CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

03/20/90

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: TENNESSEE-SCHUYLKILL

ALTERNATE NAMES:

MOHAVE COUNTY MILS NUMBER: 117F

LOCATION: TOWNSHIP 23 N RANGE 18 W SECTION 3 QUARTER NE
LATITUDE: N 35DEG 24MIN 57SEC LONGITUDE: W 114DEG 11MIN 00SEC
TOPO MAP NAME: CHLORIDE - 7.5 MIN

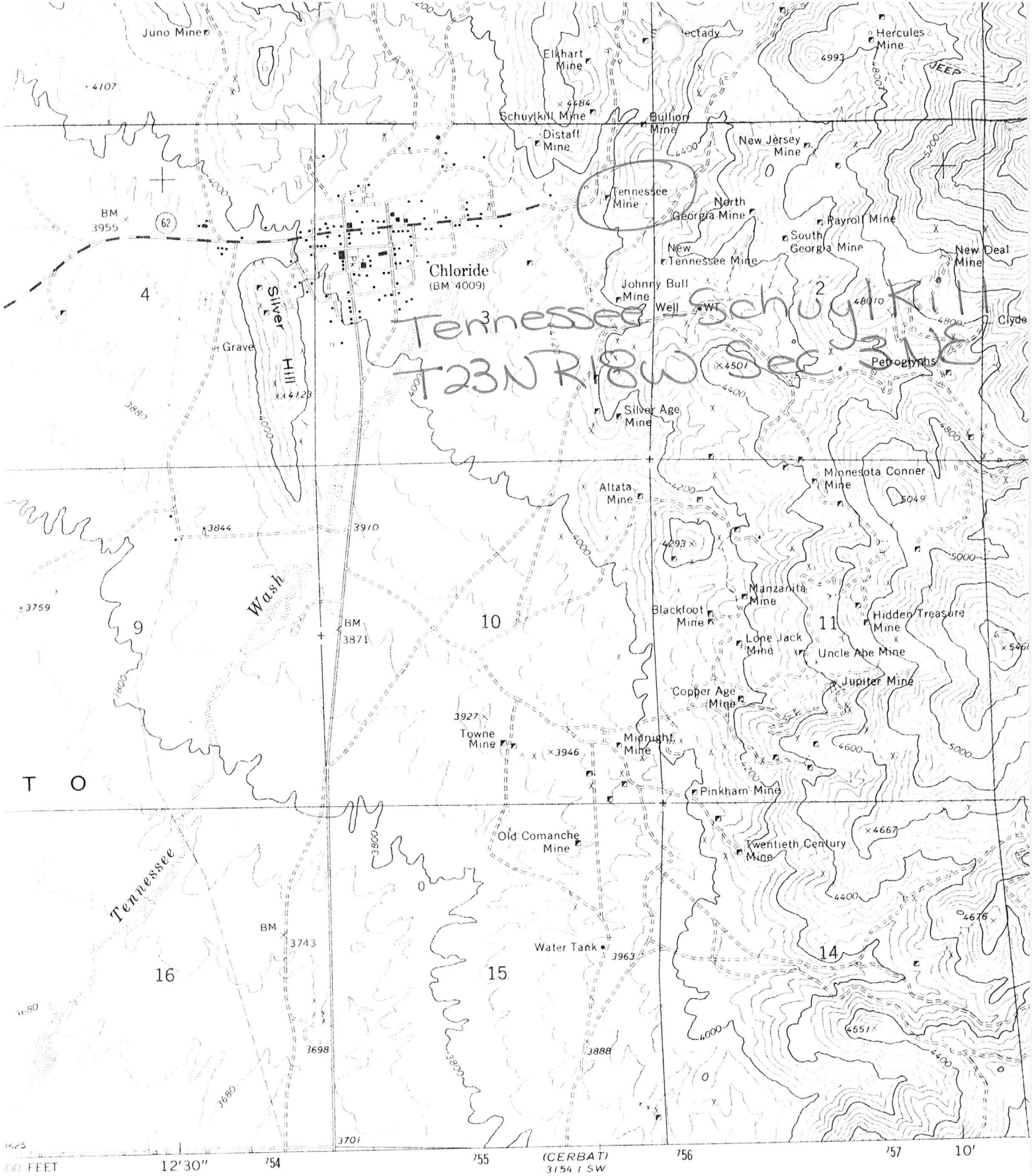
CURRENT STATUS: UNKNOWN

COMMODITY:

SILVER
SILVER NATIVE
ZINC SULFIDE
LEAD SULFIDE
COPPER SULFIDE
IRON SULFIDE
GOLD LODE

BIBLIOGRAPHY:

ADMMR TENNESSEE-SCHUYLKILL FILE & COLVO FILE
ADMMR NEW JERSEY MINE FILE
SCHRADER, F.C. "MIN. DPSTS OF CRBT RNGE, BLCK MTN, GRND WSH CLFS, AZ" USGS BULL 340 P 63
SCHRADER, F.C."MIN. DPSTS OF CRBT RNGE, BLCK MTN, GRND WSH CLFS,AZ" USGS BULL 397 P 54-57
ELSING, M.J. "AZ METAL PRODUCTION" AZBM BULL 140, P. 95; 1936
AZ MINING JOURNAL, AUG. 1920, P. 13
DINGS, M. "WALLAPAI MNG DIST, AZ" USGS BULL 978-E P. 147, 158-159; 1952
SCHODER, J. "MNG & MLNG MTHDS & CSTS AT TENNE SSEE-SCHUYLKILL CORP MINE,AZ" USBM IC 7077
GARRET, S.K "SOME AZ ORE DPSTS" AZBM BULL 145 P. 11-112, 117-119
AZ. STATE MINE INSP. RPT. 1945, P. 6
MOORE, R. "MIN. & WTR RES. OF AZ" AZBM BULL 180, P. 193; 1969
MALACH, R. "MOHAVE CO. MINES" P. 29; 1977
THOMAS, B.E. "GEOLOGY OF CHLORIDE QUAD" P 406 1953 (ADMMR GEOLOGY FILE)
RABB, D. "REC. OF METAL VALUES PRIOR TO RECLA MATION OF MND AREAS IN THE SW"
GREAT BASIN GEM JT VENTURE, VOL 3 "MT TIPTON"



Tennessee Schuylkill
T23N R18W Sec 3 NE

Chloride 7.5'

Arizona Department of Mines and Mineral Resources

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA

MM-K104 Galena

Mohave Co.
Cerbat Mts.
Cerbat Dist.
Tennessee Mines Corp Mine

MILS #117 F
O-AK
Tennessee-Schuylkill (file)

NAME OF MINE: TENNESSEE

COUNTY: MOHAVE
DISTRICT:
METALS: PB,ZN

OPERATOR AND ADDRESS: DATE:		MINE STATUS DATE:	
5/1/44	N.W.Wimer, Chloride	5/1/44	Shipping
6/44	N. A. Wimer, 70 Pine Street New York 5, N. Y.		Idle
2/15/45	Mines Operating Co., Box 256, Chloride (R.A.Thurstin, Secy. & J.R.Payne, mine Supt.)	2/15/45 ~~1/46~~	Shipping
11-14-45 4/46	Tennessee Schuylkill Corp. N.A.Wimer, ~~530 W.6th St., L.A.~~ (Pres.) Chloride & Thos. L. Chapman, Chloride (supt.)	11-14-45 1/46	Idle temp. Developing & mill.

7/44 99 employees

2/15/45 150-ton mill put into operation in Jan. Company is carrying on selective mining.

Mines Operating Co. is working under operating contract with the Tenn. Schuylkill Corp.

[redacted]

MINING JOURNAL - 5-30-42

[redacted]

ENGIN. & - NO. 2 -

[redacted]

arch, 1947—Engineering and Mining Journal

[redacted]

Engineering and Mining Journal—Vol.148, No.6

194

[redacted]

ENG. & MINING JNL - 5-47 Vol 148

[redacted]

At Arizona Mine

Min. & Industrial News 12/1948

[redacted]

[redacted]

[redacted]

[redacted]

ENGIN. & MINING JNL - 2-48 - VOL. 149 - NO. 2

CHAPMAN, Thomas L.
~~3128 Lester Street~~ Box 243, Kingman
~~Tucson, Arizona~~

ining & INDUSTRIAL News 4/1949

See APPLICATIONS - for position as field engineer 9-18-45

[redacted]

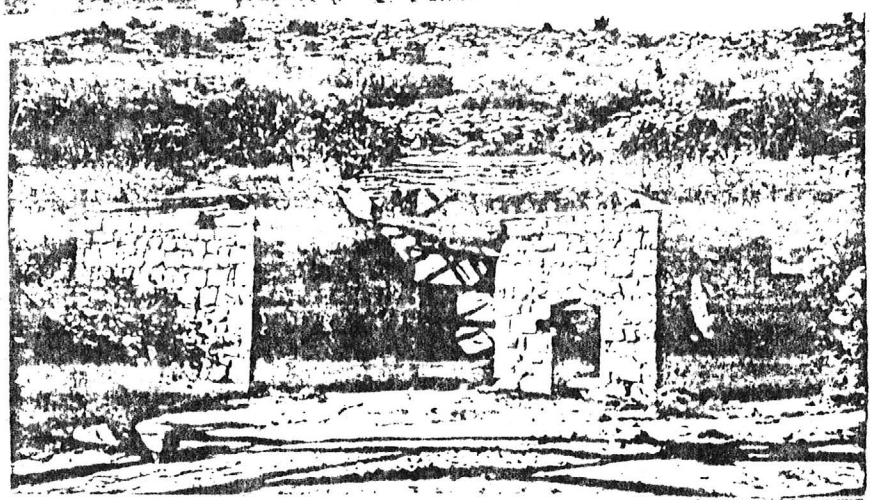
MAR 6 1946

Mineral Park Porphyry Copper

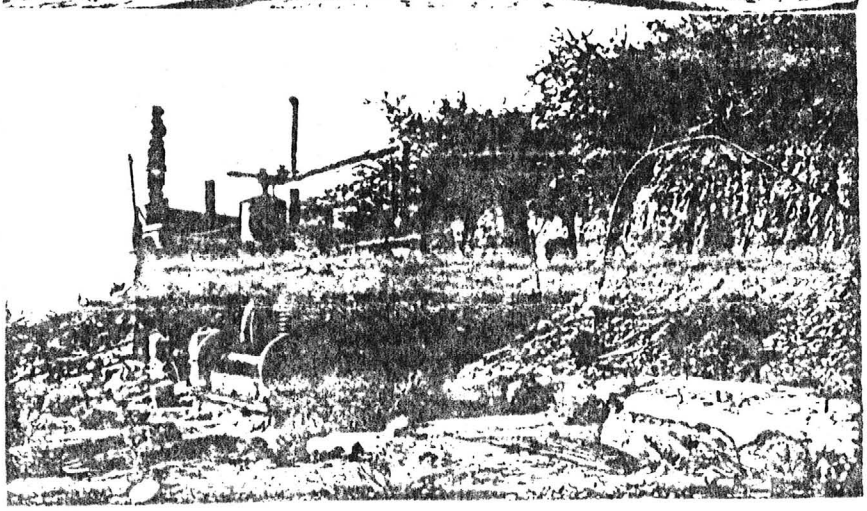
ENGIN. & MINING JNL - 9-48 - VOL. 149 - NO. 9

Schuykill

Schuykill



Elkhart



Schuykill

Top, Pat Patterson at the shaft of the Schuykill mine with the background of the Cerbat Mountains. Center, remnants of a fine stone building at the Elkhart mine, at one time housing one boiler and hoist. The mine is located near the Schuykil. Bottom, hoist and two boilers in ruin at the Schuykill mine, producer of silver, gold, lead and zinc.

PRODUCTION AND DEVELOPMENT
A COMPARISON OF 1942 AND 1943

	1941	1942	1943	1943-1942
Tonnage	45,152	40,055	38,286	95.6%
Cost Per Ton				
Mining	.078	$ 5.9022	$ 7.9456	134.6%
Milling		$ 1.4800	$ 2.2239	150.3%
Average Hourly Rate For Miners		$ 0.869	$ 1.141	131.3%
Grade of Mill Heads				
Gold	.073	0.063 oz.	0.036 oz.	57.1%
Silver	2.92	2.28 oz.	2.01 oz.	96.6%
Lead	5.5	4.19%	3.70%	88.3%
Zinc	5.53	5.16%	5.91%	105.3%
Grade of Lead Concentrate				
Gold		0.475 oz.	0.320 oz.	67.4%
Silver		16.34 oz.	21.35 oz.	130.7%
Lead		36.72%	43.08%	117.3%
Zinc		4.50%	4.57%	101.6%
Grade of Zinc Concentrate				
Gold		0.054 oz.	0.037 oz.	68.5%
Silver		2.41 oz.	2.36 oz.	97.9%
Lead		0.29%	1.28%	441.4%
Zinc		54.51%	51.87%	95.2%
Grade of Tailings				
Gold		0.008 oz.	0.009 oz.	112.5%
Silver		0.10 oz.	0.16 oz.	160.0%
Lead		0.11%	0.24%	218.2%
Zinc		1.08%	1.61%	149.1%
Recovery of Metals in Lead Concentrate				
Gold		83.2%	69.9%	84.0%
Silver		87.1%	83.7%	96.1%
Lead		97.4%	91.7%	94.1%
Zinc		9.1%	6.1%	67.0%
Zinc Concentrate				
Gold		6.5%	8.4%	129.2%
Silver		9.0%	9.5%	105.6%
Lead		0.5%	2.8%	560.0%
Zinc		75.03%	71.1%	94.4%
Tailings				
Gold		10.3%	21.7%	210.7%
Silver		3.9%	6.8%	174.4%
Lead		2.1%	5.5%	261.9%
Zinc		15.6%	22.8%	146.2%
Production				
Ozs. Gold		2,278.08	1,079.63	47.4%
Ozs. Silver		80,194.30	71,693.42	89.4%
To Lead Smelter				
Lbs. Lead		3,267,120	2,597,379	79.5%
Lbs. Zinc		110,360	275,778	67.2%
To Zinc Smelter				
Lbs. Lead		17,760	79,306	446.5%
Lbs. Zinc		3,383,980	3,216,131	95.0%
Total Lbs. Lead		3,284,880	2,677,185	81.5%
Total Lbs. Zinc		3,794,340	3,492,209	92.0%
Feet of New Development		1111	1025	72.6%
Feet of Reopening Old Workings		0	359	
Feet of Diamond Drilling		1482	460	31.0%

From C. E. Ahlf
Production and Tailing for 1943 31,609 Tons
Tailing per value $5.77, 6.22.52
at 8 premium price.

Yours very truly,

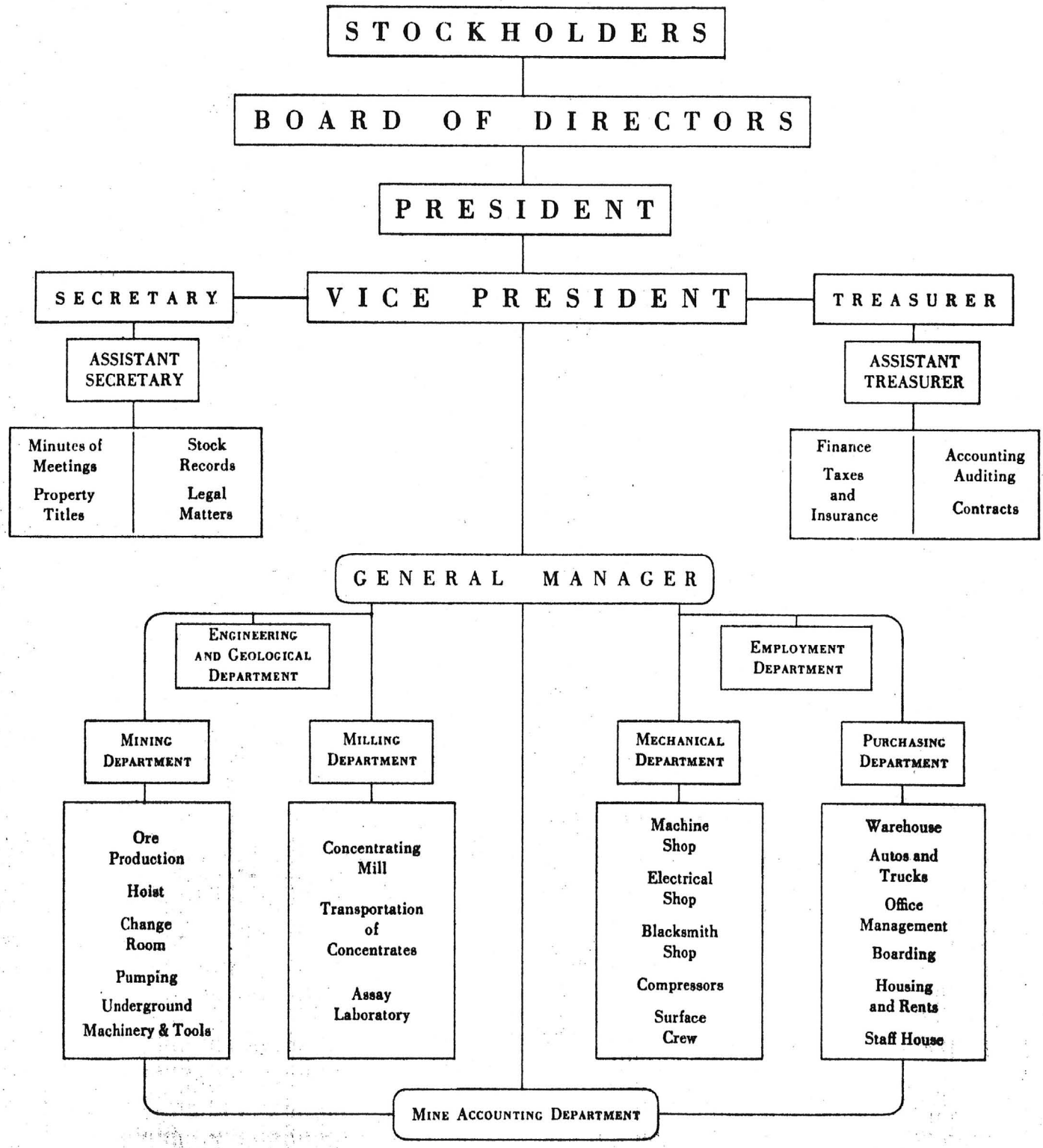
W. C. Wimer, E. M.

TENNESSEE SCHUYLKILL
Corporation

Annual Report
1942

TENNESSEE SCHUYLKILL CORPORATION

Organization Chart



PRESIDENT'S REPORT

To Stockholders of Tennessee Schuylkill Corporation:

This is the first Annual Report of Tennessee Schuylkill Corporation that has ever been published. Although the corporation was organized in 1936 and has, of course, issued reports covering each year's operations, it has been unnecessary to have such reports printed for distribution because of the fact that there were very few stockholders in this Corporation in years gone by.

On February 27, 1942, the controlling stock interest of Tennessee Schuylkill Corporation changed hands and with it the management of the Company also was changed. The writer became President of the Corporation on that date, February 27, 1942, and since that time I have been devoting my entire time to the active administration of the Company's affairs.

In July, 1942, application was made to the Quota Committee, Premium Price Plan for Copper, Lead and Zinc of the W.P.B. and O.P.A. for an assignment of a zero quota rating on the production of lead and zinc from the Tennessee Mine at Chloride, Arizona. This application was acted upon favorably and the effective date was set at July 1, 1942. This meant that for the entire production of lead and zinc from the Tennessee Mine, to which the premium price plan was applicable, the Company received a premium of 2¾c per lb. over and above ceiling prices as set by the Government. Ceiling prices are 6½c per lb. for lead and 8¼c per lb. for zinc. The entire production in the form of concentrates for the year 1942 was shipped to the American Smelting & Refining Company's zinc plant at Amarillo, Texas and the same company's lead plant at El Paso, Texas, after being milled at the property.

Operations during the year 1942 were beset with many unforeseen difficulties brought about by war conditions. Shortages of labor and materials were in many cases extremely difficult to overcome. For example, during the summer months, the crew of laborers at the mine gradually dwindled away until it was less than 50% of normal. Your management employed every method that they could possibly think of to recruit labor with the result a full crew was on the job by October or November. Another item of no small importance with which we have had to cope in the past year was the replacing of practically the entire operating staff at the mine. Previous to the time control of the Corporation changed hands most of the best members of the operating staff had left. It is not an easy matter during war times, when heavy demands are placed on the man power of the country by the armed forces

through the draft, to find people qualified to operate the various key jobs in an organization such as is necessary to operate a property of the size of the Tennessee Mine. Practically all of such positions were filled by the end of the year.

At a Meeting of the Stockholders of the Corporation held on December 29, 1942, a proposal to merge Tennessee Schuylkill Corporation and American Venture Corporation was legally adopted. Previous to that time the controlling stock interest of Tennessee Schuylkill Corporation was held in the treasury of American Venture Corporation as its sole asset of value. The merger of the two corporations was suggested by some of the larger stockholders in American Venture Corporation for the reason that they considered it impractical to operate two corporations where one would be sufficient, and the further reason that a direct stock interest in the company owning and operating the mine could be placed in the hands of the stockholders of American Venture Corporation through merging the two corporations. The merged Corporation continues operations under the name of Tennessee Schuylkill Corporation and is chartered under the Laws of the State of Delaware, having filed the proper papers with the State of Arizona to authorize the Corporation to carry on business in that state.

There is submitted with this report a Balance Sheet and Income and Expense Statement covering the operations of the Corporation for 1942, which was prepared from the audited records of the Corporation. The Company has no funded debt; all properties are owned free and clear of mortgage or incumbrance. Contracts are in effect with the American Smelting & Refining Company providing for the sale of the entire output.

There is also submitted as a portion of this report, the Operations Report for 1942 as prepared by Mr. Frederick W. Foote, E.M., Vice President and Director of the Corporation.

Examination of the Income and Expense Statement and Operations Report will reflect the fact that in the year 1942 many difficulties were met and overcome by your Corporation. It is the belief of the writer that with the exception of some minor repairs and ordinary wear and tear, the plant at the Tennessee Mine is in good shape at the end of the year and that 1943 should show a substantial increase in the Company's earnings.

N. A. WIMER,
President.

OPERATIONS REPORT, 1942

N. A. WIMER, *President*

During January, 1942, operations were normal with respect to all factors except for a deterioration in quality and quantity of miners. In February there was a two-week strike that cut output to about 40% normal, with attendant effect on costs and operating profit. The end of February the control of the Company was taken over from the former majority interest. During March and April operations were normal, except for the increasing difficulty of maintaining an adequate crew. Production, for this reason tended to fall off. The former operators, particularly in the last year of their operations, did not maintain development to an adequate amount. We realized this condition and obtained a diamond drill, and carried on a several months' drilling campaign. This resulted in finding a new orebody on the 900 foot level south of the Tennessee shaft—hithertofore unprospected ground. The 900 fool level drift was extended and stoping started. From May on, however, the grade of ore available was much lower (particularly in lead) and increasing shortage of labor and machinery breakdowns cut into the daily tonnage. Plant and facilities required complete repair and in many items complete replacement, which was proceeded with as rapidly as labor and equipment could be found. In July, the War Production Board requested the Company to push development to the utmost and increase plant capacity. Accordingly a neighboring 75-ton per day custom mill was bought and its essential parts were incorporated in the Tennessee Schuylkill mill to bring its capacity up to 200 tons per day. Among major items were a new miners change house, new office building and equipment, miners houses, restaurant, compressor, diamond drill and complete overhaul of existing equipment.

In August there were further labor disturbances and the United Mine Workers of America made its appearance in the camp. By the end of the year, unionism had not been established, but had a most adverse effect on labor and labor performance. By using every means possible the crew was built up to requirements. This building up of the crew to requirements was accomplished by wide-spread advertisements in newspapers in mining and industrial centers in the West; by close cooperation with the U. S. Employment Service; by road signs on main roads near the mine, Kingman, Boulder City, etc. Furloughed soldiers (who had formerly been miners) were also obtained. It was also necessary to replace practically all the staff after the control was taken over. The grade of ore remained low and production was subnormal until December, when tonnage was back to normal.

At year end the mine was in excellent shape as regards tonnage of potential ore. The 900 foot level orebody had been drifted on for 275 feet in a wide orebody. The plant had been renovated and

capacity raised to 200 tons per day in both mine and mill. There were some phases to be completed in the first quarter of 1943 but the main rehabilitation work had been completed. Tonnage and grade of ore treated in 1941 and 1942 compare as follows:

	1941	1942	1942–1941 1943
Tonnage	45150	40055	88.7%
Assay:			
Gold—oz. per ton	.073	.062	84.9
Silver—oz. per ton	2.92	2.06	70.5
Lead—%	5.50	4.15	75.4
Zinc—%	5.53	5.61	101.4

Operating costs for 1941 and 1942 compare as follows:

	1941	1942	1942–1941
Mining costs—per ton	$ 5.40	$ 6.01	111.3
Milling costs—per ton	1.23	1.50	121.9

The reasons for the increases are a higher wage scale; increased cost of operating supplies; greater maintainance cost on plant and decreased tonnage treated.

The outlook for 1943 is that over 50,000 tons will be mined of slightly lower gold, silver and lead content and an appreciably higher zinc content.

FREDERICK W. FOOTE,
Vice President.

February 15, 1943.

TENNESSEE SCHUYLKILL CORPORATION

Balance Sheet

DECEMBER 31, 1942*

Assets

Cash on Hand and Due from Smelters	$ 11,131.27	
Due from Metals Reserve Company	25,354.18	$ 36,485.45
Special Deposits and Accounts Receivable		6,540.00
Concentrates on Hand		3,520.00
Mining Properties	$ 84,929.97	
Development Thereof Prior to January 1, 1942	28,160.20	
	$113,090.17	
Less: Reserve for Depletion	71,138.97	41,951.20
Value of Ore Reserves	$197,200.00	
Less: Amortization Thereof	122,280.00	74,920.00
Development in Progress		8,681.18
Buildings, Machinery and Equipment:		
Buildings and Machinery	$142,628.39	
Staff House and Furnishings	4,177.74	
Office Furniture and Equipment	2,435.85	
Construction in Progress	14,527.31	
	$163,769.29	
Less: Reserves for Depreciation	45,263.31	118,505.98
Supplies on Hand		8,204.72
TOTAL ASSETS		$298,808.53

Liabilities and Capital

Accounts and Accrued Wages Payable		$ 37,000.36
Trade Acceptances Payable		8,593.23
Notes and Contracts Payable		33,673.59
Advances Payable		10,427.13
Accrued Taxes, Insurance and Interest		16,391.74
Capital Stock Outstanding (1,951,450 shares 10c par)	$195,145.00	
Less: Deficit	2,422.52	192,722.48
TOTAL LIABILITIES AND CAPITAL		$298,808.53

* *After merger of American Venture Corporation with Tennessee Schuylkill Corp.*

TENNESSEE SCHUYLKILL CORPORATION

Income and Expense Statement

1942

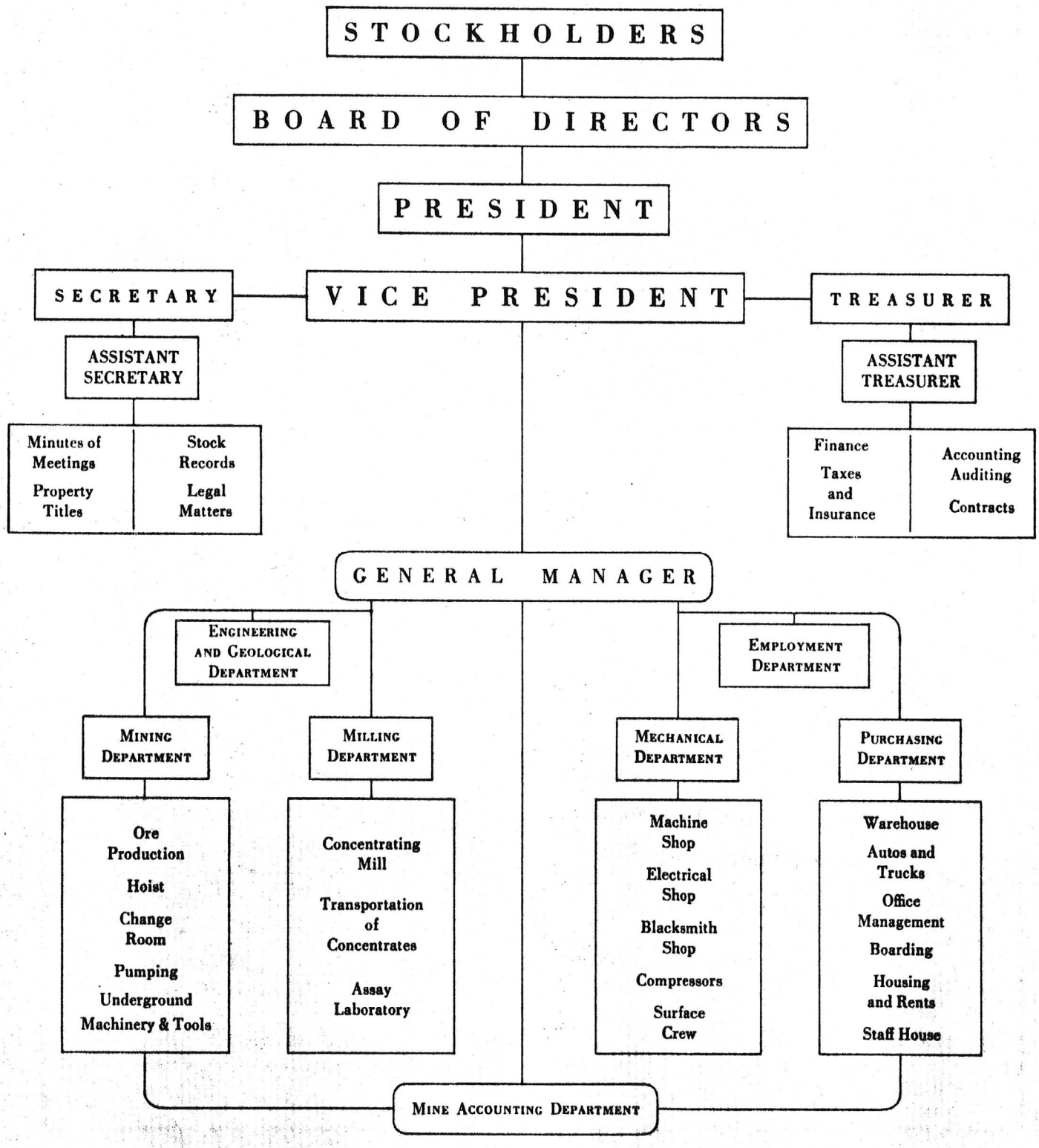
Sales—Lead and Zinc Concentrates		$558,971.17
Smelting Charges, Transportation, etc.		174,608.39
Net Smelter Settlements		$384,362.78
Miscellaneous Income		1,563.00
Gross Income		$385,925.78
Production and Sampling Tax	$ 2,968.44	
Milling Costs	59,922.25	
Mining Costs	240,939.96	
Overhead Expense (Yard, Camp, Assaying, Engineering and Mine Office)	22,210.62	
Maintaining Housing, Cafe and Staff House	935.62	
Administrative Expenses	24,556.17	
Depreciation Charges	10,941.12	362,474.18
Profit Before Provision for 1942 Income Taxes		$ 23,451.60

TENNESSEE SCHUYLKILL
Corporation

Annual Report
1942

TENNESSEE SCHUYLKILL CORPORATION

Organization Chart



TENNESSEE SCHUYLKILL CORPORATION

Balance Sheet

DECEMBER 31, 1942*

Assets

Cash on Hand and Due from Smelters	$ 11,131.27	
Due from Metals Reserve Company	25,354.18	$ 36,485.45
Special Deposits and Accounts Receivable		6,540.00
Concentrates on Hand		3,520.00
Mining Properties	$ 84,929.97	
Development Thereof Prior to January 1, 1942	28,160.20	
	$113,090.17	
Less: Reserve for Depletion	71,138.97	41,951.20
Value of Ore Reserves	$197,200.00	
Less: Amortization Thereof	122,280.00	74,920.00
Development in Progress		8,681.18
Buildings, Machinery and Equipment:		
Buildings and Machinery	$142,628.39	
Staff House and Furnishings	4,177.74	
Office Furniture and Equipment	2,435.85	
Construction in Progress	14,527.31	
	$163,769.29	
Less: Reserves for Depreciation	45,263.31	118,505.98
Supplies on Hand		8,204.72
TOTAL ASSETS		$298,808.53

Liabilities and Capital

Accounts and Accrued Wages Payable		$ 37,000.36
Trade Acceptances Payable		8,593.23
Notes and Contracts Payable		33,673.59
Advances Payable		10,427.13
Accrued Taxes, Insurance and Interest		16,391.74
Capital Stock Outstanding (1,951,450 shares 10c par)	$195,145.00	
Less: Deficit	2,422.52	192,722.48
TOTAL LIABILITIES AND CAPITAL		$298,808.53

** After merger of American Venture Corporation with Tennessee Schuylkill Corp.*

OPERATIONS REPORT, 1942

N. A. WIMER, *President*

During January, 1942, operations were normal with respect to all factors except for a deterioration in quality and quantity of miners. In February there was a two-week strike that cut output to about 40% normal, with attendant effect on costs and operating profit. The end of February the control of the Company was taken over from the former majority interest. During March and April operations were normal, except for the increasing difficulty of maintaining an adequate crew. Production, for this reason tended to fall off. The former operators, particularly in the last year of their operations, did not maintain development to an adequate amount. We realized this condition and obtained a diamond drill, and carried on a several months' drilling campaign. This resulted in finding a new orebody on the 900 foot level south of the Tennessee shaft—hithertofore unprospected ground. The 900 fool level drift was extended and stoping started. From May on, however, the grade of ore available was much lower (particularly in lead) and increasing shortage of labor and machinery breakdowns cut into the daily tonnage. Plant and facilities required complete repair and in many items complete replacement, which was proceeded with as rapidly as labor and equipment could be found. In July, the War Production Board requested the Company to push development to the utmost and increase plant capacity. Accordingly a neighboring 75-ton per day custom mill was bought and its essential parts were incorporated in the Tennessee Schuylkill mill to bring its capacity up to 200 tons per day. Among major items were a new miners change house, new office building and equipment, miners houses, restaurant, compressor, diamond drill and complete overhaul of existing equipment.

In August there were further labor disturbances and the United Mine Workers of America made its appearance in the camp. By the end of the year, unionism had not been established, but had a most adverse effect on labor and labor performance. By using every means possible the crew was built up to requirements. This building up of the crew to requirements was accomplished by wide-spread advertisements in newspapers in mining and industrial centers in the West; by close cooperation with the U. S. Employment Service; by road signs on main roads near the mine, Kingman, Boulder City, etc. Furloughed soldiers (who had formerly been miners) were also obtained. It was also necessary to replace practically all the staff after the control was taken over. The grade of ore remained low and production was subnormal until December, when tonnage was back to normal.

At year end the mine was in excellent shape as regards tonnage of potential ore. The 900 foot level orebody had been drifted on for 275 feet in a wide orebody. The plant had been renovated and

through the draft, to find people qualified to operate the various key jobs in an organization such as is necessary to operate a property of the size of the Tennessee Mine. Practically all of such positions were filled by the end of the year.

At a Meeting of the Stockholders of the Corporation held on December 29, 1942, a proposal to merge Tennessee Schuylkill Corporation and American Venture Corporation was legally adopted. Previous to that time the controlling stock interest of Tennessee Schuylkill Corporation was held in the treasury of American Venture Corporation as its sole asset of value. The merger of the two corporations was suggested by some of the larger stockholders in American Venture Corporation for the reason that they considered it impractical to operate two corporations where one would be sufficient, and the further reason that a direct stock interest in the company owning and operating the mine could be placed in the hands of the stockholders of American Venture Corporation through merging the two corporations. The merged Corporation continues operations under the name of Tennessee Schuylkill Corporation and is chartered under the Laws of the State of Delaware, having filed the proper papers with the State of Arizona to authorize the Corporation to carry on business in that state.

There is submitted with this report a Balance Sheet and Income and Expense Statement covering the operations of the Corporation for 1942, which was prepared from the audited records of the Corporation. The Company has no funded debt; all properties are owned free and clear of mortgage or incumbrance. Contracts are in effect with the American Smelting & Refining Company providing for the sale of the entire output.

There is also submitted as a portion of this report, the Operations Report for 1942 as prepared by Mr. Frederick W. Foote, E.M., Vice President and Director of the Corporation.

Examination of the Income and Expense Statement and Operations Report will reflect the fact that in the year 1942 many difficulties were met and overcome by your Corporation. It is the belief of the writer that with the exception of some minor repairs and ordinary wear and tear, the plant at the Tennessee Mine is in good shape at the end of the year and that 1943 should show a substantial increase in the Company's earnings.

N. A. WIMER,
President.

PRESIDENT'S REPORT

To Stockholders of Tennessee Schuylkill Corporation:

This is the first Annual Report of Tennessee Schuylkill Corporation that has ever been published. Although the corporation was organized in 1936 and has, of course, issued reports covering each year's operations, it has been unnecessary to have such reports printed for distribution because of the fact that there were very few stockholders in this Corporation in years gone by.

On February 27, 1942, the controlling stock interest of Tennessee Schuylkill Corporation changed hands and with it the management of the Company also was changed. The writer became President of the Corporation on that date, February 27, 1942, and since that time I have been devoting my entire time to the active administration of the Company's affairs.

In July, 1942, application was made to the Quota Committee, Premium Price Plan for Copper, Lead and Zinc of the W.P.B. and O.P.A. for an assignment of a zero quota rating on the production of lead and zinc from the Tennessee Mine at Chloride, Arizona. This application was acted upon favorably and the effective date was set at July 1, 1942. This meant that for the entire production of lead and zinc from the Tennessee Mine, to which the premium price plan was applicable, the Company received a premium of 2¾c per lb. over and above ceiling prices as set by the Government. Ceiling prices are 6½c per lb. for lead and 8¼c per lb. for zinc. The entire production in the form of concentrates for the year 1942 was shipped to the American Smelting & Refining Company's zinc plant at Amarillo, Texas and the same company's lead plant at El Paso, Texas, after being milled at the property.

Operations during the year 1942 were beset with many unforeseen difficulties brought about by war conditions. Shortages of labor and materials were in many cases extremely difficult to overcome. For example, during the summer months, the crew of laborers at the mine gradually dwindled away until it was less than 50% of normal. Your management employed every method that they could possibly think of to recruit labor with the result a full crew was on the job by October or November. Another item of no small importance with which we have had to cope in the past year was the replacing of practically the entire operating staff at the mine. Previous to the time control of the Corporation changed hands most of the best members of the operating staff had left. It is not an easy matter during war times, when heavy demands are placed on the man power of the country by the armed forces

capacity raised to 200 tons per day in both mine and mill. There were some phases to be completed in the first quarter of 1943 but the main rehabilitation work had been completed. Tonnage and grade of ore treated in 1941 and 1942 compare as follows:

	1941	1942	1942–1941 1943
Tonnage	45150	40055	88.7%
Assay:			
Gold—oz. per ton	.073	.062	84.9
Silver—oz. per ton	2.92	2.06	70.5
Lead—%	5.50	4.15	75.4
Zinc—%	5.53	5.61	101.4

Operating costs for 1941 and 1942 compare as follows:

	1941	1942	1942–1941
Mining costs—per ton	$ 5.40	$ 6.01	111.3
Milling costs—per ton	1.23	1.50	121.9

The reasons for the increases are a higher wage scale; increased cost of operating supplies; greater maintainance cost on plant and decreased tonnage treated.

The outlook for 1943 is that over 50,000 tons will be mined of slightly lower gold, silver and lead content and an appreciably higher zinc content.

FREDERICK W. FOOTE,
Vice President.

February 15, 1943.

TENNESSEE SCHUYLKILL CORPORATION

Income and Expense Statement

1942

Sales—Lead and Zinc Concentrates		$558,971.17
Smelting Charges, Transportation, etc.		174,608.39
Net Smelter Settlements		$384,362.78
Miscellaneous Income		1,563.00
Gross Income		$385,925.78
Production and Sampling Tax	$ 2,968.44	
Milling Costs	59,922.25	
Mining Costs	240,939.96	
Overhead Expense (Yard, Camp, Assaying, Engineering and Mine Office)	22,210.62	
Maintaining Housing, Cafe and Staff House	935.62	
Administrative Expenses	24,556.17	
Depreciation Charges	10,941.12	362,474.18
Profit Before Provision for 1942 Income Taxes		$ 23,451.60

NAME OF MINE: TENNESSEE

COUNTY: MOHAVE
DISTRICT:
METALS: PB,ZN

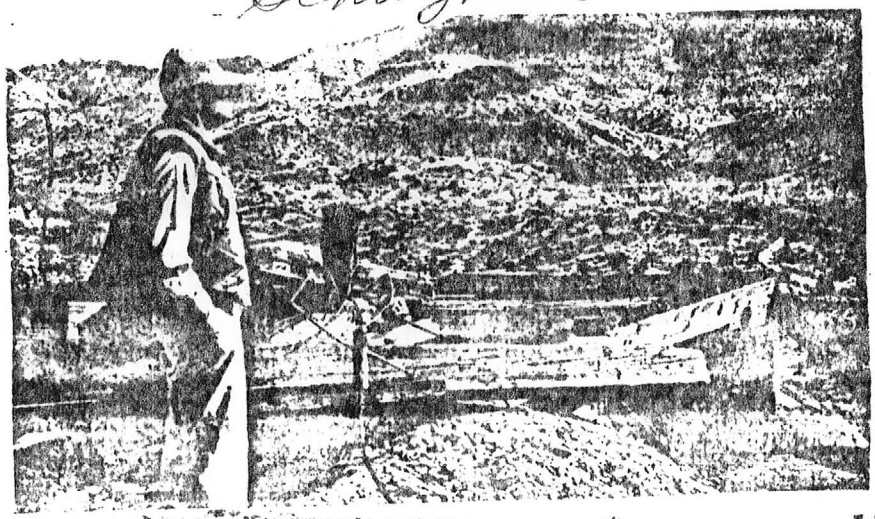
OPERATOR AND ADDRESS: DATE:		MINE STATUS DATE:	
5/1/44	N.W.Wimer, Chloride	5/1/44	Shipping
6/44	N. A. Wimer, 70 Pine Street New York 5, N. Y.		Idle
2/15/45	Mines Operating Co., Box 256, Chloride (R.A.Thurstin, Secy. & J.R.Payne, mine Supt.)	2/15/45 ~~1/46~~	Shipping
11-14-45 4/46	Tennessee Schuylkill Corp. N.A.Wimer, ~~530 W.6th St.,L.A.~~ (Pres.) Chloride & Thos. L. Chapman, Chloride (supt.)	11-14-45 1/46	Idle temp. Developing & mill.

7/44 99 employees

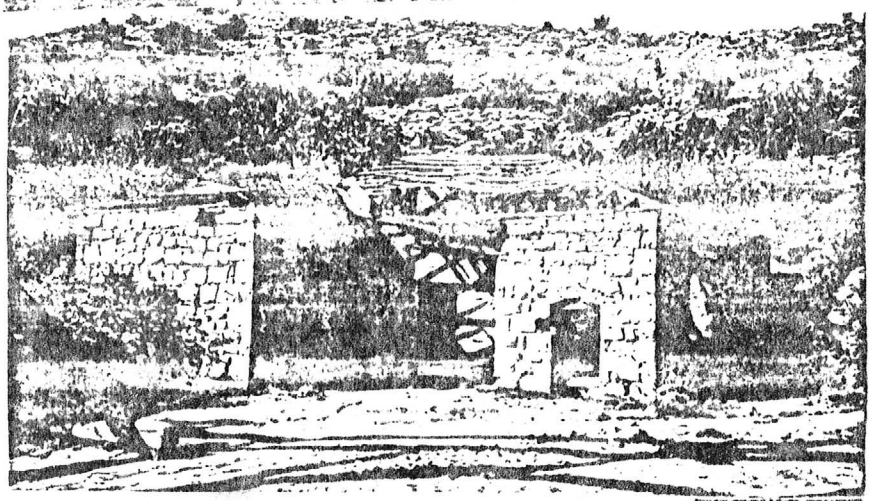
2/15/45 150-ton mill put into operation in Jan. Company is carrying on selective mining.

Mines Operating Co. is working under operating contract with the Tenn. Schuylkill Corp.

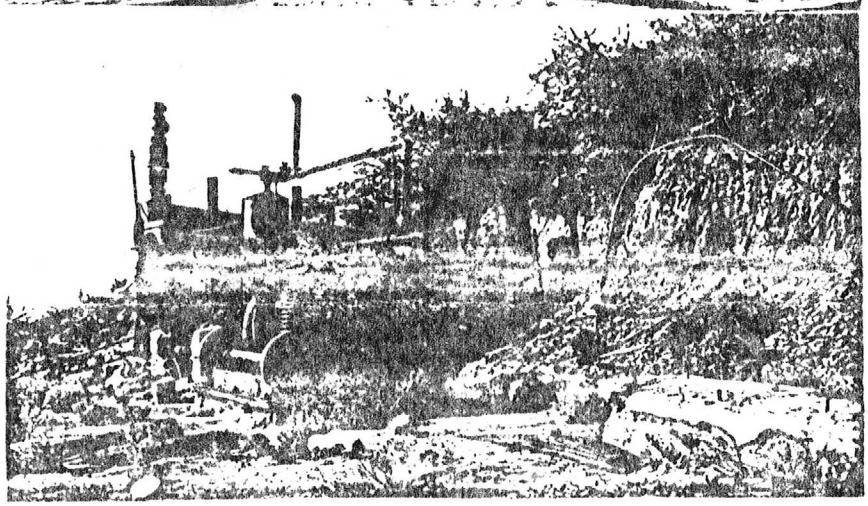
Schuykill



Schuykill



Elkhart



Schuykill

Top, Pat Patterson at the shaft of the Schuykill mine with the background of the Cerbat Mountains. Center, remnants of a fine stone building at the Elkhart mine, at one time housing one boiler and hoist. The mine is located near the Schuykil. Bottom, hoist and two boilers in ruin at the Schuykill mine, producer of silver, gold, lead and zinc.

PRODUCTION AND DEVELOPMENT
A COMPARISON OF 1942 AND 1943

	1941	1942	1943	1943-1942
TONNAGE	45,150	40,055	38,236	95.6%
COST PER TON				
Mining	~~.073~~	$ 5.9022	$ 7.9456	134.6%
Milling		$ 1.4800	$ 2.2239	150.3%
AVERAGE HOURLY RATE FOR MINERS		$ 0.869	$ 1.141	131.3%
GRADE OF MILL HEADS				
Gold	.073	0.063 oz.	0.036 oz.	57.1%
Silver	2.92	2.28 oz.	2.01 oz.	96.6%
Lead	5.5	4.19%	3.70%	88.3%
Zinc	5.53	5.16%	5.91%	105.3%
GRADE OF LEAD CONCENTRATE				
Gold		0.475 oz.	0.320 oz.	67.4%
Silver		16.34 oz.	21.35 oz.	130.7%
Lead		36.72%	43.08%	117.3%
Zinc		4.50%	4.57%	101.6%
GRADE OF ZINC CONCENTRATE				
Gold		0.054 oz.	0.037 oz.	68.5%
Silver		2.41 oz.	2.36 oz.	97.9%
Lead		0.29%	1.28%	441.4%
Zinc		54.51%	51.87%	95.2%
GRADE OF TAILINGS				
Gold		0.008 oz.	0.009 oz.	112.5%
Silver		0.10 oz.	0.16 oz.	160.0%
Lead		0.11%	0.24%	218.2%
Zinc		1.08%	1.61%	149.1%
RECOVERY OF METALS IN LEAD CONCENTRATE				
Gold		83.2%	69.9%	84.0%
Silver		87.1%	83.7%	96.1%
Lead		97.4%	91.7%	94.1%
Zinc		9.1%	6.1%	67.0%
ZINC CONCENTRATE				
Gold		6.5%	8.4%	129.2%
Silver		9.0%	9.5%	105.6%
Lead		0.5%	2.8%	560.0%
Zinc		75.03%	71.1%	94.4%
TAILINGS				
Gold		10.3%	21.7%	210.7%
Silver		3.9%	6.8%	174.4%
Lead		2.1%	5.5%	261.9%
Zinc		15.6%	22.8%	146.2%
PRODUCTION				
Ozs. Gold		2,278.08	1,079.63	47.4%
Ozs. Silver		80,194.30	71,698.42	89.4%
TO LEAD SMELTER				
Lbs. Lead		3,267,120	2,597,879	79.5%
Lbs. Zinc		110,360	275,778	67.2%
TO ZINC SMELTER				
Lbs. Lead		17,760	79,306	446.5%
Lbs. Zinc		3,383,980	3,216,131	95.0%
TOTAL LBS. LEAD		3,284,880	2,677,185	81.5%
TOTAL LBS. ZINC		3,794,340	3,492,209	92.0%
FEET OF NEW DEVELOPMENT		1411	1025	72.6%
FEET OF REOPENING OLD WORKINGS		0	359	
FEET OF DIAMOND DRILLING		1482	460	31.0%

Total Ag. Value
Current end of 1943 3,609 Tons
Taking Zero value of $77,642.52
at 8 premium prices.

Yours very truly,

W. C. WIMER, *E. M.*

TENNESSE-SCHUYLKILL CORP. MOHAVE

I drove to the Tennessee-Schulykill property in Chloride for a cursory examination of the dumps and tailing ponds. VBD WR 6/19/76

George Foss and I drove to the Tennessee dumps at Chloride. We sunk a 3" auger hole to 21 feet near the center of the Tennessee tailing dump and made two grab samples from a jig tailing dump. The assays from these samples will provide preliminary data to decide if these dumps should be thoroughly sampled. VBD WR 6/23/76

Rick Doss and I drove to Tennessee tailing dump and augered a sample from a single hole for metallurgical tests. VBD WR 7/14/76

George Fass, Rick Doss and I augered 3 sample holes into the Tennessee tailing pond after we established a 200' interval grid for sampling. Dave Rabb and Sam Rudy assisted in the sampling after familiarizing themselves with the project files in Kingman. VBD WR 8/19/76

We augered two more sample holes into the Tennessee tailing pond. VBD WR 8/20/76

I drove to Chloride and collected preliminary grab samples from the Schulykill shaft dump. VBD WR 8/22/76

George, Rick and I augered 2 holes in the Tennessee tailing pond. VBD WR 8/23/76

We completed sampling of the Tennessee tailing pond. VBD WR 8/24/76

George, Rick and I drove to the Schulkyll mine dump a short distance north of Chloride where we cut samples all day. VBD WR 9/17/76

Rick Doss, George Fass and I completed sampling at Schulykill dump. VBD WR 9/20/76

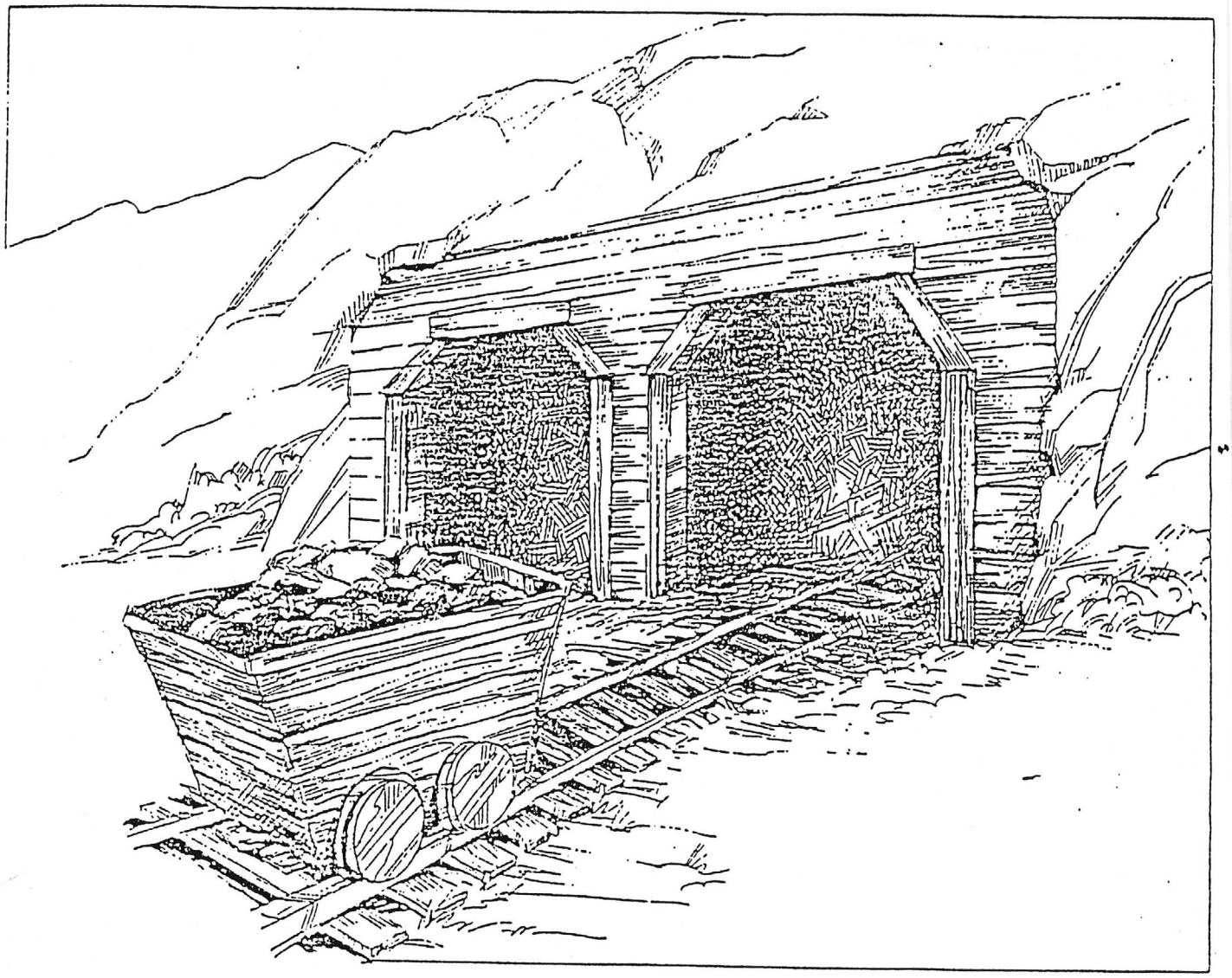
NJN Mine Report 4/14/83: Dump material from the Tennessee-~~Schuykill~~ Schuylkill, Payroll, Keystone & Ark Mines is being crushed and screened at the Tennessee-~~Schuykill~~ Schuylkill dump site. It is then trucked to the PAC Mill Site where it is ground, ~~crushed~~ classified by a cyclone, jigged, tabled and floated, producing various sulfide concentrates containing galena, sphalerite, arsenopyrite, pyrite, silver and gold. Heads are averaging .025 oz Au/ton. Most gold values are being caught in the jigs with the table and float cells making lead and zinc sulfide concentrate. The operating company is Mountain States Resources from Lakewood, Colorado, Lee Mining Corporation, P.O. Box 3849, Kingman, Arizona 86401, is the contractor.

RIH

EXHIBIT A

THE FOLLOWING REPORTS WERE WRITTEN BY THE COMPETENT PROFESSIONALS NAMED AND ARE BELIEVED ACCURATE BUT THE COMPANY MAKES NO CLAIMS TO THEIR ACCURACY OR COMPLETENESS

THE WALLAPAI PROJECT



Mountain States
Resource Development, Inc.

The Wallapai Mining District Cerbat Mountains Mohave County Arizona

GEOLOGICAL SURVEY BULLETIN 978-E

At Current Prices Of

400. Au

TABLE 1.—*Production of gold, silver, copper, lead, and zinc in the Wallapai district, Mohave County, Ariz., 1904–48, in terms of recovered metals*

[Compiled by Metal Economics Branch, U. S. Bureau of Mines, Salt Lake City, Utah]

10. Ag

Year	Crude ore produced (dry tons)	Gold (oz.)	Silver (oz.)	Copper (lbs.)	Lead (lbs.)	Zinc (lbs.)	Value (dollars)
1904	1,531	1,202.42	64,335	1,450	6,036		
1905	5,968	1,157.00	38,731	173	112,266		68,294
1906	9,946	2,772.00	125,331	114,532	901,590		
1907	13,013	5,358.62	58,895	62,917	1,229,634	30,666	229,296
1908	2,179	1,193.13	29,931	11,920	249,229	505,133	76,103
1909	11,635	2,330.77	69,566	1,774	113,112	5,204,121	374,335
1910	1,109	421.23	43,509	20,341	255,368		47,195
1911	12,692	2,733.73	71,243	27,428	2,394,629	960,697	290,229
1912	4,472	1,481.87	43,761	7,529	1,370,930	799,219	171,502
1913	32,633	2,568.27	177,530	30,752	5,171,988	4,233,642	450,330
1914	22,492	1,213.41	55,931	15,297	3,765,102	4,632,185	472,695
1915	85,035	3,292.73	213,519	46,171	6,452,496	17,352,849	2,697,582
1916	104,755	6,166.90	229,237	190,507	5,823,731	17,021,620	3,307,298
1917	101,302	7,012.38	291,197	84,394	6,037,742	17,127,390	2,650,978
1918	4,739	557.62	12,068	91,356	533,162	52,533	150,358
1919	3,332	572.91	44,531	50,[illegible]	404,093		111,591
1920	2,359	632.51	37,300	[illegible]	358,[illegible]		84,173
1921	10,296	1,059.83	52,917	[illegible]	278,[illegible]		114,393
1922	3,453	253.91	42,099	[illegible]	[illegible]		61,234
1923	1,151	233.81	25,[illegible]	[illegible]	[illegible]		30,017
1924	388	143.20	[illegible]	[illegible]	172,058		21,358
1925	3,169	738.29	[illegible]	[illegible]	311,046	174,703	89,316
1926	10,056	2,031.[illegible]	[illegible]	[illegible]	697,803	1,669,296	231,479
1927	19,259	[illegible]	49,499	[illegible]	698,086	1,134,454	193,[illegible]
1928	995	[illegible]	[illegible]	10,450	43,751	150,319	23,617
1929	1,8[illegible]	[illegible]	[illegible]	19,393	64,294	133,414	27,859
1930	[illegible]	[illegible]	[illegible]	2,411	37,640	35,104	7,630
1931	[illegible]	[illegible]	233	341			434
1932	236	[illegible]	3,533	2,333	17,500		5,873
1933	333	[illegible]	3,317	1,422	33,946	11,024	9,527
1934	1,[illegible]	[illegible]	4,718	2,737	11,314	10,[illegible]	11,[illegible]
1935	[illegible]	1,663.29	76,319	26,308	140,723	133,203	128,570
1936	38,[illegible]	3,792.00	193,763	107,539	1,681,476	1,047,560	491,334
1937	119,216	13,318.00	525,640	400,182	4,958,230	3,428,334	1,311,[illegible]
1938	109,810	15,027.00	590,518	311,193	4,667,239	3,319,812	1,292,478
1939	65,716	9,501.00	431,325	146,077	1,460,533	1,319,692	753,[illegible]
1940	76,317	5,143.00	254,740	221,221	4,007,480	8,559,050	1,251,030
1941	72,555	7,500.00	213,377	132,741	4,916,350	4,532,000	1,036,479
1942	70,331	3,498.00	137,112	136,350	3,312,000	4,487,700	936,757
1943	43,721	1,522.60	85,193	216,350	2,754,950	3,654,340	703,619
1944	33,359	593.00	37,536	1,103,200	1,557,000	2,691,000	571,943
1945	21,402	1,053.00	49,708	434,500	1,003,000	1,367,000	420,414
1946	34,599	732.00	38,229	350,500	737,000	971,000	318,495
1947	46,221	474.00	43,233	456,100	1,305,700	1,733,200	349,016
1948	51,734	694.00	22,039	621,400	591,100	1,344,700	326,501
Total	1,276,296	121,191.40	4,503,737	2,712,992	71,473,202	109,350,313	22,172,902
		.098oz.	3.81oz.	4.48#	56#	85.8#	

1,276,200 REPORTED TONS AVERAGED $128/ton (todays values)

.25 Pb

.40 Zn

.72 Cu

Per Ton

$39.00 Au

$38.10 Ag

$ 3.22 Cu.

$34.32 Zn

$14.00 Pb

$128.64

Zinc-lead production reached its peak in the years 1915–17, which coincided with large-scale production from the Tennessee and Golconda mines under the stimulus of high metal prices.

At the time the present investigation was being carried on in the district (early 1943), the Tennessee mine was producing and milling about 150 tons of crude ore per day averaging 7 percent zinc, 3.5 percent lead, and 17 to 25 ounces of silver per ton. A disastrous fire destroyed the Golconda mill in October 1917. Since then the Golconda has produced only intermittently and on a small scale, and the mine is now largely inaccessible on account of caving and the encroachment of water.

FIELD WORK AND ACKNOWLEDGMENTS

Field work for the present investigation was carried on from February to June 1943. Aerial photographs on a scale of about 1 inch

TABLE 2.—*Production of gold, silver, copper, lead, and zinc of selected mines in the Wallapai district, Mohave County, Ariz., cumulative from 1901 through 1948, in terms of recovered metals*

[Compiled by Metal Economics Branch, U. S. Bureau of Mines, Salt Lake City, Utah]

Mine	Gold (oz.)	Silver (oz.)	Copper (lbs.)	Lead (lbs.)	Zinc (lbs.)
Alpha (*m*)	292	33,499	22,263	16,476	
Altata and Altata Extension (*c*)	382	36,021	136,616	7,691	
Badger, Hercules, and Hercules group (*c*)	361	12,287	1,418	331,365	32,524
Banner group (*s*)	1,697	79,352	21,603	2,195,988	39,946
Blackfoot (*cer*)	133	11,556	19,617	101,565	115,369
Blue Bell (*c*)	169	30,951	16,274	182,001	
Cerbat (*cer*)	12	2,033	1,133	4,120	
Champion (*cer*)	982	23,689	11,531	825,993	325,391
C. O. D. (*s*)	1,590	151,283	23,921	348,872	23,165
Columbus-Mohave Doctrine (*cer*)	846	3,093	4,370	17,322	134,233
Copper Ace (*c*)	3	1,663	266	21,573	
Distant (*c*)	81	33,854	1,392	149,600	
Elkhart (*c*)	672	10,383	7,482	243,199	
Empire and Silver Union (*c*)	1	2,473	122		
Eureka (*c*)	2	2,511	3,371	23,861	42,714
Flores (*cer*)	422	366	172	512	
George Washington (*m*)	111	11,039	13,777	34	
Golconda (*c*)	[illegible]	310,150	331,703	2,031,719	55,225,070
Golden Eagle and Bonsal (*m*)	1,[illegible]	24,345	890	40,076	
Golden Gem (*cer*)	2,425	8,210	3,383	14,960	
Hidden Treasure (*c*)	[illegible]	9,074	[illegible]	132,601	231,316
Idaho (*cer*)	250	3,253	1,742	9,345	[illegible]
Juno (*c*)	1,239	43,125	4,317	233,498	154,135
Keystone (*m*)	2,703	432,049	340,778	348,845	114,063
Little Chief (*c*)	391	65,331	2,070	111,825	
Lucky Boy (*c*)	1,923	40,439	230	8,140	
Mary Bell (*c*)	28	935	337	19,155	28,733
Midnight (*c*)	44	8,533	10,748	4,122	
Minnesota-Connor (*c*)	2,590	229,129	50,702	169,722	71,033
Mint (*m*)	232	15,265			
New London (*cer*)	13	3,268	1,535	136,699	31,213
Nighthawk group (*m*)	324	16,207	3,410	1,589	
Old Colony (*s*)	21	2,169	634	4,376	
Paymaster (*cer*)	99	23,090			
Payroll (*c*)	128	4,104	11,694	39,928	102,137
Pinkham (*c*)	36	14,695	35,136	3,133	
Rainbow (*c*)	2,410	34,982	4,718	213,271	22,426
Redemption (*c*)	21	4,012	11,449		
Rico (*s*)	1,149	15,309	1,449	2,620	
Samoa and Salmon (*c*)	4,459	37,891	4,454	656,377	67,886
St. Louis (*cer*)	24	11,142	1,030	835,841	1,496
Silver Ace (*c*)	24	3,350			
Silver Hill (*c*)	708	8,642	10,722	229,949	143,594
Tennessee and Schuylkill (*c*)	42,353	1,514,157	532,587	30,597,096	66,805,907
Towne (*c*)	144	6,296	2,108	5,816	
Vanderbilt (*cer*)	1,012	2,119	327	2,568	
Washington and Washington Extension (*m*)	58	2,203	1,610	1,700	

c, Chloride camp; *m*, Mineral Park camp; *cer*, Cerbat camp; *s*, Stockton camp.

FUTURE ECONOMIC IMPORTANCE OF THE DISTRICT

It is believed that the future economic importance of the district will lie chiefly in the base-metal content of the fissure veins. Most of the veins have not been explored sufficiently at depth to test the base-metal content and particularly the zinc content. On the basis of a geologic study of the veins in the district there is no reason for assuming that any of several other veins will not be as productive of lead and zinc as the Tennessee or Golconda veins. Future development work, particularly at greater depths, on the many miles of veins in the district may disclose several that will prove to be their equal or better.

From "The Wallapai Project" by Mountain States Resource Development, Inc.
Complete report in Tennessee-Schuylkill file.

Ore minerals are principally cerargerite (silver), native gold, galena (lead) sphalerite (zinc), and chalcopyrite (copper). Some arsenopyrite occurs along with cerrusite and oxidized base metal minerals. One can consider this to be a typical "Rocky Mountain Lead, Zinc, Copper Ore."

In March 1977 Messers Dale and Rudy reported on their efforts to justify a custom mill for the small miners of Mohave County. They were funded by a government grant and did their work in conjunction with a number of governmental agencies. In the northern part of the district they report 256,700 tons of dump and tailing ore grading .018 to .103 oz/T gold, .66 to 6.63 oz?t silver, .03 to .16% copper, .13 to 1.79% lead and .50 to 3.56% zinc. They considered this to be proven ore.

It is interesting to note that this is only the northern part of the district and only includes materials that were easily accessable. Items like the buried table and jig tails at the Tennessee were not included.

H. Mason Coggin, a well known and respected mining engineer, evaluated the Copper Age group of claims in April, 1980. He measured many ore occurrences and interpreted a number of undeveloped one in the Copper Age group has a potential of 4.730 million tons averaging $200/ton.

In the Hidden Treasure section of the property Mr. Coggin estimates .5 million tons of ore grading $200/ton or better.

The Arizona Bureau of Mines lists the following known reserves in the Wallapai Mining District:

Mine	Tons	% Cu	% Pb	% Zn	oz/T Au	oz/T Ag
Banner	3841	.5	22.6	11.9	.21	7.4
	5000	.5	22.6	11.9	.21	7.4
Summit	25,000	.58	4.3	6.3	.066 -	4.5
	25,000	.58	4.3	6.3	.066	4.5
Golconda	40,000	.5	.5	14.0	.20	4.0
	40,000	.5	.5	14.0	.20	4.0
Fountain Head	1,250	.61	.65	16.4	.2	3.5
	3,750	.61	.65	16.4	.2	3.5
Detroit	1600	2.31	1.0	5.5	.01	7.2
	1600	2.31	1.0	5.5	.01	7.2
Wrigley	56,000	.1	9.0	.1	.1	.2
Tennessee	29,503	.1	4.1	8.2	.01	.2
	50,000	.1	4.1	8.2	.01	.2

Tennessee	100,000	.1	4.1	8.2	.01	.2
New Moon	11,000	.1	5.0	8.0	.05	7.5
	9,900	.1	5.0	8.0	.05	7.5
	10,000	.1	5.0	8.0	.05	7.5
Minnesota	900	.6	5.0	4.0	.01	.2
Lone Jack	2000	.19	5.51	4.66	.035	3.47
Copper Age	7,000	.1	3.6	7.3	.06	2.0
	7,000	.1	3.6	7.3	.06	2.0
Champion	570	.1	8.0	15.6	.26	10.0
	6,000	.1	8.0	15.6	.26	10.0
	6,000	.1	8.0	15.6	.26	10.0

While the above represent substantial exploration and are very conservative, espcially since this is what their taxes are based upon, it is not fully conclusive. Mining costs, metallurgical techniques and markets must be developed. However these do show the substantial amounts of ore left in the mines.

Howard H. Heilman examined the Golconda Mine in great detail. He measured the reserves in numerous structures and defined those reserves as follows:

Virginia	350,000 tons
Tub	400,000
Little Jimmie	150,000
Peach Triangle	350,000
Golconda	300,000
Prosperity	80,000
Primrose	80,000
Blackfoot	90,000
	1,800,000

Mr. Heilman values these ores as follows:

Zinc	16%
Lead	.5%
Copper	.5%
Gold & Silver	$120.00/T*

* Bases on $300/oz gold and $6.00/oz silver.

The whole emphasis that comes from the Golconda reports is that the mine was shut down when the fire occurred and once stopped was not restarted. The stopes that were in production are in approximately the same situation as when the mine closed.

Tonnages as indicated above were confirmed by H. G. Humes and The American Metal Company. Grades in their estimates ran higher in lead and copper and slightly lower in zinc.

Dump samples on the Golconda were taken and measurements of tonnage were made. The measured tonnages are as follows:

Chats	15,000 tons
Lower Blackfoot	3,000
Middle Blackfoot	7,000
Upper Blackfoot	500
Prosperity	8,000
Tub	3,000
Silver	7,000
Tails	20,000
Golconda	30,000
	93,500

Of the dump ore, approximately 6,000 tons of it will not meet $65/T gross metal value criteria leaving some 87,500 tons.

Samples taken by CEC have confirmed some of the grades quoted. The ongoing program of sampling each dump by complete trenching and then metallurgical testing the sampled material will accurately prove not only the tonnage and assay of each dump, but will also define what can be recovered from these dumps.

Metallurgically the ores in the Wallapai District are best treated by flotation. Recoveries as follows can be expected on ores that are freshly mined:

Lead and Silver	90-95%
Copper and Gold	85-90%
Zinc	75-85%

Ores that have been oxidized by weathering (e.g. dump ores) are also best treated by flotation unless the weathering is severe. One might expect a 5% reduction in recovery, but otherwise the treatment should be unaffected.

Gravity seperation means can also be used on the Wallapai ores. Recoveries are lower, but oxidation has no effect. Some cases of highly oxidized ores yield higher recoveries than flotation, but these are not very important in the district.

Ores with high sulfides should never be treated by leaching techniques. This is a waste of time, money and resources.

The most important item in determining the best method of treatment is metallurgical testing. Ores, even ores from similar mines, must be tested and the parameters for optimum treatment established. A few dollars spent on professional metallurgical testing will save hundreds of thousands in the final analysis.

Summarizing one can state that dump ores and tailings in the district that will meet a $65/T gross metal value are substantial. If the reports issued by competent personnel quoted herein are correct the tonnage is in excess of 300,000 tons. While CEC is

(602) 297-7231

P.O. BOX 36446
TUCSON, ARIZONA 85740

Cimetta
Engineering &
Construction Co., Inc.

9 Jun 82

Mr. Eldon Lee
Mountain States Resource Development, Inc.
P. O. Box 104
Berthoud, CO 80513

RE: Wallapai Project
Ore In Place, Dump, &
Tailings Reserves

Dear Eldon:

Persuant to your request we have reviewed all of the data made available to us on the Wallapai Project by MSRD and others and the data that we have collected since our involvement. The purpose of this review was to determine tonnages and grades of reserves that are contained on your properties. We did not attempt to rate the metallurgical aspects of each reserve since this is the purpose of the work now being conducted. We did comment on the overall metallurgical treatment concept and expected results of the district.

The Wallapai Project basically encompasses the bulk of the Wallapai Mining District so for purposes of this review we will use the two synonomously. Of course, it must be acknowledged that Duval Corporation's Mineral Park Property is located in the middle of the district.

Up until the advent of the Mineral Park Porphyry Mine, the two main producers in the district were the Tennessee and Golconda Mines. Their production from 1904 to 1948 was as follows:

Golconda	20,752	oz Gold
	510,180	oz Silver
	354,703	lb Copper
	2,031,719	lb Lead
	56,226,020	lb Zinc
Tennessee	42,383	oz Gold
	1,514,187	oz Silver
	839,837	lb Copper
	59,897,096	lb Lead
	66,805,907	lb Zinc

It would appear on the surface that the Tennessee in the northern part of the district was the main property. However, when one considers the fact that the Golconda was destroyed by fire in

October of 1917 and didn't produce anything of substance from that time forward and the Tennessee continued to produce right on up into the 1950's one must look again at the facts. In other words, the Golconda achieved its production in 13 years whereas the Tennessee achieved its in 44 years.

The main thing to note here is that the two major high grade producers in the district are part of the MSRD holdings. Also important to note is that one property was halted due to a disaster, not depletion of the mine or uneconomical conditions. (Note: This is not saying the Tennessee is depleted.)

When one looks at the district from a geological standpoint the following facts stand out:

1. The center of the district is dominated by the Ithica Granite stockworks. This has been developed into the Mineral Park Porphyry Mine and seems to be the source of mineralization for the district.
2. There are numerous vein deposits, both to the north and south of the stock. The north veins are dominated by the Tennessee and Copper Age groups while the south is dominated by the Golconda.
3. The Emerald Isle Mine is a property which seems to have no relation to the veins or the porphyry and seems to be the exception that proves the rule.

Since the Ithica Granite Stock is owned and mined by Duval, it is being eliminated from further discussion. The same is true of the Emerald Isle Mine since it was not taken up by MSRD in its acquisition program due to a lack of values.

The veins in the district are fissue veins that seem for the most part to be younger than the rocks into which they have intruded. It would appear that these veins were formed by the intrusion of the Ithica Granite Stock and subsequently mineralized by solutions from the stock.

For the most part these fissure veins pinch and swell from just a few inches to over 100 feet in width with the average width being 3 to 4 feet. However, the veins have an average strike length of over one mile and the exposed outcrops of the district have shown the veins to have a combined strike length of over 85 miles.

The veins are filled with pyrite and quartz with their oxidized zone extending down to 150 feet below the surface on an average basis. Depths of 1600 feet have been reached in mining with no apparent bottoming of the veins and well known and respected geologists estimate that the veins will extend to at least 2500 feet below the surface.

Ore minerals are principally cerargerite (silver), native gold, galena (lead) sphalerite (zinc), and chalcopyrite (copper). Some arsenopyrite occurs along with cerrusite and oxidized base metal minerals. One can consider this to be a typical "Rocky Mountain Lead, Zinc, Copper Ore."

In March 1977 Messers Dale and Rudy reported on their efforts to justify a custom mill for the small miners of Mohave County. They were funded by a government grant and did their work in conjunction with a number of governmental agencies. In the northern part of the district they report 256,700 tons of dump and tailing ore grading .018 to .103 oz/T gold, .66 to 6.63 oz?t silver, .03 to .16% copper, .13 to 1.79% lead and .50 to 3.56% zinc. They considered this to be proven ore.

It is interesting to note that this is only the northern part of the district and only includes materials that were easily accessable. Items like the buried table and jig tails at the Tennessee were not included.

H. Mason Coggin, a well known and respected mining engineer, evaluated the Copper Age group of claims in April, 1980. He measured many ore occurrences and interpreted a number of undeveloped one in the Copper Age group has a potential of 4.730 million tons averaging $200/ton.

In the Hidden Treasure section of the property Mr. Coggin estimates .5 million tons of ore grading $200/ton or better.

The Arizona Bureau of Mines lists the following known reserves in the Wallapai Mining District:

Mine	Tons	% Cu	% Pb	% Zn	oz/T Au	oz/T Ag
Banner	3841	.5	22.6	11.9	.21	7.4
	5000	.5	22.6	11.9	.21	7.4
Summit	25,000	.58	4.3	6.3	.066 -	4.5
	25,000	.58	4.3	6.3	.066	4.5
Golconda	40,000	.5	.5	14.0	.20	4.0
	40,000	.5	.5	14.0	.20	4.0
Fountain Head	1,250	.61	.65	16.4	.2	3.5
	3,750	.61	.65	16.4	.2	3.5
Detroit	1600	2.31	1.0	5.5	.01	7.2
	1600	2.31	1.0	5.5	.01	7.2
Wrigley	56,000	.1	9.0	.1	.1	.2
Tennessee	29,503	.1	4.1	8.2	.01	.2
	50,000	.1	4.1	8.2	.01	.2

Tennessee	100,000	.1	4.1	8.2	.01	.2
New Moon	11,000	.1	5.0	8.0	.05	7.5
	9,900	.1	5.0	8.0	.05	7.5
	10,000	.1	5.0	8.0	.05	7.5
Minnesota	900	.6	5.0	4.0	.01	.2
Lone Jack	2000	.19	5.51	4.66	.035	3.47
Copper Age	7,000	.1	3.6	7.3	.06	2.0
	7,000	.1	3.6	7.3	.06	2.0
Champion	570	.1	8.0	15.6	.26	10.0
	6,000	.1	8.0	15.6	.26	10.0
	6,000	.1	8.0	15.6	.26	10.0

While the above represent substantial exploration and are very conservative, espcially since this is what their taxes are based upon, it is not fully conclusive. Mining costs, metallurgical techniques and markets must be developed. However these do show the substantial amounts of ore left in the mines.

Howard H. Heilman examined the Golconda Mine in great detail. He measured the reserves in numerous structures and defined those reserves as follows:

Virginia	350,000 tons
Tub	400,000
Little Jimmie	150,000
Peach Triangle	350,000
Golconda	300,000
Prosperity	80,000
Primrose	80,000
Blackfoot	90,000
	1,800,000

Mr. Heilman values these ores as follows:

Zinc	16%
Lead	.5%
Copper	.5%
Gold & Silver	$120.00/T*

* Bases on $300/oz gold and $6.00/oz silver.

The whole emphasis that comes from the Golconda reports is that the mine was shut down when the fire occurred and once stopped was not restarted. The stopes that were in production are in approximately the same situation as when the mine closed.

Tonnages as indicated above were confirmed by H. G. Humes and The American Metal Company. Grades in their estimates ran higher in lead and copper and slightly lower in zinc.

Dump samples on the Golconda were taken and measurements of tonnage were made. The measured tonnages are as follows:

Chats	15,000 tons
Lower Blackfoot	3,000
Middle Blackfoot	7,000
Upper Blackfoot	500
Prosperity	8,000
Tub	3,000
Silver	7,000
Tails	20,000
Golconda	30,000
	93,500

Of the dump ore, approximately 6,000 tons of it will not meet $65/T gross metal value criteria leaving some 87,500 tons.

Samples taken by CEC have confirmed some of the grades quoted. The ongoing program of sampling each dump by complete trenching and then metallurgical testing the sampled material will accurately prove not only the tonnage and assay of each dump, but will also define what can be recovered from these dumps.

Metallurgically the ores in the Wallapai District are best treated by flotation. Recoveries as follows can be expected on ores that are freshly mined:

Lead and Silver	90-95%
Copper and Gold	85-90%
Zinc	75-85%

Ores that have been oxidized by weathering (e.g. dump ores) are also best treated by flotation unless the weathering is severe. One might expect a 5% reduction in recovery, but otherwise the treatment should be unaffected.

Gravity seperation means can also be used on the Wallapai ores. Recoveries are lower, but oxidation has no effect. Some cases of highly oxidized ores yield higher recoveries than flotation, but these are not very important in the district.

Ores with high sulfides should never be treated by leaching techniques. This is a waste of time, money and resources.

The most important item in determining the best method of treatment is metallurgical testing. Ores, even ores from similar mines, must be tested and the parameters for optimum treatment established. A few dollars spent on professional metallurgical testing will save hundreds of thousands in the final analysis.

Summarizing one can state that dump ores and tailings in the district ~~that~~ will meet a $65/T gross metal value are substantial. If the reports issued by competent personnel quoted herein are correct the tonnage is in excess of 300,000 tons. While CEC is

just getting started, work to date has indicated that the reserves represented by the men quoted herein have been conservative in both tonnage and grade.

Ore in place has been estimated by many. While today's prices for metals make some of it uneconomic there are substantial reserves in the district. If one were to have to estimate what could reasonably be developed it might look like the following:

Northern Area (Tennessee Mine)	
Proven & Probable	350,000 tons
Possible	2,800,000
Central Area (Copper Age Mine)	
Proven & Probable	95,000
Possible	4,730,000
Souther Area (Golconda Mine)	
Proven & Probable	1,800,000
Possible	3,000,000

Again the tonnages shown must be proven by exploration, but as McClelland G. Dings put in his report:
"On the basis of a geologic study of the veins in the district there is no reason for assuming that any of several other veins will not be as productive of lead and zinc as the Tennessee and Golconda-veins. Future work, particularly at greater depths, on the many miles of veins in the district may disclose several that will prove to be their equal or better."
The district and the project have the potential for greatness, long life and emense profit. One must only be sufficiently tenacious and approach the problems professionally. As I have said many times, mining is a tough business and is not for the faint hearted, but the rewards are comensurate.

In closing, we feel the Wallapai Project has an excellent chance of being one of the formost in the now developing rejuvination of the mining industry as it was known at the turn of the century. We are looking forward to being associated with this project knowing that with a dilligent, professional approach it will be the success we all desire.

Sincerly,
Cimetta Engineering & Construction Co., Inc.

J. B. Davis

Potentials for ore development can be broken down as follows:

(1) Possibility of reporcessing old dumps and tailings.

(2) Reopening of old mines to produce ore which was considered low grade in the past.

(3) Development of deeper extensions of existing veins.

(4) Location and development of hidden veins running parallel to known veins.

(5) Mining of the upper zones of known veins by open pit methods.

(6) The potential development of large porphyry type mineralization.

Many of the old mines were mined for silver and lead and a few for copper. However, the predominant mineral in the district is sphalerite (zinc sulfide). Large block of zinc ore were left by the miners at the turn of the century. In those days the blocks were worth little or nothing. Today those blocks are high grade ore.

Some discussion was put forth by Theodore B. Comstock about buried auriferous veins trending across the main veins. Where these intersected the main north-south veins, massive high grade sheets of ore were developed. There is some evidence to support this theory and if valid, the possibility of many yet undiscovered high grade ore bodies increases substantially.

After reviewing the information available one could draw the following conclusions about the potential for developing mining operations on the properties controlled by M. S. R. D. in the vicinity of Chloride, Arizona:

(1) The dumps and tailings contain many tons of valuable ore. Flotation recovery techniques will be needed in combination with highly trained crews to achieve maximum profitability, but gravity techniques could be used to get started.

(2) The principle metal value in the district is zinc. This is closely followed by copper.

(3) The upper reaches of the veins contain zinc, lead and precious metals. With depth the lead will convert to copper.

(4) Many ore zones containing mainly zinc were left by early miners opening the possibility of reopening many of the major mines. This can only be determined by reopening and examining these mines and carrying out drilling programs to determine the existance of parallel veins and downward vein extensions.

(5) Most of the veins will carry principally copper and zinc values with minor precious metal values.

(6) Some of the flat dipping veins and the wider veins will allow open pit mining techniques to be applied. This will allow the treatment of much lower grade ores.

(7) The most promising target for the development of a mining operation, excluding dumps and tails, is the Tennessee-Schuylkill Group. This is closely followed by the Golconda-Prosperity Group. Properties immediately north of Mineral Park in the vicinity of the Copper Age Mine will take considerably more work to develop.

(8) The possibility of another large porphyry in the district is a distinct possibility. However, capital costs to develop such properties are at present prohibitive and so exploration for such a deposit should be given a low priority.

In summary, the M. S. R. D. controlled properties have excellent potential for developing a 300-500 tpd operation for the treatment of dumps and tailings. Such an operation could be moderately profitable over the next ten (10) years.

The potential for developing a number of small sulfide mines that would feed a central concentrator are excellent. It shouldn't be difficult to develop reserves to keep a 500-1000 tpd flotation plant running for ten (10) years or more. However, it would have to be realized that base metals would be the primary products and precious metals would be incidental to this production. The production of pyrite for the manufacture of fertilizer should not be ignored.

The potential for the development of large mining operations would not seem to be good in the immediate future. However, extensions of Duval's Mineral Park property into the Golconda area are possible and the possibility of a separate porphyry in the Chloride area is certainly worth the exploration funds to find out if it is present.

What has basically been said is that there are no proven ore reserves on the M. S. R. D. properties, but minimal exploration expenditures should prove up many reserves. However, the efforts necessary to explore all of the properties will take years, but the key to it all is that M. S. R. D. has the property position to carry out a professional exploration program that will allow development when ore is proven. M. S. R. D. will not be in the position of finding ore on property belonging to others.

As was started in the beginning, this is a very preliminary review. As more data is collected we can become more specific. In the mean time if you would like to review any of the information supporting this report it is available here in Tucson.

Sincerely,

CIMETTA ENGINEERING & CONSTRUCTION CO., INC.

J. B. Davis

JBD/jmr

Cimetta
Engineering &
Construction Co., Inc.

8. The Tennessee-Schuylkill mine is the other large mine in the district. It produced high quality lead-zinc ore with gold and silver. The Tennessee exceeded the Golconda in total production by virtue of it being mined for many more years and to greater depth. The Golconda, however, is clearly much longer in strike than the Tennessee.

Comparison to the Tennessee gives direct confirmation that the Golconda will continue in depth. The Tennessee workings extend down to 1600 slant feet with good quality ore in evidence. The U.S.G.S. survey reports shoots in the Tennessee of 400 feet in length. This comparison of dimension shows the Golconda exceeding the Tennessee in length by some threefold indicating that the Golconda should exceed the depth by far that of the Tennessee.

Similarly a comparison of the slant depths and elevations bears out the same expectation for the Golconda. The shaft elevation of the Tennessee is 4200 feet and the slant depth is 1600 feet whereas the Golconda has an elevation of 4900 feet and a slant depth of 1100 feet (equivalently worked levels). In view of this, and in terms of slant depth, using a 60 degree dip, the Tennessee shoot is now some 1400 feet greater depth than the Golconda.

Reference to the Tennessee in the above manner to show firm support for the depth continuation of the Golconda shoot obviously involves the conclusion that the Tennessee was of high quality from shallow workings to the lowest levels. The Tennessee's production record through a long period of years certifies this conclusion. On the other hand, as in many instances, mineralized fissure veins in the district pinch and swell on both strike and dip. This is true in either the Tennessee or the Golconda. The important point is the average recovery

of quality ore over the length of the whole ore shoot for each level as has been established for the Golconda and the Tennessee.

It is unfortunate that partially negative observations regarding mines like the Tennessee or the Golconda take on expanded meanings and irrefutable stature as the years go by unless the contrary and complete data is well publicized. In many cases the negative comments are taken out of context and not limited to the restricted facts that originated them. Contradictory statements are even reported in the U.S.G.S. survey for the Tennessee where, for example, Garrett of the Tennessee group in 1938 reported the gold values as being in the pyrites as opposed to Sharpe, also of the Tennessee staff, who reported in 1943 that the galena contained the gold and the pyrites was barren. Obviously neither condition can be 100% correct for the average of the mine but in the absence of one of these comments the written record of later years would show only one conclusion.

Sharpe was the metallurgist at the Tennessee in 1943 and his studies were based largely on production then from the 900 foot level. Garrett preceded him and was associated with the Tennessee in 1938 or earlier. This directly points up the fact with regard to the time of any observation and the circumstances of that time. Some time in 1938 or earlier the fact that the Tennessee did show a marked barren zone around the 500 or 600 level could have been the determining factor in an appraisal for the Tennessee at that particular time. Opposing this now is its later operating history with its demonstrated strength, size, and quality of ore shoot to the 1600 foot level.

The U.S.G.S. Survey of 1943 (Bulletin No. 978-E) shows a notable example of the misinterpretations to be obtained with regard to the size of the ore shoots in the district. The Bulletin reports on Page 143 - "Ore shoots are generally small and as a rule range from 8 to 10 inches to 3 or 4 feet in thickness. The thickest shoot measured 20 feet in the Tennessee mine. An ore shoot in the Golconda mine is reported to have greatly exceeded in size any in the Tennessee, but the Golconda was not accessible for examination." At the time of this survey it is true that the Golconda ore shoot proper could not be inspected via the shaft and this fact probably resulted in the failure to make other inspections in the Golconda area. If such inspections had been made at that time it was possible to observe the Tub ore shoots from two places underground and from one surface cut that exceeded by far the thickest shoot of 20 feet found in the Tennessee. Furthermore the Bulletin refers to the fundamental work of Schrader. In Schrader's work are observations that the Tub veins are from 30 to 100 feet wide in the Tub claim, Silver, etc.

The quality and continuation of the Tennessee mine with depth can be readily certified from the available records of mill assays and production data. Both in the files of Golconda Chemicals and in the files of the Tennessee trustees in Mohave County are the authentic records showing the quality of the Tennessee in the later years of its operation and at the lower levels. As an illustration we have in the Golconda Chemicals' file the records of the last eight months operation of the Tennessee from February to September of 1945. The final average for

the entire eight months showed a mill heads average of gold - 0.077 oz./ton, silver - 2.64 oz./ton, lead - 6.03% and zinc 7.23%.

We also have in file the certified statement of the operator in charge of the mining at that time under lease to the trustee. The operator affirms the requirement upon him of ore recovery from the total width of the ore shoot (20 feet) as opposed to the removal of only the 5 to 8 feet of high grade in the shoot.

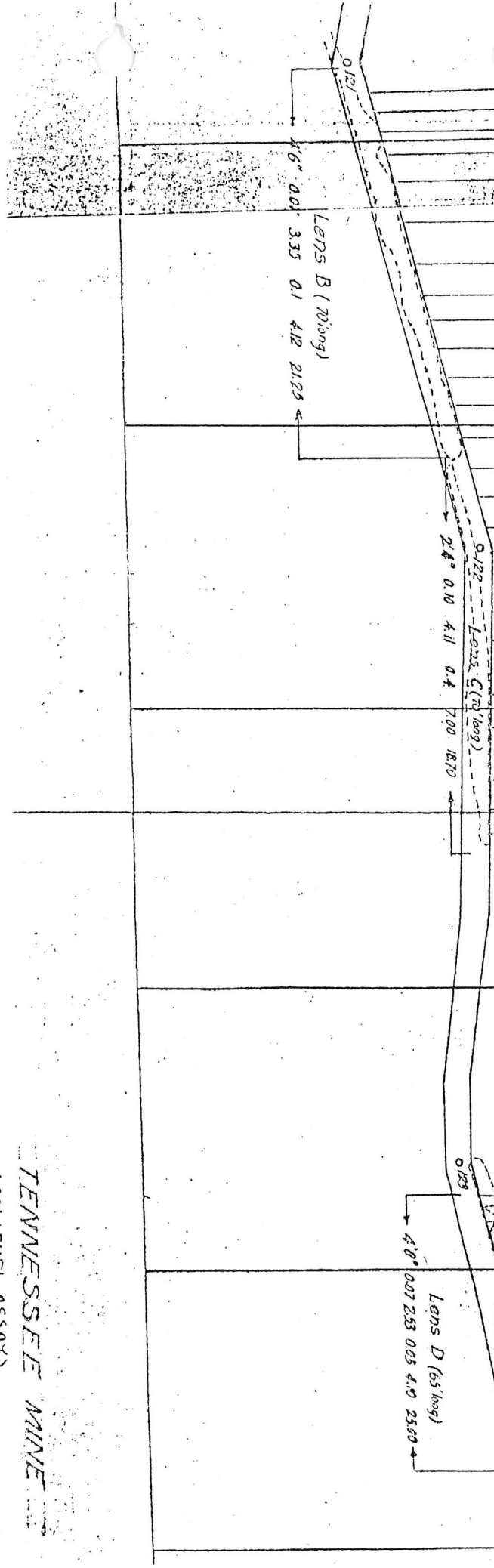
The ore recovered from the Tennessee during 1944 and 1945 came in the largest quantity from the levels ranging from 900 to 1300. A review of the mill and production records however shows the quality of the ore also in the deeper levels. At the end of this section is an illustrative tabulation of the ore values removed during 1944 and 1945 from the Tennessee.

At the close of this lease operation at the end of 1945 an extension of the Schuylkill shaft was made from 1350 to 1400 feet by the operator. This extension showed another body of high grade at this point in the shoot of over 50% lead.

The record of the Tennessee is outstanding for quality and quantity of ore. Unfortunately much of the earlier mining was done in the most temporary and expedient way for scalping of ore values. This resulted in poor tunnels in size, maintenance, etc. A cooperative, corporate structure was also involved for some years. This arrangement dictated that capital expenditures be kept to a minimum for any long term development work. The looseness of management control, etc., resulted in underground conditions almost precluding rehabilitation and also indebtedness, still current, of large magnitude to public utilities, and for government taxes, etc. Had these not been the conditions the Tennessee would have warranted much more effort for rehabilitation and control. Even in 1943, when the U.S.G.S., was receiving all out aid from the local trustee of the Tennessee, they reported that most of the Schuylkill workings were inaccessible.

TENNESSEE RANDOM SAMPLES 1944-1945

Date	Level		Gold (oz)	Silver (oz)	Lead %	Zinc %
Aug. 44	1600	(6 Cars)	.01	.76	14.1	-
July 44	1600	(6 Cars)	.11	3.7	.5	7.2
June 44	1600	(2 Cars)	.05	2.09	1.7	16.7
July 45	1427	(30 Cars)	-	-	9.8	9.4
April 45	1400	(N. Drift)	.14	4.29	10.6	14.9
April 45	1400	(No. 1)	.10	2.86	4.5	19.2
June 45	1400	(N. Drift)	.43	1.72	3.1	4.6
June 45	1427	(Raise)	.10	1.43	3.1	8.1
June 45	1427	(Raise)	.23	2.10	7.3	6.9
June 45	1427	(Floor)	.03	.53	.5	8.4
June 45	1400	(Stope - 39 Cars)	.20	4.97	13.0	11.4
May 45	1427	(Stope)	-	-	.6	2.3
May 45	1400	(Raise - H.W.)	.07	9.66	22.3	10.7
May 45	1400	(N. Drift)	.25	2.70	.6	3.4
May 45	1400	(Raise Face)	.07	1.44	1.0	11.8
June 45	1400	(Winze - 40 Cars)	.10	2.24	3.1	15.7
Feb. 45	1350	(Winze)	.20	1.6	1.8	11.1
Mar. 44	1323	(28 Cars)	.21	2.14	5.8	5.6
Mar. 44	1323	(25 Cars)	.06	5.07	14.7	6.3
Feb. 44	1323	(54 Cars)	.06	6.80	5.5	9.2
April 45	1227	(Muck Pile)	.01	7.66	5.3	3.7
July 45	1227		-	-	11.9	5.2
April 45	1229	(Raise)	.10	5.87	15.7	4.9
May 45	1129	(Drift)	.12	3.68	9.7	9.8
Aug. 44	1128B	(16 Cars)	.02	.94	15.1	9.4
Sept. 45	904	(115 Cars)	-	-	3.4	12.2
May 45	904S	(8th Floor)	.03	1.7	2.0	7.4
May 45	904	(41 Cars)	-	-	1.9	12.8
May 45	904	(80 Cars)	-	-	5.9	11.8
May 45	904	(65 Cars)	.04	2.84	8.5	6.5
May 45	904	(67 Cars)	.04	2.99	6.6	8.0



Section	Au	Ag	Cu	Pb	Zn
4'6"	0.04	1.88	0.3	0.7	20.2
1'0"	0.06	7.04	3.2	12.6	21.6
6'0"	0.04	1.68	0.1	5.3	19.6
2'4"	0.02	3.98	0.7	1.9	23.8
5'8"	0.10	3.94	0.2	5.4	17.5
8'4"	0.08	3.44	Tr.	1.1	10.7
3'8"	0.04	3.16	Tr.	Tr.	27.8
5'0"	0.18	2.02	Tr.	2.4	19.9
3'7"	0.08	1.42	Tr.	Tr.	10.2
3'9"	0.08	1.44	Tr.	1.2	16.6
2'6"	0.04	1.84	Tr.	0.9	30.3
3'7"	0.06	1.90	Tr.	0.5	22.2
5'10"	0.07	7.98	0.4	16.1	33.2
2'8"	0.04	3.16	Tr.	2.4	24.1
1'1"	0.16	5.04	0.8	5.5	73.3
1'0"	0.06	8.14	0.6	24.2	30.1
0'7"	0.04	6.93	0.8	10.5	40.2
1'3"	0.24	8.08	2.1	9.1	29.5
1'6"	0.08	5.88	0.7	6.6	34.0
1'5"	0.18	6.82	2.1	3.1	20.2
3'7"	0.06	9.46	0.2	23.7	17.5
3'8"	0.20	4.15	Tr.	6.5	16.0
4'0"	0.04	0.48	0.2	1.0	11.2
4'6"	0.04	0.48	Tr.	1.0	12.8
3'4"	0.08	4.92	1.2	5.7	14.2
1'11"	0.16	2.08	Tr.	5.5	12.2
1'8"	0.08	2.20	Tr.	5.0	26.5
4'8"	0.04	0.56	Tr.	1.0	21.6
6'10"	0.02	3.74	Tr.	3.2	17.4
1'3"	0.08	1.92	Tr.	1.0	33.1
4'6"	0.08	0.56	Tr.	2.2	21.8
7'5"	0.10	0.46	Tr.	3.8	19.0
5'0"	0.16	6.40	0.4	10.8	20.7
6'6"	0.04	1.64	0.1	Tr.	35.1
4'0"	0.06	0.78	Tr.	0.5	32.2
3'3"	0.08	1.68	Tr.	Tr.	19.0
8'9"	0.04	2.36	Tr.	6.5	42.0
3'0"	0.18	8.50	Tr.	17.8	23.7
2'6"	0.04	4.60	Tr.	7.5	33.5

TENNESSEE MINE

600' LEVEL ASSAYS