



## **CONTACT INFORMATION**

Mining Records Curator  
Arizona Geological Survey  
1520 West Adams St.  
Phoenix, AZ 85007  
602-771-1601  
<http://www.azgs.az.gov>  
[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: LEGHORN

ALTERNATE NAMES:

B AND D  
LEG HORN PATENTED MS 3007  
FALLS, PATENTED MS 3007  
COPPER LODE PROPERTY

YAVAPAI COUNTY MILS NUMBER: 639

LOCATION: TOWNSHIP 14 N RANGE 3 E SECTION 6 QUARTER SE  
LATITUDE: N 34DEG 37MIN 23SEC LONGITUDE: W 112DEG 03MIN 46SEC  
TOPO MAP NAME: CHERRY - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

GOLD  
COPPER SULFIDE  
IRON

BIBLIOGRAPHY:

USGS CHERRY QUAD  
BLM MINING DISTRICT SHEET 82  
WEED, W.H. MINES HANDBOOK VOL XI 1912-13 P 74  
AZ COPPER GOLD MINES CO.  
ADMMR LEGHORN MINE FILE  
LINDGREN, W. ORE DEPTS JEROME & BRADSHAW MTS  
QUADS USGS BULL 782 1926 P 107  
ADMMR BUGLER MINE FILE  
CLAIMS EXTEND INTO W2W2 SEC. 5  
CLAIMS OVERLAP SITTING BULL MINE, PATENTED  
CLAIM 939

Tucson

Don's <sup>1</sup> ~~leg~~ prospect <sup>2</sup> ~~possibly~~ KAP R JH

MELVIN H. JONES  
Mining Geologist

MHJ/j  
16 September, 1979.

PRELIMINARY GEOLOGICAL EVALUATION REPORT, LEGHORN MINE, CHERRY CREEK, HRESCOTT NATIONAL FOREST, YAVAPAI COUNTY, ARIZONA.

On August 19, 1979, the undersigned, <sup>also Silver</sup> made a preliminary geology examination of the Leghorn Mine (gold), accompanied by the owners, Mr. and Mrs. David Campbell, PO box 1297, Wickenburg, Arizona, 85358. (phones 684-2539, 684-2052). This mining property is located 2 1/2 miles North of Cherry Creek village, and is on the SW slope of the Black Hills Range. Elevation 5500 feet, (see map Incl.#1). It consists of two(2) patented mining claims - Leghorn and Falls and this totals forty (40) acres. The last mile on the road to the Mine, is now difficult to traverse. This report involves one day of surface examination (including sampling) and considerable time on the study of old records. It was not possible these days to go underground in the old shaft and adit, due to caved conditions.

HISTORY.

This property was one of the first mines in the Cherry Creek Mining District and was operated intermittently between 1904 and 1918. This mining consisted of largely following rich streaks of ore, which in many cases ran up to \$100.00 per ton (in Au) at the old price of \$20.67 per oz. Eight thousand (8000) tons were mined. In the 1930's when gold was \$35.00 per oz., five(5) railroad carloads were shipped, according to old records.

The inclined shaft, on the property, reportedly goes to a depth of 600 feet. On this shaft are five (5) levels with drifts, crosscuts, and stores. (at 100', 200', 300', 400', and 600' levels). The total is 2100 feet of workings.

All of the old buildings formerly there, are gone, except for an old wooden ore bin on the Falls. Now missing are the headframe, shaft house, cook and boarding shack, two(2) houses, and a Chilean Mill. Besides the old inclined shaft collar and adit portal, all that can be observed is the dump, and a few exploration pits. As the property is near the Cherry Creek Community, the land has value as future home sites.

GEOLOGY.

The Leghorn mine is in a granitic mass (basically quartz monzonites) which are older PreCambrian igneous intrusives, and are related genetically to the Mazatzal revolution. This grades into schists and gneisses, as a result of metamorphic conditions. The gold is carried in quartz filled fissures and faults, and this probably occurred during the Larimide. Subsequent hypogene or supergene enrichment was not significant. The bulk of the ore mined is from a Zone of Oxidation, although some minor sulphide streaks were noted. Free gold is in the ferric stained quartzose rocks. Silver will run one(1) oz. per ton, or less. Petrographic examination reveals small amounts of Malachite, Azurite, Pyrite, Chalcocite, and Heulandite.

The strike of the ore vein is about N. 15 deg. West, with a dip of 32 deg. West. At a depth of 200 feet, the dip is reported at 40 deg. W.

And at the 400 ft. level it is 45 deg.W., and at the 600 ft. level it is almost vertical. The width of the vein at the 600 ft. level is reported at 7 ft and reduces gradually to 2 ft. at the top level.

The ore material seen on dumps and 'in place' appears to be amiable to gravity type concentration (floatation and tables), amalgamation, and cyanidation. It was reported that 92 to 95% recovery was made with the old Chilean Mill recovery system. However, it should be definitely understood that a Mill sized sample should be tested in a competent laboratory before choosing a method of recovery, for future operations.

Samples taken by the undersigned, and results follow(see Incl.#3

<u>SAMPLE NO.</u>	<u>LOCATION</u>	<u>OZ. (Au) PER TC</u>
LH #1	Grabb sample. Bottom of ore bin on Falls.	0.09
LH #2	Chip channel cut. Small shallow pit 5 ft. length. About 30 Ft. E. of shaft (on strike).	0.09
LH #3	Chip channel cut. Vein 18 inches wide at E. side of shaft collar.	1.06

These samples were taken to confirm (or refute) abundant previous sampling data (in old reports). Mr. Campbell, also took a sample at the LH #2 location, while we were there. His sample was slightly deeper and his result was better (0.32 oz.) See Incl.#4. These samples were from a strike cut. This, of course is not the best method but the hole was already there. Other past sampling is reflected in the old records.

### DISCUSSION.

In the records of the Department of Mineral Resources, State of Arizona, Mr. John Jett, EM, PE, Director, are several old and detailed reports on the Leghorn Mine. One such report is by Mr. Harry R Palmer, EM, of Los Angeles, CA who visited the mine in the 1930's. Other information is in the reports of a Mr. Dickinson and a Mr. Drescher, mining professionals. Also there are statements of a Mr. Sessions, former Leghorn Mine Superintendent. Certain information in these old records are quoted below, and are considered to be factual and correct.

The strike of the orebody is approximately N. 15 deg.W., with a dip to the W. of 32 deg. and increasing to almost vertical at the maximum depth reached, 600 ft.

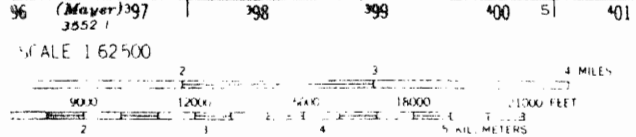
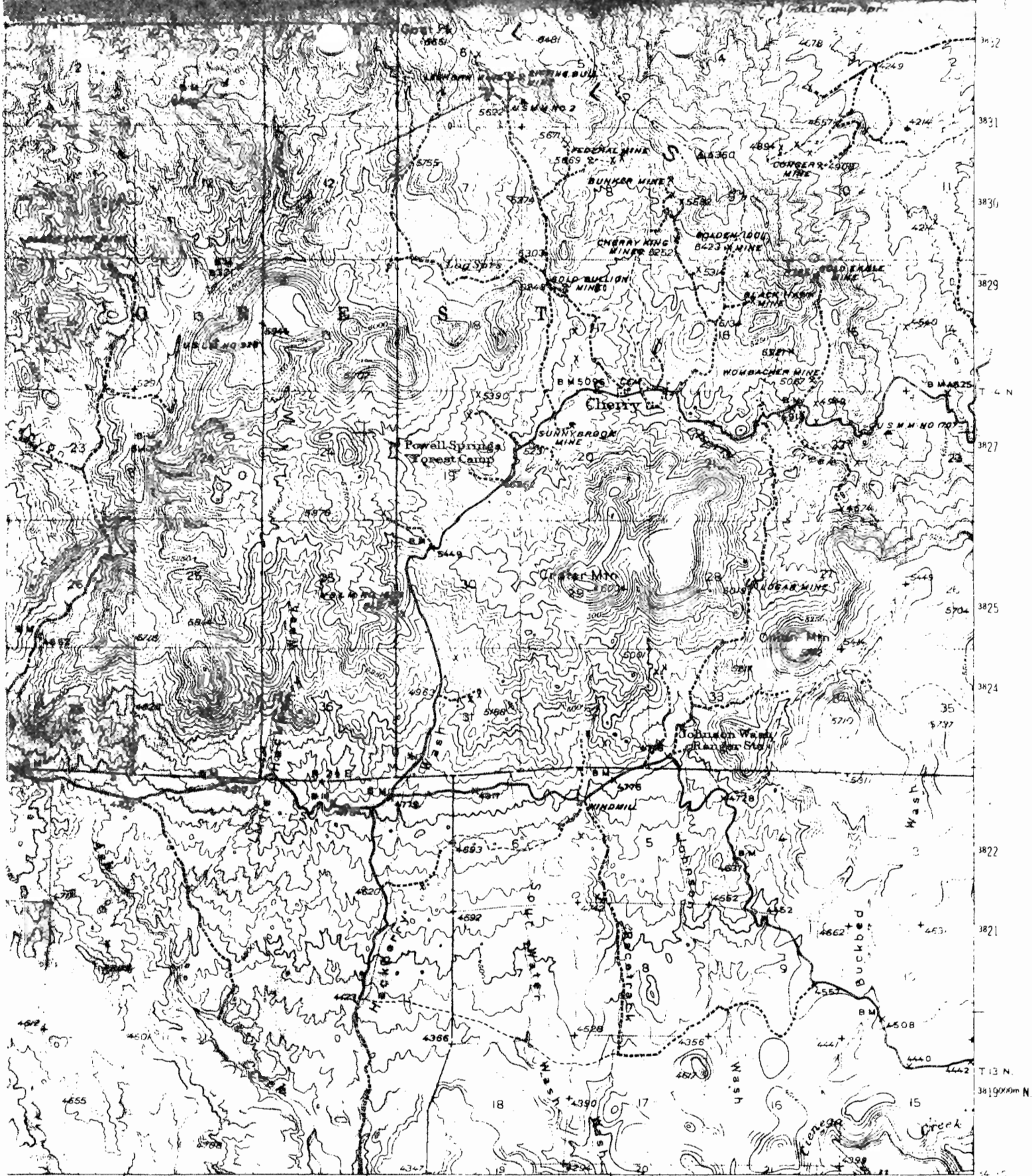
Along the inclined shaft, are the following:

100 ft. level.	200 ft. lateral drift to the South.
200 ft. level.	200 ft. Lateral drift to the South, and 200 Ft. to North
300 ft. level.	500 ft. lateral drift to the North.
400 ft. level.	100 ft. lateral drift to the South.
600 ft. level.	100 ft. lateral drift to the South.

A winze is 150 ft. North of shaft and connects the 1st, 2nd, and 3rd levels. Total work amounts to 2100 feet.

The Dickinson report says in 1906, at a depth of 368 ft. there are about 4652 tons of ore in sight, having a value of \$271.80 per ton (at today's, 1979 prices).

The Drescher report (1930's) has the Leghorn Mine blocked out



Interior—Geological Survey Washington D. C.—1970  
 Certain land lines are omitted because of insufficient data  
 All recovered dimers are shown

Polyconic projection. 1:27 North American datum  
 10,000 foot grid based on Arizona Central rectangular coordinate system  
 1000-meter Universal Transverse Mercator grid (zone 12, shown in blue)

DENVER, COLORADO 80225 OR WASHINGTON, D. C. 20242  
 PHOTOCOPYING AND SYMBOLS IS AVAILABLE ON REQUEST

MINGUS MTN., ARIZ.  
 N 2430—W 1100

1944  
 AMS 3553 II SERIES 4798

into a total of seven(?) separate masses, as outlined below( also given are values per ton at 1979 (today's prices):

Block #1	5000 tons @	\$140.00 per ton.
Flock #2	3333 tons @	\$120.00 per ton.
Block #3	3333 tons @	\$150.00 per ton.
Block #4	2500 tons @	\$150.00 per ton.
Block #5	3500 tons @	\$140.00 per ton.
Block #6	6666 tons @	\$140.00 per ton.
Block #7	1500 tons @	\$120.00 per ton.

Total tons are 38,332, and figured at lowest given value (\$120.00) equals \$4,599,640.00 (at \$350.00 per oz. gold).

In order to operate a gold mine in these times, and where direct shipping of ore, is unfeasible, abundant water is necessary. It is reported that there is an old well in the adjoining creek bed, near the South end of the property. It is not known how much water this old well will produce. But, in the old days, when the mine was working, they had water. It is said that the old mine produces water at the 200 foot level, that had to be pumped out. This could be a source of useable water for leaching, for example. It is now reported that the old shaft is full of water up to the 400 foot level.

It should also be understood that to open up this old mine, in these modern times, will be costly. The shaft will have to be cleaned out, re-timbered, as well as the drifts. At the lower levels, the water will have to be pumped out.

The amount of potential ore in the dump was not ascertained. The sample results by others is not too encouraging (0.19 oz.), but is by no means conclusive. If new sampling reveals good values, and measurements indicate sufficient tonnage, then working the dump could be considered.

Obviously, before any mine should be placed into operation (to make profits), the tonnages in reserves, and values have to be verified. This is done in these modern times, by drilling. This activity can run into big money for the average mine owner. In the case of the Leghorn mine, roads for the drilling rigs will have to be built on the side of a mountain, and drilling sites prepared. A minimum of five(5) holes should be drilled to a depth of at least 700 feet, at a cost of about \$35,000.00. The sites for these drill holes should be picked out in advance by a qualified geologist or engineer.

The correlation of all data, including interpolation of some study information, results in the conclusions given below.

#### CONCLUSIONS.

The Leghorn mine, with its Leghorn and Falls claims, has an excellent potential as a producing gold mine, in the range of 50 to 100 tons per day.

It should be drilled to verify ore values and tonnage.

After careful consideration, based on current information, the undersigned places a value on the Leghorn mine of \$100,000.00. This is exclusive of its Real Estate value of \$25,000.00, or more.

1601 Sandhill Road, sp 36.  
Las Vegas, Nevada, 89104

MELVIN H JONES  
Mining Geologist.

# Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

For **Campbell Investments**  
 Post Office Box 1297  
 Wickenburg, Arizona 85358

Date **August 24, 1979**

## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER	LEAD		
1052	Red Crown, large open cut Chip Sample 1 across 4'	0.03	1.9		24. %		
	Leg Horn Main Grab	0.05	0.45				
	Leg Horn Main Stockpile grab #1	0.19	0.35				
	Hope Mine open cut West Chip #1	0.05	0.20				
	Lee Ann Pump Pilot Plant test run 1 table heads	0.07	0.15				
	Lee Ann Open Cut East of shaft Chip #1	0.16	0.35				
	Small open cut North of old shaft Chip #1	0.32	1.4				
	LuAnn Dump Pilot Plant test run 1	0.05	0.45				
	LuAnn Dump Pilot Plant test run 1 Table Cons.	0.21	1.7				

*See from →*

Respectfully submitted,

ARIZONA TESTING LABORATORIES

*Claude E. McLean, Jr.*

Claude E. McLean, Jr.



*Incl # 4*

IRON KING ASSAY OFFICE  
ASSAY CERTIFICATE

BOX 14 -- PHONE 632-7410  
HUMBOLDT, ARIZONA 86329



ASSAY  
MADE  
FOR

J. D. CAMPBELL  
Humboldt, Arizona 86358

Oct. 13, 1976

Ref. no.	DESCRIPTION	oz/ton Au	oz/ton Ag	% Fe	% Pb	% Zn	% Cu
10-11-1	Cut west from old shaft	.414	2.08				
10-11-2	57 OPL off tunnel	.604	1.91				
10-11-3	Winze on main tunnel	.562	0.50				
10-11-4	West face of tunnel	.184	0.26				

CHARGES \$24.00

ASSAYER

Please pay from this.

Incl #4



# Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

For Mr. Melvin Jones  
Post Office Box 1196  
Wickenburg, AZ . 85358

Date August 24, 1979

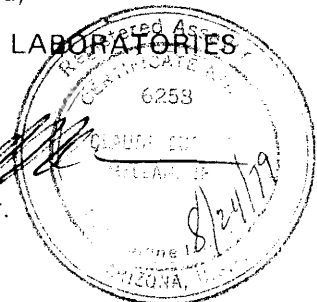
## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
1044	LH 1	0.09					
	LH 2	0.09					
	LH 3	1.06					

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Claude E. McLean, Jr.

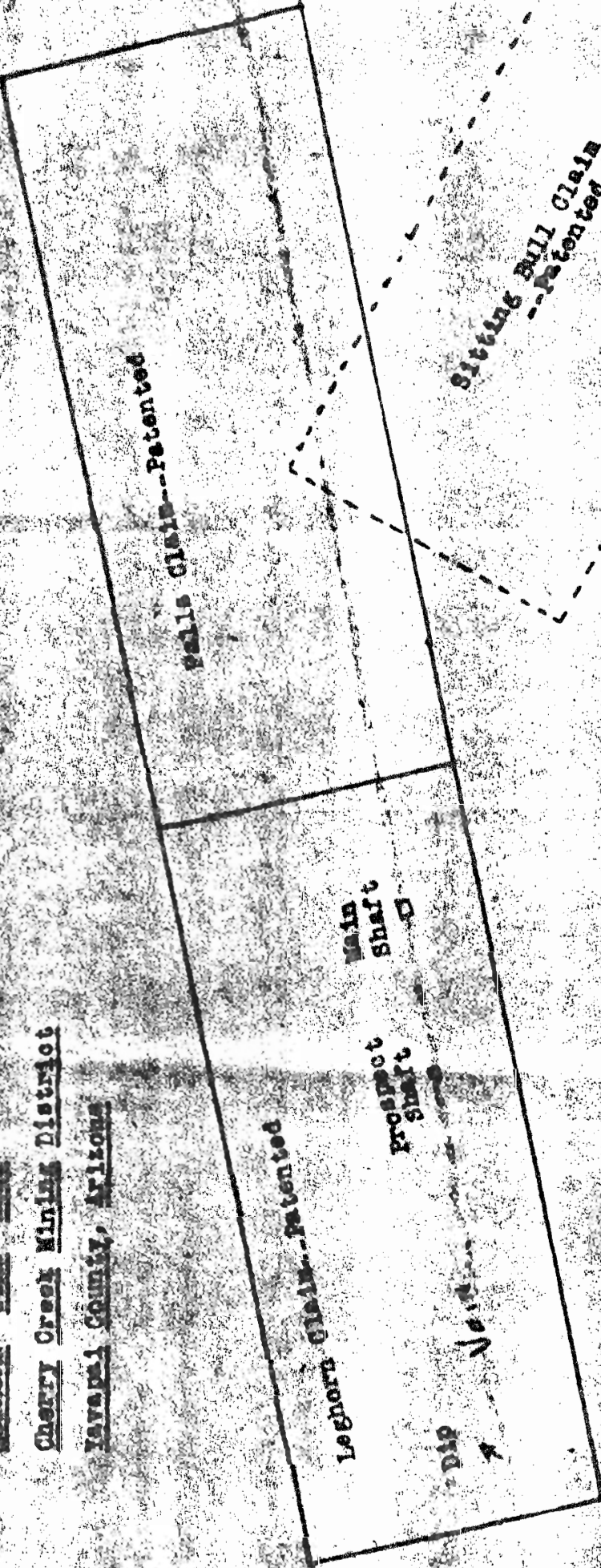


Incl #3

**LEBORN GOLD MINE**

Cherry Creek Mining District

Yavapai County, Arizona



North  
↑

Scale: 1" equals 300'

Incl #2

Leghorn  
M.M.

BRIEF HISTORY OF LEGHORN MINES

Date - ?

HUSSON

DRESCHER Report

PROPERTY:

The property consists of two (2) full lode mining claims or 40 acres. The names of these claims are the Leghorn and the Falls.

THE ARIZONA DEPARTMENT OF MINERAL RESOURCES  
MAKES NO REPRESENTATION AS TO THE ACCURACY  
OF THE CONTENTS OF THESE DOCUMENTS.

LOCATION:

The property is located in the Cherry Creek Mining District, Yavapai County, Arizona. They are on the South and West slope of the Black Hills Range, and about 10 miles due South of Jerome, Arizona. With reference to other mining properties, the property is located in that mineralized zone extending from the United Verde Mine South through the county. In this zone to the North is the United Verde Mine; the United Verde Extension Mine; the Jerome Verde; Verde Central; Copper Chief, and many others of lesser importance. To the South are the Logan; Binghamton; Blue Bell; KaGabe; Gladstone, and many others. To the East and almost adjoining is the Verde Eastern Mine. With reference to access and transportation, excursions, etc., the property is reached by road about two miles distant from the Prescott to Camp Verde Highway; it is 14 miles to railroad shipping point at Dewey via first-class surfaced highway; it is 18½ miles via same highway to a large custom smelter at Humboldt.

TITLE:

The claims are both patented and owned in fee, therefore unassailable as to title and as to proof of the Government's check of mineralization.

WATER:

Ample water is developed in the mine for mining and milling purposes, and excellent domestic water is available from springs.

# IRON KING ASSAY OFFICE ASSAY CERTIFICATE

BOX 14 — PHONE 632-7410  
HUMBOLDT, ARIZONA 86329



ASSAY  
MADE  
FOR

J. D. CAMPBELL  
P.O. Box 1297  
Wickenburg, Ariz. 85358

Oct. 13, 1976

Ref. no.	DESCRIPTION	oz/ton Au	oz/ton Ag	%	Fe	Pb	Zn	Cu
10-11-1	Cut west from old shaft	.414	2.08					
10-11-2	57 OPL off tunnel	.604	1.91					
10-11-3	Winze on main tunnel	.562	0.58					
10-11-4	West face of tunnel	.184	0.26					

CHARGES \$24.00

ASSAYER \_\_\_\_\_

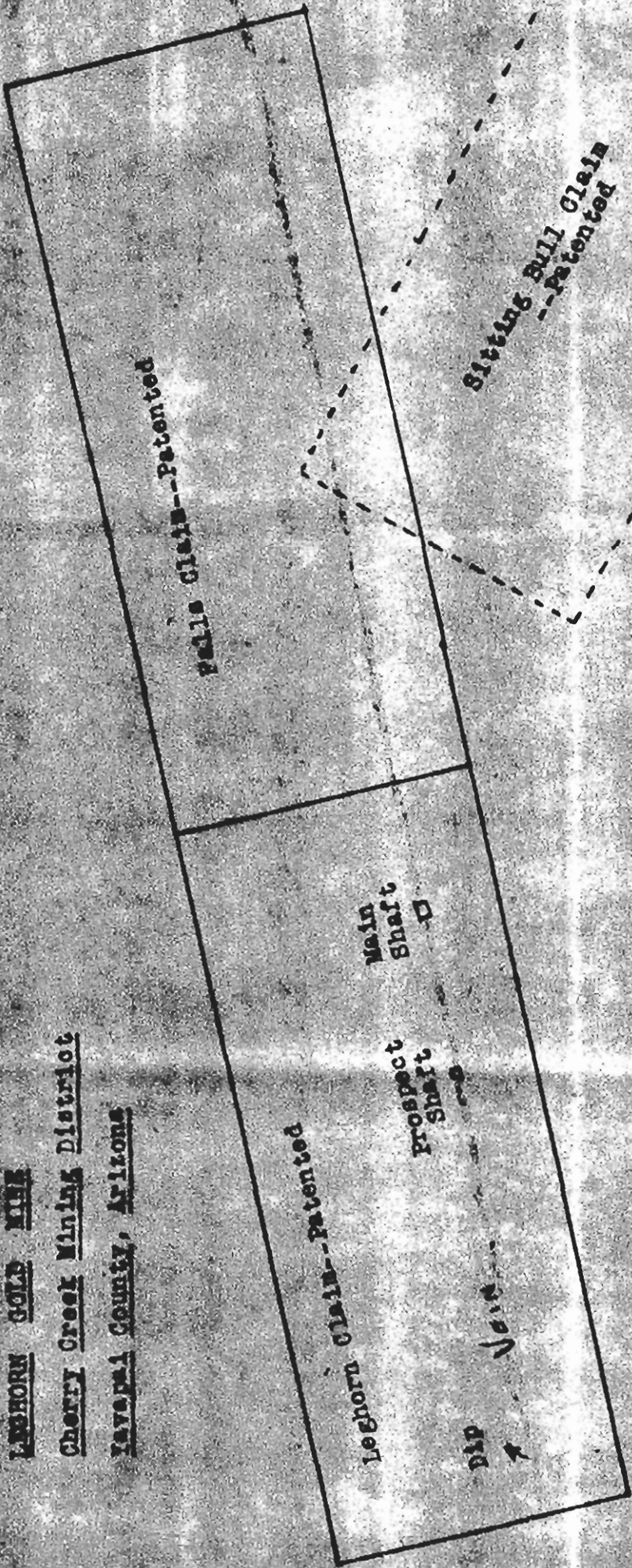
Please pay from this.

Incl #4

LEGHORN GOLD MINE

Cherry Creek Mining District

Yavapai County, Arizona



North

Scale: 1" equals 300'

Incl #2

Nov 1937  
LEIGHORN

THE B. & D. MINE

Data taken from reports of Dickinson, Drescher, Palmer and verbal statements of Sessions, former Superintendent.

LOCATION:

This property is situated 1-3/4 miles from a post-office and 16 miles from a R.R. shipping point. Labor is available in the vicinity and a nearby small farming community can supply certain boarding house necessities. The elevation is about 5500 ft. and the climate is much milder than this elevation would indicate and operations in winter are seldom interrupted by snowfall which usually is quite light. A mining city with excellent stores and mining supply houses is only 30 miles distant by good dirt county roads.

AREA:

The property consists of two patented mining claims of approximately 20 acres each. The titles are in good order and the taxes are paid.

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HISTORY:

This mine was one of the first operations in the district in which it is located. Early operators did considerable of the development and it has been worked intermittently and the shaft deepened from 1904 to 1918. These operations consisted largely of following the rich streaks of ore which in many cases ran up to \$100 in gold per ton (old price).

Mr. Sessions stated that his company mined and milled 7000 tons on the north of the shaft above the 350 level, giving an average value in free gold at the mill of \$15.00 per ton (old price). On the south of the shaft more than 1000 tons were stoped yielding a value of \$30 per ton.

Within the past few years five carloads were taken from the upper workings which yielded better than \$12.00 per ton.

The development work below the 350 level was done after 1906.

GEOLOGY:

The country rock of the whole district is granite, through which in many places strong dykes of porphyry have intruded. The country immediately surrounding the mine shows seyenite, gneiss and porphyritic intrusions.

The vein is essentially a true fissure in the granite varying from 18" to 36" at the surface to 6 ft at 375 ft

and widening to 7 ft at the 600 ft. level. The vein filling is quartz, more or less broken up and heavily impregnated with oxides of iron and some copper. The oxidized zone containing the free gold extends down to a depth of approximately 200 ft when although oxidation continues, some sulphides appear. It is reported that the whole 7 ft width of the vein at the 600 ft level is broken up, shot through with small veins of sulphide and assays \$9.00 (old price) in gold across the full width on both sides of the shaft.

The strike of this vein is approximately N. 15°W. and the dip is 32°W to the 200 ft level, when the dip changes to about 40°, increasing to 45° at the 300 level. At the break at the 600 ft level the vein is supposed to stand at 90°.

DEVELOPMENT: The mine is developed by an incline shaft, sunk on the dip of the vein, 600 ft. Lateral drifting is as follows: 100 ft. level, 200 ft. drift to the south; 200 ft. level, 200 ft. drift north; 200 ft. drift south; 300 ft. level, 500 ft. drift north; 400 ft. level, 100 ft. drift south; 600 ft. level, 100 ft. drift south. A winze connects the first, second and third levels 150 ft north of the shaft. The total work amounts to 2100 ft.

ORE RESERVES:

From the blocks noted here according to the Drescher report, should be deducted the stoped tonnage already noted. No assay map accompanies the report so that it is not known how the widths and values of the ore blocks were arrived at. The Dickinson report stated that in 1906, when the shaft had reached a depth of 368 ft. there were approximately 4652 tons of ore in sight having a value of \$27.18 per ton (old price).

Block # 1	-	5000 tons	@	\$14.00
Block # 2	-	3333 tons	@	\$12.00
Block # 3	-	3333 tons	@	\$15.00
Block # 4	-	2500 tons	@	\$15.00
Block # 5	-	2500 tons	@	\$14.00
Block # 6	-	6666 tons	@	\$14.00
Block # 7	-	1500 tons	@	\$12.00

38,332 at the low value of \$12.00 = \$459,964  
(old price)

RECOMMENDATIONS:

Taking into consideration the fact that the vein is steadily widening with depth, one engineer recommended that the shaft be sunk to the 1000 ft. level and lateral work be done 500 ft. in each direction from the shaft to prove the length and continuity of the ore shoot, and the same lateral work at the 600 ft. level. Intermediate development would then follow in the blocks thus outlined.

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The ore can be readily treated by modern methods, and very probably a combination of flotation and amalgamation will be suitable for some time, when amalgamation may have to be dropped.

With the ore reported as being present below the 350 level as a criterion, a mill of not less than 35 tons daily capacity nor more than 50 tons, is indicated.

The original mill site was at a creek some distance from the mine (perhaps 1/2 mile) and of this one of the reports states, "creek is fed by numerous streams from the mountains and during the last 30 years (to 1906) has never been dry in summer nor frozen over in winter."

How much water the shaft makes regularly is not yet known, and a nearby spring is probably good only for domestic water. As there is an excellent mill site below the shaft and adjacent to it, the deficiency can be made up by pumping from the creek so that no water shortage is anticipated.

THE ARIZONA DEPARTMENT OF MINERAL RESOURCES  
MAKES NO REPRESENTATION AS TO THE ACCURACY  
OF THE CONTENTS OF THESE DOCUMENTS.

Nov. 1937.



# THE GOLD MINE

Cherry Creek Mining District  
Navajo County, Arizona

Aug 25, 1937

TUCSON

-0-

Location: This property is situated about one and three-fourths miles north of Cherry Post Office, and is reached by a good road which branches off of the Dewey-Camp Verde Highway at Cherry. Dewey, the closest railroad point, is 16 miles westerly from Cherry.

Area: The property consists of two patented mining claims of approximately 20 acres each known as the Leghorn and Falls. (See records in the County Recorder's Office, Prescott, Arizona). Titles are guaranteed to be in perfect order.

History: This mine was one of the first operations in the Cherry Creek District which dates back to the earliest mining in this section. Early operators did most of its present development, but it has been worked intermittently, with some production, from about 1904 to 1918. These operations consisted mostly of following the rich streaks of ore which ran in many cases from \$100.00 and more in gold per ton. For several years the mine was idle on account of caved conditions at the collar of the main working shaft. About two years ago a small group of eastern parties secured a lease and option for the property. They repaired the shaft and retimbered same, and it is now in good condition for mining purposes. Other mine workings are reported to be in excellent condition for the extraction of ores. These parties also built modern and up-to-date living quarters and piped in water for camp purposes. They did no actual mining but spent all of their money for the foregoing improvements, and the property has now reverted back to the original owner.

General Geology: Most of the district is in the upland basin of Cherry Creek with elevations of 5000 to 5500 feet. The prevailing rock is Bradshaw granite which at this property is of a reddish color. The vein fractures are quartz filled, and a number of small veinlets which intersect the vein are also quartz filled.

The strike of the Leghorn-Falls vein is approximately North 15 degrees West, and dips 35 degrees West to about the 300-foot level, at which point it dips about 45 degrees West. The rake of the creshoot is southwesterly. The vein is continuous for the full length of the two claims of this property for a distance of 3000 feet as exposed by its outcrops. To a depth of about 250 feet the vein shows an average width of from three to four feet, and then gradually widens to widths of from eight to ten feet.

The ore is mostly oxidized to the present 600-foot (incline) level, and is quartz and hematite. The values are gold, and the ore carries very little silver.

Development: The mine is opened up with an incline shaft following the vein to the 600-foot level, and several drifts have been run mostly northerly from this shaft. Very little drifting has been done along the vein to the south. Several short raises have been made by various lessees following rich streaks of ore. A small area from the 100-foot level at the south of the shaft has been stoped out, and an area from the 250-foot level at the north of the shaft has also been stoped out. (See sketch).

Ore Values: According to consistent sampling--not considering any high assay results--it is estimated that the ores as exposed in the north mine workings will easily average \$7.50 in gold per ton; and in the mine workings at the south side of the shaft the ores will average approximately \$14.50 in gold per ton. The gold values are quite free and a very high percentage of extraction can be expected by amalgamation and table concentration. These ores offer no difficult metallurgical problem, and all gold recovery can be made at the property.

Ore Tonnage: It is roughly estimated that there are at least 20,000 tons of commercial ores exposed on three sides in the northerly section above the 300-foot level of the mine. This ore should be cheaply mined by stoping. The property offers unusual opportunities for the development of large tonnages of commercial ores both longitudinally and in depth.

Surface Improvements: One new residence (approximately 24x35 feet in size) containing large combination living room, two bedrooms, kitchen, service porch and bathroom. The kitchen and bathroom are equipped for running water--hot and cold. One smaller residence (approximately 20x25 feet in size) containing living room, bedroom, kitchenette and bath with modern plumbing. Both residences have electric lights. One new bunkhouse (approximately 12x24 feet in size). New auto sheds. Rebuilt cook house and a mess hall (approximately 20x30 feet in size). A shaft house (approximately 20x30 feet in size). A good headframe at the shaft. A 1400-foot (1" galvanized iron) water line from the well in the creek near the south end of the property with a small gasoline pump was installed that furnished water to a storage tank above and near the residence, and water was piped to the later. It is not known as to what condition the water line and equipment is in at present.

Remarks: The undersigned visited this property a few years ago, but at that time it was impossible to investigate underground conditions on account of not being able to enter the shaft. The information herewith is furnished by the owner and parties who have worked in the mine, and I believe the same to be reasonably correct.

Bulletin No. 137, published in 1934 by the Arizona Bureau of Mines, states that the Leghorn vein is said to average two feet in width. However, Mr. Walter McDonald who had charge of repairing the mine shaft and other workings in the mine states the vein averages from three to four feet wide to about the 300-foot level and then gradually widens to widths of from eight to ten feet.

Respectfully submitted:

Phone: VERmont 3805  
1452 West Forty-eighth Street,  
Los Angeles, California,  
August 25, 1937.

Harry R. Palmer, E. H.

# LEGHORN GOLD MINE

CHERRY CREEK DISTRICT,  
YAVAPAI COUNTY, ARIZONA.

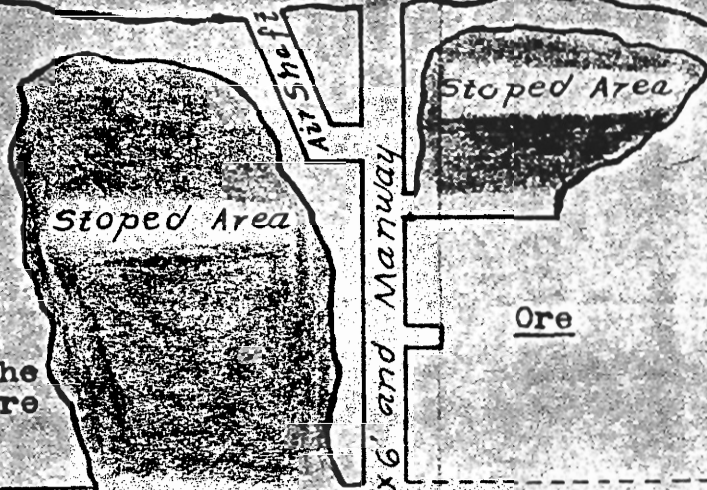
Approximate scale:  
1" equals 100'

North

Longitudinal Section

ORE

The ore vein in this area is from three to four feet wide



The vein strikes Northwest-Southeast, and Dips 35 degrees Westerly. The rake of the ore-shoot is Southwest. At about the 300-foot level the vein dips more steeply.

Proposed Ext. 250 foot level

The following sample cuts were made on the north side of the shaft beginning at the 100-foot level, and were cut at intervals of every ten feet. They represent ore widths of from three to four feet. Values in gold per ton only are given. The ore carries very little silver.

\$14.70	\$ 3.50	Gold @ \$35 per oz.
10.15	13.99	
1.75	14.34	
1.05	1.75	
2.80	14.70	
3.50	3.83	
2.80	4.20	
4.20	10.15	
	13.64	

The vein in this area is from eight to ten feet wide

The following sample cuts were made on the south side of the shaft beginning at the 100-foot level, and were cut at intervals of every ten feet. They represent ore widths of from three to four feet. Values in gold per ton only are given.

\$26.60	\$17.50	Gold @ \$35 per oz.
18.90	2.79	
20.30	7.00	
28.00	6.30	
10.50	7.00	

This sketch is compiled from information supplied by the owner and parties who have worked in the mine.

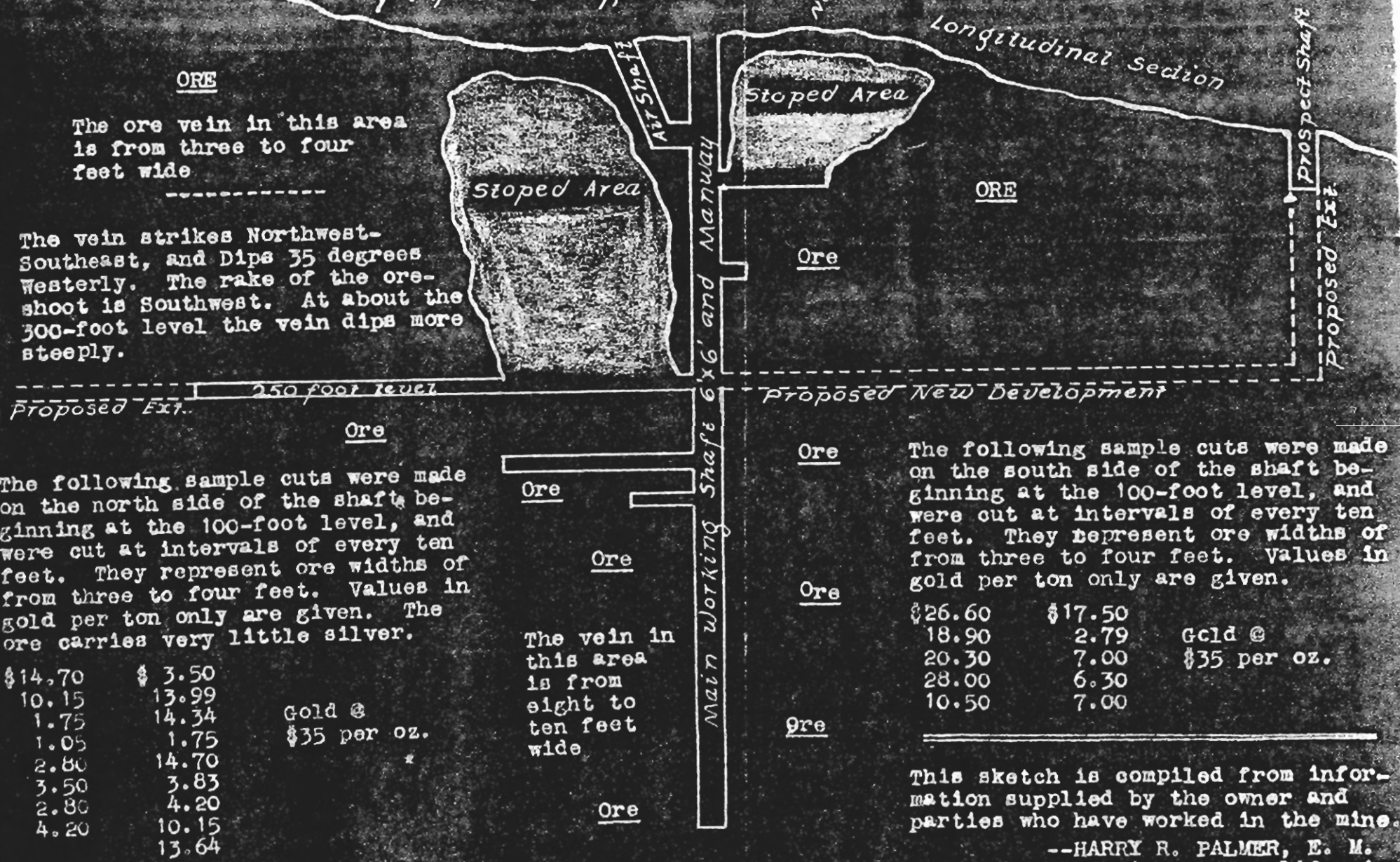
--HARRY R. PALMER, E. M.  
Los Angeles, California

August 24, 1937.

# LEGHORN GOLD MINE

CHERRY CREEK DISTRICT,  
YAVAPAI COUNTY, ARIZONA.

Approximate scale:  
1" equals 100'



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-----  
250 foot level  
-----  
Proposed Exit.

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Ore

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reported from all these mines. The Etta is mentioned in the M report for 1887 as a quartz vein 5 to 6 feet wide, developed to depth of 200 feet, and containing ore of a value of \$29 to the ton.

The road to Cherry Creek leads off a few miles farther south in the valley at Aultman. A line of sycamores indicates the position of Verde River, and the old Prescott road turns to the west over the uplands and flat mesas of the Verde formation of Tertiary lake beds sparsely covered by mesquite. Within a short distance the road reaches heavy beds of Quaternary conglomerate, which continue up to a gap at an altitude of 5,400 feet, where the Verde fault brings up the granite of the main ridge of the Black Hills. A little to the south of the road Cherry Creek, on its way to Verde River, has incised a canyon 500 feet deep, the erosion having been accelerated by the great fault. At the gap is the Blue Monster property, the shaft of which, 400 feet deep, is sunk almost on the fault line, at first in gravel, then in lava, and finally apparently cutting into the granite. Why it was sunk is not clear, probably with a wild hope of striking a copper deposit. A mile to the north is the Pfan mine, which was being operated in 1904 on a quartz vein in granite and from which some production was obtained. Locally the Pfan mine is known as having been the scene of some interesting sampling operations a number of years ago. Two or three miles farther on the road leads into the pretty basin of upper Cherry Creek (altitude 5,000 feet), in which most of the properties of the district are situated.

#### GOLDEN IDOL MINE

The Golden Idol mine, owned by the Verde Inspiration Co., is the property formerly known as the Hillside,  $1\frac{1}{2}$  miles north-northeast of Cherry, at an altitude of 5,400 feet. There appear to be three veins on the property and on one of them an incline 375 feet long has been sunk at a dip of  $35^{\circ}$  W. A stamp mill and a cyanide plant are on the property, which was worked from 1907 to 1910. Pits near the shaft show a 4-foot vein of sheared granite with bunches of quartz. The quartz shows bluish-black streaks of microscopic tourmaline, also a little pyrite and chalcopyrite. It contains solution cavities with limonite. The ore is said to have contained \$7 to \$12 to the ton.

#### CONGER AND INSPIRATION MINES

The Conger mine lies to the northeast of the Golden Idol, across the divide. These two may well be on the same vein system as the Monarch mine. The general strike would be N.  $30^{\circ}$  E. and the dip to the west.

From U.S.G.S. bulletin 782.

#### FEDERAL MINE

The Federal mine, about a mile north of Cherry, at an altitude of 5,600 feet, is said to be owned by Mr. Wombacher, of Cherry. The vein dips south or southwest and is opened by 260-foot incline. It was worked about 1907. The country rock is red and white granite.

#### LEGHORN MINE

The Leghorn mine, now owned by the Arizona Copper-Gold Mines Co., is situated about 2 miles north of Cherry, at an altitude of 5,800 feet. The vein is contained in granite and has been opened by an incline 600 feet long, dipping  $35^{\circ}$  W. In Weed's Mines Handbook for 1922 it is stated that there are 6,000 feet of workings. A Chilean mill has been erected on the property. The mine has had some production. The vein is said to average 2 feet in width. The quartz contains chalcopyrite and gold, but it is probable that difficulties were encountered below the zone of oxidation. Specimens from the dump show abundant solution cavities filled with hematite and secondary quartz. Above the Leghorn is the Ann C. mine, which has similar ore. A short distance north of Cherry a prospect was opened in 1922 by the same company at an altitude of about 5,250 feet, on a sheared vein 4 feet wide, striking north and dipping  $45^{\circ}$  W. This vein contains good bunches of quartz with heavy copper stain, and the ore is said to assay well in copper, gold, and silver.

#### LOGAN MINE

The Logan mine is about 2 miles southwest of Cherry. The vein, like the others, is in granite and dips  $50^{\circ}$  W. The shaft is 286 feet deep on the incline. Decomposed granite and much slightly copper-stained quartz lie on the dump. It is claimed that 6,000 tons of ore are blocked out. There is a small mill on the property, and it was being reopened in 1922 by a company with the suggestive name of the New United Verde Copper Co., which also owns the Lucky dome property not far away.

#### PRESCOTT DISTRICT

#### GEOLOGY

The Prescott district includes the northern foothills of the Bradshaw Mountains between Prescott and Agua Fria River. Prescott lies in the basin of Granite Creek, in the area of massive Bradshaw granite that occupies the southwest corner of the Jerome quadrangle. The granite is adjoined on the east by the north end of a great mass

TIMBER:

Quantities of heavy native timber is available about two miles distant for either fuel purposes or mining timbering.

GEOLOGY:

The various geological formations comprise sedimentary, metamorphic, and igneous rocks, the sediments being of pre-Cambrian Age, and the igneous rocks are of Tertiary Age.

The basic rock or formation is of a distinct gneissic structure, and is commonly called a granitic porphyry. Intrusives of different kinds are mingled together, and these intrusives or dykes include rhyolite porphyry, tuffa, pitchstone, monzonite porphyry, andesite porphyry, andesite and a dark green vitreous ash. Chino limestone overlies a part of the formation and has undoubtedly at one time overlain the entire formation.

The general trend of the veins and dykes are from North to South.

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VEIN SYSTEM:

Numerous veins traverse the property and among these is one very strong fissure vein, having a strike North 20° East with a dip of about 50° to the East. This undoubtedly is the mother vein of this property, and most of the smaller veins can be traced to and called feeders of this principal vein. The vein filling is a bipyramidal and bedded quartz, deeply oxidized, containing high quantity of iron, oxidized to a depth of several hundred feet. The values are in gold with a small percentage of silver always present. The fissure is well defined, being separated from the walls by a gouge. The metallic minerals of the vein filling are pyrites, hematite, limonite, and arsenopyrite.

DEVELOPMENT:

The property is developed by an incline shaft, sunk on the vein on the Lehigh claim to a depth of 600 feet on an

average incline of 45° levels are established at various intervals and lateral drifting on the veins as follows:

at the 100 ft. level, 200 ft. of lateral work has been done from the shaft to the North.

at the 200 ft. level, 200 ft. of lateral work has been done from the shaft to the North, and 200 ft. from the shaft to the South.

at the 300 ft. level, 500 ft. of lateral work has been done from the shaft to the North.

at the 400 ft. level, 100 ft. of lateral work has been done from the shaft to the North.

at the 600 ft. level, 100 ft. of lateral work has been done from the shaft to the South.

All of this lateral work has followed the vein as is in ore.

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A winze connects the second, third and fourth levels 150 ft. to the North of the shaft.

An attached map shows a cross section of the development work, and this summarized is as follows in feet:

Shaft		600 ft.
1st level lateral		200 "
2nd " "		400 "
3rd " "		500 "
4th " "		100 "
<del>5th " "</del>		<del>100 "</del>
Winzes		200 "
TOTAL		2100 ft.

ORE RESERVES:

The developed ore is referred to in conjunction with map attached, as follows:

Block No. 1 lies between the second and fourth level, South of the shaft, and is exposed on three sides, 200 x 200 x 100 feet. The average width of the ore is 2 feet, although the vein is considerably larger than this in places. The average values

in gold from assay taken approximate \$14.00 to the ton. In this block of ground there is 5000 tons.

Block No. 2 lies below the fourth level to bottom of shaft and is triangled and measured 100 x 200 x 4 ft. and contains approximately 3333 tons. Less pieces are encountered between the fourth and sixth levels in the shaft, and it is difficult to estimate average value of ore on account of lack of drifting on sixth level. However, it is safe to estimate an average value of \$12.00 per ton in gold.

Block No. 3 lies above the first level, North of the shaft, and is exposed on two sides. This is measured 100 x 200 x 2 feet. In this block there is 3333 tons of an average value of \$15.00

Block No. 4 lies between the first and second level, to the North of the shaft, and between the shaft and a winze connecting levels. This ore is exposed on four sides, and is measured as 100 x 150 x 2 feet, and contains 2500 tons of an average value of \$15.00 per ton.

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Block No. 5 lies between the second and third level, North of the shaft, and between shaft and winze connecting levels. This ore is also exposed on four sides, and is measured 100 x 500 x 2 feet, and contains 2500 tons of an average value of \$14.00 per ton.

Block No. 6, lies between the second and fourth levels, North of the shaft, and is exposed three sides and triangled and measured as 50 x 200 x 50 x 2 feet, and contains 6666 tons of an average value of \$14.00 per ton.

Block No. 7, lies between the fourth level and the sixth level, North of the shaft, and is exposed three sides, and triangled to measure 500 x 200 x 100 x an average width of 5 feet. In this block there is 1500 tons conservatively, and at an average value of \$12.00 per ton.

On account of lack of lateral work on the sixth level, the values can only be approximated, and they may average a little more or a little less. However, the tonnage estimate is very low



as will be realized when I say that the vein is steadily increasing in width until at the bottom of shaft it is between six and seven feet in width.

Surface indications would indicate that the vein for several hundred feet both to the North and South of shaft is one continuous ore shoot, and the faces of all drifts both to North and South of shaft are in good ore, and especially in the South drifts where very high assays are showing exceptionally rich ore. Some of the assays run from \$100.00 to \$225.00 in gold.

For the purpose of eliminating any chance of over-estimate of values, we shall take an average value of \$12.00 for all ore developed. The ore reserves would then show as follows:

Block No. 1 - 5000 tons @ \$12.00 per ton - value,	\$60,000.00
" " 2 - 3333 " " " " " "	39,996.00
" " 3 - 3333 " " " " " "	39,996.00
" " 4 - 2500 " " " " " "	30,000.00
" " 5 - 2500 " " " " " "	30,000.00
" " 6 - 6666 " " " " " "	79,992.00
" " 7 - 15000 " " " " " "	180,000.00
<b>TOTAL TONS - 33333</b>	<b>TOTAL GROSS VALUE - \$429,984.00</b>

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PRODUCTION COSTS:

The mining and milling and reduction of the above ore reserves will not exceed \$7.00 per ton. This would be divided as follows:

- Mining, including timbering and new development over and above the actual mining of even already developed - - - \$4.00 per ton
- Milling, including loss of 10% of values - - - - - \$3.00 " "

Therefore, a net profit of \$5.00 per ton could be expected on the ore now developed, which would summarize as follows:

33,333 tons at \$5.00 per ton, net profit - - - - -	\$166,665.00
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MILLING AND REDUCTION PROCESS:

The ore is amenable to amalgamation, and concentration, and cyanidation. By grinding to a 70 mesh in a weak solution of cyanide, running over insect amalgamation plates for recovery of the coarse free gold, thence to concentrating tables, thence into cyanide leaching tanks, a saving of from 92 to 95% of the value will be made. Many tests have proved this method.

RECOMMENDATIONS:

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Taking into consideration the fact that the vein is steadily widening with depth, I would recommend that the shaft be sunk immediately to at least 1000 ft. depth, and that lateral work be extended at least 500 ft. in either direction from the shaft on the 600 ft. level to prove the length and continuity of the ore sheet; also that the 1000 ft. or tenth level, have an amount of lateral work of 500 ft. both North and South of shaft. This work can be done for approximately:

400 ft. of sinking - - - - -	\$20,000.00
2000 " " drifting - - - - -	20,000.00
TOTAL - - - - -	\$40,000.00

It is more than likely that at this depth the ore will average better than 6 ft. in width. If it does, this work would prove an additional tonnage of 200,000 tons, and with the values holding as they now are, or increasing as I believe they will, this would then become a large and rich mine.

While this development was being done, a reduction plant of a first unit of 50 tons per 24 hour capacity should be installed, and the present ore reserves warrant such a plant. The total cost of such a plant, together with all necessary mining machinery, building, etc., will not exceed \$40,000.00 if purchased new. Judicious use of a certain amount of good used machinery will greatly cut down this figure. The present known ore reserves

will pay for this plant and carry on the development work above mentioned, and still leave a surplus of around \$100,000.00 not counting the additional ore that the above development will open up.

CONCLUSION:

It must be taken into consideration that the great mines both North and South of this property in this mineralised belt have conclusively proven that the ores go down to a great depth and also that the almost fabulous values at times, are encountered at and below 1000 ft. in depth; therefore, it is reasonable to assume that this property should be no exception.

Therefore, I would say that from the present proven ores, the property is an attractive mining property and that the future possibilities are extremely attractive.

Respectfully submitted,

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