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Arizona Department of Mines and Mineral Resources Mining Collection

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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: HIDDEN TREASURE

ALTERNATE NAMES:

EMERSON GROUP

MOHAVE COUNTY MILS NUMBER: 122E

LOCATION: TOWNSHIP 23 N RANGE 18 W SECTION 11 QTR. NE
LATITUDE:N 35DEG 23MIN 49SEC LONGITUDE:W 114DEG 10MIN 11SEC
TOPO MAP NAME: CHLORIDE - 7.5 MIN

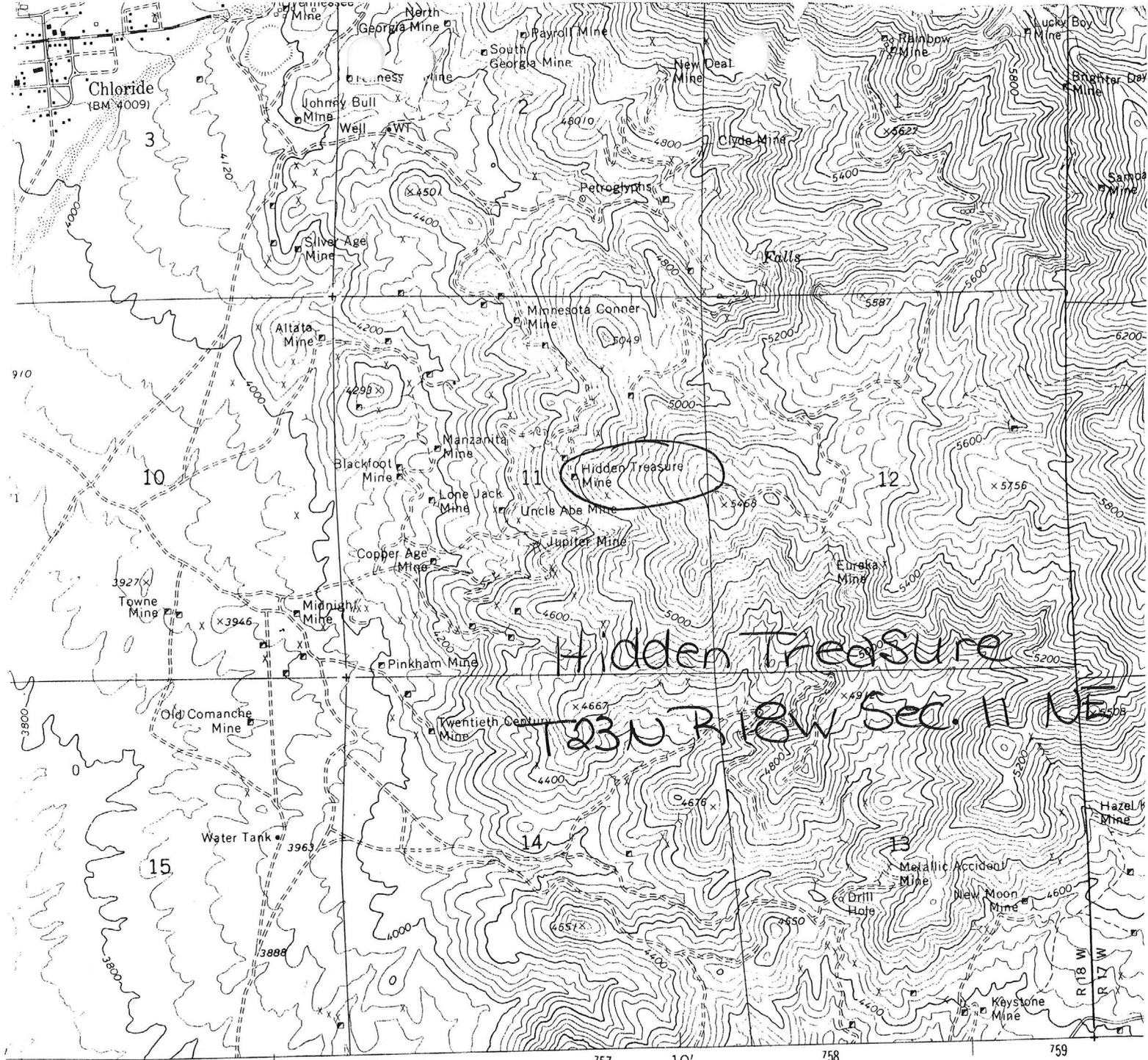
CURRENT STATUS: PAST PRODUCER

COMMODITY:

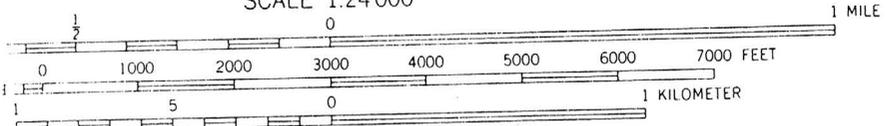
ZINC-(M) SULFIDE-PRIMARY
LEAD-(M) SULFIDE-COPRODUCT
COPPER-(M) SULFIDE-BYPRODUCT
SILVER-BYPRODUCT
GOLD-(M) LODE-BYPRODUCT
IRON-BYPRODUCT

BIBLIOGRAPHY:

USGS CHLORIDE QUAD
ADMR MOHAVE CARD FILE
HAURY, P.S., USBM RI 4101, P. 15-17
ADMR HIDDEN TREASURE MINE FILE
SCHRADER, F.C., USGS BULL 397, P. 72
WILLIS, C., AZ. MNG. JRNL. AUG. 1920, P. 13
DINGS, M., USGS BULL 978-E, P. 147, 155-156
ADMR EMERSON MINE FILE
TENNEY, J., AZBM BULL 125, P. 87
MALACH, R., MOHAVE CO. MINES, 1977, P. 21-23



(CERBAT)
3154 1 SW
SCALE 1:24,000



CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242
FOR DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Chloride 7.5'

HIDDEN TREASURE MINE

MOHAVE COUNTY

Mrs. Gutman - Chloride, Arizona - owner

It is reported that W. C. Nelson, Box 1052, Kingman, and associates had acquired some 48 mining claims from Mrs. Gutman of Chloride. The ground included 23 claims (Jupiter mine etc.) on the east side of Chloride and 35 claims, including the Merrimac mine, west of Chloride. These people intended to incorporate and begin exploratory developing soon. TPL WR 12-23-60

No work has been started yet on the Gutman properties (Jupiter, Hidden Treasure, etc.)
TPL WR 2-24-61

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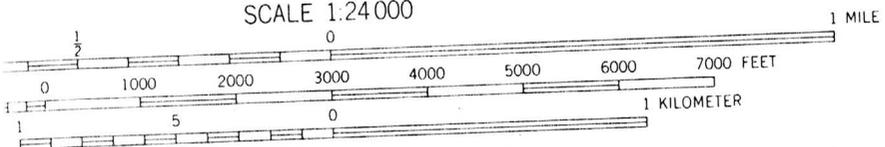
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Chloride 7.5'

NAME: HIDDEN TREASURE (B) ✓

COUNTY: MOHAVE

1/2 mile S.W. Mineral Spring 2 mile S.E. Chloride

T 23 N R 18 W SEC. 11 Elev. 4800
Central

DISTRICT: WALLAPAI
(CHLORIDE)

Mineralization: A. Ag. Cu Pb Zn

Geology:

Type Operation: 3-300' shafts

Production: 250_{oz} Au, 9.074_{oz} Ag, 7,897 lb Cu, 159,861 lb Fe, 231,345 lb Zn 1901-1948 Total 2 P147

References: MOHAVE CO. (USGS 750 P. 155) (0265 347 P. 72)
USBM RI 4101 clipping file

Mohave Cty. Card File

HIDDEN TREASURE

Pb, Cu, Au, Ag, Zn

Mohave

8 - 7

T 23 N, R 18 W

W. C. Babcock, Box 644, Kingman
and Geo. R. Neil, Chloride

'44
'46

DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

OK

DEPT. MINERAL RESOURCES
RECEIVED
AUG 18 1946
PHOTO

Date

1. Mine: Hidden Treasure
2. Location: Sec. Twp. 23N Range 18W Nearest Town Chlovide
Distance 2 miles Direction So. East Road Condition Fair
3. Mining District & County: Yavapai, Mohave County
4. Former Name of Mine: Same as above
5. Owner: W. B. Babcock, Geo. R. Kuhl
Address: Kingman, Ariz., & Chlovide, Ariz.
6. Operator: None
Address:
7. Principal Minerals: Gold, Silver, Lead & Zinc
8. Number of Claims: Four (4) Lode Yes Placer
Patented Unpatented Yes
9. Type of Surrounding Terrain: Rugged, elevation about 4500 ft.

10. Geology & Mineralization: S. granites, granite porphyries, gneisses. The dip 12 degrees N. East. The strike North West. Sh. g. faulting. Vein can be traced for a mile. Four veins in the system.

11. Dimension & Value of Ore Body: Vein is 3' to 10' wide, averaging 4 1/2'. In a report made Feb. 19-1928 the superintendent made a report that the ore they were putting thro the 150 ton flotation mill averaged \$75.00 of which \$2.60 to \$4.00 consisted of gold & silver.

12. Ore "Blocked Out" or "In Sight": *Stops caved*

Ore Probable: *Geological indications point to large tonnage and to a great depth.*

13. Mine Workings—Amount and Condition:

No.	Feet	Condition
Shafts... 1	100	good
Raises...		
Tunnels... 5	3000	good
Crosscuts... 1	750	"
Stopes... 6	750	mostly caved.

14. Water Supply: *Water in the lower workings*

15. Brief History: *The Hidden Treasure vein was located probably about 65 years ago and was worked on the surface for its high grade gold, silver & lead ores. Twenty five or thirty years ago the mine was bought by a company. A crosscut tunnel run to cut the vein at 350 ft of depth. A flotation mill of 150 tons capacity was built and the mine worked for a considerable time. Finally thru mismanagement it closed down and was allowed to revert to the government. Located again 1929.*

16. Signature: *W. B. Babcock*

17. If Property for Sale, List Approximate Price and Terms: *I can't set a price because of partner. Terms can be arranged tho.*

Hidden Treasure

December 23, 1944

War Price and Rationing Board
Kingman, Arizona

Gentlemen:

We have received from you the yellow and pink copies of gas application for Frank Grannis, Box 147, Chloride, for 40 gallons per month for personal car and 500 gallons for compressor.

We wrote you a day or so ago that you should also send the white copies to be signed by us and returned to you as we have to keep the yellow and pink copies here.

However, this letter can constitute approval.

Thanking you for your cooperation.

Yours very truly,

Chas. E. Dunning
Director

CHD:LP
CC: Mr. Grannis

Office 47

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date: December 16, 1944
Name of Mine: Hidden Treasure
Owner or Operator: Frank Williams
Address: Box 147, Chloride
Mine Location: 2 1/2 Southeast of Chloride

Filing Information

File System
File No.
This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production: X; Development: X; Financing; Sale of mine;
Experimental (sampling); Owner's occasional trip;
Other (specify)

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months: 50
Approx. present rate per 3 months: none, development
Anticipated rate next 3 months: 100
If in distant future check (X) here

EQUIPMENT OPERATED:

Table with 4 columns: Type, Quantity or Horse Power, Miles or Hours Per Month, Gallons Required Per Month. Rows include Personal Cars, Light or Service Trucks, Ore Hauling Trucks, Compressors, and Other Mine or Mill Eqpt.

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Lead and zinc

REMARKS:

Had two men working there.

Approved by letter by OPA 12/23/44. White copy missing

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By: W. J. B.

304 xx

March 1, 1944

Mr. Frank E. Grannis
Box 147
Chloride, Arizona

Dear Mr. Grannis:

Please pardon my delay in replying to your letter of February 25. Probably Mr. Willis has also thanked you for your check to the Washington Fund and, if not, I wish to assure you that such action is most appreciated.

I am very glad to know that your "B" premium on lead and zinc has been granted. It has taken a lot of work but we feel justified when we are able to accomplish things of this sort.

Yours very truly,

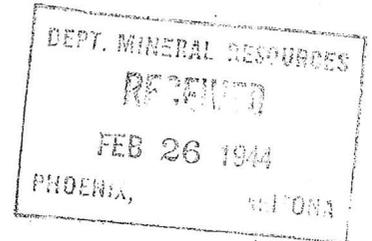
J. S. Coupal, Director

JSC:LP

W

Box 147
Chloride, Arizona.
February 25, 1944.

Mr. J. S. Coupal, Director,
Department of Mineral Resources,
304 Home Builders Bldg.,
Phoenix, Arizona.



Dear Mr. Coupal:

Today I received from WPB the additional "B" premium on lead and zinc.

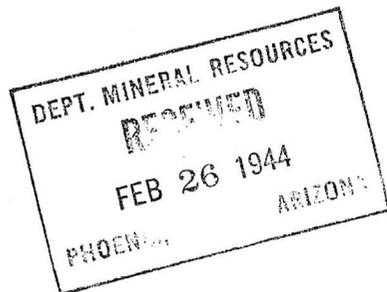
I feel certain this was made possible thru your efforts and Bill Broadgate in Washington, and wish to sincerely thank you for this assistance.

Please accept the enclosed check for the Washington Fund.

Yours sincerely,

Frank H. Grannis.

*Frank H. Grannis, Jr.
TSc*



Box 147
Chloride, Arizona.
February 24, 1944.

Mr. J. S. Coupal, Director,
Department of Mineral Resources,
304 Home Builders Bldg.,
Phoenix, Arizona.

Dear Mr. Coupal:

Some time ago I sent you information regarding application for additional premiums on lead and zinc.

To this date I have heard nothing from WPB except an acknowledgement of my letter written to them. As I am nearly ready to start shipping, I thought perhaps your department might be able to give me some assistance on the matter.

Thanking you, I am

Yours sincerely,

Frank A. Gunnin.

COPY

WAR PRODUCTION BOARD
WASHINGTON, D.C.

November 30, 1943.

Mr. Frank H. Grannis
Box 147
Chloride, Arizona.

Dear Mr. Grannis:

Re: Hidden Treasure Mine

We have your application of October 22, 1943, in which you request higher premium payments than are now available under the A zero quotas.

From the information now at hand, the Committee is unable to take quota revision action. The B quotas for lead, the B and C quotas for zinc, and the Special Quotas for Small Copper Mines are available only for those mines in which the ore reserves are sufficient that there can be made a well-based estimate of monthly tonnages and grades of ore to be produced, the costs of production, and the expected revenues, all at the expected scale of operations, in order that an appropriate quota may be calculated.

Since it appears that such information cannot be obtained with respect to your property, your request is accordingly denied.

Very truly yours

Iandon F. Strobel
Executive Secretary, Quota Committee
Premium Price Plan for Copper, Lead & Zinc
WPB Dept. 4508

STATUS OF DORMANT MINES

The "Hidden Treasure"

MINE NAME: "Hill Side" formerly known as

LOCATION: Yalapa Mining District, Chihuahua, Ariz.

OWNER AND/OR LEASEE: W. S. Babcock & G. R. Neil

ADDRESS: Kingman, Ariz. Box 644

APPROXIMATE PRODUCTION (Year of 1945):

1944

COPPER 1400 Lbs. LEAD 12826 Lbs.

ZINC 21800 Lbs. (OTHER) Silver 10870oz

Sold .13 for 113 tons.

CHECK THE CHIEF CAUSE OF YOUR DISCONTINUED PRODUCTION:

- (A) Easily available ore worked out.
- (B) Increased costs, but have quantity similar to past grade of ore.
- (C) Too close a margin to develop more ore.
- (D) _____

If you have ore ready to mine please give your estimate of the amount of metal (name each metal) that you could produce in one year (after allowing 60 days to get started) if there were premiums above present market prices. Name amount with a low premium, and amount at a high premium; such as:

Copper at 22 $\frac{1}{2}$ ¢ plus 5¢ premium..... 1,000,000 Lbs.
 Copper at 22 $\frac{1}{2}$ ¢ plus 10¢ premium..... 1,500,000 Lbs.

If you do not have ore ready to mine please discuss the following:

- (A) Do you think a reasonable development program would produce a justified tonnage of commercial ore at above mine?

Yes

- (B) With a premium price (guaranteed for one year) could you carry out such a development program yourself? What premium?

No

- (C) If you could not do this yourself, would a quick drilling program by some government agency (at government expense) be sufficient?

I don't think so

- (D) Or would you prefer a loan plan similar to the arrangements during World War II?

Prefer a loan plan

How about a combination plan in two stages such as follows?

Stage 1: Government engineers review project and, if a little drilling appears to be justified and a preliminary key to the situation, such drilling program to be agreed upon by owner and government engineer, paid for by the government, but let by contract.

Stage 2: If results of drilling (or without drilling) justify underground development and/or production equipment, same to be obtainable via a mortgage loan on property.

Please discuss the above:

This property at one time supported a 150 ton mill. Much ground has been opened but to put it in shape to produce will take government aid. There are several plans of ore development on this mine that could be very productive of a complex ore.

SUGGESTIONS:

Lead, zinc, gold + silver.

DATE _____

SIGNATURE _____

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

SPECIAL REPORT

Mine Hidden Treasure (4 claims) Date 9/28/39
District Wallapai - 1½ mi. from Chloride Engineer Elgin B. Holt
Subject: Brief Report of Property

On September 28, 1939, I visited this property in company with one of the owners, W. C. Babcock, and inspected such parts of the underground mine workings as were found to be accessible, which were the three main tunnels; some of the old stopes being caved in. Following is a brief description of the mine.

HIDDEN TREASURE

Owners: W. C. Babcock & G. R. Neil, Kingman, Arizona.

The following notes have been compiled from two reports: One by John Daniell, E. M., July 15, 1925, and the other by F. G. Smith, General Manager, Chloride Mining Company, February 19, 1928:

Geology: Formation consists of Pre-Cambrian granite complex, associated with gneiss and also basic intrusive dikes.

Veins: Five veins from 3 to 10 feet wide, strike N. 59 deg. West, dip 72 deg. N.E., traverse property for a distance of 5,500 feet. Two of these veins are important and three unimportant.

Character of Ore: At slight depth, complex sulphide ores are found carrying: Zinc blende, galena, iron pyrite, a little chalcopyrite, plus gold and silver.

Development work: Three main tunnels have been run, and in 1925, 4215 feet of development work had been done, 3065 feet on veins and 1150 ft. in country rock.

Ore Reserves: Before stoping and milling started, Daniell estimated: 86,450 tons of sulphide milling ore and 27,150 tons of non-milling oxidized ore by the flotation process, blocked out in the mine and that geological indications pointed to the existence of commercial ore in quantity with greater depth. Also that 20 major veins, within 4 or 5 miles of property, have in the past been worked profitably.

Values: Daniell estimated all blocked out ore to average: Au & Ag \$3.25 per ton; Pb 3 to 3.5%; Zn 4 to 5%; but stated dilution might be expected by waste coming in once stoping starts.

Mill: A 150-ton selective flotation plant was operated at property by the Chloride Mining Company, controlled by Twitchell & Smith, a 5,700 ft. areal tramway connecting mine and mill. This plant was seemingly well designed and manned and was built to treat the ores of this property, as well as customs ores. Mill, which operated about one year, was designed to product the following products:

- (1) A clean lead concentrate, carrying most of the gold, silver and copper and practically all the lead.

- (2) A clean zinc concentrate, low in the other metals.
- (3) A pyritic table concentrate from tails to recover any gold that might be lost from flotation operations.

Ore ground to 90 mesh and K & K flotation equipment mainly employed; water was collected and returned.

Mill Operations: Were reported by Mr. Smith as follows: "Mill and mine operated by electric power from Kingman at a net cost of 2½ cents per K.W. hour. The maximum capacity of mill is about 8 tons per hour. Aside from a few purely mechanical difficulties the mill has worked almost perfectly, and the results obtained have been eminently satisfactory. Lead concentrates produced have carried from 50 to 65% lead, with an average of about 6% zinc. Zinc concentrates have averaged from 40 to 50% zinc, with about 1½% lead. Tailings rarely carry over traces of gold, silver and lead, with about 3/10% zinc. Copper accumulates in the lead conc. up to 7%."

Mill Heads: No average of mill heads was given in Smith's report; but he does give the assay results of a daily run on 52.1 tons of ore, as of April 15, 1927, as follows:

ASSAYS	Au ozs	Ag ozs	Lead %	Zinc %	Iron %	Cu %	Insol.%
Heads	0.04	1.40	1.25	6.85	12.1	0.3	
Pb conc.	0.52	43.78	40.60	6.90	9.2	7.1	5.10
Zn conc.	0.05	5.25	1.10	51.40	10.90	Tr	2.55
Tails	Tr	0.68	Tr	2.75			

OPERATING COSTS, per Mr. Smith, were as follows:

Mining & tramming costs per ton -----	\$ 0.845
Milling costs per ton of ore treated in 1927:	
Labor -----	\$ 0.51
Oils & Chemicals -----	.19
Power -----	.772
	<u>1.472</u>
TOTAL	\$ 2.317

Cause of Failure: The main reason why this operation failed to show a profit is told in the conclusion of Mr. Smith's report which is as follows:

"The condition of the zinc market has made necessary the shut-down of this mill, and the reason will be apparent from the following table, which shows final distribution of the values in zinc concentrates produced:

"Paid out for smelting costs -----	64%
Paid out for freight costs -----	12.5%
Value retained by C. M. Co. -----	23.5%

which means that zinc at 5.6¢ per pound, the producer gets 1.3¢ per pound, while 4.2¢ per pound is taken by the smelter & the railroad. ***** Just why the smelters are doing this is somewhat strange, not only from an ethical standpoint, but from the standpoint of what might be good business."

Conclusion: As the main ore shoots of the Hidden Treasure mine have been pretty well stoped out above the 350 ft. level of the mine - which is the deepest level- new ore will have to be developed by either sinking an inside winze or shaft, or by driving another working tunnel on vein from the foot of the mountain. At this lower point the EMERSON TUNNEL has already been driven on the main Hidden Treasure vein in ore a distance of 300 or 400 feet. If this tunnel could be continued it would finally attain a depth of around 400 feet under the said 350 ft. level of the mine; and in driving the tunnel it would be following undeveloped ground; hence other important ore bodies might be found.

In short, if the mine could be developed in a large way, it could no doubt be depended upon to produce at least 200 tons of milling ore daily over a long period of years. However, under present conditions, with the nearest zinc plant at Amarilla and the nearest lead stack at either Salt Lake City or El Paso, and also taking into consideration that the smelters continue to take the lion's share of any lead and zinc produced, it is hardly likely that money could be found at this time to reopen this promising property and erect another mill on the same. It is hoped that this discouraging condition can be remedied by the erection in Mohave County, or near Boulder Dam, proper smelting works, and possibly an electrolytic zinc plant.

As to what may be expected as to values and quantity of ore should this mine be developed to considerable depth, I wish to point out that the Tennessee-Schuylkill mine has been worked to a depth of 1400 feet and the Golconda to 1200 feet; and on the 10th level of the latter property there was opened up and extracted years ago one of the largest bodies of zinc ore ever found in Arizona and several hundred feet of drifting on it failed to show a break in the ore. This property is estimated to have had a total production of \$8,000,000 in gold, silver, lead and zinc.

The Hidden Treasure is recommended to any company looking for a lead-zinc mine, carrying gold and silver values, in Arizona. In making this recommendation, however, I am assuming that any company that would be searching for lead-zinc properties in this State would know in advance just how to dispose of these metals at a profit.

Elgin B. Holt

Box 147
Chloride, Arizona.
January 5, 1944.

Hidden Pass

Mr. J. S. Coupal, Director,
Department of Mineral Resources,
413 Home Builders Bldg.,
Phoenix, Arizona.

Dear Mr. Coupal:

At the mine meeting last night, Mr. Holt suggested that I send you a copy of the letter shown you while here from the WPB, denying my application for additional premiums on lead and zinc. I have a zero quota on the property under the claim names which is the Hillside Group. After discussing the situation with Mr. Holt, it seems there might be a possibility of their changing the decision if you took the matter up with Mr. Broadgate in Washington. Of course I realize it would be difficult to accomplish, but if there is even a possibility I would like to work on it.

Since making the application, I have worked into an old stope which is 150' in length and the back about 50' above the drift level. In the center of this stope I took a sample 2' in width which assayed as follows: au .29oz., ag 6.44ozs., pb 5.8%;zn 8.3%. There are other places in it which assay good and I plan to cut and fill, keeping the ore as clean as possible rather than shrink as they did previously. I have already developed a manway and chute at the north end of the stope and will do the same at the south end, but it requires considerable filling as it is pretty badly caved, so it may be another two weeks before this is accomplished, but at that time it will be in good shape.

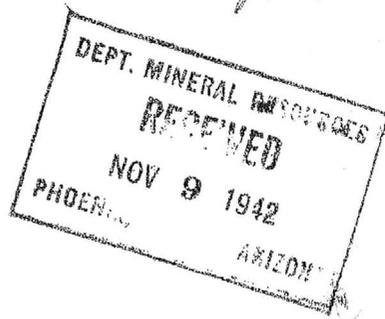
This information may give Mr. Broadgate something to work on and as you see it could not be shipped without the premiums to the Miavale mill, and would be a very narrow margin if shipped as a silicious ore. From the back of the stope to the surface is over 250' which, assuming the ore shoot extends that far, is a good sized block of ore.

Anything you can do to help on this will certainly be appreciated.

Yours sincerely,

Frank H. Greenie

November 7, 1942



To: Earl F. Hastings
From: Elgin B. Holt
Subject: Emerson Group, Chloride, Arizona,
Lessee: Frank H. Grannis, who is
applying for \$5,000 RFC loan.

Attached hereto is my report on the Emerson Group of mines, located 3 miles S. E. of Chloride, and adjacent to the Hidden Treasure mine. The application of Grannis for this loan will be mailed to W. B. Gohring today; so it should reach your office in due time.

As you will readily note, this property should be operated in conjunction with the Hidden Treasure. As a matter of fact, both Grannis and Langley, of the Golden Gem, are negotiating with owners of Hidden Treasure for a lease and option; and if either one succeeds in tying property up, the one that gets it will apply for an RFC loan; and no doubt later on arrangements could be made to treat ores from both properties in the same mill. The main thing being to get these mines opened and into production.

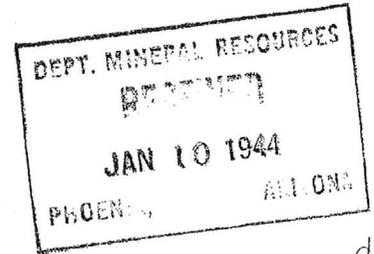
I think the Emerson-Hidden Treasure vein is the most important potential lead-zinc producer in the Chloride area, possibly as good or better than the Tennessee.

Hence, kindly give this application due consideration.

Elgin B. Holt.

January 8, 1943

MEMORANDUM



To: J. S. Coupal
From: Elgin B. Holt
Subject: Premiums on zinc-lead ore,
Hidden Treasure Mine, Chloride,
Frank H. Grannis.

At our last meeting in Chloride, Frank H. Grannis, Lessee of the Hidden Treasure mine, advised me as follows:

He has a Zero quota on lead, zinc and copper, and during October, 1943, he applied for a B premium on lead and B & C on zinc, and was turned down by Strobel.

He is working the Hidden Treasure mine with his own money and recently has run into a goodly body of ore assaying, per him, Pb 5.8%, Zn 8.3% and Au .29 ounce per ton.

He wants to ship this type of ore to Midvale, but cannot make it go unless he can get the said extra premiums.

I advised him to write to you with a view to taking this up with Broadgate and he has done so.

As Grannis has put a lot of time, money and work in this property, I suggest we do all we can for him in this matter, with the end in view of getting the said extra premiums if possible.

E.B.H.

Elgin B. Holt.

cc - Frank H. Grannis

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA

SPECIAL REPORT

FIELD ENGINEERS REPORT

Mine Hidden Treasure (4 claims).

Date 9/28/39

District Wallapai - $1\frac{1}{2}$ mi. from Chloride.

Engineer Elgin B. Holt.

Subject: Brief Report of Property.

On September 28, 1939, I visited this property in company with one of the owners, W. C. Babcock, and inspected such parts of the underground mine workings as were found to be accessible, which were the three main tunnels; some of the old stopes being caved in. Following is a brief description of the mine.

HIDDEN TREASURE

Owners: W. C. Babcock & G. R. Neil, Kingman, Arizona.

The following notes have been compiled from two reports: One by John Daniell, E. M., July 15, 1925, and the other by F. C. Smith, General Manager Chloride Mining Company, February 19, 1928:

Geology: Formation consists of Pre-Cambrian granite complex, associated with gneiss and also basic intrusive dikes.

Veins: Five veins from 3 to 10 feet wide, strike N. 59 deg. West, dip 72 deg. N. E, traverse property for a distance of 5,500 feet. Two of these veins are important and three unimportant.

Character of Ore: At slight depth, complex sulphide ores are found carrying: Zinc blende, galena, iron pyrite, a little chalcopyrite, plus gold and silver.

Development work: Three main tunnels have been run, and in 1925, 4215 feet of development work had been done, 3,065 feet on veins and 1150 ft. in country rock.

Ore Reserves: Before stoping and milling started, Daniell estimated: 86,450 tons of sulphide milling ore and 27,150 tons of non-milling ^{oxidized} ore by the flotation process, blocked out in the mine and that geological ~~conditions~~ indications pointed to the existence of commercial ore in quantity with greater depth. Also that 20 major veins, within 4 or 5 miles of property, have in the past been worked profitably.

Values: Daniell estimated all blocked out ore to average: Au & Ag \$3.25 per ton; Pb 3 to 3.5%; Zn 4 to 5%; but stated dilution might be expected by waste coming in once stoping starts.

MILL: A 150-ton selective flotation plant was operated at property by the Chloride Mining Company, controlled by Twitchell & Smith, a 5,700 ft. areal tramway connecting mine and mill. This plant was seemingly well designed and manned and was built to treat the ores of this property, as well as customs ores. Mill, which operated about one year, was designed to produce the following products:

- (1) A clean lead conc., carrying most of the gold, silver and copper and practically all the lead;

- (2) A clean zinc concentrate, low in the other metals.
- (3) A pyritic table concentrate from tails to recover any gold that might be lost from flotation operations.

Ore ground to 90 mesh and K & K flotation equipment mainly employed; water was collected and returned.

MILL OPERATIONS, were reported by Mr. Smith as follows: "Mill and mine operated by electric power from Kingman at a net cost of 2½ cents per K. W. hour. The maximum capacity of mill is about 8 tons per hour. Aside from a few purely mechanical difficulties the mill has worked almost perfectly, and the results obtained have been eminently satisfactory. Lead concentrates produced have carried from 50 to 65% lead, with an average of about 6% zinc. Zinc concentrates have averaged from 40 to 50% zinc, with about 1½% lead. Tailings rarely carry over traces of gold, silver and lead, with about 3/10% zinc. Copper accumulates in the lead conc. up to 7%."

was

Mill Heads: No average of mill heads were given in Smith's report; but he does give the assay results of a daily run on 52.1 tons of ore, as of April 15, 1927, as follows:

ASSAYS	Au ozs	Ag ozs	Lead%	Zinc%	Iron%	Cu%	Insol.%
Heads	0.04	1.40	1.25%	6.85%	12.1	0.3	
Pb conc.	0.52	43.78	40.80	6.90	9.2	7.1	5.10
Zn conc.	0.05	5.25	1.10	51.40	10.90	Tr	2.55
Tails	Tr	0.63	Tr	2.75			

OPERATING COSTS, per Mr. Smith, were as follows:

Mining & tramming costs per ton -----	\$ 0.845
Milling costs per ton of ore treated in 1927:	
Labor -----	\$ 0.51
Oils & Chemicals ----	.19
Power -----	.772
	1.472
TOTAL	\$ 2.517

CAUSE OF FAILURE: The main reason why this operation failed to show a profit is told in the conclusion of Mr. Smith's report which is as follows:

"The condition of the zinc market has made necessary the shut-down of this mill, and the reason will be apparent from the following table, which shows final distribution of the values in zinc concentrates produced:

"Paid out for smelting costs -----	64%
Paid out for freight costs -----	12.5%
Value retained by G. M. Co. -----	23.5%

which means that zinc at 5.6¢ per pound, the producer gets 1.5¢ per pound, while 4.2¢ per pound is taken by the smelter & the railroad. *****

Just why the smelters are doing this is somewhat strange, not only from an ethical standpoint, but from the standpoint of what might be good business."

CONCLUSION: As the main ore shoots of the Hidden Treasure mine have been pretty well stoped out above the 350 ft. level of the mine - which is the deepest level - new ore will have to be developed by either sinking an inside winze or shaft, or by driving another working tunnel on vein from the foot of the mountain. At this lower point the EMERSON TUNNEL has already been driven on the main Hidden Treasure vein in ore a distance of 300 or 400 feet. If this tunnel could be continued it would finally attain a depth of around 400 feet under the said 350 ft. level of the mine; and in driving the tunnel it would be following undeveloped ground; hence other important ore bodies might be found.

In short, if the mine could be developed in a large way, it could nodoubt be depended upon to produce at least 200 tons of milling ore daily over a long period of years. However, under present conditions, with the nearest zinc plant at Amarilla and the nearest lead stack at either Salt Lake City or El Paso, and also taking into consideration, that the smelters continue to take the lion's share of any lead and zinc produced, it is hardly likely that money could be found at this time to reopen this promising property and erect another mill on the same. It is hoped that this discouraging condition ~~can~~ can be remedied by the erection in Mohave County, or near Boulder Dam, proper smelting works, and possibly an electrolytic zinc plant.

As to what may be expected as to values and quantity of ore should this mine be developed to considerable depth, I wish to point out that the Tennessee-Schuykill mine has been worked to a depth of 1400 feet and the Golconda to 1200 feet; and on the 10th level of the latter property there was opened up and extracted years ago one of the largest bodies of zinc ore ever found in Arizona and several hundred feet of drifting on it failed to show a break in the ore. This property is estimated to have had a total production of \$8,000,000, in gold, silver lead and zinc.

The Hidden Treasure is recommended to any company looking for ^a lead-zinc mine, carrying gold and silver values, in Arizona. In making this recommendation, however, I am assuming that any company that would be searching for lead-zinc properties in this State would ~~be~~ know in advance just how to dispose of these metals at a profit.

Elgin B. Holt.

Arizona Mohave Mines & Development Company,
Phoenix, Arizona.

Gentlemen:

Herewith find an outline report as to your property and conditions as I found them in my short visit there this week.

PROPERTY:

Consists of 5 full claims and 3 fractions about 150 acres in all. Plenty of chances for mill sites should such be needed later. Water for camp supplied by spring and plenty can be developed for mill. There has been no survey of claims so attached prints are but field sketches to show locations of work and directions.

LOCATION:

About 2 miles south of Chloride, the north terminal of a branch of the Santa Fe from Kingman, ground is reached by wagon road, last mile of which is rough but later development will probably necessitate new road to the west end by way of the Minnesota-Conner Mine. A mile of new good grade will give easy access to the main workings.

HISTORY:

Principal claims of the property have been held for 18 years by Thomas Thornton from whom your company obtained title. Thornton operated by taking out small bunches of shipping ore, most of which was a gold bearing quartz. In taking out this ore, quite a large tonnage of zinc ore was encountered but until recently such ore was of little value in that district.

ARIZONA MOHAVE CO.

CONDITIONS:

Are very favorable for operation. Only two miles from railroad and town of Chloride, which is a good supply center. Local stores carrying mine supplies or obtaining same on short notice from Kingman.

TOPOGRAPHY:

Claims are located on the south west side of the Cerbat Range at an elevation of about 4,500 feet above sea level and about 300 feet above Chloride Station. The rise from the railroad to the camp is very gradual and only at the mine end is the haul difficult. This can be overcome later should it be found best to move camp to the west tunnel.

FORMATION:

The geology of the district has been gone into very fully by F. C. Schrader in the U. S. Geological Survey Bulletin on the Mohave District, so I will only mention that veins are in a Pre-Cambrian granite, intruded by porphyry dikes. A condition most favorable to mineralization in large ore zones and which is shown in present workings.

DEVELOPMENT:

Consists of several tunnels and shafts of various lengths and depths, all of which show ore of milling values.

The main working is a tunnel on the west end of the Hidden Treasure Claim, run as an adit on the vein, 395 feet in length. This tunnel supplied the former owners with considerable shipping ore according to the general talk around the district. Sampling has shown that bunches of good values still remain.

This tunnel was started in on the central cropping in an ore zone of about 100 feet in width but

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by the prospector following pay bunches zig zagging from pay shoot to pay shoot has resulted in a very crooked adit but which can be easily straightened out and which is being done at present. In the ore zone are three parallel croppings of ore all of which carry good values.

Over the tunnel and on the south cropping, at an elevation of about 180 feet, a shaft was put down about 110 feet. This has a very promising showing in the bottom. Later development should connect this with the tunnel and will materially aid in opening up this claim and also supply air below. Near this shaft and to the north only a few feet is a shaft about 60 feet deep on the middle cropping and which also shows good milling ore. All along the main croppings which can be followed the entire distance of the claims, 5,000 feet, various workings, open cuts and tunnels have been opened. All present very interesting conditions and show the continuity of the ore.

At the extreme east end and driven west on the vein, is a tunnel about 150 feet long. This also has very good showings. All of the above workings strengthen the conditions and value of this property.

CONCLUSION:

I unhesitatingly recommend the present work, that of cleaning out the 395 ft. west tunnel, and continuing this at least 100 feet. This should show that the present change of ore at the breast is permanent, and should show a good increase in amount of heavy ore on account of increasing depth reached as tunnel is driven.

This group of claims is one of the most promising properties that I have seen for some time, and I can strongly

ARIZONA MCHAVE CO.

advise you to go ahead on your present outlined work.
Surrounded as it is by large producers of its own character
of ore, with its good showing, it has big chances of
becoming a fine paying mine.

Yours very respectfully,

Charles M. Donohue, E.M.

Mining Engineer.

Feb. 26-1916.

Field Maps)
Check Assays) Attached.

Smelter

Near Shipper
SPECIAL REPORT

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine **Hidden Treasure (4 claims).**
District **Wallapai - 1 1/2 mi. from Chloride.**
Subject: **Brief Report of Property.**

Date **9/28/39**
Engineer **Elgin B. Holt.**

On September 28, 1939, I visited this property in company with one of the owners, W. C. Babcock, and inspected such parts of the underground mine workings as were found to be accessible, which were the three main tunnels; some of the old stopes being caved in. Following is a brief description of the mine.

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Development work: Three main tunnels have been run, and in 1925, 4215 feet of development work had been done, 3,065 feet on veins and 1150 ft. in country rock.

Ore Reserves: Before stoping and milling started, Daniell estimated: 86,450 tons of sulphide milling ore and 27,150 tons of non-milling, ^{oxidized} ore by the flotation process, blocked out in the mine and that geological ~~indications~~ indications pointed to the existence of commercial ore in quantity with greater depth. Also that 20 major veins, within 4 or 5 miles of property, have in the past been worked profitably.

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MILL: A 150-ton selective flotation plant was operated at property by the Chloride Mining Company, controlled by Twitchell & Smith, a 5,700 ft. areal tramway connecting mine and mill. This plant was seemingly well designed and manned and was built to treat the ores of this property, as well as customs ores. Mill, which operated about one year, was designed to produce the following products:

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Oils & Chemicals	.19	
Power	.772	
		1.478
TOTAL		\$ 2.317

CAUSE OF FAILURE: The main reason why this operation failed to show a profit is told in the conclusion of Mr. Smith's report which is as follows:

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Just why the smelters are doing this is somewhat strange, not only from an ethical standpoint, but from the standpoint of what might be good business."

CONCLUSION: As the main ore shoots of the Hidden Treasure mine have been pretty well stoped out above the 350 ft. level of the mine - which is the deepest level - new ore will have to be developed by either sinking an inside winze or shaft, or by driving another working tunnel on vein from the foot of the mountain. At this lower point the EMERSON TUNNEL has already been driven on the main Hidden Treasure vein in ore a distance of 300 or 400 feet. If this tunnel could be continued it would finally attain a depth of around 400 feet under the said 350 ft. level of the mine; and in driving the tunnel it would be following undeveloped ground; hence other important ore bodies might be found.

In short, if the mine could be developed in a large way, it could not but be depended upon to produce at least 200 tons of milling ore daily over a long period of years. However, under present conditions, with the nearest mine plant at Amarilla and the nearest lead stack at either Salt Lake City or El Paso, and also taking into consideration, that the smelters continue to take the lion's share of any lead and zinc produced, it is hardly likely that money could be found at this time to reopen this promising property and erect another mill on the same. It is hoped that this discouraging condition can be remedied by the erection in Mohave County, or near Boulder Dam, proper smelting works, and possibly an electrolytic zinc plant.

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The Hidden Treasure is recommended to any company looking for/lead-zinc mine, carrying gold and silver values, in Arizona. In making this recommendation, however, I am assuming that any company that would be searching for lead-zinc properties in this State would ~~be~~ in advance just how to dispose of these metals at a profit. *KNOW*

Work done

Elgin B. Holt.

Potential production of this property, if developed in a large way, is estimated at 200 tons daily of milling ore.
E. B. H.

Exhibit "B."

TO THE BOARD OF DIRECTORS
of the
ARIZONA-MOHAVE MINES DEVELOPMENT CO.

Gentlemen:-

In compliance with your request of recent date, I submit below a brief technical description of your company's property (The Hidden² Treasure group of gold mining claims) situated in the Wallapai (Hualpai) Mining District, Mohave Co., Arizona, supplemented by my conclusions as to the present value of the property and also its economic potentiality. As you are already aware, the following description and conclusions are based on a fairly exhaustive examination of the property covering a period of three days, during which time every accessible underground working was carefully inspected either by me or by Mr. J. K. Murphy, my assistant, and samples conservatively taken wherever an opportunity to do so was presented to us.

Description of the Hidden Treasure Group
of
Mining Claims.

Location, etc.

The Hidden Treasure group, consisting of four full-sized mining claims and one fractional claim, is located in the Wallapai (Hualpai) Mining District, Mohave County, Arizona, about two miles south-east of Chloride, $1\frac{1}{4}$ miles south of the Tennessee mine, and $\frac{1}{2}$ mile south-southwest of the Minnesota-Connor mine. The mean elevation of the property is about 4500 feet. A good wagon road leading from Chloride ~~xxx~~ to the Altata mine termin-

ates within a half-mile of the Oro Fino claim of the group, which practically disposes of the problem of transportation of supplies and mine output. Abundant water for camp and reduction purposes is to be obtained by sinking to moderate depth, since the permanent ground-water level of the district is known to be within 400 feet of the surface. Fuel oil is generally burned by the reduction plants at the neighboring mines, while the hoists used are of the gasoline type.

Geology, veins, and ores.

The country rock enclosing the veins is a pre-Cambrian gneissoid, biotite granite, intruded by granite-porphry and a younger granite petrologically similar to the rock it intrudes. The older granite is the dominant member of the prevailing pre-Cambrian complex of the region; in which complex, according to F. C. Schrader, of the U. S. Geological Survey (See Bull. 397), all of the producing mines of the Hualpai district are found. Within a circular area of seven miles from the Hidden Treasure group are to be found twenty-nine properties mentioned by Schrader in his Report as having produced from \$25,000 to \$1,300,000, the deepest shaft of the most productive mine being not more than 400 feet vertically.

Veins and ores.-

The Hidden Treasure, Revenue, Chenango, and Alabama claims of the group are located along the strike of three principal fault fissure veins, which parallel each other very closely, the average distance between the two outer veins not exceeding seventy feet. The veins strike northwest, two of them having a dip of 77 degrees to the northeast, while the third member of the system

dips 80° southwest. The vein filling consists of quartz, a little calcite, and inclusions of country rock, the latter being kaolinized locally by the decomposition of pyrite. The average vein width is probably about eight feet, though this is largely conjecture, as no walls are as yet exposed in any of the openings. It is possible that as depth is attained in the southwest-dipping vein, a curvature in the fault plane, changing the dip to the northeast, will be found to exist.

In addition to the three principal veins already described, a smaller system of three parallel veins, more widely separated, however, than the main veins, intersects the southwest vein of the larger system at an obtuse angle. These intersecting veins outcrop at irregular intervals along their strike, and vary in width from eighteen inches to two and one-half feet. The particular significance attaching to their presence lies in the fact that, according to F. C. Schrader's Geological Survey Report, nearly all the ore shoots of magnitude encountered in that district have been found at the junction of these so-called "feeders" with main veins.

The most extensive working of the group is a tunnel 300 feet in length, the portal of which is located about 150 feet from the northwest endline of the Hidden Treasure, the most northwesterly claim of the group. The face of the tunnel is, approximately, 150 feet below the outcrop of the veins, and, in conjunction with an oblique crosscut, started a few feet back from the tunnel face, shows about fourteen feet of ore, consisting of gold-bearing pyrite, galena, and a little sphalerite. About two hundred feet in from the portal the tunnel has cut a thirty-inch vein of solid sphalerite, galena, and gold-bearing pyrite. This ore aver-

ages 30% zinc, about an equal amount of lead, and from \$1.80 to \$6.10 gold.

Three hundred feet southeast of the tunnel portal, and at an elevation of, approximately, 150 feet above it, three shafts have been sunk, one on each main vein. Shafts #1 and 2, sunk in the two northeast-dipping veins, have each produced a profitable tonnage of high-grade gold ore. Shaft #1 is 45 feet deep and shaft #2 65 feet deep. No ore is now showing in the bottom of either of them. Shaft #3 has a depth of 106 feet, has produced a considerable tonnage of 2 and 3 ounce gold ore, and now shows in the bottom three and one-half feet of solid ore, principally lead carbonate and gold-bearing pyrite, the average assay value of which is: Gold, \$20.50; silver, \$3.72; no test made for lead.

In addition to the exposures of ore already enumerated, a forty-five-foot shaft sunk in the vein near the southeast end-line of the Hidden Treasure shows a small shoot of very good ore, from 12 to 18 inches in width, which, appearing on the hanging wall side near the collar of the shaft, strikes off, at a depth of about 25 feet, into the footwall. Owing to the dangerous condition of the shaft ladders, it was found impossible to obtain a fair average sample of this ore body, though a conservative estimate based on two or three pieces I was able to break from the vein at considerable personal risk, supplemented by what are probably truthful statements by the owner, lead me to place the probable average gold content at two ounces per ton. It should be here stated that the productive veins of this district, of which more than one hundred are authentically recorded, are generally characterized by a narrowness of the ore shoots encountered near the surface, the same condition existing practically throughout

the entire oxidized zone, which in the Cerbat Range has an average limit of 100 feet measured along the dip of the vein.

In addition to the shafts already mentioned, four or five others are sunk in the main veins at various points, none of them being accessible to examination. It is affirmed by the owner, however, that considerable high-grade ore has been extracted from each of them, the shafts having been sunk for the purpose of locating ore of a sufficiently high grade to chloride or ship.

These shafts vary in depth from 40 to 75 feet.

Near the southeast end of the Chenango claim, a second tunnel, about 150 feet in length, has been driven. This tunnel was started on the vein (probably the central one of the larger system), which outcrops boldly at that point, but the working commences to bear off into the country rock at not more than 25 feet from the portal, the outcrop of the vein showing perhaps 50 feet to the right of the tunnel face.

I estimate the amount of development work on the property at about 1500 linear feet.

Conclusions.

I am more favorably impressed by the apparent and actual merit of this group of claims than I have been by any prospect during the past twenty years. Considering the ground from a cold-blooded business standpoint, from the angle of prospective economic value, I feel perfectly justified in assuring you that if your development policy is based upon ordinary mining intelligence and everyday common-sense, a successful outcome to your enterprise is assured from the beginning of your exploratory work; this opinion being predicated on the assumption that you will secure

sufficient capital to prosecute the work of development to an adequate ending.

My reasons for predicting that you have a prospect which will ultimately develop into a mine are as follows:-

The veins of your principal system are fault fissures of considerable magnitude; in fact, I may conservatively say, of more than ordinary proportions both in length and width. Also, they are in a basement series of rocks which are certain to continue downward in unbroken continuity to profound depths. No change of formation can possibly be anticipated within the vertical limit to which it is now possible to mine; which means that the mineral-bearing solutions to whose agency your present exposed ores are due, having found conditions favorable to precipitation and deposition within the zone now penetrated by your deepest workings, it naturally follows that, no change in the wall rock occurring with increased depth, the same character of ore deposition, but most probably on a much more extensive scale than is now found near the surface, will be found to continue vertically as your shafts deepen. In addition to the above, I am inclined to predict that the comparatively thin sheet of country rock separating the two northeast-dipping veins, will be found, wherever parallel ore shoots are encountered in those two particular veins, to have been altered by the mineralizing solutions, and that replacement of rock minerals by ore minerals has taken place. Should this surmise prove to be correct, a shoot or shoots of unusual thickness may be expected to occur in the localities indicated.

The fact that commercially valuable ores have already been extracted from each vein of your principal system, proving that

deposition has taken place in all of them - that all three are ore-bearing - convinces me that the conclusions above recorded are conservatively drawn from a fairly accurate geological interpretation of the property, supplemented by known occurrences, due to similar conditions, in many other productive and successful mines.

In conclusion, I desire to say that I have avoided as much as possible the use of technical terms in this descriptive report, wherever the use of everyday words would answer my purpose. Neither have I included my theory as to the genesis of your ore deposits, since to do so might possibly inject an element of obscurity into a subject which I have striven to , and I hope have succeeded in making reasonably plain to you.

Very respectfully yours,

F. A. Clifford
Mining Geologist.

Phoenix, Ariz,
Nov. 20 - 1915.

NAME: **HIDDEN TREASURE** (B) ✓

COUNTY: MOHAVE

1/2 mile S.W. Minnerich Corner 2 mile S.E. Chloride

T 23 N R 18 W SEC. 11 Elev. 4800
Central

DISTRICT: WALLAPAI
(CHLORIDE)

Mineralization: A. Ag. Cu Pb Zn

Geology:

Type Operation: 3-300' shafts

Production: 250_{oz} Au, 9.074_{oz} Ag, 7,897 lb Co, 159,861 lb Pb, 231,345 lb Zn 1901-1948 Table 2 P147

References: MOHAVE CO. MINER. 2-21 (USGS 750 P. 125) (3265 3471 72)
USBM RI 4101 Clipping file

Mohave City Card File

HIDDEN TREASURE MINE

MOHAVE COUNTY

Mrs. Gutman - Chloride, Arizona - owner

It is reported that W. C. Nelson, Box 1052, Kingman, and associates had acquired some 48 mining claims from Mrs. Gutman of Chloride. The ground included 23 claims (Jupiter mine etc.) on the east side of Chloride and 35 claims, including the Merrimac mine, west of Chloride. These people intended to incorporate and begin exploratory developing soon. TPL WR 12-23-60

No work has been started yet on the Gutman properties (Jupiter, Hidden Treasure, etc.)
TPL WR 2-24-61

HIDDEN TREASURE

Pb, Cu, Au, Ag, Zn

Mohave

8 - 7

T 23 N, R 18 W

W. C. Babcock, Box 644, Kingman
and Geo. R. Neil, Chloride

'44
'46

DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

OK

DEPT. MINERAL RESOURCES
RECEIVED
AUG 19 1946
PHC: FON:

Date

- Mine: Hidden Treasure
- Location: Sec. Twp. 23N Range 18W Nearest Town Chlovide
Distance 2 miles Direction So. East Road Condition Fair
- Mining District & County: Wallapai, Mohave County
- Former Name of Mine: Same as above
- Owner: W. B. Babcock, Geo. R. Neil
Address: Kingman, Ariz., & Chlovide, Ariz.
- Operator: None
Address:
- Principal Minerals: Gold, Silver, Lead & Zinc
- Number of Claims: Four (4) Lode Yes Placer
Patented Unpatented Yes
- Type of Surrounding Terrain: Rugged, elevation about 4500 ft.

10. Geology & Mineralization: Granites, granite porphyries, gneisses. The dip 72 degrees N. East. The strike North West. Slight faulting. Vein can be traced for a mile. Four veins in the system.

11. Dimension & Value of Ore Body: Vein is 3' to 10' wide, averaging 4 1/2'. In a report made Feb. 19-1928 the superintendent made a report that the ore they were putting thro the 150 ton flotation mill averaged \$75.00 of which \$2.00 to \$4.00 consisted of gold & silver.

12. Ore "Blocked Out" or "In Sight": *Stopes caved*

Ore Probable: *Geological indications point to large tonnage and to a great depth.*

13. Mine Workings—Amount and Condition:

No.	Feet	Condition
Shafts..... 1	100	good
Raises.....		
Tunnels..... 5	3 000	good
Crosscuts..... 1	750	"
Stopes..... 6	750	mostly caved.

14. Water Supply: *Water in the lower workings*

15. Brief History: *The Hidden Treasure vein was located probably about 65 years ago and was worked on the surface for its high grade gold, silver & lead ores. Twenty five or thirty years ago the mine was bought by a company. A crosscut tunnel run to cut the vein at 350 ft of depth. A flotation mill of 150 tons capacity was built and the mine worked for a considerable time. Finally thro mismanagement it closed down and was allowed to revert to the government. Located again 1929.*

16. Signature: *W. B. Babcock*

17. If Property for Sale, List Approximate Price and Terms: *I can't set a price because of partner. Terms can be arranged tho.*

Hidden Treasure

December 23, 1944

War Price and Rationing Board
Kingman, Arizona

Gentlemen:

We have received from you the yellow and pink copies of gas application for Frank Grannis, Box 147, Chloride, for 40 gallons per month for personal car and 500 gallons for compressor.

We wrote you a day or so ago that you should also send the white copies to be signed by us and returned to you as we have to keep the yellow and pink copies here.

However, this letter can constitute approval.

Thanking you for your cooperation.

Yours very truly,

Chas. H. Dunning
Director

CED:LP

CC: Mr. Grannis

Office Copy

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date: December 16, 1944
Name of Mine: Hidden Treasure
Owner or Operator: Frank Kranis
Address: Box 147, Chloride
Mine Location: 2 1/2 Southeast of Chloride

Filing Information

File System
File No.
This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production X; Development X; Financing; Sale of mine;
Experimental (sampling); Owner's occasional trip;
Other (specify)

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months: 50
Approx. present rate per 3 months: none, development
Anticipated rate next 3 months: 100
If in distant future check (X) here

EQUIPMENT OPERATED:

Table with 4 columns: Type, Quantity or Horse Power, Miles or Hours Per Month, Gallons Required Per Month. Rows include Personal Cars, Light or Service Trucks, Ore Hauling Trucks, Compressors, and Other Mine or Mill Eqpt.

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Lead and zinc

REMARKS:

Had two men working there.

Approved by letter by CHD 12/23/44 White copy missing

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By: W. J. St.

March 1, 1944

Mr. Frank H. Grannis
Box 147
Chloride, Arizona

Dear Mr. Grannis:

Please pardon my delay in replying to your letter of February 25. Probably Mr. Willis has also thanked you for your check to the Washington Fund and, if not, I wish to assure you that such action is most appreciated.

I am very glad to know that your "B" premium on lead and zinc has been granted. It has taken a lot of work but we feel justified when we are able to accomplish things of this sort.

Yours very truly,

J. S. Coupal, Director

JSC:LP

JW

Box 147
Chloride, Arizona.
February 25, 1944.

Mr. J. S. Coupal, Director,
Department of Mineral Resources,
304 Home Builders Bldg.,
Phoenix, Arizona.

DEPT. MINERAL RESOURCES
RECEIVED
FEB 26 1944
PHOENIX, ARIZONA

Dear Mr. Coupal:

Today I received from WPB the additional "B" premium on lead and zinc.

I feel certain this was made possible thru your efforts and Bill Broadgate in Washington, and wish to sincerely thank you for this assistance.

Please accept the enclosed check for the Washington Fund.

Yours sincerely,

Frank H. Grannis.

*Frank and Milton Grannis, Yst.
T.Sc.*

DEPT. MINERAL RESOURCES
RECEIVED
FEB 26 1944
PHOENIX, ARIZONA

Box 147
Chloride, Arizona.
February 24, 1944.

Mr. J. S. Coupal, Director,
Department of Mineral Resources,
304 Home Builders Bldg.,
Phoenix, Arizona.

Dear Mr. Coupal:

Some time ago I sent you information regarding application for additional premiums on lead and zinc.

To this date I have heard nothing from WPB except an acknowledgement of my letter written to them. As I am nearly ready to start shipping, I thought perhaps your department might be able to give me some assistance on the matter.

Thanking you, I am

Yours sincerely,

Frank A. Gunnin.

COPY

WAR PRODUCTION BOARD
WASHINGTON, D.C.

November 30, 1943. C

Mr. Frank H. Grannis
Box 147
Chloride, Arizona.

Dear Mr. Grannis:

Re: Hidden Treasure Mine

We have your application of October 22, 1943, in which you request higher premium payments than are now available under the A zero quotas.

From the information now at hand, the Committee is unable to take quota revision action. The B quotas for lead, the B and C quotas for zinc, and the Special Quotas for Small Copper Mines are available only for those mines in which the ore reserves are sufficient that there can be made a well-based estimate of monthly tonnages and grades of ore to be produced, the costs of production, and the expected revenues, all at the expected scale of operations, in order that an appropriate quota may be calculated.

Since it appears that such information cannot be obtained with respect to your property, your request is accordingly denied.

Very truly yours

Landon F. Strobel
Executive Secretary, Quota Committee
Premium Price Plan for Copper, Lead & Zinc
WPB Dept. 4508

STATUS OF DORMANT MINES

The "Hidden Treasure"

MINE NAME: "Hill Side" formerly known as

LOCATION: Wallapai Mining District, Schuette, Ariz.

OWNER AND/OR LEASEE: W. S. Babcock & G. R. Neil

ADDRESS: Kingman, Ariz. Box 644.

APPROXIMATE PRODUCTION (Year of 1945):

1944

COPPER 1400 Lbs. LEAD 12826 Lbs.

ZINC 21800 Lbs. (OTHER) Silver 10870oz Gold .13 for 113 tons.

CHECK THE CHIEF CAUSE OF YOUR DISCONTINUED PRODUCTION:

- (A) Easily available ore worked out.
- (B) Increased costs, but have quantity similar to past grade of ore.
- (C) Too close a margin to develop more ore.
- (D) _____

If you have ore ready to mine please give your estimate of the amount of metal (name each metal) that you could produce in one year (after allowing 60 days to get started) if there were premiums above present market prices. Name amount with a low premium, and amount at a high premium; such as:

Copper at 22½¢ plus 5¢ premium..... 1,000,000 Lbs.
Copper at 22½¢ plus 10¢ premium..... 1,500,000 Lbs.

If you do not have ore ready to mine please discuss the following:

- (A) Do you think a reasonable development program would produce a justified tonnage of commercial ore at above mine?

Yes

- (B) With a premium price (guaranteed for one year) could you carry out such a development program yourself? What premium?

No

- (C) If you could not do this yourself, would a quick drilling program by some government agency (at government expense) be sufficient?

I don't think so

- (D) Or would you prefer a loan plan similar to the arrangements during World War II?

Prefer a loan plan

How about a combination plan in two stages such as follows?

Stage 1: Government engineers review project and, if a little drilling appears to be justified and a preliminary key to the situation, such drilling program to be agreed upon by owner and government engineer, paid for by the government, but let by contract.

Stage 2: If results of drilling (or without drilling) justify underground development and/or production equipment, same to be obtainable via a mortgage loan on property.

Please discuss the above:

This property at one time supported a 150 ton mill. Much ground has been opened but to put it in shape to produce will take Government aid. There are several plans of ore development on this mine that could be very productive of a complex ore.

SUGGESTIONS:

Lead, zinc, gold & silver.

DATE _____

SIGNATURE _____

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

SPECIAL REPORT

Mine Hidden Treasure (4 claims) Date 9/28/39
District Wallapai - 1½ mi. from Chloride Engineer Elgin B. Holt
Subject: Brief Report of Property

On September 28, 1939, I visited this property in company with one of the owners, W. C. Babcock, and inspected such parts of the underground mine workings as were found to be accessible, which were the three main tunnels; some of the old stopes being caved in. Following is a brief description of the mine.

HIDDEN TREASURE

Owners: W. C. Babcock & G. R. Neil, Kingman, Arizona.

The following notes have been compiled from two reports: One by John Daniell, E. M., July 15, 1925, and the other by F. G. Smith, General Manager, Chloride Mining Company, February 19, 1928:

Geology: Formation consists of Pre-Cambrian granite complex, associated with gneiss and also basic intrusive dikes.

Veins: Five veins from 3 to 10 feet wide, strike N. 59 deg. West, dip 72 deg. N.E., traverse property for a distance of 5,500 feet. Two of these veins are important and three unimportant.

Character of Ore: At slight depth, complex sulphide ores are found carrying: Zinc blende, galena, iron pyrite, a little chalcopyrite, plus gold and silver.

Development work: Three main tunnels have been run, and in 1925, 4215 feet of development work had been done, 3065 feet on veins and 1150 ft. in country rock.

Ore Reserves: Before stoping and milling started, Daniell estimated: 86,450 tons of sulphide milling ore and 27,150 tons of non-milling oxidized ore by the flotation process, blocked out in the mine and that geological indications pointed to the existence of commercial ore in quantity with greater depth. Also that 20 major veins, within 4 or 5 miles of property, have in the past been worked profitably.

Values: Daniell estimated all blocked out ore to average: Au & Ag \$3.25 per ton; Pb 3 to 3.5%; Zn 4 to 5%; but stated dilution might be expected by waste coming in once stoping starts.

Mill: A 150-ton selective flotation plant was operated at property by the Chloride Mining Company, controlled by Twitchell & Smith, a 5,700 ft. areal tramway connecting mine and mill. This plant was seemingly well designed and manned and was built to treat the ores of this property, as well as customs ores. Mill, which operated about one year, was designed to product the following products:

- (1) A clean lead concentrate, carrying most of the gold, silver and copper and practically all the lead.

Conclusion: As the main ore shoots of the Hidden Treasure mine have been pretty well stoped out above the 350 ft. level of the mine - which is the deepest level- new ore will have to be developed by either sinking an inside winze or shaft, or by driving another working tunnel on vein from the foot of the mountain. At this lower point the EMERSON TUNNEL has already been driven on the main Hidden Treasure vein in ore a distance of 300 or 400 feet. If this tunnel could be continued it would finally attain a depth of around 400 feet under the said 350 ft. level of the mine; and in driving the tunnel it would be following undeveloped ground; hence other important ore bodies might be found.

In short, if the mine could be developed in a large way, it could no doubt be depended upon to produce at least 200 tons of milling ore daily over a long period of years. However, under present conditions, with the nearest zinc plant at Amarilla and the nearest lead stack at either Salt Lake City or El Paso, and also taking into consideration that the smelters continue to take the lion's share of any lead and zinc produced, it is hardly likely that money could be found at this time to reopen this promising property and erect another mill on the same. It is hoped that this discouraging condition can be remedied by the erection in Mohave County, or near Boulder Dam, proper smelting works, and possibly an electrolytic zinc plant.

As to what may be expected as to values and quantity of ore should this mine be developed to considerable depth, I wish to point out that the Tennessee-Schuykill mine has been worked to a depth of 1400 feet and the Golconda to 1200 feet; and on the 10th level of the latter property there was opened up and extracted years ago one of the largest bodies of zinc ore ever found in Arizona and several hundred feet of drifting on it failed to show a break in the ore. This property is estimated to have had a total production of \$8,000,000 in gold, silver, lead and zinc.

The Hidden Treasure is recommended to any company looking for a lead-zinc mine, carrying gold and silver values, in Arizona. In making this recommendation, however, I am assuming that any company that would be searching for lead-zinc properties in this State would know in advance just how to dispose of these metals at a profit.

Elgin B. Holt

Hidden Texas

Box 147
Chloride, Arizona.
January 5, 1944.

Mr. J. S. Coupal, Director,
Department of Mineral Resources,
413 Home Builders Bldg.,
Phoenix, Arizona.

C

Dear Mr. Coupal:

At the mine meeting last night, Mr. Holt suggested that I send you a copy of the letter shown you while here from the WPB, denying my application for additional premiums on lead and zinc. I have a zero quota on the property under the claim names which is the Hillside Group. After discussing the situation with Mr. Holt, it seems there might be a possibility of their changing the decision if you took the matter up with Mr. Broadgate in Washington. Of course I realize it would be difficult to accomplish, but if there is even a possibility I would like to work on it.

Since making the application, I have worked into an old stope which is 150' in length and the back about 50' above the drift level. In the center of this stope I took a sample 2' in width which assayed as follows: au .29oz., ag 6.44ozs., pb 5.8%;zn 8.3%. There are other places in it which assay good and I plan to cut and fill, keeping the ore as clean as possible rather than shrink as they did previously. I have already developed a manway and chute at the north end of the stope and will do the same at the south end, but it requires considerable filling as it is pretty badly caved, so it may be another two weeks before this is accomplished, but at that time it will be in good shape.

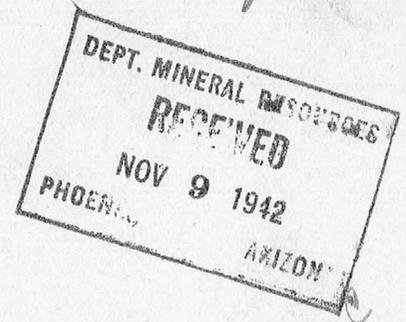
This information may give Mr. Broadgate something to work on and as you see it could not be shipped without the premiums to the Midvale mill, and would be a very narrow margin if shipped as a silicious ore. From the back of the stope to the surface is over 250' which, assuming the ore shoot extends that far, is a good sized block of ore.

Anything you can do to help on this will certainly be appreciated.

Yours sincerely,

Frank H. Dennis

November 7, 1942



To: Earl F. Hastings
From: Elgin B. Holt
Subject: Emerson Group, Chloride, Arizona,
Lessee: Frank H. Grannis, who is
applying for \$5,000 RFC loan.

Attached hereto is my report on the Emerson Group of mines, located 3 miles S. E. of Chloride, and adjacent to the Hidden Treasure mine. The application of Grannis for this loan will be mailed to W. B. Gohring today; so it should reach your office in due time.

As you will readily note, this property should be operated in conjunction with the Hidden Treasure. As a matter of fact, both Grannis and Langley, of the Golden Gem, are negotiating with owners of Hidden Treasure for a lease and option; and if either one succeeds in tying property up, the one that gets it will apply for an RFC loan; and no doubt later on arrangements could be made to treat ores from both properties in the same mill. The main thing being to get these mines opened and into production.

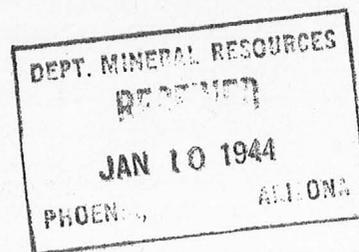
I think the Emerson-Hidden Treasure vein is the most important potential lead-zinc producer in the Chloride area, possibly as good or better than the Tennessee.

Hence, kindly give this application due consideration.

Elgin B. Holt.

January 8, 1943

MEMORANDUM



To: J. S. Coupal
From: Elgin B. Holt
Subject: Premiums on zinc-lead ore,
Hidden Treasure Mine, Chloride,
Frank H. Grannis.

At our last meeting in Chloride, Frank H. Grannis, Lessee of the Hidden Treasure mine, advised me as follows:

He has a Zero quota on lead, zinc and copper, and during October, 1943, he applied for a B premium on lead and B & C on zinc, and was turned down by Strobel.

He is working the Hidden Treasure mine with his own money and recently has run into a goodly body of ore assaying, per him, Pb 5.8%, Zn 8.3% and Au .29 ounce per ton.

He wants to ship this type of ore to Midvale, but cannot make it go unless he can get the said extra premiums.

I advised him to write to you with a view to taking this up with Broadgate and he has done so.

As Grannis has put a lot of time, money and work in this property, I suggest we do all we can for him in this matter, with the end in view of getting the said extra premiums if possible.

E.B.H.

Elgin B. Holt.

cc - Frank H. Grannis

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

SPECIAL REPORT

Mine Hidden Treasure (4 claims).

Date 9/28/39

District Wallapai - 1½ mi. from Chloride.

Engineer Elgin B. Holt.

Subject: Brief Report of Property.

On September 28, 1939, I visited this property in company with one of the owners, W. C. Babcock, and inspected such parts of the underground mine workings as were found to be accessible, which were the three main tunnels; some of the old stopes being caved in. Following is a brief description of the mine.

HIDDEN TREASURE

Owners: W. C. Babcock & G. R. Neil, Kingman, Arizona.

The following notes have been compiled from two reports: One by John Daniell, E. M., July 15, 1925, and the other by F. G. Smith, General Manager Chloride Mining Company, February 19, 1928:

Geology: Formation consists of Pre-Cambrian granite complex, associated with gneiss and also basic intrusive dikes.

Veins: Five veins from 3 to 10 feet wide, strike N. 59 deg. West, dip 72 deg. N. E, traverse property for a distance of 5,500 feet. Two of these veins are important and three unimportant.

Character of Ore: At slight depth, complex sulphide ores are found carrying: Zinc blende, galena, iron pyrite, a little chalcopyrite, plus gold and silver.

Development work: Three main tunnels have been run, and in 1925, 4215 feet of development work had been done, 3,065 feet on veins and 1150 ft. in country rock.

Ore Reserves: Before stoping and milling started, Daniell estimated: 86,450 tons of sulphide milling ore and 27,150 tons of non-milling ^{oxidized} ore by the flotation process, blocked out in the mine and that geological ~~conditions~~ indications pointed to the existence of commercial ore in quantity with greater depth. Also that 20 major veins, within 4 or 5 miles of property, have in the past been worked profitably.

Values: Daniell estimated all blocked out ore to average: Au & Ag \$3.25 per ton; Pb 3 to 3.5%; Zn 4 to 5%; but stated dilution might be expected by waste coming in once stoping starts.

MILL: A 150-ton selective flotation plant was operated at property by the Chloride Mining Company, controlled by Twitchell & Smith, a 5,700 ft. areal tramway connecting mine and mill. This plant was seemingly well designed and manned and was built to treat the ores of this property, as well as customs ores. Mill, which operated about one year, was designed to produce the following products:

- (1) A clean lead conc., carrying most of the gold, silver and copper and practically all the lead;

CONCLUSION: As the main ore shoots of the Hidden Treasure mine have been pretty well stoped out above the 350 ft. level of the mine - which is the deepest level - new ore will have to be developed by either sinking an inside winze or shaft, or by driving another working tunnel on vein from the foot of the mountain. At this lower point the EMERSON TUNNEL has already been driven on the main Hidden Treasure vein in ore a distance of 300 or 400 feet. If this tunnel could be continued it would finally attain a depth of around 400 feet under the said 350 ft. level of the mine; and in driving the tunnel it would be following undeveloped ground; hence other important ore bodies might be found.

In short, if the mine could be developed in a large way, it could nodoubt be depended upon to produce at least 200 tons of milling ore daily over a long period of years. However, under present conditions, with the nearest zinc plant at Amarilla and the nearest lead stack at either Salt Lake City or El Paso, and also taking into consideration, that the smelters continue to take the lion's share of any lead and zinc produced, it is hardly likely that money could be found at this time to reopen this promising property and erect another mill on the same. It is hoped that this discouraging condition ~~can~~ can be remedied by the erection in Mohave County, or near Boulder Dam, proper smelting works, and possibly an electrolytic zinc plant.

As to what may be expected as to values and quantity of ore should this mine be developed to considerable depth, I wish to point out that the Tennessee-Schuykill mine has been worked to a depth of 1400 feet and the Golconda to 1200 feet; and on the 10th level of the latter property there was opened up and extracted years ago one of the largest bodies of zinc ore ever found in Arizona and several hundred feet of drifting on it failed to show a break in the ore. This property is estimated to have had a total production of \$8,000,000, in gold, silver lead and zinc.

The Hidden Treasure is recommended to any company looking for ^a lead-zinc mine, carrying gold and silver values, in Arizona. In making this recommendation, however, I am assuming that any company that would be searching for lead-zinc properties in this State would ~~me~~ know in advance just how to dispose of these metals at a profit.

Elgin B. Holt.

Arizona Mohave Mines & Development Company,
Phoenix, Arizona.

Gentlemen:

Herewith find an outline report as to your property and conditions as I found them in my short visit there this week.

PROPERTY:

Consists of 5 full claims and 3 fractions about 150 acres in all. Plenty of chances for mill sites should such be needed later. Water for camp supplied by spring and plenty can be developed for mill. There has been no survey of claims so attached prints are but field sketches to show locations of work and directions.

LOCATION:

About 2 miles south of Chloride, the north terminal of a branch of the Santa Fe from Kingman, ground is reached by wagon road, last mile of which is rough but later development will probably necessitate new road to the west end by way of the Minnesota-Conner Mine. A mile of new good grade will give easy access to the main workings.

HISTORY:

Principal claims of the property have been held for 18 years by Thomas Thornton from whom your company obtained title. Thornton operated by taking out small bunches of shipping ore, most of which was a gold bearing quartz. In taking out this ore, quite a large tonnage of zinc ore was encountered but until recently such ore was of little value in that district.

Charles M. Dowd

ARIZONA MOHAVE CO.

CONDITIONS:

Are very favorable for operation. Only two miles from railroad and town of Chloride, which is a good supply center. Local stores carrying mine supplies or obtaining same on short notice from Kingman.

TOPOGRAPHY:

Claims are located on the south west side of the Cerbat Range at an elevation of about 4,500 feet above sea level and about 300 feet above Chloride Station. The rise from the railroad to the camp is very gradual and only at the mine end is the haul difficult. This can be overcome later should it be found best to move camp to the west tunnel.

FORMATION:

The geology of the district has been gone into very fully by F. C. Schrader in the U. S. Geological Survey Bulletin on the Mohave District, so I will only mention that veins are in a Pre-Cambrian granite, intruded by porphyry dikes. A condition most favorable to mineralization in large ore zones and which is shown in present workings.

DEVELOPMENT:

Consists of several tunnels and shafts of various lengths and depths, all of which show ore of milling values.

The main working is a tunnel on the west end of the Hidden Treasure Claim, run as an adit on the vein, 395 feet in length. This tunnel supplied the former owners with considerable shipping ore according to the general talk around the district. Sampling has shown that bunches of good values still remain.

This tunnel was started in on the central cropping in an ore zone of about 100 feet in width but

ARIZONA MOHAVE CO.

by the prospector following pay bunches zig zagging from pay shoot to pay shoot has resulted in a very crooked adit but which can be easily straightened out and which is being done at present. In the ore zone are three parallel croppings of ore all of which carry good values.

Over the tunnel and on the south cropping, at an elevation of about 180 feet, a shaft was put down about 110 feet. This has a very promising showing in the bottom. Later development should connect this with the tunnel and will materially aid in opening up this claim and also supply air below. Near this shaft and to the north only a few feet is a shaft about 60 feet deep on the middle cropping and which also shows good milling ore. All along the main croppings which can be followed the entire distance of the claims, 5,000 feet, various workings, open cuts and tunnels have been opened. All present very interesting conditions and show the continuity of the ore.

At the extreme east end and driven west on the vein, is a tunnel about 150 feet long. This also has very good showings. All of the above workings strengthen the conditions and value of this property.

CONCLUSION:

I unhesitatingly recommend the present work, that of cleaning out the 395 ft. west tunnel, and continuing this at least 100 feet. This should show that the present change of ore at the breast is permanent, and should show a good increase in amount of heavy ore on account of increasing depth reached as tunnel is driven.

This group of claims is one of the most promising properties that I have seen for some time, and I can strongly

ARIZONA MOHAVE CO.

advise you to go ahead on your present outlined work.
Surrounded as it is by large producers of its own character
of ore, with its good showing, it has big chances of
becoming a fine paying mine.

Yours very respectfully,

Charles M. Donohue, E.M.

Mining Engineer.

Feb. 26-1916.

Field Maps)
Check Assays) Attached.

MA 25
Near Shipper
SPECIAL REPORT

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Hidden Treasure (4 claims).

Date 9/28/39

District Wallapai - 1 1/2 mi. from Chloride.

Engineer Elgin B. Holt.

Subject: Brief Report of Property.

On September 28, 1939, I visited this property in company with one of the owners, W. C. Babcock, and inspected such parts of the underground mine workings as were found to be accessible, which were the three main tunnels; some of the old stopes being caved in. Following is a brief description of the mine.

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Ore Reserves: Before stoping and milling started, Daniell estimated: 86,450 tons of sulphide milling ore and 27,150 tons of non-milling, *oxidized* ore by the flotation process, blocked out in the mine and that geological ~~indications~~ indications pointed to the existence of commercial ore in quantity with greater depth. Also that 20 major veins, within 4 or 5 miles of property, have in the past been worked profitably.

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In short, if the mine could be developed in a large way, it could not doubt be depended upon to produce at least 200 tons of milling ore daily over a long period of years. However, under present conditions, with the nearest zinc plant at Amarillo and the nearest lead stack at either Salt Lake City or El Paso, and also taking into consideration, that the smelters continue to take the lion's share of any lead and zinc produced, it is hardly likely that money could be found at this time to reopen this promising property and erect another mill on the same. It is hoped that this discouraging condition may be remedied by the erection in Mohave County, or near Boulder Dam, proper smelting works, and possibly an electrolytic zinc plant.

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The Hidden Treasure is recommended to any company looking for lead-zinc mine, carrying gold and silver values, in Arizona. In making this recommendation, however, I am assuming that any company that would be searching for lead-zinc properties in this State would ~~be~~ in advance just how to dispose of these metals at a profit.

know

W. B. Holt

Elgin B. Holt.

Potential production of this property, if developed in a large way, is estimated at 200 tons daily of milling ore.

E. B. H.

Exhibit "B."

TO THE BOARD OF DIRECTORS
of the
ARIZONA-MOHAVE MINES DEVELOPMENT CO.

Gentlemen:-

In compliance with your request of recent date, I submit below a brief technical description of your company's property (The Hidden Treasure group of gold mining claims) situated in the Wallapai (Hualpai) Mining District, Mohave Co., Arizona, supplemented by my conclusions as to the present value of the property and also its economic potentiality. As you are already aware, the following description and conclusions are based on a fairly exhaustive examination of the property covering a period of three days, during which time every accessible underground working was carefully inspected either by me or by Mr. J. K. Murphy, my assistant, and samples conservatively taken wherever an opportunity to do so was presented to us.

Description of the Hidden Treasure Group
of
Mining Claims.

Location, etc.

The Hidden Treasure group, consisting of four full-sized mining claims and one fractional claim, is located in the Wallapai (Hualpai) Mining District, Mohave County, Arizona, about two miles south-east of Chloride, $1\frac{1}{4}$ miles south of the Tennessee mine, and $\frac{1}{2}$ mile south-southwest of the Minnesota-Connor mine. The mean elevation of the property is about 4500 feet. A good wagon road leading from Chloride ~~xxx~~ to the Altata mine termin-

ates within a half-mile of the Oro Fino claim of the group, which practically disposes of the problem of transportation of supplies and mine output. Abundant water for camp and reduction purposes is to be obtained by sinking to moderate depth, since the permanent ground-water level of the district is known to be within 400 feet of the surface. Fuel oil is generally burned by the reduction plants at the neighboring mines, while the hoists used are of the gasoline type.

Geology, veins, and ores.

The country rock enclosing the veins is a pre-Cambrian gneissoid, biotite granite, intruded by granite-porphry and a younger granite petrologically similar to the rock it intrudes. The older granite is the dominant member of the prevailing pre-Cambrian complex of the region; in which complex, according to F. C. Schrader, of the U. S. Geological Survey (See Bull. 397), all of the producing mines of the Hualpai district are found. Within a circular area of seven miles from the Hidden Treasure group are to be found twenty-nine properties mentioned by Schrader in his Report as having produced from \$25,000 to \$1,300,000, the deepest shaft of the most productive mine being not more than 400 feet vertically.

Veins and ores.-

The Hidden Treasure, Revenue, Chenango, and Alabama claims of the group are located along the strike of three principal fault fissure veins, which parallel each other very closely, the average distance between the two outer veins not exceeding seventy feet. The veins strike northwest, two of them having a dip of 77 degrees to the northeast, while the third member of the system

dips 80° southwest. The vein filling consists of quartz, a little calcite, and inclusions of country rock, the latter being kaolinized locally by the decomposition of pyrite. The average vein width is probably about eight feet, though this is largely conjecture, as no walls are as yet exposed in any of the openings. It is possible that as depth is attained in the southwest-dipping vein, a curvature in the fault plane, changing the dip to the northeast, will be found to exist.

In addition to the three principal veins already described, a smaller system of three parallel veins, more widely separated, however, than the main veins, intersects the southwest vein of the larger system at an obtuse angle. These intersecting veins outcrop at irregular intervals along their strike, and vary in width from eighteen inches to two and one-half feet. The particular significance attaching to their presence lies in the fact that, according to F. C. Schrader's Geological Survey Report, nearly all the ore shoots of magnitude encountered in that district have been found at the junction of these so-called "feeders" with main veins.

The most extensive working of the group is a tunnel 300 feet in length, the portal of which is located about 150 feet from the northwest endline of the Hidden Treasure, the most northwesterly claim of the group. The face of the tunnel is, approximately, 150 feet below the outcrop of the veins, and, in conjunction with an oblique crosscut, started a few feet back from the tunnel face, shows about fourteen feet of ore, consisting of gold-bearing pyrite, galena, and a little sphalerite. About two hundred feet in from the portal the tunnel has cut a thirty-inch vein of solid sphalerite, galena, and gold-bearing pyrite. This ore aver-

ages 30% zinc, about an equal amount of lead, and from \$1.80 to \$6.10 gold.

Three hundred feet southeast of the tunnel portal, and at an elevation of, approximately, 150 feet above it, three shafts have been sunk, one on each main vein. Shafts #1 and 2, sunk in the two northeast-dipping veins, have each produced a profitable tonnage of high-grade gold ore. Shaft #1 is 45 feet deep and shaft #2 65 feet deep. No ore is now showing in the bottom of either of them. Shaft #3 has a depth of 106 feet, has produced a considerable tonnage of 2 and 3 ounce gold ore, and now shows in the bottom three and one-half feet of solid ore, principally lead carbonate and gold-bearing pyrite, the average assay value of which is: Gold, \$20.50; silver, \$3.72; no test made for lead.

In addition to the exposures of ore already enumerated, a forty-five-foot shaft sunk in the vein near the southeast end-line of the Hidden Treasure shows a small shoot of very good ore, from 12 to 18 inches in width, which, appearing on the hanging wall side near the collar of the shaft, strikes off, at a depth of about 25 feet, into the footwall. Owing to the dangerous condition of the shaft ladders, it was found impossible to obtain a fair average sample of this ore body, though a conservative estimate based on two or three pieces I was able to break from the vein at considerable personal risk, supplemented by what are probably truthful statements by the owner, lead me to place the probable average gold content at two ounces per ton. It should be here stated that the productive veins of this district, of which more than one hundred are authentically recorded, are generally characterized by a narrowness of the ore shoots encountered near the surface, the same condition existing practically throughout

the entire oxidized zone, which in the Cerbat Range has an average limit of 100 feet measured along the dip of the vein.

In addition to the shafts already mentioned, four or five others are sunk in the main veins at various points, none of them being accessible to examination. It is affirmed by the owner, however, that considerable high-grade ore has been extracted from each of them, the shafts having been sunk for the purpose of locating ore of a sufficiently high grade to chloride or ship.

These shafts vary in depth from 40 to 75 feet.

Near the southeast end of the Chenango claim, a second tunnel, about 150 feet in length, has been driven. This tunnel was started on the vein (probably the central one of the larger system), which outcrops boldly at that point, but the working commences to bear off into the country rock at not more than 25 feet from the portal, the outcrop of the vein showing perhaps 50 feet to the right of the tunnel face.

I estimate the amount of development work on the property at about 1500 linear feet.

Conclusions.

I am more favorably impressed by the apparent and actual merit of this group of claims than I have been by any prospect during the past twenty years. Considering the ground from a cold-blooded business standpoint, from the angle of prospective economic value, I feel perfectly justified in assuring you that if your development policy is based upon ordinary mining intelligence and everyday common-sense, a successful outcome to your enterprise is assured from the beginning of your exploratory work; this opinion being predicated on the assumption that you will secure

sufficient capital to prosecute the work of development to an adequate ending.

My reasons for predicting that you have a prospect which will ultimately develop into a mine are as follows:-

The veins of your principal system are fault fissures of considerable magnitude; in fact, I may conservatively say, of more than ordinary proportions both in length and width. Also, they are in a basement series of rocks which are certain to continue downward in unbroken continuity to profound depths. No change of formation can possibly be anticipated within the vertical limit to which it is now possible to mine; which means that the mineral-bearing solutions to whose agency your present exposed ores are due, having found conditions favorable to precipitation and deposition within the zone now penetrated by your deepest workings, it naturally follows that, no change in the wall rock occurring with increased depth, the same character of ore deposition, but most probably on a much more extensive scale than is now found near the surface, will be found to continue vertically as your shafts deepen. In addition to the above, I am inclined to predict that the comparatively thin sheet of country rock separating the two northeast-dipping veins, will be found, wherever parallel ore shoots are encountered in those two particular veins, to have been altered by the mineralizing solutions, and that replacement of rock minerals by ore minerals has taken place. Should this surmise prove to be correct, a shoot or shoots of unusual thickness may be expected to occur in the localities indicated.

The fact that commercially valuable ores have already been extracted from each vein of your principal system, proving that

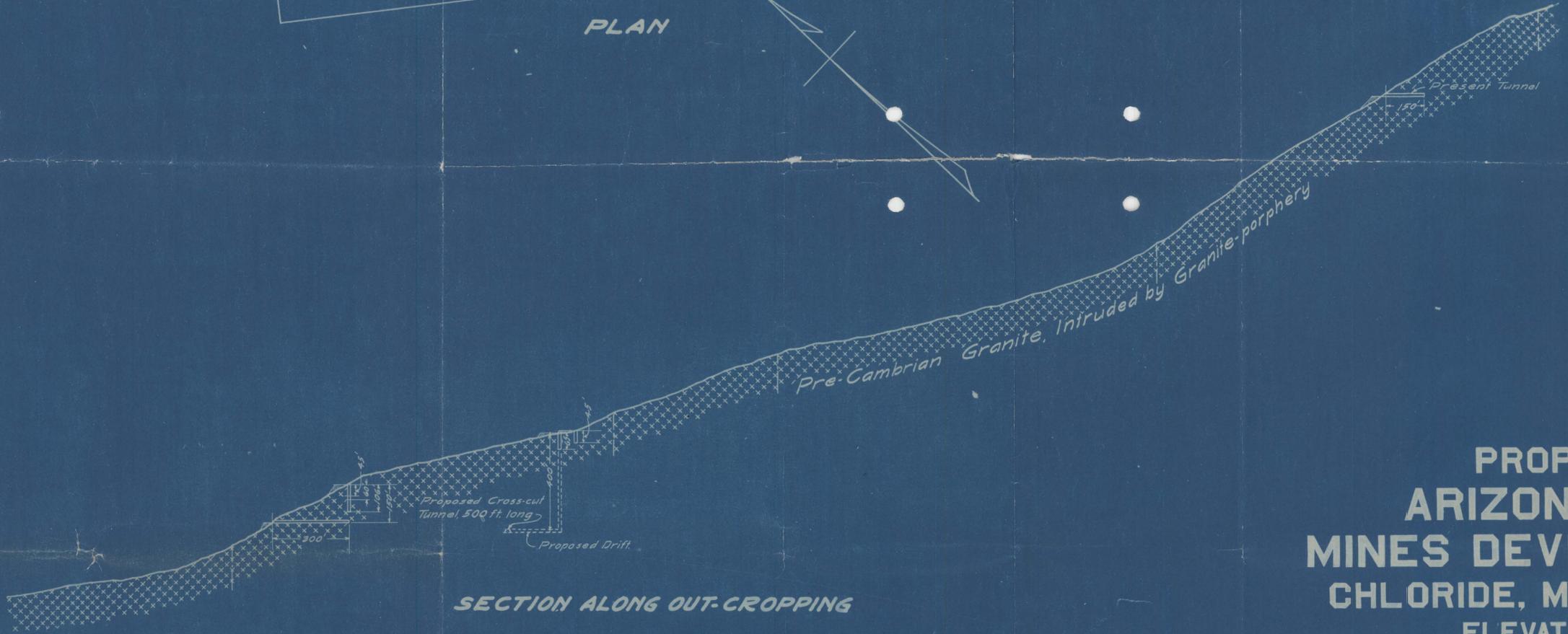
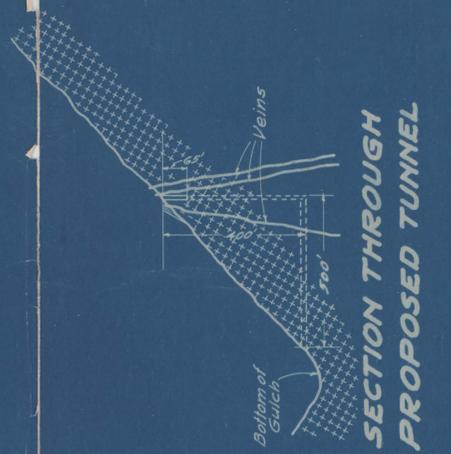
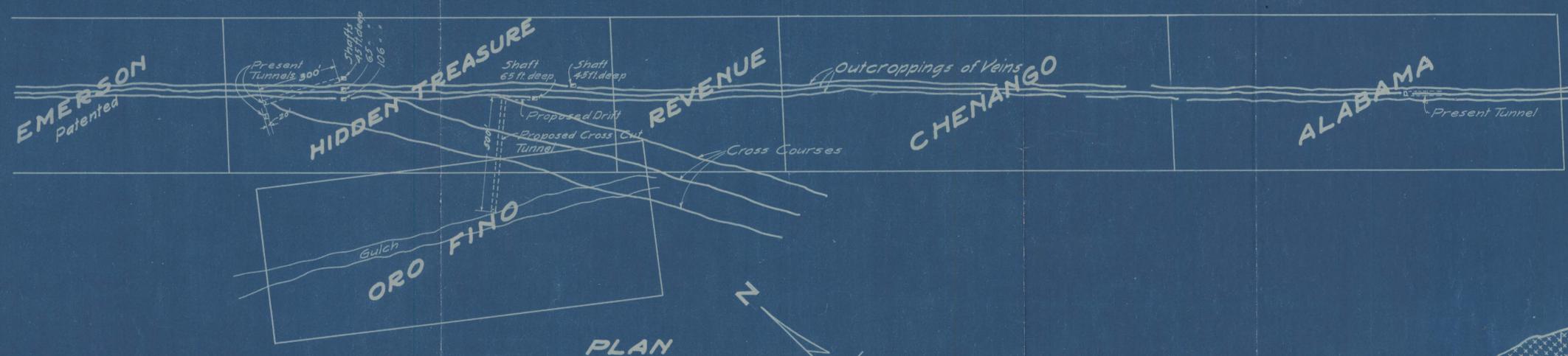
deposition has taken place in all of them - that all three are ore-bearing - convinces me that the conclusions above recorded are conservatively drawn from a fairly accurate geological interpretation of the property, supplemented by known occurrences, due to similar conditions, in many other productive and successful mines.

In conclusion, I desire to say that I have avoided as much as possible the use of technical terms in this descriptive report, wherever the use of everyday words would answer my purpose. Neither have I included my theory as to the genesis of your ore deposits, since to do so might possibly inject an element of obscurity into a subject which I have striven to , and I hope have succeeded in making reasonably plain to you.

Very respectfully yours,

F. A. Clifford
Mining Geologist.

Phoenix, Ariz,
Nov. 20 - 1915.



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ARIZONA-MOHAVE
MINES DEVELOPMENT CO.
 CHLORIDE, MOHAVE CO., ARIZ.
 ELEVATION, 4500 FT.

