

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.

PRINTED: 12/17/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: CHAMPION

ALTERNATE NAMES:

ATWATER KENT GROUP ROADSIDE CLAIMS NEEDLES

MOHAVE COUNTY MILS NUMBER: 101A

LOCATION: TOWNSHIP 22 N RANGE 18 W SECTION 13 QUARTER SE LATITUDE: N 35DEG 17MIN 36SEC LONGITUDE: W 114DEG 08MIN 47SEC TOPO MAP NAME: CERBAT - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

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

BIBLIOGRAPHY:

ADMMR MOHAVE CARD FILE SCHRADER, F.C. "MIN. DEPTS OF CRBT RNGE, BLCK MTNS, GRND WSH CLFS,AZ" USGS BUL 397 P 104-5 DINGS, M.G. "WALLAPAI MNG DIST, CRBT MTNS, AZ" USGS BULL 978-E, P. 149, 1952 AZ. MNG JNL, AUG. 1920, P. 13 HINTON, R.J. "1000 OLD AZ MINES" P 98, 1962 AZ. STATE MINE INSP ANL RPT, P 21, 1915 AEC PRELIM. RECONN. RPT #172-485, P. 102 MALACH, R. "MOHAVE COUNTY MINES", 1977 ADMMR CHAMPION FILE ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

111

a Cara ana

PRIMARY NAME: CHAMPION

ALTERNATE NAMES:

ATWATER KENT GROUP ROADSIDE CLAIMS NEEDLES

MOHAVE COUNTY MILS NUMBER: 101A

LOCATION: TOWNSHIP 22 N RANGE 18 W SECTION 13 QUARTER SE LATITUDE: N 35DEG 17MIN 36SEC LONGITUDE: W 114DEG 08MIN 47SEC TOPO MAP NAME: CERBAT - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

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

BIBLIOGRAPHY:

ADMMR MOHAVE CARD FILE SCHRADER, F.C. "MIN. DEPTS OF CRBT RNGE, BLCK MTNS, GRND WSH CLFS,AZ" USGS BUL 397 P 104-5 DINGS, M.G. "WALLAPAI MNG DIST, CRBT MTNS, AZ" USGS BULL 978-E, P. 149, 1952 AZ. MNG JNL, AUG. 1029, P. 13 JUS. 1920 HINTON, R.J. "1000 OLD AZ MINES" P 98, 1962 AZ. STATE MINE INSP ANL RPT, P 21, 1915 AEC PRELIM. RECONN. RPT #172-485, P. 102 MALACH, R. "MOHAVE COUNTY MINES", 1977 ADMMR CHAMPION FILE

CHAMPION

MOHAVE

Lon Smith, John Allen and Hugh Alger, owners-operators of the Roadside claims (old Champion mine) in the Cerbat Mts. of Mohave County are closing down the mine. Their search for significant ore reserves was not successful. VBD WR 2/25/76

Kingman Mining Project, Underground map 1 section, 11/5/76

Mohave Miner March 5, 1953.

Wallapai mining District (Cerbat) SUMMARY REPORT SUMMARY REPORT OF MINERALS EXAMINATION Mineral Products PD, Zn, Qu, Hy Ha State. County ... hampion Kogd Ve 1alms Name of property or dy Atwater-Ken Date of this report Date examined 10 Engineer Reason for examination. Engineer accompanied by 00 un property / D/ Ant Smith n Allen Loci the 2007 Dechin Owner dleAddress. 86 KINgman HZ. lac 1 Hugh h Leased or optioned to NO ODE Address. Location of property (be specific) 2.2 miles ore JUIP hide With quartz gangue Ur. which cuts precampi 1 ke (*Aneisses*, Known dimensions of the deposit Olke Lenses 1000 a 07 Depth. Length 10 Width. 10) Attitude of the deposit (strike, dip, etc.) ... a bog 7liht. Possible extensions; correlation of known showings The Certeat 1egd 210 many de 00. DOSI. Mine workings (brief description or attach map or sketch) (indicate whether accessable). OF reported it 3 leve he 100 / " inaccessible. OP Da (over)

11-21

Mining and milling equipment on property frue Compressers, pipe track, Mine cars, & mining equipment. teil thousand Past production (if any)..... Present rate of production (if any) ... per day of ore 10 m to ning di 11/11/19 60, enter-or attach sketch)..... ne Sampling (describe briefly. 1111 Tentative Estimate of Reserves (Subject to revision when assays are received or after engineering calculations) no estimate Measurable_____Grade_____ Indicated_____Grade_____ Inferred.....tons......Grade Mining method (actual or suggested) ______ Kesung Milling or processing method (actual or suggested) <u>Selective</u> lotation (..... one Processing tests suggested Tentative conclusion and decision Considerable barade ZINC ores are repo in. this area. Owners proposal to reopen shaft and Sample is Good To be accompanied by brief letter giving examining engineer's general impression of the deposit, his impression of the owner, and any other confidential information he may care to submit. Refer to any known prior examinations and reports. May be executed in pencil. Should be mailed within 24 hours after examination is completed. This is a recent told that title was and relocation, Was cleared by due process law,

JEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

Mine Champion

Date November 13,1952.

District Wallapai

Engineer Geo. F. Reed

Subject:

t: Present Status (Lead-Zinc Mine)

This property, consisting of three unpatented claims, Atwater Kent and Atwater Kent Nos. 1 & 2, is owned by I.M. George of Kingman (c/o Kingman Water Co.) and is leased to Pat Paterson of Chloride. Claims are located in Eastern half of Sec. 13, Twp.22N, Rge.18W. Reached from Kingman on Boulder Dam Highway nine miles then turn right past Ferguson House 2.4 miles of dirt road. It is Mohave County. Elev. about h000.feet.

Paterson and partner have been working for past two years on the 150 foot 1/2 level and have shipped over 400 tons of ore to Midvale, Utah, and to Deming, N.Mex. These are both custom selective flotation mills. The ore has run about .25 oz.gold, 8.00z. silver, 14.% lead and 0.50% copper and 18.% zinc on an average. The vein dips steeply to the NE and strikes North-West. It outcrops on a steep hillside and the 600 foot inclined shaft is cut at the 50 level by an adit. Ore is hoisted to this level with an air tugger and trammed to the bin.

The country rocks are Pre-Cambrian Schists, gneisses, granite and dikes. A fine grained greenish dike with small biotite flakes, apparently invaded the vein fissure ahead of the ore. The ore streak averages about $l_2^{\frac{1}{2}}$ feet wide and is almost solid sulphides of the above metals and iron. The ore shoots lenze out and may be either on the hanging wall or footwall of the dike. Lenzes appear to be 50 to 100 feet long with an aggregate length being worked of 200 feet or more lately.

The water level is held just below the 150 foot level pocket by pumping about enough water for showers and drilling. Nothing very definite is known about the lower levels. They are said to be zincy.

The most recent car went to Deming and was paid for at $13\frac{1}{2}$ zinc quotation and 15ϕ lead. Reported assay is 0.100z.gold, 5.680z. silver, 12.0% lead, 0.40% copper and 21.8% zinc. Milling cost \$4.00.Zinc pay was \$21.67 per ton. Gross pay was \$48.00 per ton at Deming after milling. Net at mine after royalty and trucking was \$17.06.00 for 54. tons.

George F. Reed

LEFARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

MineCHAMPIONDateApril 16, 1957DistrictWALLAPAI, MOHAVE CO.EngineerMARK GEMMILL

Subject:

Mr. C. G. Paterson, Box 174, Chloride now owns this property and resumed operations during recent months - is now making occasional shipments of copper, lead, zinc, gold and silver to Deming. He has six men employed.

CHAMPION MINE

MOHAVE COUNTY

Information from Mine Inspector's office - August 15, 1957

Champion Mine (Chloride, Arizona) Wallapai District - Mohave County 3-12-57

5 men

3 claims ZN-LEAD

C. G. Patterson - Owner & Manager Box 174 Chloride, Arizona

200 tons per month in tunnel & winze

down

LAS

Idle. FPK 10-31-57

References: USGS Bull. 397, p. 103 " 978, map " 978-E, p. 149

Mr. Eldon Lee 9 Jun 82 Page 5

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

C	hats	15,000	tons
Т	ower Blackfoot	3,000	
N	iddle Blackfoot	7,000	
T	Ipper Blackfoot	500	
τ	Prosperity	8,000	
ב די	np	3,000	
2	lilver	7.000	
		20,000	
		30,000	
C	orconua	02 500	

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

> imetta mgineering & mgineeri

ST. 語の 译 1 E AN E E 51 E 3 Ant 1

E

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	s Cu	% Pb	<u>% Zn</u>	oz/T Au	oz/T Ag
Banner		3841 5000	.5	22.6 22.6	11.9 11.9	.21	7.4 7.4
Summit	-	25,000 25,000	.58	4.3 4.3	6.3 6.3	.066 - .066	4.5 4.5
Golcon	da	40],000 40,000	.5	.5	14.0 14.0	.20	4.0 4.0
Founta	in Head	1,250 3,750	.61 .61	.65	16.4 16.4	.2	3.5
Detroi	t	1600 1600	2.31 2.31	1.0 1.0	5.5 5.5	.01	7.2 7.2
Wrigle	Y	56,000	.1	9.0	.1	.1	. 2
Tennes	5ee	29,503 50,000	.1 .1	4.1 4.1	8.2 8.2	.01	. 2

imetta

E).] 國 Ī 7:17

5

F

Mr. Eldon Lee 9 Jun 82 . Page 4

....

.

話を

[

.....

.....

Mr.

Tennessee	100,000	.1	4.1	8.2	.01	. 2
New Moon	11,000 9,900 10,000	.1 .1 .1	5.0 5.0 5.0	8.0 8.0 8.0	.05 .05 .05	7.5 7.5 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 7,000	.1	3.6 3.6	7.3 7.3	.06	2.0
Champion	570 6,000 6,000	.1 .1 .1	8.0 8.0 8.0	15.6 15.6 15.6	.26 .26 .26	10.0 10.0 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	cons
	Tittle Timmia	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	
Heilman values	these ores as follo	OWS:	
	Zinc	16%	
	Lead	.5%	
	Copper	.5%	
	Gold & Silver	\$120.00/	Т*
505 on \$300/00			

* 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.

💭 imetta

🗲 ngineering &

Construction Co., Inc.

JEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

Mine Champion

Date November 13,1952.

Engineer Geo. F. Reed

District

Subject:

Present Status (Lead-Zinc Mine)

Wallapai

This property, consisting of three unpatented claims, Atwater Kent and Atwater Kent Nos. 1 & 2, is owned by I.M.George of Kingman (c/o Kingman Water Co.) and is leased to Pat Paterson of Chloride. Claims are located in Eastern half of Sec. 13, Twp.22N, Rge.18W. Reached from Kingman on Boulder Dam Highway nine miles then turn right past Ferguson House 2.4 miles of dirt road. It is Mohave County. Elev. about 4000.feet.

Paterson and partner have been working for past two years on the 150 foot 1/2 level and have shipped over 400 tons of ore to Midvale, Utah, and to Deming,N.Mex. These are both custom selective flotation mills.The ore has run about .25 oz.gold, 8.0oz. silver, 14.% lead and0.50% copper and 18.% zinc on an average. The vein dips steeply to the NE and strikes North-West. It outcrops on a steep hillside and the 600 foot inclined shaft is cut at the 50 level by an adit. Ore is hoisted to this level with an air tugger and trammed to the bin.

The country rocks are Pre-Cambrian Schists, gneisses, granite and dikes. A fine grained greenish dike with small biotite flakes, apparently invaded the vein fissure ahead of the ore. The ore streak averages about $l_2^{\frac{1}{2}}$ feet wide and is almost solid sulphides of the above metals and iron. The ore shoots lenze out and may be either on the hanging wall or footwall of the dike. Lenzes appear to be 50 to 100 feet long with an aggregate length being worked of 200 feet or more lately.

The water level is held just below the 150 foot level pocket by pumping about enough water for showers and drilling. Nothing very definite is known about the lower levels. They are said to be zincy.

The most recent car went to Deming and was paid for at $13\frac{1}{2}$ @ zinc quotation and 15¢ lead. Reported assay is 0.10oz.gold, 5.68oz. silver, 12.0% lead, 0.40% copper and 21.8% zinc. Milling cost \$4.00.Zinc pay was \$21.67 per ton. Gross pay was \$48.00 per ton at Deming after milling. Net at mine after royalty and trucking was \$17,06.00 for 54. tons.

George F. Reed

DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

Mine	CHAMPION	Date April 16, 1957
District	WALLAPAI, MOHAVE CO.	Engineer MARK GEMMILL

Subject:

Mr. C. G. Paterson, Box 174, Chloride now owns this property and resumed operations during recent months - is now making occasional shipments of copper, lead, zinc, gold and silver to Deming. He has six men employed. Information from Mine Inspector's office - August 15, 1957

Champion Mine (Chloride, Arizona) Wallapai District - Mohave County 3-12-57

3 claims ZN-LEAD

C. G. Patterson - Owner & Manager Box 174 Chloride, Arizona

200 tons per month in tunnel & winze

down

5 men

LAS

Idle. FPK 10-31-57

Références: USGS Bull. 397, p. 103 " 978, map " 978-E, p. 149

Mr. Eldon Lee 9 Jun 82 Page 5

E

N.N

御記

母

-

E.

[i]

5

3

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	
TIOSPELICJ	3,000	
Silver	7,000	
Dile	20,000	
	30,000	
Golconda	02 500	
	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

💽 imetta

e ngineering &

Construction Co., Inc.

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	8 Cu	% Pb	% Zn	oz/T Au	oz/T Ag
Banner	3841 5000	.5	22.6 22.6	11.9 11.9	.21	7.4 7.4
Summit -	25,000 25,000	.58	4.3 4.3	6.3 6.3	.066 - .066	4.5
Golconda	401,000 40,000	.5	.5 .5	14.0 14.0	.20	4.0 4.0
Fountain Head	1,250 3,750	.61	.65 .65	16.4 16.4	. 2	3.5 3.5
Detroit	1600 1600	2.31 2.31	1.0 1.0	5.5 5.5	.01 .01	7.2 7.2
Wrigley	56,000	.1	9.0	.1	.1	. 2
Tennessee	29,503 50,000	.1	4.1 4.1	8.2 8.2	.01	. 2

imetta

E ngineering &

5

F

Į

211

2]

) I

A.

ĪŊ

Mr. Eldon Lee 9 Jun 82 : Page 4

1

4

1.4

.

in.

:

÷.

.

1

: : :

;; : ;; : ; :

-

ľ

Tennessee	100,000	.1	4.1	8.2	.01	.2
New Moon	11,000 9,900 10,000	.1 .1 .1	5.0 5.0 5.0	8.0 8.0 8.0	.05 .05 .05	7.5 7.5 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 7,000	.1 .1	3.6 3.6	7.3 7.3	.06	2.0 2.0
Champion	570 6,000 6,000	.1 .1 .1	8.0 8.0 8.0	15.6 15.6 15.6	.26 .26 .26	10.0 10.0 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 t	ons
	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 foll	lows:	
	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.

💭 imetta 🗲 ngineering & Construction Co., Inc.