal for production amounting to over 10 tons per month. He estimates that their net profit from operation with this new bonus should amount to approximately $2,500.00 per month.

New development work now consists of drifting and crosscutting on the new 600' Level. This work is being done by contract and has exposed the Nos. 5 and 6 Ore-bodies on this Level. A crosscut is now being ran to explore the No. 2 Ore-body. Unfortunately the No. 5 and 6 ore bodies are only from 12 to 18" wide on this level, although it is believed that with the new premium prices, they can be profitably stoped as the ven is narrow, but practically pure sulphide. The No. 6 Ore-body is not completely exposed as yet and there is a possibility that additional lenses of ore will also be found on this level.

In any event the work has demonstrated that the

ore extends to depth and it is probable that this mine will repay this loan and show an additional profit to the owner.

WM. B. MAITLAND
Supervising Engineer

WBM:MJ
Enclosure:
Summary of Shipments

Docket No. B-ND-4473 - R. F. M. Davis

No.	Date	Dry Tons	Oz. Au.	Oz. Ag.	% Pb.	% Zn.	% Cu.	Gross Value	Mill net value to Shipper	Bonus Payments
9	5/14/43	88.04	.10	5.6	3.2	8.8	1.87	$1110.38	$ 660.14	$ 604.62
10	5/21/43	81.15	.08	4.3	3.10	10.10	2.18	1005.93	592.98	620.00
11	5/31/43	114.99	.10	4.3	2.5	8.9	2.34	1372.64	804.72	803.49
12	5/31/43	110.72	.09	4.9	3.2	9.9	1.92	1400.50	834.89	816.77
13	6/7/43	113.95	.12	6.2	2.3	8.6	2.78	1550.52	993.45	814.57
14	6/12/43	112.88	.08	5.1	2.6	8.7	2.44	1345.30	784.99	794.38
T o t a l		621.73	.10	5.1	2.8	9.1	2.28	7785.25	4670.57	4453.83
Total Previously Reported		588.07	.13	5.45	3.57	8.39	1.49	7542.33	4438.36	3842.86
Total shipped to-date:		1,209.80	.11	5.26	3.17	8.77	1.89	$15,327.58	$9,108.93	$8,296.69

Total value of ore before deduction for mining cost: $17,405.62

Net value per ton " " " " " $ 14.39

325 Heard Building
Phoenix, Arizona

May 20, 1943

Mr. Landon F. Strobel
Executive Secretary
Quota Committee
Washington, D. C.

Dear Mr. Strobel:- Re: R. P. M. Davis
Docket No. B-ND-4473

Mr. L. L. Farnum, Manager of the Hackberry Mine, upon which we have a Development Loan, has requested me to write you in order that you may know our impressions of the operations he is carrying out near Mayer, Arizona. Mr. W. B. Gohring, who is in charge of this Office, has suggested that I write you as I am familiar with the mine and have kept in contact with Mr. Farnum's operations since the loan was granted. Mr. Farnum has sent me a copy of the correspondence with you.

The Hackberry mine is pecular inasmuch as it has produced considerable high-grade ore in the past, but the ore occurs as small disconnected pipes along a major shear zone, thus making the development cost high and not allowing for cheap mining by mechanical means. Much of the ore now left in the mine is represented by small areas of copper-lead ore, that has a high zinc content, that was left around the margins of the old stopes by the former operators. Mr. Farnum has attempted to mine this ore, but has found that due to the high cost of stope preparation and the large amount of timbering necessary, due to the incompetent wall-rock, costs were too high under present prices to allow him to continue with the stoping of these small bodies of ore in the old stopes.

I believe that this ore in the margins of the old stopes represents about one-half to one-third of the ore now exposed in the mine and if a higher price were granted this project for their copper-lead-zinc, much of this ore could be mined profitably.

Considering the mine as a whole and not taking into consideration any spectacular development of new ore bodies either at depth or laterally along the vein, it appears to me

that this mine will probably pay back only the loan to the Government, leaving no profit for the operators and hence, no incentive for future development of the mine in order to open up new ore. To-date, they have not even demonstrated that the loan can be paid back, but I believe that this is possible, as Mr. Farnum is, in my opinion, a good engineer and a good operator.

All of our estimates of costs on this project have been too low, as transportation costs, efficiency of men and absenteeism have seriously affected the profitable operation of this property and apparently these conditions will become more severe in the future.

Therefore, it is my belief that in order to obtain the maximum production from this property and insure its continued development and production, I believe an additional premium on the price paid for copper-lead-zinc in this case is warranted.

Sincerely yours,

WM. B. MAITLAND
Supervising Engineer

WBM:MJ

RECONSTRUCTION FINANCE CORPORATION

MINING SECTION

MEMORANDUM REPORT OF SUPERVISING ENGINEER

Docket No. B-ND-4473 . . . .R. P. M. Davis
Hollywood, California
Date of Examination . . . . . .May 2, 1943
Date of Report . . . . . .May 14,1943

On May 2, 1943, I visited the above captioned mine in order to examine the progress being made.

Attached to this report is the applicant's summary of the work done during March. Since that time, the shaft sinking has been completed for a distance of 150' or from the 450' Level to the 600' Level. This shaft made a large amount of water and went through some extremely heavy fault gouge so that spiling at times was necessary. The applicant's engineer estimates that this shaft cost about $75.00 per foot. The applicant is now crosscutting and drifting on the 600' level to determine whether the ore shoots found on the level above, extend downward. If no ore is found on the 600' Level, the applicant intends to mine all available ore from the upper levels and then abandon the project. However, if ore is found on the 600' Level, there should be little question that this loan will be paid off in spite of rising costs. Lack of skilled labor and absenteeism has increased operating costs in this district.

This project was granted a $35,000.00 Loan and from December 2, 1942, to April 10, 1943, the following expenditures were made:-

Freight and hauling	$ 639.57
Payroll	20063.57
Equipment.	2220.00
Supplies	2103.31
Power	1192.27
Lumber	2482.12
Misc. Taxes, fees, insurance, etc.	2803.88
Total expenditures	$31,506.72
Balance of loan funds	3,493.28

In addition, the mine has shipped to the nearby "Iron King Custom Mill" from January 17, 1943, to April 25, 1943, 588.07 dry short tons for which they have been paid (to Trust Fund) $8,281.22, or $14.08 per ton before deduction of mining cost. The gross custom mill value of this ore was $11,395.19 (including premium) or a gross value per ton of $19.36, making a marketing charge of $5.28 per ton.

Following is the shipping schedule:-

Lot	Date	Dry Tons	Oz. Au.	Oz. Ag.	% Pb.	% Zn.	% Cu.	Gross Value	Mill Net Val.	Bonus Pay-ments
1	1/17/43	41.22	09	4.4	2.6	6.5	1.13	$382.15	178.59	204.64
2	1/21/43	53.30	09	4.22	3.7	9.8	1.42	637.09	371.00	375.83
3	2/ 1/43	68.97	075	3.35	2.7	7.8	1.15	634.18	271.84	384.91
4	2/14-21	139.97	175	4.5	3.05	8.8	1.405	1867.20	1157.01	894.58
5	2/28/43	44.27	14	4.7	2.10	8.3	1.26	537.00	311.51	269.10
6	3/7/ 43	74.28	137	5.0	3.65	8.65	1.42	1008.50	581.33	492.14
7	4/6-8/43	90.42	12	6.95	5.35	8.57	1.58	1371.49	860.51	681.29
8	4/25/43	75.64	14	6.50	3.80	7.9	2.30	1104.72	706.57	540.37
Total and Averages: 1/17-4/25		588.07	0.13	5.45	3.57	8.39	1.49	$7542.33	$4438.36	3842.86

In my original sampling of the mine, I calculated that the ore would run 0.07 oz. gold, 3.3 oz. silver, 3.00% lead, 6.50% Zinc and 1.50% copper.

Work is progressing satisfactorily on this project and regular shipments of ore will be made in the future. The only new development work will be done on the 600' Level and all work on the upper levels will be stoping.

WM. B. MAITLAND
Supervising Engineer

Memorandum: To W. B. Gohring, Supervising Engineer

From: Charles A. Rasor, Supervising Engineer

Subject: R. P. M. Davis, R. F. C. Loan on Hackberry Mine

I submit herewith a break down and an analysis of the operation of R. P. M. Davis under a Reconstruction loan of $40,000.

The original loan of $20,000 for development was approved November 20, 1942, but provided that $5000 plus interest of $53.42 be deducted to repay loan of $5000 on the Boggs mine, an operation under the same Borrower. On February 17, 1943 a loan of $40,000 was approved of which $20000 was in exchange for the notes on the original loan of $20,000. Deducted from the second $20,000 was the interest charges of $178.09 on the first $20,000. The loan was repaid fully as follows.

Date	Amount	Interest
Jan 1, 1943		$51.12
July 1, 1943		473.42
Jan 1, 1944	10,000.00	806.58
July 1, 1944	5000.00	604.93
Sept 1, 1944	5000.00	33.97
Jan 1, 1945	10000.00	408.77
April 2, 1945	10 000.00	99.73
Total	$40 000.00	$2478.52

After the return of capital of ₦34768.47, there was a profit on the ore of ₦22168.50. From the profit the follow charges were deducted:

Profit on ore		₦22,168.50
Interest charges on Loan	2478.52.	
Reimbursible charges to R.F.C	202.56	
Loan on Boggs plus Interest	5231.51	
	7912.59	7912.59
Returns to Borrower from Trust Fund.		₦14255.91

The following tables show the break down of production and costs.

Table 1 Analysis of Metal Production and Returns from 10,156.11 Dry Tons

Total Metal.	Average assay per ton	Gross Mill value.	Average value per ton	Premiums	Total Gross value	Total aver value/ton
1101.929 ounces Gold	.11 ounces	$ 27,716.39	$ 2.73	—	$ 27,716.39	$ 2.73
51809.3 ounces Silver	5.1 ounces	27,199.56	2.68	—	27,199.56	2.68
1,827,194 pounds Zinc	9.0 %	32,264.22	3.18	$ 108,962.82	141,227.04	13.91
696515 pounds Lead	3.43 %	9709.01	.95	32,367.22	42,076.23	4.14
372,948 pounds Copper	1.83 %	13,206.32	1.30	30,793.87	44,000.19	4.33
		$ 110,095.50	$ 10.84	$ 172,123.91	$ 282,219.41	$ 27.79

(51)

Table 2 Analysis of Operating Cost of Mining and Milling 10,363,342 Wet Tons

Mining and Development	Total cost	Percent of Total.	Cost per ton.
Labor.	$ 118,353.35	57.09	$ 11.42
Super. & General Expense	28,398.28	13.70	2.74
Supplies & Equipment	20,573.74	9.92	1.99
Compensation Insurance	11,576.38	5.58	1.12
Electric Power	10,677.27	5.15	1.03
Timber	10,030.50	4.84	0.97
Unemployment Ins. & OAB	3933.14	1.90	0.38
Rogalty	3750.00	1.82	0.35
Total Mining & Dev.	$ 207,292.68	100.00	$ 20.00
Custom Milling Expense			
Trucking to mill	$ 16,840.43		$ 1.62
Mill treatment	35,918.80		3.47
Total Milling Expense	$ 52,759.23		$ 5.09
Total Mining & Milling	$ 260,051.91		$ 25.09

Total Gross proceeds from ore	$ 282.219.41
Total Mining & Milling costs	260 051.91
Profit on production	$ 22,168.50

The mine was a replacement vein of quartz and sulfides of a complex nature in schist. The vein had an average width of three feet and dipped steeply. The area mined was roughly 100 feet laterally and 600 feet in length. Ore was hoisted through a steeply inclined shaft. Poor walls made mining difficult.

Charles A Rose.

Memorandum to W. B. Gohring, Supervising Engineer

From. Charles A. Rasor, ~~S-E~~

Subject. R. P. M. Davis Loan.

I submit herewith a break down and analysis of the operations of R. P. M. Davis under an R.F.C. loan of $40,000. The original loan was for $20,000 approved Nov 20, 1942, but provided that $5000 plus $53.42 interest be deducted to repay loan of $5000 on the Boggs mine under the same borrower. A supplemental loan of $40,000 was approved February 17, 1943, $20,000 of which was in exchange for the original loan of $20,000. Deducted from the second $20000 was the interest of $178.09 on the first $20000. The loan was repaid fully as follows -

Date	Amount	Interest
Jan 1, 1943		$51.12
July 1, 1943		473.42
Jan 1, 1944	10,000.00	806.58
July 1, 1944	5000.00	604.93
Sept 1, 1944	5000.00	33.97
Jan 1, 1945	10 000.00	408.77
April 2, 1945	10 000.00	99.73
Total	$40,000.00	$2478.52

a surplus in the Trust Fund of $14,255.81 was returned to the Borrower -

The mine was a replacement vein of quartz and sulfide of a complex nature in schist. with an average width of three feet. It was worked through a steeply inclined shaft

Production 1943-1944-1945

Wet tons ore 10 363, 342

Dry tons " 10 156. 110

Tons of water 207. 232

Total Metal.		Average Assay per ton
Ounces Gold	1101.929	.11 ounces
Ounces Silver	51809.3	5.1 "
Pounds Zinc	1,827,194	9.0 %
Pounds Lead	696,515	3.43 %
Pounds Copper	372,948	1.83 %

Production Record

	Tons	au oz	ag oz	cu	au	ag	cu
1905	3679.00	.087	3.9	1.60	320.073	14348.1	117728
1906-1907	2942.00	.10	4.35	2.39	294.200	12797.7	140628
1929	267.918	.18	5.65	4.33	47.683	1513.8	23182
1930	62.723	.16	6.3	3.22	10.036	395.2	4039
1939	349.662	.19	8.28	2.87	67.914	2894.2	20104
1940	57.493	.26	9.0	5.25	14.948	517.4	6039
	7358.796	.103	4.41	2.12	754.854	32466.4	311718

16,984 lbs lead 1939.

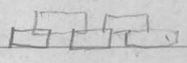
1943	5602.041				528.976	24863.5	180.164
1944	4140.314				496.503	2409.8	165818
1945	413.755				76.450	2854.0	26968
	10 156.110	.1085	5.1	1.83	1101.929	51809.3	372948

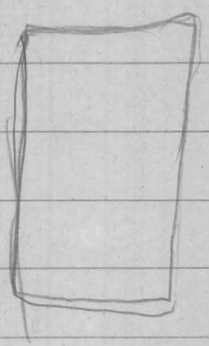
Iron 16%
Sulfur 12%
Iron 30%

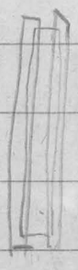
Lindgren Complex Deposits ① Pyritic copper deposits in schists are represented by the Blue Bell, Huckleberry, Bellmont, Boyce & other mines page 127, are deposits of the Jerome and Bradshaw Mountains Quicksilver, Ariz. U.S.G.S. Bull 782 waldemar Lindgren 1926

265
5.20

7/2/23
3/2/23
2/4/23







and the area mined was roughly 100 feet laterally and 600 feet in depth. Poor walls made mining difficult. Under the loan 10,363.342 wet tons were mined. ~~Analysis of production and costs are shown below.~~

Profit on ore was $282,219.41 − $260,051.91 or $22,168.50.

Profit per ton was $2.14.

22,168,50 Profit

7912.69 Paid back on Boggs + miles

14,255,81 back returned

14038.97

5 162 21 76 6.84

4500.00 40000

662.76

34768.49

282219.41

16987.90

22168.50

34768.49

56936.99

785.96

5772[illegible].95

40000,00

1772[illegible].95

2478.62

1 5244.33

202,56

1 5044.77

786.96

22168.50

16720.03

5448.47

22168.50

14038.97

662.76

1 4701.73

56 936.99

14038.97

2478.62

202.56

16 720.03

40000.00

2478.62

202.56

42681.18

14038.97

56 710.15

5231.51 Paid back

2478.62

202.56

7912.69

To H.B.A. by A Rasor

I submit herewith a break down and analysis of the operations of R.P.M. Davis under an R.F.C. loan of $ ~~under the above~~ numbered dated (Sentence). The original loan was $ disbursed on (- date -). a supplemental loan ~~was~~ of $ was disbursed on (- date -). The loan was repaid fully as follows:-

Date	amount	Int. amount
"	"	"
"	"	"
"	"	"
Total		"

P. a surplus in the Trust Fund of $ was returned to the borrower. (of the loan proceeds)

I. The mine is a (replacement vein in schist ?) with an average width of — feet. It was worked through a — degree inclined shaft and the area mined was roughly — feet laterally and — feet in depth. Poor walls made ~~mining~~ ~~conditions~~ difficult.

Total of Sub-Reg.			251079.77		
Total Labor & Payment Tons		1439237			
Supervision					
RPM Davis	3000.00				
Supt - Fernhem	13750.00				
Foreman	8820.00			25570.00	
	25570.00				
Labor	1182667				
Total	1439237				
Timber	1003050			1003050	
Electric Power	1067727			1067727	
Compensation Insurance	115738			115738	
Additional Fees to Tons	39333.14			39333.14	
Equip & Rental on Equip	119366		Supplies & Equip		
Gas & Oil	119763				
Purchase Contract Royalty	3750.00				
Petty cash	154096				
Supplies	1608041				
Misc assay 448.00					
Fees 363.20					
T.H. 675.00					
Road Rent 407.60	1287730				
	6336931				
Loan	400000.00				
Int on Loan	2478.62				
Misc & RFC.	202.56				
	42681.18	42681.18			
		251079.77			3
					363
					207.266.89
					126
Wet Tons	1036339				
Dry tons	1015611				
Trucking 1.25 / ton	129954.18				
T. Tax	3986.25				
Net Mill Payment to shipper	5733627				
Trucking	129954.18				
T. Tax	3986.25				
Mill Treatment	3591880			1100950	
Gross mill value	1100950			1599911.7	
	1036339			2467967	
	6.2067			2631526.9	
				1324.0	

266,131.54 1/4

256,953.64

9,167.90

150

Payroll	Sup - 175	Tax	Firemen	RPM D.
1096.42	173.25	11.08	117.56	
1371.73	173.25	13.85	117.56	
1578.90	173.25	15.98	151.61	
1393.67	166.05	8.126	133.19	
2307.82	166.05	27.62	141.90	
2089.38	166.05	515.40	129.84	
1968.32	166.05	1034.05	130.92	
2382.12	166.05	627.20	141.90	
2989.64	166.05		155.62	
2869.47	166.05		146.26	
2509.53	166.05		146.26	
2392.28	166.05		146.26	
3049.50	166.05		146.26	
2806.37	166.05		132.55	
2927.67	166.05		131.33	
2611.61	152.25		120.81	144.00
3265.89	152.25		131.13	
2638.19	151.25		131.93	
but was s.c. 1147 3480.52			131.73	147.40
2972.84	157.25		131.73	
2802.26		260.08	131.73	
3289.54		355.40	131.73	
3390.54		347.69	131.73	Jan 200.00
3165.91		398.86	131.73	Jan 200.00
1304		311.53		Jan 200.00
3129.06		206.49	131.73	Jan 200.00
3294.80		141.34	131.73	200.00
94.50				200.00
3329.73		459.47	131.73	200.00
3780.60			131.73	200.00
906.48	550 - 293		"	200.00
3220.13	"		"	200.00
2859.31	"		"	200.00
2776.31	"		"	Jan 200.00
3045.30	"		"	200.00
2795.02	"		"	200.00
2529.90	"		"	200.00
2666.12	"		"	300.00
2711.15	"		"	
2371.88	"		"	
2272.12	"		"	
2112.79	"		"	
2200.66	"		"	
1946.19	"		"	
2101.91	"		"	
1886.38	"		"	

175 × 30 = 5250

250 × 30 = 7500

7500 / 13750 Sup

820 / 22590

Nov 16 1942

1	1473.40	213.00	13.72
2	1605.29	〃	〃
3	1536.82	〃	〃
4	1469.65	〃	〃
5	1636.34	〃	〃
6	1692.68	〃	〃
7	1453.82	〃	〃
8	1582.85	〃	〃
9	1520.22	〃	〃
10	1542.14	〃	〃
11	1267.17	〃	〃
12	1415.76	〃	〃
13	1506.33		
14	191.32		

Nov 31, 1943

136,343.87 Labor
4597.47 Taxes overhead - Rents
3000.00
140941.34 Lab + Payroll Taxes
22570.00
118371.34
~~3000~~

Total 506 - 251,079.77
140941.34
110,138.43

140941.34
55.54

251,079.77
143996.88
107,082.89

9946.58
53.42
00000

9946.58
15000.00
10000.00
9821.91
34768.49 This

9821.91
10000.00
19821.91

Expenses 64475.22

35000.00

143996.88
73.51
143923.37
64475.22
40000.00
2478.62
202.56
251,079.77

		wt tons	Trucking	Gross value	dumps 7/11/04
			1.25		
1	41.22	4206			150.45
2	under 29% 53.30	54.39			209.47
3		70.380			253.81
4		142.83		186720	526.29
5		45.17		53700	167.34
6		75.797		969.35	290.43
7		92.26		1371.49	392.20
8		77.18		1104.72	298.78
9		89.84		1110.36	334.55
10		82.80		1005.93	306.84
11		117.34		1372.64	416.84
12		112.98		1400.50	420.74
13		116.27		1550.82	407.37
14		115.18		1345.30	412.01
15		104.73		1166.80	379.23
start 16	75, 80, 60, 60, 65	8472		809.91	290.25
17		117.99		1074.24	404.71
18		113.67		979.98	389.80
19		86.85		869.41	297.88
20		71.297		733.47	244.54
21		88.087		794.45	302.14
22		71.617		650.33	245.65
23		88.48		783.82	303.49
24		107.22		1049.33	367.78
25		102.60		917.02	351.93
26		103.205		937.77	353.99
27		106.174		925.84	364.18
28		89.74		951.52	307.81
29		110.047		1133.14	377.46
30		82.432		640.21	282.74
31		112.616		947.36	386.27
32		133.37		976.20	457.45
33	24	101.454		662.08	347.99
34	33	63.29		491.76	217.07
35		156.034		1286.00	535.20
36		106.118		824.17	363.79
37		113.058		907.54	387.79
38		108.813		990.44	373.23
39		120.505		890.08	413.33
40		95.01		756.23	325.88
41		94.116		722.83	322.82
42		123.125		963.86	422.32
43		97.103		838.17	333.06
44		94.704		624.33	324.84
45		100.60		914.40	345.06
46		113.057		744.33	387.79
		4496309			15794.89

cu. 372948
94125 × 5 = 4094.45
278823 × " 97 = 23529.87
27624.32

cu 27624.32
zn 106435.78
lb 30998.74

zn 227548.
1599646 ×275 = 4818.30
×.825 = 101617.48
106435.78

82301 — 1946.42
614214 — 29052.32
30998.74

372948 − 80 × 5.6
49983 65 +
322965

2239.22
104963.5
127135.57

106435.78
209.96
106225.82

1659058.84
164848.88
209.96

1827194
227548 × 75 + 271
1599646 × 60 + 371

4693.18
26394.17
31087.35

5.6
2 / 11.2
2.1

244
3270
1080
1.7

118095.50
106172.61
3922.89

470.7
313.83
980.72
980.72
1176.87
392.89

34
2448
1952

244.
1220
1708
1.82

3474.77
22744.07
26218.84

225
304
1.0

51809.3
6682.2 × 80.0 × 6.5
45127 × 80 × 63

87
58
6.96

4
20 / 83
8

41.0
.820

87
.7
6.09

837
75
4355
609
6.525

696515
82301 × 60 × .4km
61421.4 × 60 × 2cm

2024.62
7370.56
9395.18

10156
850

275

40 cents Pb. 2 cents
Cu 5 cents
Zn .2.75 cents

47		86801			56798	29723	
48		94462			72428	32400	
49		112134			89660	38462	
50		99426			80230	34103	
51		95721			76734	32832	
52		113446			92010	38912	
53		104507			86276	35846	
54		65450			42179	22449	
55		139678			109890	47909	
56		108712			99805	37288	
57		99709			72770	34200	
58		97943			76240	33594	
59		144942			90793	49715	
60		105961			67466	36345	
61		97803			63489	33546	
62		108463			97578	37203	
63		104927			78242	35990	
64		104744			89725	35927	
65		89085			100224	30556	
66		89025			101597	30536	
67		12238			11282	4198	
68		6591486				2291273	
69		3791856					
70							
71		10363342 x 1.25		$12954.18 trading			
72				3886.25 Tax			
73							
74							
75		144689		80% x 32.50		11574	3761.91
76	Au	957240		75% x 32.00		71793	22973.76
77	Ag	5180913		80% x .63		414474	26111.86
78	Pb	6965150		60% x .40 2 cents		417909	8358.18
79	Zn	1827194.0		60% x .55 2.75		109631.6	30148.69
80	Cu	3729480		65% x 1.00 5 cents		24241.6	12120.80
81							
82				Bonus:		Mill	
83	Au	1101927				27716.39	26735.67
84	Ag	5180913				27199.56	26218.84
85	Pb	696515			32367.22	9707.01	9395.18
86	Zn				108962.82	32264.22	31087.35
87	Cu				30793.87	13206.32	12735.57
88					$172123.91	140095.50	
89							
90							
91							
92							

Hackberry,

51.12 2nd 1854.35
473.42 2nd
34.49 Hem
30.20 "
25.75 "
53.78 "
23.77 "
34.57 "
67.24 Timber Bimberly C-93
14.75 Timber C-93

10000 + 99.73

2378.87
99.73
2478.62
202.56
2681.18

13.80
41.06
54.86
10.02
64.88
1.29

54.86
21.37
76.23

Loan 40,000.00
Int 2478.62
202.56
42681.19

1.29
11.28
2.80
21.37

64675.20
40000.00
2478.62
202.56
107356.40
82.89
273.51
200
73.51
21.37
52.14
53

107156.40
82.89
73.51

53.42 Deliv'd on Acct
+ 5000.00 Loan on Acct

2779
2509
270

10156.11
37
7109.277
2032.22
29421.497

27421.50
34788.49
62789.99
42681.18
19508.71
5254.
14254.71

27421.50
22167.50
5254.00

282.219,41
200 051.91
22 167.50
34 768.49
56935.99
42681.18
14254.81

15804.53

15041.77
14254.81
786.96

172 123,97
171 577,07
6.84

10

1563891
1440017
123874

Hackberry Mine

Iron King

Date	No.		Au	Ag	Pb	Zn	Cu	Gross	Tons	#	Au	Ag	Pb	Zn	Cu	Mill payment	Bonus
1-17-43	1		.09	4.4	2.6	6.5	1.13		41.22	3.65	3.710	181.4	2143	5359	932	178.59	209.64
1-21-43	2		.09	4.22	3.7	9.6	1.42		53.30	3.93	4.777	224.9	3944	10234	1514	371.00	375.83
2-1-43	3		.075	3.35	2.7	7.8	1.15		68.97	3.68	5.173	231.1	3724	10759	1586	279.10	384.91
3-13-43	4		.175	4.5	3.05	8.8	1.405	13.34	139.970		24.495	629.9	8538	24635	3933	1157.01	894.58
3-16-43	5		.14	4.7	3.1	8.3	1.26	12.13	44.27		6.198	208.1	2745	7349	1116	311.51	269.10
4-8-43	6		.137	5.0	3.65	8.05	1.42	13.05	74.28		10.176	371.4	5422	12850	2110	581.33	492.14
4-30-43	7		.12	6.95	5.35	8.57	1.58	15.168	90.42		10.850	628.4	9675	15478	2857	860.51	681.29
5-5-43	8		.14	6.5	3.8	7.9	2.30	14.605	75.64		10.590	491.7	5749	11951	3479	706.57	540.37
5-14-"	9		.10	5.6	3.2	8.8	1.87	12.612	88.04		8.804	493.0	5635	15475	3293	660.14	604.62
5-21-"	10		.08	4.3	3.1	10.10	2.18	12.396	81.15		6.492	348.1	5031	16382	3538	592.98	620.00
5-31 "	11		.10	4.3	2.5	8.9	2.34	11.937	114.99		11.499	494.5	5750	20468	5382	804.72	803.49
5-31 "	12		.09	4.9	3.2	9.9	1.92	12.649	110.72		9.964	542.5	7086	21923	4252	834.29	816.77
6-7 "	13		.12	6.2	2.3	8.6	2.18	13.607	113.95		13.674	706.5	5242	19599	6336	993.45	814.57
6-12 "	14		.08	5.1	2.6	8.7	2.44	11.918	112.88		9.03	575.7	5870	19641	5509	784.99	794.38
6-17 "	15	Pb 2.75 Zn 2.75	.09	5.4	2.8	7.5	2.02	11.369	102.63		9.237	554.2	5747	15395	4146	652.23	642.25
6-26 "	16	This date Pb 5.5 Zn 8.25	.10	5.3	2.5	6.5	3.0	9.766	82.93		8.293	439.5	4147	10781	4976	410.58	1097.41
7-2-"	17		.10	4.7	2.8	6.8	2.47	9.29	115.63		11.563	543.5	6475	157.6	5712	517.62	1553.74
7-7-"	19		.11	5.8	3.2	7.3	2.27	10.215	85.11		9.362	493.6	5147	12426	3864	459.71	1215.08
7-8-"	18		.09	4.5	2.7	7.1	2.12	8.797	111.40		10.026	501.3	6016	15819	4723	443.73	1494.95
7-14 "	20		.12	4.8	3.5	9.8	1.73	10.497	69.87		8.384	353.4	4891	13695	2418	377.14	1206.49
7-20-"	21		.10	5.2	3.1	7.7	1.38	9.203	86.325		8.633	448.9	5352	13294	2383	378.90	1201.28
7-27 "	22		.12	4.6	2.7	7.9	1.25	9.266	70.185		8.422	322.9	3790	11089	1755	312.47	960.07
7-29 "	23		.12	4.7	2.4	5.8	2.0	9.04	86.71		10.405	407.5	4162	10058	3468	366.45	986.66
7-30-"	24		.13	5.2	2.6	6.7	2.17	9.986	105.08		13.660	546.4	5464	14081	4560	543.50	1135.27
8-4-"	25		.10	4.7	2.5	7.9	1.76	9.12	100.55		10.05	472.6	5028	15887	3539	432.99	1400.99
8-5-"	26		.11	4.8	2.2	7.7	1.76	9.272	101.14		11.12	485.5	4450	15576	3560	450.90	1354.85
8-12-"	27		.11	4.7	2.3	7.1	1.53	8.818	104.05		11.445	489.0	4786	14775	3184	424.96	1303.18
8-17-"	28		.14	5.8	3.0	8.2	1.71	10.82	87.945		12.312	510.0	5277	14423	3008	528.20	1296.49
8-21-"	29		.14	5.2	2.6	8.2	1.84	10.507	107.846		15.098	560.8	5608	17687	3969	613.99	1723.78
8-27-"	30		.08	4.3	2.5	6.8	1.53	7.925	80.783		6.462	347.4	4039	10986	2472	251.34	1097.59
9-1-"	31		.09	4.4	2.9	7.9	1.39	8.584	110.364		9.932	485.60	6401	17436	3068	416.10	1669.40
9-3-"	32		.07	3.4	2.6	7.8	1.35	7.469	130.70		9.149	444.4	6796	20387	3529	347.04	1914.52
9-6-"	33		.08	3.9	2.6	7.8	1.3	7.929	62.02		4.962	241.9	3225	9675	1613	193.21	903.29
9-11 "	34		.07	2.9	1.9	6.7	1.31	6.459	99.426		6.959	258.3	3778	13323	2605	183.47	1244.87
9-17-"	35		.08	4.5	2.6	8.6	1.17	8.410	152.913		12.233	688.1	7951	26301	3578	549.91	2348.84
9-27	36		.08	3.8	2.5	7.7	1.46	7.925	106.118		8.319	395.2	5200	16015	3037	323.55	1519.62
9-27 "	37		.08	4.0	2.6	8.6	1.22	8.191	110.797		9.04	452.2	5761	19057	2703	374.19	1711.22
9-30 "	38		.10	4.6	2.9	9.2	1.29	9.288	106.637		8.43	433.8	6185	19621	2731	477.11	1771.08
9-30 "	39		.07	3.6	2.4	8.3	1.12	7.537	118.095		10.81	500.4	5669	19604	2445	321.60	1736.67
10-8 "	40		.07	3.9	2.7	9.1	1.27	8.122	93.109		6.65	370.5	5028	16944	2365	308.03	1573.91
10-11 "	41		.08	4.1	2.4	7.6	1.18	7.837	92.233		7.52	385.9	4427	14019	2177	278.83	1283.70
10-17 "	42		.07	3.7	2.7	9.0	1.27	7.788	120.663		8.61	455.6	6516	21719	3065	383.01	1944.45
10-19 "	43		.08	4.5	3.3	9.1	1.27	8.808	95.160		7.77	437.0	6281	17319	2417	380.09	1601.32
10-25 "	44		.06	3.0	2.0	7.7	1.16	6.727	92.81		5.68	284.1	3712	14293	2153	177.56	1245.24
10-29 "	45		.10	4.7	2.8	9.0	1.33	9.275	98.588		9.859	463.4	5521	17746	2622	439.82	1609.68
10-30 "	46		.07	2.7	1.9	7.3	1.25	6.718	110.796		7.755	299.1	4210	16174	2770	210.98	1460.55
									4108.413		4133.402	20200.0	243894	71349	141652	21649.40	53683.83

Hackberry Mine

Date	No.	Au	Ag	Pb	Zn	Cu	Gross	Tons	Au	Ag	Pb	Zn	Cu	Payment	Bonus
11-4-43	47	.06	3.3	1.8	7.0	1.28	6.677	85.065	5101	2807	3062	11909	2178	158.49	1085.17
11-8-43	48	.09	3.5	1.8	7.3	1.63	7.824	92.572	8331	3240	3333	13516	3018	278.66	1270.93
11-14-43	49	.07	4.2	3.0	8.2	1.44	8.159	109.891	7692	4615	6593	18022	3165	367.60	1723.84
11-17-"	50	.08	3.6	2.6	8.2	1.8	8.234	97.437	7795	3508	5067	15980	3508	333.26	1550.89
11-20-"	51	.08	4.0	2.9	7.6	1.6	8.180	93.807	7504	3752	5441	14259	3002	315.78	1416.48
11-24-"	52	.07	4.3	3.4	9.0	.99	8.276	111.177	1 7782	4780	7560	20012	3201	384.82	1814.61
12-1-"	54	.06	3.0	2.2	6.9	1.26	6.576	64.141	3848	1924	2822	8851	1616	113.04	832.11
12-3-"	53	.08	4.2	2.9	9.0	1.11	8.424	102.417	8193	4302	5940	18435	2274	369.75	1643.20
12-11-"	55	.08	3.9	2.8	7.7	1.43	8.028	136.884	10950	5338	7666	21080	3915	439.97	2032.14
12-21-"	56	.11	4.7	3.7	7.8	1.38	9.368	106.538	11719	5007	7884	16620	2940	485.20	1676.78
12-27-"	57	.08	3.9	2.5	6.0	1.5	7.441	97.715	7817	3811	4886	11726	2931	256.72	1223.35
12-31-"	58	.09	3.7	2.8	7.0	1.44	7.943	95.981	8639	3551	5375	13438	2764	300.36	1341.18
1-5-44	59	.06	2.9	2.2	6.3	1.38	6.406	142.044	8523	4119	6250	17898	3920	226.16	1763.33
1-14-44	60	.06	3.2	2.2	6.0	1.44	6.497	103.842	6230	3323	4569	12461	2991	174.79	1260.08
1-21-44	61	.07	3.0	2.4	5.8	1.45	6.624	95.847	6709	2875	4601	11118	2780	173.51	1158.56
1-26-44	62	.08	4.6	3.6	9.6	1.40	9.18	106.294	8503	4889	7653	20408	2976	464.10	1909.55
2-2-44	63	.09	5.2	3.5	9.2	1.38	9.559	102.828	9255	5347	7198	18920	2838	487.43	1781.80
2-3-"	64	.08	4.7	3.3	8.0	1.57	8.941	102.649	8212	4825	6775	16424	3223	403.12	1435.78
2-14-"	65	.13	6.1	4.3	9.6	1.67	11.18	87.303	11349	5326	7508	16762	2916	581.98	1664.05
2-26-"	66	.12	6.7	4.7	9.7	1.63	11.615	87.245	10469	5845	8201	16926	2844	575.99	1703.11
3-4-"	67	.13	5.1	3.7	8.6	1.27	10.241	11.993	1559	612	887	2063	305	65.08	118.67
3-9-"	68	.11	4.8	3.5	9.1	1.55	9.91	99.145	10905	4759	6940	18044	3073	505.27	1733.87
3-13-"	69	.10	4.8	3.8	9.2	1.44	9.703	66.715	6672	3202	5070	12276	1921	320.19	1181.76
3-24-"	70	.09	4.4	3.1	8.75	1.31	8.801	103.818	9343	4568	6437	18148	2720	420.18	1688.07
3-30-"	71	.11	4.7	3.2	8.8	1.45	9.623	104.701	11517	4921	6701	18427	3036	503.53	1743.74
4-5-"	72	.11	5.3	3.5	9.9	1.19	10.92	152.292	16752	8072	10660	30154	3625	819.05	2725.75
4-20-"	73	.10	7.2	5.0	11.2	1.22	11.918	97.276	9728	7004	9728	21790	2374	471.61	2044.61
4-29-"	74	.12	6.7	4.5	10.3	1.24	11.512	96.677	11601	6477	8701	19915	2398	450.47	1879.04
5-6-"	75	.10	5.3	4.0	9.9	1.30	10.143	140.127	14013	7427	11210	27745	3643	746.78	2600.18
5-19-"	76	.16	6.4	4.6	9.2	1.46	12.153	108.932	7429	6972	10022	20043	3181	799.70	2015.66
5-31-"	77	.15	6.9	4.7	10.1	1.52	12.327	147.16	22074	10154	13833	29726	4474	1135.08	2920.14
6-3-"	78	.12	6.3	3.9	9.5	1.54	11.127	134.836	16180	8495	10517	25619	4153	851.24	2475.41
6-15-"	79	.24	6.1	4.3	9.4	1.41	14.084	106.852	25645	6839	9417	20089	3013	990.57	1985.83
6-22-"	80	.15	5.3	4.2	9.7	1.39	11.83	106.297	15945	5634	8929	20622	2955	689.29	1891.74
6-30-"	81	.09	4.8	3.2	9.7	2.05	9.88	95.935	8634	4605	6140	18611	3924	486.03	1804.55
7-5-"	82	.16	7.3	4.1	11.6	1.75	13.469	56.129	8981	4097	4603	13022	1965	485.81	1210.84
7-18-"	83	.14	6.6	3.9	8.7	1.7	11.598	106.758	14946	7046	8327	18576	3630	724.27	1880.18
7-28-"	84	.14	7.3	4.1	7.7	1.55	11.572	92.328	12926	6740	7571	14217	2842	623.97	1502.92
8-7-"	85	.15	6.2	3.4	8.3	1.52	11.268	102.005	15301	6324	6936	16933	3101	658.36	1665.43
8-16-"	86	.07	5.0	4.0	12.85	1.65	10.473	113.607	7952	5680	9081	29197	3749	642.93	2601.12
8-25-"	87	.06	4.7	3.5	11.5	2.5	10.069	106.966	6418	5027	7488	24602	5348	562.13	2368.42
8-25-"	88	.11	5.2	3.6	8.3	2.6	10.314	118.041	12985	6138	6138	19595	6138	649.25	2053.09
9-6 "	89	.12	5.8	5.4	13.5	2.67	13.29	112.875	13545	6547	12191	30476	6028	956.76	3021.32
9-16	90	.08	5.0	5.6	12.2	2.84	11.656	100.060	8.005	500.3	11207	24415	5683	684.64	2560.66
9-27 "	91	.14	6.3	5.1	12.0	3.12	13.747	66.201	9268	417.1	6753	15888	4131	591.40	1677.37
10-5 "	92	.14	6.8	4.7	11.5	3.42	13.933	110.520	15473	7515	10389	25420	1560	1007.86	2744.16
								9086.345	912.023	439213	578362	1563891	299640	45807.68	136347.50

10000.00 + 99.73 x74
10000.00 + 408.77 67
5000.00 + 33.77 6
5000.00 + 604.93 3
10000.00 + 806.38

1953.18

2779
2509
270

10156.11
27
77

1368.49

4105.48
1368.48
2737.00

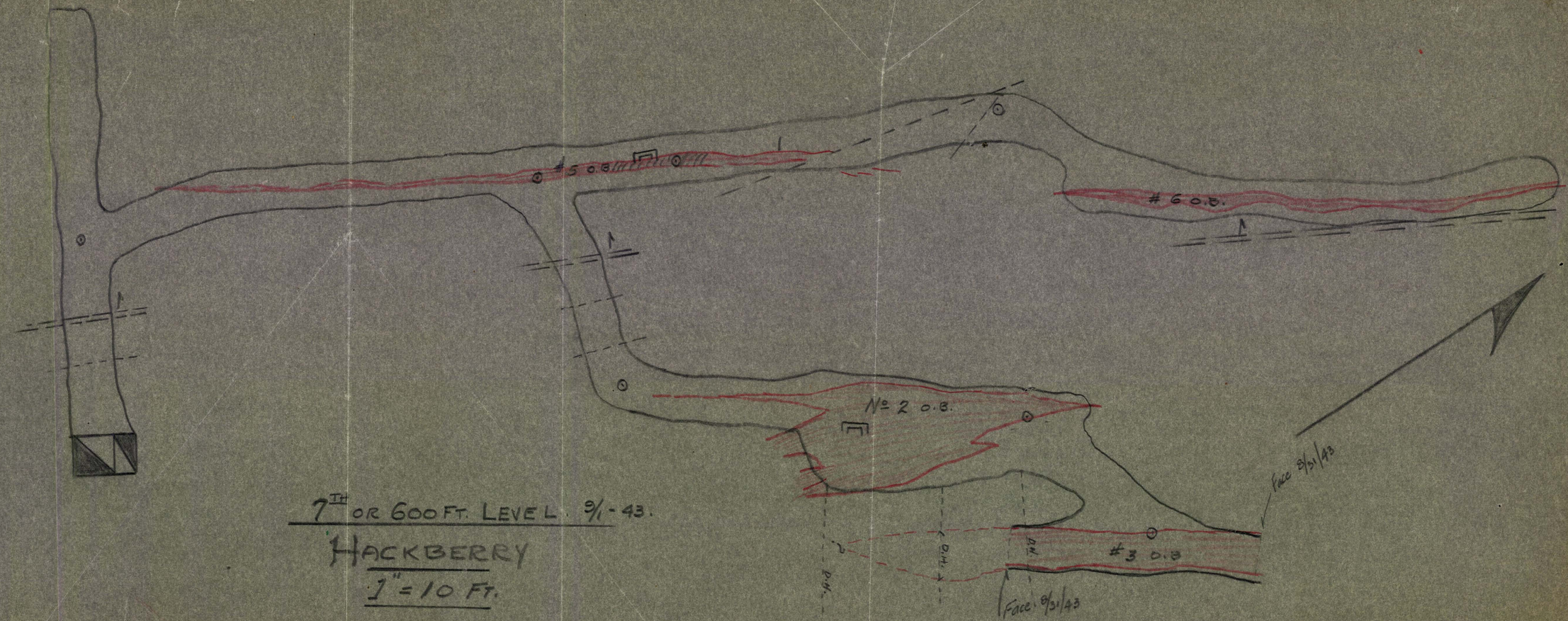
4105.48 Pb - 24
3169.55 Cu

42 681.18
20
62 681.18

Date	Yr	No.	Au	Ag	Pb	Zn	Cu	Gross	Tons	Au	Ag	Pb	Zn	Cu	Mill Payment	Bonus		
									9086.345	912.023	43,921.3	578 362	1,563,891	297 640	45807.68	136347.50		
10-12	44	93	.14	6.6	4.9	12.8	2.97	14.017	138.705	19.419	915.5	13593	35508	8239	1276.53	3593.88		
10-27	44	94	.14	6.9	5.5	13.5	3.06	14.602	64.521	9.033	445.2	7097	17421	3949	631.55	1775.62		
11-11		95	.18	6.8	6.2	12.3	2.82	15.127	99.322	17.878	675.4	12316	24433	5602	1024.32	2607.41		
11-19		96	.19	9.0	8.3	14.4	4.20	18.57	126.286	23.994	1136.6	20943	36370	10608	1737.22	4197.16		
12-4		97	.20	8.7	6.4	11.8	4.04	17.24	112.026	22.405	974.6	14339	26438	9052	1392.17	3121.59	6067.60	
12-16-31		98	.18	7.7	5.0	11.3	3.86	15.64	115.150	20.727	886.7	11515	26024	8890	1246.52	2948.01		
total		433844							9742.355	1025.477	48956.3	658185 ✓	1730085	345980	53115.99	154591.17		
1-5-18	45	99.	.16	6.5	4.7	12.0	3.52	14.49	107.427	17.188	698.3	10098	25782	7563	1039.71	2753.67		
1-27-31	"	100	.14	5.7	4.7	12.3	2.61	13.12	95.647	13.391	545.2	8991	23529	4993	794.18	2341.28		
2-23	"	101	.19	7.7	4.4	10.9	3.01	15.05	93.848	17.831	722.6	8257	20459	5650	960.65	2167.14		
3-6	"	102	.24	7.6	4.7	11.7	3.75	17.02	116.833	28.040	887.9	10982	27339	8762	1425.74	2795.62		
			.1085	5.1	3.43	9.0	1.832		10,156.110	1101.929	51809.3	696515	1,827194	372948	57336.27	144848.88	222185.15	232747.12
															5.45	16.23	21.88	34768.49
																5.65		267515.61
																21.88		
									5502041						57370.69			
1943									5602041	528.976	24803.5	309523	897339	180164				
1944									4140.314	496.503	24091.8	348662	832746	165818			222185.15	
1945									413.755	76.450	2854.0	38380	97109	26968			34768.49	
																	256953.64	

Zinc Minerals

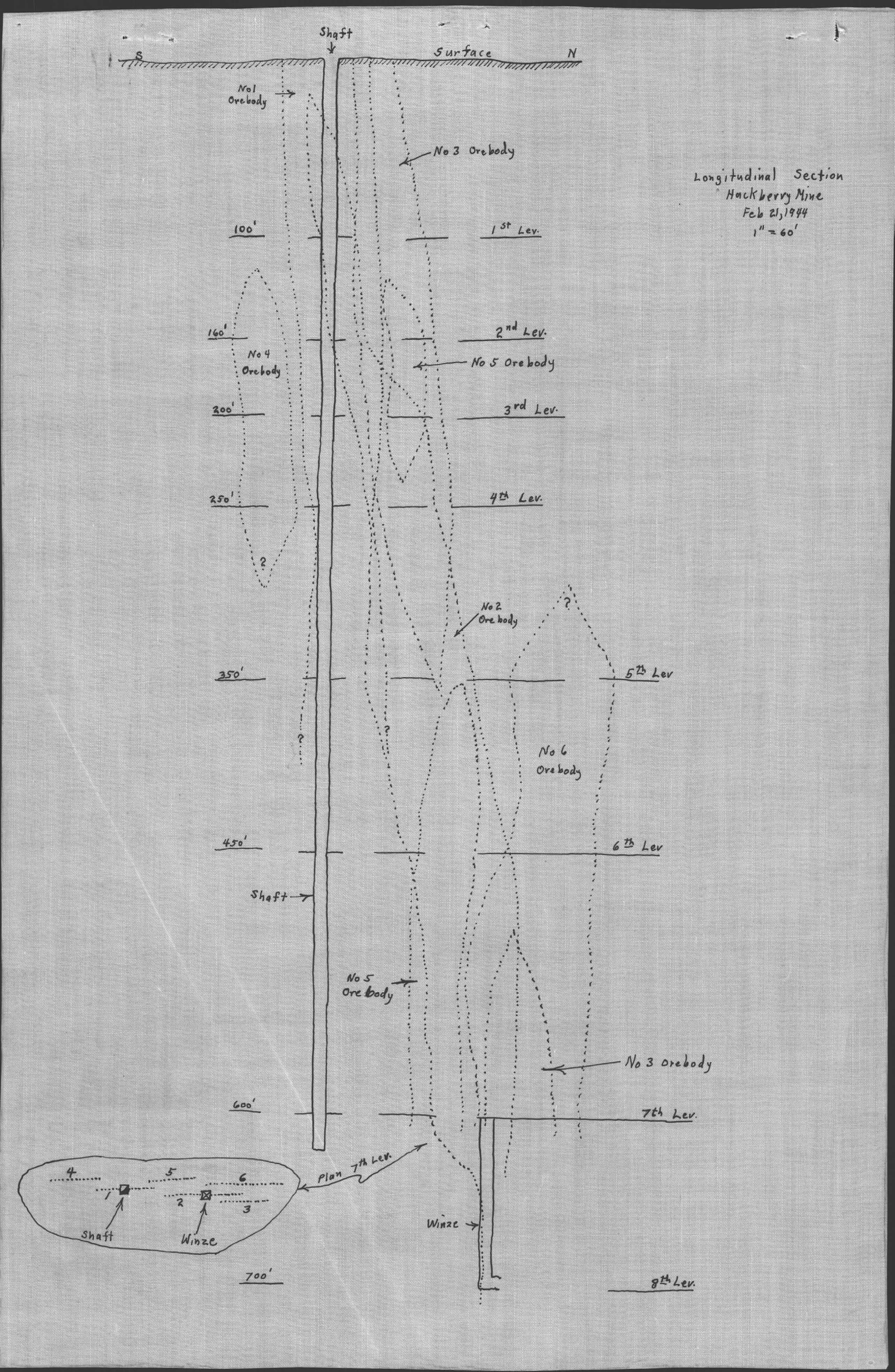
Minerals	Composition	% Zn	optical character	ε	ω	α	γ	β	H	sp G	Crystal
Sphalerite	ZnS	67.0							3.5 4.0	3.9 4.1	
Smithsonite	$ZnCO_3$	52.0	uniaxial −	1.621	1.849				5.5	4.3 4.45	Rhomb
Monheimite	$(Zn,Fe)CO_3$										
Hydrozincite	$2ZnCO_3 \cdot 3Zn(OH)_2$	59.13	Biax −			1.640	1.750	1.736	2.0 2.5	3.58 3.80	Mono
Willemite	$2ZnO \cdot SiO_2$	58.0	un +	1.719	1.691				5.5	3.98 4.19	Tri Rhom.
Calamine	$H_2Zn_2SiO_5$	55.0	Biax +			1.614	1.636	1.617	4.5 5.0	3.40 3.5	ortho hemi
Hardystonite	$Ca_2ZnSi_2O_7$		un +	1.657	1.669				3.0	3.4	Tetragonal
Zincocalcite	Zn(calcite)										
Zinciferous	Dolomite										
Hopeite	$Zn_3P_2O_8 4H_2O$		−		α hopeite β hopeite	1.572 1.574	1.592 1.582	1.591 1.592	3.2	3.0	orthohom
Parahopeite	$Zn_3P_2O_8 4H_2O$		+			1.614	1.627	1.625	3.7	3.3	Triclinic
Adamite	$Zn_3As_2O_8 Zn(OH)_2$						1.73		3.5	4.3	orthorhombic



7TH OR 600 FT. LEVEL 9/1-43.

HACKBERRY

1" = 10 FT.


Shaft
S
Surface
N
No1 Orebody
No 3 Orebody
Longitudinal Section
Hackberry Mine
Feb 21, 1944
1" = 60'
100'
1st Lev.
160'
2nd Lev.
No 4 Orebody
No 5 Orebody
200'
3rd Lev.
250'
4th Lev.
?
No 2 Orebody
350'
5th Lev
No 6 Orebody
450'
6th Lev
Shaft
No 5 Orebody
No 3 orebody
600'
7th Lev.
4
5
6
1
2
3
Shaft
Winze
Plan 7th Lev.
Winze
700'
8th Lev.