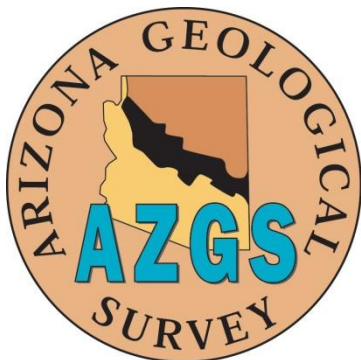




CONTACT INFORMATION

Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

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roughly the same distance northwest and southeast of the shaft. The 600-foot level, however, extends northwestward from the main shaft along the vein, intersecting the surface at a point about 2,400 feet beyond the shaft. Southeast of the shaft this level is reported to extend for 400 feet. No drifts are reported between the 1,200-foot level and the bottom of the shaft (1,400-foot level).

The Golconda vein strikes northwest and dips to the northeast (pl. 18). The angle of dip varies, but it is reported to average about 65° in the underground workings. The vein pinches and swells, ranging in thickness from 2 to 7 feet. On the surface the vein can be traced, chiefly by small prospect pits, for about 4,000 feet. Near its northwest end it splits into several branches, two of which form approximately parallel prongs and have opposing dips. The Oro Plata mine is located on the southwest prong. A branch, about 1,700 feet long, trending in a more northerly direction, is known as the Primrose vein.

The country rock is chiefly the pre-Cambrian complex, mostly granite. Numerous small, irregular bodies of the Ithaca Peak granite, too small to be shown on the geologic map, are exposed on the surface in the area along and adjacent to the trend of the vein.

The principal metallic minerals, as determined chiefly from material on the mine dumps, are sphalerite, galena, pyrite, and chalcopryrite, contained in a milky quartz gangue. Much of the sphalerite is dark brown to almost black. Sphalerite is greatly in excess of galena. This is in marked contrast to the Tennessee-Schuylkill mine, which has produced about the same amount of zinc as the Golconda mine (table 2) yet has produced almost as much lead as zinc.

Information of a general nature indicates that the best ore shoots on the Golconda vein were found northward from the main shaft for about 1,000 feet. Most of the ore has been removed from the surface to the 600-foot level. Reports vary greatly regarding the grade and quantity of ore left in the workings below the 1,000-foot level.

About 500 feet southeast of the shaft on the 700-foot level a crosscut to the southwest connects with the mine workings along the Tubb, or Middle Golconda, vein. One of the higher levels in the Golconda mine also is reported to be connected by a crosscut to the Tubb vein. The Tubb vein roughly parallels the Golconda vein and, like it, dips to the northeast. On the surface the Tubb vein is 350 to 600 feet distant from the Golconda vein. Four levels, with a total of about 3,500 feet of drifts, are reported on the Tubb vein.

GROSS COPPER PROSPECTS

A low-grade deposit of chalcocite occurs on the Gross ranch near the western border of the main exposure of the Ithaca Peak granite

south of Mineral Park. The inaccessible mine workings are reported to consist of a 200-foot shaft and two drifts, each about 600 feet long. One drift is to the east, and the other is to the northeast. The workings were driven in 1926 by the C. and A. Mining Co. No ore has been shipped. Material on the mine dump shows malachite, azurite, and specks of chalcocite disseminated in minor quantities in pyritized and silicified granite. Several veinlets of chalcocite 0.05 to 0.2 inch thick were observed, and one such veinlet is reported to have been 2 inches thick. A few specks or paper-thin stringers of molybdenite also were seen. Native copper, occurring as small leaf forms, is reported to be present in minor quantities but was not observed during the visit to the prospect.

GROSS MOLYBDENITE PROSPECTS

In Bismark Canyon, 1,400 feet east of the Gross ranch house, two adits have been driven to explore a low-grade molybdenite deposit (pl. 18). The work ~~was done~~ about 1926 by the C. and A. Mining Co., but no ore has been shipped. ~~The adit~~ on the north side of the canyon bears almost due north ~~for about~~ 800 feet. Molybdenite occurs most commonly in specks and small stringers in quartz veinlets that cut the Ithaca Peak granite. The veinlets are 0.02 to 1.5 inches thick, but thicknesses of 0.5 inch or less predominate. Some molybdenite occurs in small disseminated specks in the granite or as paper-thin stringers with little or no quartz.

The adit on the south side of the wash is inaccessible but is reported to bear a little east of south. Near its south end a crosscut to the east encounters a rhyolite dike about 20 feet wide in nearby exposures. The material on the dump shows numerous narrow molybdenite-bearing quartz veinlets and stringers of pyrite cutting the rhyolite. The minerals extend into the granite in the same manner that was noted where they are exposed in the adit on the north side of the wash.

HIDDEN TREASURE MINE

The Hidden Treasure mine is nearly 2 miles southeast of Chloride on the lower western slope of the mountains (pl. 18). The property consists of five claims along and bordering the Hidden Treasure vein held by Frank H. Grannis, of Chloride. The mine has been worked intermittently for many years by numerous operators. Schrader (1909, p. 72) reports mining operations prior to his visit to the district in 1907. The mine has produced, in addition to gold, silver, and copper (table 2), a little more than 115 tons of metallic zinc and nearly 80 tons of metallic lead during the period of recorded production from 1901 to 1948.

The mine workings, which were partly accessible when the mine was visited, include several shafts, three crosscutting adits bearing northeast, and three levels vertically spaced about 50 feet apart. Drifts total about 3,000 feet.

The Hidden Treasure vein, on which the mine is located, has an average strike of about N. 50° W. and dips steeply to the northeast. It is correlated with the vein on which the Emerson mine is located (pl. 18). The vein pinches and swells to thicknesses ranging from 0.5 to 15 feet. Many branches and spur veins are disclosed in the underground workings of the Hidden Treasure mine. Crosscuts indicate several thin veins, some of which are probably branches of the main vein, trending about parallel to it. These smaller veins or branches, with few exceptions, could not be traced on the surface.

The country rock is the pre-Cambrian complex of granite, gneiss, schist, and amphibolite. In numerous places the country rock adjoining the vein is greatly altered to sericite or impregnated with pyrite for distances ranging from a fraction of an inch to several feet. Locally seams or thin zones of gouge an inch or two thick border the quartz veins.

The metallic sulfides, which are in a quartz gangue, include pyrite, sphalerite, galena, and minor quantities of chalcopyrite. Ore shoots that were observed in the underground workings are generally small bodies only a few feet long and a foot or less thick consisting of an intimate mixture of the various metallic sulfides and little or no quartz.

KEYSTONE MINE

The Keystone mine is in Mineral Park at an altitude of about 4,375 feet. Schrader (1909, p. 82) states that it was located in 1870 and that its surface ores were very rich in gold and silver, by reason of which it became the first important producer in the district. The mine, consisting of three patented claims, has changed ownership many times and, when visited, was reported to be owned by the Beach Estate. It was then idle, and water filled the underground workings and the shaft to a depth of about 50 feet below the surface. Table 2 indicates that the greatest values have been in silver and gold, although the mine has also produced substantial amounts of copper, lead, and zinc.

The mine was developed by a shaft, reported to be about 400 feet deep, and four levels at 150, 200, 300, and 400 feet. Drifting on the 150-foot level is reported to have reached a distance of 850 feet northwest of the main shaft and 450 feet southeast of it. On the 300-foot level drifts extend about 275 feet both northwest and southeast of the shaft. On the 400-foot level is about 125 feet of drifting,

mostly to the northwest. The greater part of the ore above the 300-foot level is reported to have been worked out.

The vein on which the mine is located strikes northwest and dips to the northeast at angles ranging from about 65° to 80°. About 800 feet northwest of the shaft the vein splits into two main branches; the southern branch dips prevailing to the southwest at a steep angle and near its west end cuts a wide rhyolite dike. Another vein about parallel to the main vein is reported to lie approximately 100 feet northeast of the Keystone shaft, although no evidence could be found of this vein in surface outcroppings northwest of the shaft.

Vein matter on the mine dump is milky quartz with abundant pyrite and lesser amounts of sphalerite, chalcopyrite, and galena. Argentite, although reported to be present in the ore, was not found.

PAYROLL MINE

The Payroll mine is about 1.5 miles east of Chloride, near the head of Payroll Gulch, at an altitude of about 4,500 feet. The property, which includes the patented Payroll and Black Prince claims, is held by the Thomas B. Scott Estate. The property is an old one, having been located in 1887, and much of the early work consisted of shallow diggings along the Payroll vein chiefly for high-grade gold ore. Considerable mining had been done prior to Schrader's (1909, p. 62) visit to the district in 1907, as he reports three shafts, about 400 feet of drifts, over 600 feet of tunnels, and some crosscuts and stopes. The main shaft was 225 feet deep. The mine was idle and the workings were inaccessible when visited by the writer in 1943. The main shaft is now reported to be a little more than 600 feet deep. The mine was developed by four main levels, the 50-, 200-, 400-, and 600-foot levels. Drifting and stoping from these levels has extended chiefly southeastward along the vein, the maximum distance from the shaft being 500 feet on the 600-foot level. The total length of all drifts is reported to be about 2,000 feet.

Production from the mine during the period 1901-48, as given in table 2, shows that during these years the mine was essentially a producer of zinc, although the early, unrecorded production may have been mostly in gold and silver.

The country rock consists of many types of the pre-Cambrian complex, although light-gray, fine-grained granite, dark, medium-grained biotite granite, hornblende schist, and amphibolite predominate. A diabase dike, not shown on the geologic map, is poorly exposed for a short distance along the northeast side of the vein near the main shaft. It could not be found in its projected position on the northwest side of the gulch, and it apparently has been cut off by the northeastward-trending fault shown on plate 18.

RECONSTRUCTION FINANCE CORPORATION

MINING DIVISION

REPORT OF SUPERVISING ENGINEER

Docket No. C-ND-7949 Frank H. Grannis
P. O. Box 147
Chloride, Arizona
Date of Examination . . April 23, 1943
Date of Report May 21, 1943

NOTE: The project has been operating under a preliminary development loan in the sum of \$5,000.00, granted in December, 1942. ~~The loan funds have been expended and the applicant has requested additional funds with which to continue the development.~~

The original application for a loan proposed cleaning out the Emerson Tunnel and this work was accomplished. The length of the tunnel proved to be 437', instead of 950', as reported, and the caved condition in which the work was begun was found to continue practically to the fore. No ore was disclosed during the course of the work and the operations were transferred to the Hidden Treasure property. This tunnel is driven on the Emerson Vein at some 200' higher elevation than the Emerson tunnel. Several caves were cleaned out and the upper Hidden Treasure workings were made accessible through an existing raise at the end of this lower tunnel. *See*

The loan funds have been expended and the borrower has applied for additional funds (application received May 15, 1943) with which to continue the development. The following report is concerned with this application.

1. NAME AND ADDRESS OF APPLICANT

2c-PC
FRANK H. GRANNIS
P. O. Box 147
Chloride, Arizona

Correspondent: Same

2. CHARACTER OF PROJECT

Development of lead-zinc-silver deposit.

3. LOCATION OF MINE

The mine is located in Section 11, T. 23 N., R. 18 W., in the Wallapai Mining District, Mohave County, Arizona. The town of Chloride is four (4) miles northwest from the mine by steep mountain road and the nearest railroad point is at Kingman, Arizona, approximately thirty (30) miles from the mine, via Chloride. The road from Chloride to Kingman is paved highway and the mine is accessible at all seasons, except during rare storms, when the road between Chloride and the mine is sometimes impassable for short periods.

4. APPLICANT

The applicant is a comparatively young man who has had many years of practical milling experience and some, but not a great deal of experience in mining. The work performed under the preliminary development loan has been handled in an efficient manner.

5. LOAN REQUESTED

\$30,000.00, including repayment of preliminary development loan of \$5,000.00.

6. DESCRIPTION OF PROJECT

A. General Features

- (1) There are no mine workings, mill or other appurtenances which are not included in the applicant's ownership.
- (2) The proposed project would comply with State Compensation and Safety-First Statutes.
- (3) There are no apparent legal discrepancies in the project.
- (4) There are no impeded right-of-way facilities.
- (5) There is no likelihood of surface or sub-surface trespass during the project.

B. Existing Development

- (1) The mine is opened by tunnels and a winze.
 - a. The sketch accompanying this report was made from maps furnished by the applicant, supplemented in the more interesting portions with details obtained by compass and tape surveys.
 - b. Samples were cut with pick and maul, and gathered upon canvas.
 - c. The mine was only partially accessible and the accessible portions were in only fair condition.
 - d. General features of the deposit, etc.

The mine is located in the low hills lying on the western edge of the Cerbat Range. The predominant country rock of the immediate locality is a coarse granite, which has been cut by a number of steeply dipping quartz veins striking approximately N. 50 W. The most important of these, known as the "Emerson Vein", is traceable by prominent cropping for several thousand feet on the surface. Practically all of the work on the property has been done upon this vein and its branches.

Past work on the Emerson property consisted

principally of a tunnel on the Emerson Vein with a small stope and a shallow winze (inaccessible) near its portal. There is no record available regarding this production, but it was quite small and the value was in gold with some silver. As noted above in the description of the work performed under the preliminary development loan, nothing of interest was found in the cleaning out of this tunnel. *cleaning*

The Hidden Treasure mine was actively developed during several years, including and prior to 1927. A flotation plant was built near Chloride and an aerial train was constructed from the mine to the mill, which operated during part of 1927. The tonnage treated during that period, as listed by the Salt Lake Office of the U. S. Bureau of Mines, was 9,300 tons with recovered metals: *the*

Gold: . . . 61 oz. Silver: . . . 6,932 oz.
Copper: 6,176 lbs. Lead: 133,500 lbs.
Zinc: 252,174 lbs.

This works out at recoveries per ton of:

<u>Oz. Au.</u>	<u>Oz. Ag.</u>	<u>Lbs. Cu.</u>	<u>Lbs. Pb.</u>	<u>Lbs. Zn.</u>
.01	.75	6.6	14.4	27.1

The project was a promotional enterprise and it is apparent from the above that, even allowing for very poor recoveries, the material treated was far below a commercial grade. Other production from the Hidden Treasure property has consisted of a small amount of sorted gold-silver ore, mined from scattered surficial workings on the vein croppings above the main workings.

The principal workings on the Hidden Treasure property consists of two long crosscuts to the vein and upwards of 3000' of drifting on three (3) levels. Several hundred feet of this drifting was done on parallel or branch veins. Additional work, tributary to these workings, includes several crosscuts and raises, and a two-compartment winze sunk to a depth of 100' with 100' of drifting at that depth. Also, a short tunnel and a number of small irregular openings have been made on the vein croppings above the main workings.

Following is a description of the workings and the sampling: (see accompanying sketch:)

Main Level

A crosscut tunnel is driven into the hill in a northeasterly direction for a distance of 840'. At 615' a strong vein was intersected

and at 720' the main vein was cut. The balance of the crosscut is in barren ground. The first vein at 615' strikes approximately N 50° W and stands almost vertically with a slight inclination Southwest. The vein has been drifted upon for a short distance in both directions. The vein is composed of hard quartz and crushed wall rock with considerable gouge material. It is heavily iron stained throughout and in the southeast drift, it is mineralized with pyrite and sphalerite and galena. Samples Nos. 3 to 8 were cut in the back of the drift. The assays show erratic and generally low values.

The main vein encountered at 720' from the portal of the crosscut has been drifted upon in both directions. The vein strikes about N 50° W and dips 65° NE. Former operators carried on stoping operations above the drift, beginning at a point 80' northwest of the crosscut and extending at least 160' southeast from that point. The drift is caved at 100' Southeast from the crosscut. An old map of this area shows two more stopes on the vein southeast of the presently accessible portion of the drift. The 9,300 tons milled from the property was, no doubt, largely derived from the stopes in this part of the vein.

The stope above the level at the crosscut is inaccessible, except in the northwest portion, where at 20' above the level, the back though caved is visible for a length of 20', showing only low-grade material. The main part of the stope is said to have been carried to a maximum height of 75' and there is no opening to the surface from this stope or the other stopes in the inaccessible part of the drift. Although chutes have been installed at intervals and the ground appears to have been stoped continuously for a length of at least 160', the material mined must have been very poor, judging from the appearance of the muck in the chutes and the samples (Nos. 2B to 5B) cut in the floor of the level, and also from the record of metals recovered in mining this area. The floor of the drift here was covered with debris and some water and could be sampled at only a few places. The samples show very low metal contents and do not indicate the presence of an ore body below the stope.

At 75' northwest from the crosscut, a two-compartment winze has been sunk on the vein to a depth of 100' and about 100' of drifting was done at that level. The shaft was filled with water to within 40' of the level. There was no ore on the level at the collar of the shaft. It is said that the southeast drift was "beginning to come into ore."

the drift connects with
At 360' northwest from the crosscut with the top of a raise from the "Lower Tunnel," hereinafter described. At 140' northwest from the top of this raise a small lens of ore has been stoped above the level for an average height of 35' and a length of 50'. A raise (inaccessible) has been driven on a low slope to connect with the end of the "Thornton Tunnel," hereinafter described, some 35' above this level. Sample No. 3 and B-6 were cut in the floor of the drift below this stope. The assays show fair values across narrow widths.

At 200' northwest from the above described stope, another lens of ore has been mined between this level and the Thornton Tunnel above. The stope is about 35' long and at its highest point, in about the center, it breaks through into a stub crosscut in the hanging wall of the Thornton Tunnel 35' above. Apparently the lens here was thin and irregular. There is no ore remaining in the stope. The location of the break-through into the Thornton Tunnel indicates that the lens lies in the hanging wall of the main vein at a distance of about 10' from it. The balance of the level shows nothing of interest.

Thornton Tunnel

southwesterly
more southerly
The Thornton Tunnel is driven into the hill in a southeasterly direction on the vein. At 120' a branch drift which is driven some 135' in a more southerly direction develops a vein which strikes approximately N 35° W and dips about 65° S.E. A small stope has been opened in the end of this drift. Samples No. 1 and 2 were cut respectively in the end and 20' from the end of the drift. The samples show rather low lead and zinc (sulphide) but good gold values, particularly in Sample No. 2. The ore shoot shows a length of about 30'. The stope is filled and inaccessible.

The main drift at 390' from the portal encounters a thin lense containing sulphides (and some oxidized) iron, zinc and lead. The lens is 18' long. The walls are not definite and the ore streak weaves on strike. Sample No. 1B was cut across the best and widest portion of the lens.

At 365' from the portal a stope has been opened for a length of 60' and a maximum height of 40' above the level. The back of the stope shows thin stringers of sphalerite across a width of 4 or 5', but no ore. Beyond the stope, and to the end of the drift and top of the raise from the level below, the back of the drift has been broken out for a height of

10 to 15' above the level and in places shows stringers of sphalerite with some galena and pyrite. In places these minerals occur in small lenses or pods up to 12" in width. The hanging wall is definite and the foot-wall is irregular. The ground is loose and the mineralization is not sufficiently strong or regular to constitute ore.

Lower Tunnel

A lower tunnel approximately 55' lower than the main level and about 90' below the Thornton Tunnel is driven westerly into the hill. The tunnel begins as a crosscut and at 270' the vein is intersected and a drift continues for a distance of 510' on the vein. At the end of the drift a raise which inclines upward on the vein connects with the main level. There is nothing of interest in the course of the tunnel until at about 640' from the portal a lens of zinc, lead and iron sulphide material is encountered. This lens is exposed continuously for some 60' in the back of the drift. The clean-out job in the drift had not yet reached this point and the working place was very sloppy underfoot and in places dangerously loose overhead. Samples were cut at 10' intervals, except in about the center of the lens where the conditions of the back would not permit sampling. The lens at this point could be seen however with width and grade apparently the same as that shown in the samples on either side. The assay (Nos. B-7 to B-11) showed an average width of 30" and a weighted average metal content of:

<u>Oz. Au.</u>	<u>Oz. Ag.</u>	<u>%Cu.</u>	<u>%Pb.</u>	<u>%Zn.</u>
.13	1.18	.07	2.78	3.28

This lens is evidently the downward extension of the ore which was stoped on the main level above where Samples No. 3 and B-1 were out in the floor of the drift.

C. Proposed Development

The applicant proposes to unwater the winze and drift southwest and southeast on the vein from the 100' level in the winze. Of the amount requested (\$25,000.00) he proposes to spend \$14,800.00 for equipment. The largest equipment item is a Diesel-generator plant costing \$13,800.00 or, alternately, a power line extension into the property, costing about \$7,000.00. There is no developed body of ore in the mine upon which to estimate probable rate of out-put, costs, etc.

- D. There is no equipment on the property, beyond rails, ore car and miscellaneous hand-tools.
- E. In the absence of proven or indicated ore, it

is not possible to estimate probable ore to be developed by the loan.

7. OBJECTIONS TO PROJECT

There is no justification for the proposed development northwest on the 100' level in the winze since the vein on the main level above here shows no mineralization for a distance of some 300' from the present face of the northwest drift in the winze. Justification for the proposed work in a southwest direction in the winze is predicated upon the stoping in this direction above the main level. As pointed out earlier in this report, the available record regarding this work is not favorable and the floor samples show only uninteresting values.

8. COMMENTS OF SUPERVISING ENGINEER

As noted above under "Objections to Project," the proposed work in the winze is not justified by the previous performance record of this part of the mine, nor by the sampling on the level.

The ore showings elsewhere in the mine are too small and low grade and irregular to justify favorable consideration of their further development. It is possible, however, that if a local custom milling outlet becomes available, one or more of these showings might support individual leaser operations at top bonus prices for metals.

An additional loan to the project is not recommended.

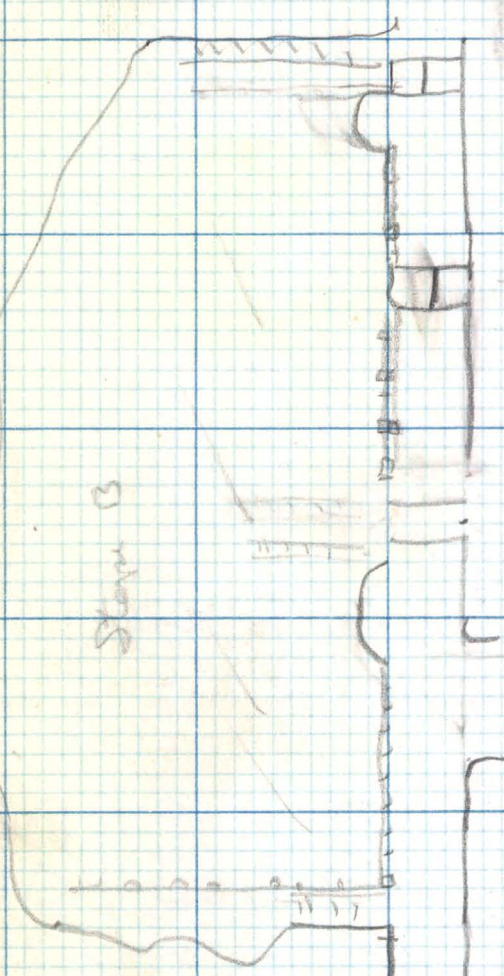
T. P. LANE
Supervising Engineer

Stop A traps just below bridge (Thurston)
 at level is completely oxidized brown
 sulphide. Length about 40' (pieces.)

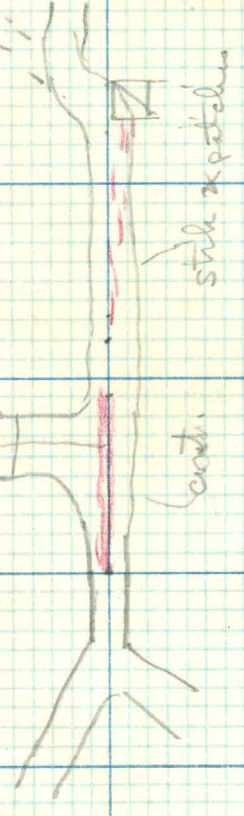
strings & pits (not one)
 w/ lens 4-12" at
 458-468 (piece)
 Fe 2m pt
 mud wall
 much oxidized and

$\rightarrow N 72 \frac{1}{2} W$

X
 top of 10' & 12' day



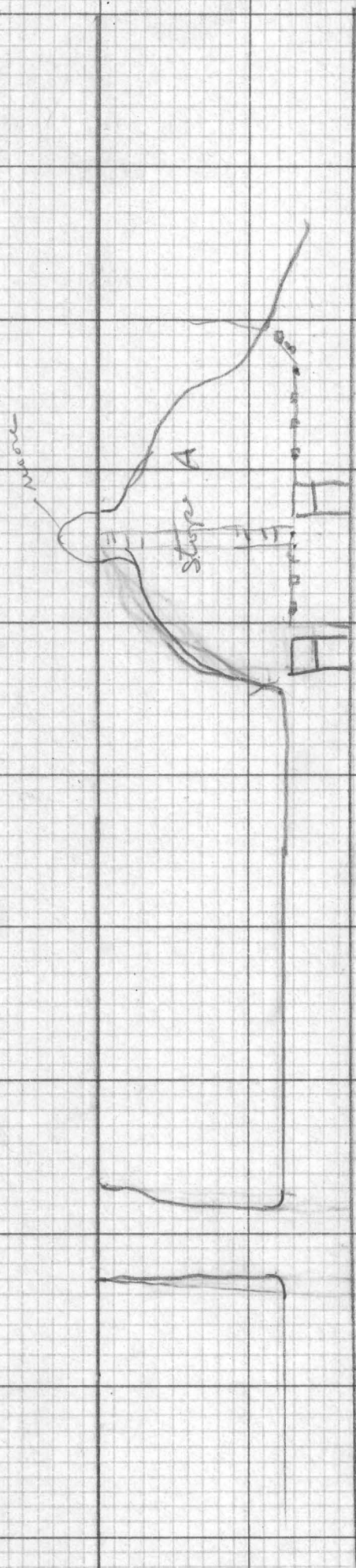
Thurston Tunnel



390 310 330

36
 64
 100

Steps B



Flora shown only regular grade not with sample

A hand-drawn map of a lake on graph paper. The lake is an irregular shape with a small rectangular feature inside. The word "Lake" is written vertically inside the lake area.

X

#1 6' across with 2.5' au + sh

43% Cu

1.22 Pb

.70 Zn

#2 8'

2.1' au +

94% Pb

.72% Zn

15' shift

1.75 au

tr Cu

.41% Pb

.65% Zn

$$\begin{array}{r} 2415.51 \\ 2188.46 \\ \hline 227.05 \end{array}$$

$$\begin{array}{r} 91551 \\ 150000 \\ \hline 41351 \end{array}$$

$$\begin{array}{r} 112684 \\ 6514 \\ \hline 119200 \\ 67256 \\ \hline 186456 \end{array}$$

$$\begin{array}{r} 2633303 \\ 2547000 \\ \hline 96303 \\ 227.05 \\ \hline 119008 \\ 1136.18 \\ \hline 53.90 \end{array}$$

$$218846$$

$$\begin{array}{r} 915.51 \\ 127295 \\ \hline 2188.46 \end{array}$$

$$\begin{array}{r} 4597.90 \\ 4370.85 \\ \hline 227.05 \end{array}$$

$$\begin{array}{r} 24097.91 \\ 22970.55 \\ \hline 1127.36 \end{array}$$

RECONSTRUCTION FINANCE CORPORATION
MINING SECTION
LIQUIDATION REPORT

Borrower: Frank H. Grannis
Docket No: C-MD-7949
Date of Report: May 25, 1945

Hidden Treasure mine

1. NAME AND ADDRESS OF APPLICANT:

Frank H. Grannis
Box 147
Chloride, Arizona

2. LOCATION OF PROJECT:

In Section 11, T. 23 N., R. 18 W., Wallapai Mining District, Mohave County, Arizona, about four miles from Chloride, Arizona.

3. AMOUNT OF LOAN AND DATE OF AUTHORIZATION:

On December 9, 1942, a loan of \$5,000.00 was approved to Borrower.

4. PURPOSES FOR WHICH LOAN WAS EXPENDED:

To clean out and rehabilitate a tunnel on Borrower's property.

5. EQUIPMENT:

a. List of equipment bought with loan funds:

3 tons of track and fish plates.

b. List of equipment on hand worth salvaging:

None

c. List of equipment sold:

All equipment sold in September, 1943.

(See letter of September 10, 1943, to Tully which states:

"Enclosed please find check for \$200.00 made out to the Reconstruction Finance Corporation. This represents the sale of three tons (more or less) of 12# rails and fish plates; about 750' of lumber; a few mine ties and small tools. This is the complete equipment bought under the loan.")

d. No equipment remaining to liquidate.

6. PROPERTY:

Property was held by lease, but on July 24, 1943, Borrower received letter from owners requesting the termination of contract on Hidden Treasure.

7. COMMENTS:

Borrower, on May 19, 1945, sent a letter to Mr. W. B. Gohring stating that he was stopping work on the Hidden Treasure and requesting instructions to close. Mr. Grannis has been operating the property on a royalty basis, leaving 10% of smelter returns and 10% of all premiums

7. COMMENTS: (Cont)

in the bank. On May 24, 1945, a check for \$216.60, representing 10% of all returns, was sent to the Custodian of the Federal Reserve Bank to be credited against Borrower's indebtedness. Borrower shipped 114.4 tons of .13 ounces gold, 9.37 ounces silver, .62% copper, 5.65% lead, and 9.58% zinc which brought \$564.25 in smelter settlements and \$1601.75 in premiums.

On September 24, 1943, Mr. Gohring sent to Washington a check from the Borrower for \$78.78 representing a refund on cancellation of insurance policy. There are no other refunds.

8. CONCLUSION:

The proposed project failed to develop any material quantity of ore and the property is believed to have little merit at the present time; consequently, the loan should be considered a loss.

9. RECOMMENDATION:

It is recommended that this account be closed.

CAR
CHARLES A. RASOR
Supervising Engineer

CAR:gmk

Supervising Engineer Report. A
Frank H. Grannis

Docket No C-NS-7949 Box 1 of 1
Elkridge, Maryland
Date of Examination April 23
Date of Report May 22

Note: The project has been operating under a preliminary development loan in the sum of \$5000 granted in Dec. 1942. The loan funds have been expended and the applicant has requested additional funds with which to continue the development. The original application for loan proposed clearing out the Emerson ^{tunnel} ~~passage~~ and this work was accomplished. ~~The tunnel was found to be cased throughout practically its entire length.~~

NOT

~~This length of the tunnel was found to be 437 feet instead of 950 feet as reported and the cased condition in which the work was begun, was found to continue in that condition practically to the fore. No ore was disclosed by the during the course of the work and the operations were transferred to the lower tunnel on the Hidden Treasure property ~~some on the same vein~~ ~~at some place~~ ~~the portal of this tunnel is on the hillside~~~~

No P

This tunnel is driven on the ~~same~~ ^{Emerson} vein and its portal is ^{at} some 200 feet higher elevation than the Emerson tunnel. Several ~~cores were~~ cleaned out ^{out} ~~up~~ ~~several cores and making the~~ and the upper Hidden Treasure workings were ^{an existing raise at the end of} made accessible than this lower tunnel.

~~The following report~~

P

The loan funds have been expended and the borrower has ~~requested~~ applied ^(application received May 12) for additional funds, with which to continue the development. The following report is concerned with this application.

District No.

C. and F. No.

Title of Project

D. T. of mine

Date of Report

1. Name and Address of Applicant

Name ^{H.O.} Frank Gramis

Address P.O. Box 147

Chloride, Arizona

2. Character of Project

Development of lead-zinc-silver deposit.

3. Location of Mine

The mine is located in sec 11, T. 23 N, R. 18 W., in the Wallapai mining district, Mohave County, Arizona. The town of Chloride is 4 miles northwest from the mine by steep mountain road.

The nearest railroad point is at Kingman, Arizona, approximately 30 miles ^{by road} from the mine via Chloride. The road from ^{Chloride to} Kingman is paved highway. The mine is accessible at all seasons except during rare storm periods when the road between Chloride and the mine is ^{sometimes} impassable for short periods.

4

Applicant

The applicant is a comparatively young man. He has had ~~some~~ ^{of practical} but apparently not a great ^{deal of} experience. ^{many years} ~~much~~ ^{experience} and some ^{experience}. The work performed under the preliminary development ~~work~~ ^{loan} has been handled in an efficient manner.

5

Loan Requested

\$ 30,000, including repayment of preliminary development loan of \$ 5,000.

6.

Description of Project

A. General Features

1. There are no mine workings, mill or other appurtenances which are not included in the applicant's ownership.
2. The ~~project~~ Proposed project would comply with State compensation and Safety-First statutes.
3. There are no apparent legal discrepancies in the project.
4. ~~There are no~~ ^{There are no} ~~liabilities~~ ^{liabilities} of impeded right-of-way facilities.

5

There is no likelihood of surface or sub-surface trespass during the project

B. Existing Development

1. Mine is opened by tunnels and a ~~mine~~.

a. The sketch accompanying this report ~~was made from~~ ~~from~~ maps furnished by the applicant, ~~with~~ supplemented in the more interesting portions with details obtained by compass and tape surveys.

b. Samples were cut with pick and nail and gathered upon canvas.

c. The mine was ~~was~~ only partially accessible and the accessible portions were in only fair condition.

d. General features of deposit etc.

The mine is located in the low hills lying on the western edge of the ~~Carbat~~ range. The predominant country rock of the immediate locality is a coarse granite. The granite has been cut by a number of ^{steeply dipping} ~~near or less~~

~~parallel~~ quartz veins which strike approximately ^{N 50° E} ~~of these~~. The most important ~~one~~ and the one which has received most of the

4

Known as the Emerson vein, is traceable by prominent cropping for several thousand feet on the surface. Practically all of the ~~past~~ work on the project has been done upon this vein and its branches.

P

Past work on the Emerson property consisted principally of a tunnel on the Emerson vein with a small slope and a shallow mine (micaceous) near its portal. There is no record available regarding this production but it was quite small and ^{the} values ^{was} ~~were~~ in gold ~~and possibly~~ ^{with} ~~and~~ ^{and} with some silver. As noted above in the description of the work performed under the preliminary development loan ~~there is~~ nothing of interest ^{was found} ~~exposed~~ in the ~~tunnel~~ clearing out of this tunnel.

The Hidden Treasure mine was actually developed ~~in~~ ^{during} the several years including and prior to 1927. An aerial tramway was built and a flotation plant was built near Chloride and an aerial tram was constructed from the mine to the mill.

~~The statistical records of the~~ The mill

operated ~~for~~ during part of 1927 and ~~the material treated during that period, as~~ ^{listed by the} ^{Salt Lake} office of U.S. ~~the~~ Bureau of Mines, was 9300 tons ~~recovered~~ with recovered metals: Gold 61 oz., silver 6,932 oz., Copper 6,176 lbs., lead 133,500 lbs. and zinc 252,174 lbs. This works out at recovery per ton of:

oz Au	oz Ag	lbs Cu	lbs Pb	lbs Zn
.01	.75	6.6	14.4	27.5

The project was a promotional enterprise and it is apparent from the above that, even if allowance is made for very poor recoveries, the material treated ~~did not~~

Mr P

was far below a commercial grade. Other production from the ~~proper~~ Hidden Treasure property has consisted of a small ~~amount~~ ^{amount} of sorted ~~material~~ ^{gold-silver} ore mined from scattered ~~surface~~ workings on the vein croppings above the main workings.

The principal workings on the Hidden Treasure property consist of two long crosscuts ~~at the~~ ^{to the} vein and upraises ~~approximately~~ ^{of 3000} ~~2835~~ feet of drifting on 3 main levels. Several hundred feet of this drifting was done on parallel or branch veins. Additional ^{tributary to these workings} ~~work~~ includes several crosscuts and raises and a two compartment mine sunk to a depth of 100 feet with 100 feet of drifting at that depth ~~foot level~~. Also, a short tunnel and a ~~small amount~~ ^{number} of ~~small~~ ^{small} irregular openings have been made on the ^{vein} croppings above the main workings. Following

Following is a description of the workings and the sampling: (see accompanying sketch:)

Main Level

A crosscut tunnel is driven into the hill ^{in a northeasterly direction} for a distance of 840 feet. At ~~615~~ ^{at} strong vein was intersected. At ~~750~~ ^{at} the main vein was intersected. At 615 feet 615 feet a strong vein was intersected.

and at 720 feet the main vein was ~~cut~~ ^{cut}.

The balance of the crosscut is in barren ground. The first vein at 615 ft ~~is~~ strikes approximately N 50° W and stands almost vertically with a slight inclination ^{toward} SW. The vein has been drifted upon ^{for a short distance} in

~~(sample)~~ in both directions. The vein is composed of hard quartz and crushed wall rock with ~~and~~ considerable gouge material. It is ~~and~~ heavily iron stained ^{throughout}, and in the southeast drift it is ~~intermixed~~ with pyrite and ~~small amounts of~~ sphalerite and galena. ~~drift and~~ Samples Nos. 3 to 8 were cut in the back of the drift. The assays show erratic and generally low values.

No P

The main vein encountered at 720' from the portal of the crosscut has been ~~therein strikes about N 50° W and dips 65° NE~~ drifted upon in both directions. Former

operators carried on stoping operations above the drift ~~for~~ beginning at a point 60 feet northwest of the crosscut and extending ^{at least}

~~at least~~ 160 feet southeast from that point. The drift is cored ^{at 100 ft SE from the crosscut}.

An old map of this area ~~drifts~~ shows two more stopes on the vein southeast of the ^{presently} accessible portion of the drift.

The stope above the level ^{at the crosscut} is inaccessible except in the northwest

portion where ^{at 20 feet above the level} the back though cored is visible for a length of 20 ft, showing only low grade material. ~~above the level there is no ore to be seen here however~~ The ^{main part of the} stope is said to have

The 930 tons milled from the property was no doubt largely derived from the stopes in this part of the vein.

been carried to a maximum height of
 75 feet and there is no opening
 to the surface from this stope or ~~any~~ the
 other stopes in the inaccessible part of the
~~level drift~~. ~~judging from this fact, the~~
~~and poor grade of material in the chutes~~
 Although chutes have been installed at
 intervals and the ground ^{appears to} has been stoped
 continuously for a length of ~~160~~ at least
 160 feet the material mined ^{must have been} ~~was~~ very
 poor, judging from the appearance of the
 muck in the chutes and the samples
 (Nos 2B to 5B) cut in the floor of the
 level, and also from the record of
 metals recovered in mining this area.
 The floor of the drift ^{here} ~~was~~ covered with
~~muck and debris and some water and~~
~~only could be sampled at only a few~~
~~places. The samples show~~
~~The assays are very low~~ ^{metal contents} ~~and do not~~
 indicate the presence of an ore body below
 the stope.

At 75 feet northward from the
 crosscut a ^{2-compartment} ~~large~~ has been sunk on the
 vein to a depth of 100 feet and about
 100 feet of drifting was done at that
 level. The shaft was filled with water
 to within 40 feet of the level. There
 was no ore on the level at the collar
 of the shaft. It is said that the
 the southeast drift was "beginning to
 come into ore".

At 360 ft. northwest from the crosscut with the top of a raise from the "Lower Tunnel", hereinafter described.

MoP At 140 feet northwest from the top of this raise a small lens of ore has been stopped above the level for an average height of 35 ft and a length of 50 feet. A raise (inaccessible) has been ^{driven} run on a low slope to the connect with the end of the "Thornton Tunnel", hereinafter described, some 35 feet above this level. Sample B-3 and B-6 were cut in the floor of the drift below this slope. The assays show ~~only~~ fair values across narrow widths.

At 200 ft northwest from the above described slope another thin lens of ore has been mined between this level and the Thornton tunnel above. The slope is about 35 feet long and at its highest point, in about the center, it breaks through into a stub crosscut in the hanging wall of the Thornton Tunnel 35 feet above. Apparently the lens ^{here} was thin and irregular. There is no ore remaining in the slope.

The balance of the level shows nothing of interest.

Thornton Tunnel. The Thornton tunnel is driven into the hill in a southwesterly direction on the vein. At 120 feet a branch drift ~~exposes~~ which is driven some 135 ft in a southeasterly direction develops a vein which

from the position of the break-through into the hanging wall of the vein indicates that the lens paralleled the main vein to a distance of about 10 feet from it.

strikes approximately $N 35^{\circ} W$ and dips about $65^{\circ} SE$. A small slope has been opened in the end of this drift. Samples 1 and 2 were cut ~~in the~~ respectively in the end and 20 from the end of the drift. The samples show rather low lead and zinc (sulphide) but good gold values, particularly ~~low~~ in sample No. 2. The ore shoot shows a length of about 30 feet. The slopes filled and inaccessible.

The main drift at 340 feet from the portal encounters a thin lens of ~~zinc iron and lead sulphide~~ ^{material} with some oxidized containing ~~iron zinc and~~ containing sulphides (and some oxidized) iron, zinc, and lead, with sulphides predominating. The lens is ~~an~~ 18 feet long. Sample No. 1B was cut ~~out in the~~ ^{at the} center of the lens and appears to represent the average. The lens is ~~the ore streak~~. The walls are not definite and the ore streak weaves on strike. Sample No. 1B was cut across the best and widest portion in the center of the lens. ~~is~~ ?

At 365 feet from the portal a slope has been opened for a length of 60 feet and a ^{maximum} height of 40 feet above the level. The back of the slope shows ^{thin} stringers of sp. white across a width of 4 or 5 feet and to the end of the drift and top of the raise from the level below but no ore. Beyond the slope ^{same} the back of the drift has been broken out

The position of the lens is through

a height
for 10 to 15 feet above the level, and in
places shows stringers of sphalerite with some
galena ^{and pyrite}. In places these ~~sulphide stringers~~ the
minerals occur in small lenses or pods up to
12 inches in width. The ~~ground is fairly hanging~~
wall is definite ~~but the~~ and the foot wall
is irregular. The ground is loose and the
mineralization is not sufficiently strong or
regular to constitute ore.

Lower Tunnel. A lower tunnel approximately
~~550~~ feet lower than the Main level and about
90 feet below the Thornton tunnel is
driven westerly into the hill. ~~at 270 feet~~
~~from the portal~~ the tunnel begins
as a crosscut and at 270 feet the vein
is intersected and a drift continues
for a distance of 510 ft on the vein. At
the end of the drift a raise ^{which} inclines
upward ~~on the~~ on the vein connects
with the Main level. There is nothing
of interest ^{in the course of} ~~in the~~ the tunnel until at
about 640 ^{ft} from the portal a lens of zinc,
lead and ^{iron} sulphide material is encountered.
This lens ~~continues for some~~ is exposed
continuously for some 60 ft in the back of the drift.
~~Samples were cut across the lens at~~
~~10 foot intervals except in~~
The clean out job in the drift had not
~~been carried~~ not reached this ^{point} place
and as a consequence the working

place was very sloppy underfoot and in places dangerously loose overhead. Samples were cut at 10 foot intervals except in ~~about~~ ^{at this point} about the center of the lens where the conditions of the rock would not permit sampling. The lens ^{at this point} could be seen ~~to~~ ^{down} ~~the~~ with width and grade apparently the same as that shown in the samples on either side. The assay (Nos B-7 to B-11) showed an ~~average~~ average mill of 30" and a weighted average metal content of:

Oz Au	Oz Ag	% Cu	% Pb	% Zn
.13	1.18	.07	2.78	3.28

This lens is evidently the downward extension of the ore which was stoped on the main level above ~~the~~ where samples 3 and B-1 were cut in the floor of the drift.

C. Proposed Development

The applicant proposes to unwater the mine and drift Southwest and Southeast ~~from the 100 Ft. level in the mine.~~ on the vein. Of the amount requested (\$25,000) he proposes to spend \$14,800 for equipment. The largest equipment ~~item~~ ^{is a} Diesel-generator plant costing \$13,800, or, alternately, ~~or~~ a power line extension into the property costing about \$7,000.

There is no developed body of ore in the mine upon which to estimate probable rate of output, costs etc.

D. There is no equipment on the property beyond rails, ~~one~~ car and miscellaneous hand tools.

F. ~~It is so~~
For the absence of ~~a developed ore~~^{proved} ~~or as~~ indicated on ~~body~~ it is not possible to estimate probable ore to be developed by the loan.

Objections to Project

There is no justification ^{wherein} for ~~and~~ the proposed development northwest on the 100 Ft. level in the mine since ^{the} vein on the main level ^{above here} ~~does not~~ in this direction shows no mineralization for a distance of some 300 feet from the present face of the northwest ~~vein~~ drift in the mine. ~~As if the proposed development southeast in the mine~~ Justification for the proposed work in a southeast direction ~~from~~ in the mine is predicated upon the stoping in this direction ^{above} ~~on~~ the main level. As ^{printed out} ~~noted~~ earlier in this report the ^{available} records regarding this work is not ~~very impressive~~, favorable and the floor samples show only uninteresting values.

Comments of Supervising Engineer

As noted above under "Objections to Project" the proposed work in the mine area is not justified by any of the previous performance ^{record} of this part of the mine nor by the sampling on the level below the

~~If the property offers any interest in any possibilities which the project might have would result to~~

~~The showings elsewhere in the mine are ~~too~~ small and low grade and irregular to justify favorable consideration of their ^{further} development.~~

Mr. P ~~It seems possible, that, however, that with top bonus prices for metal, one or more of these showings might support individual ^{and} ~~lesser~~ operations, providing a ^{local} custom milling outlet for the ^{one} becomes available.~~

~~An additional loan to the project is not recommended.~~

Mr. P The ^{one} showings elsewhere in the mine are too small and low grade and irregular to justify favorable consideration of their further development. It ~~is~~ possible however that, if a local custom milling outlet for the ~~one~~ becomes available, one or more of these showings might

support individual lease operations
at top bonus prices for metals.

An additional loan to the
project is not recommended.

RECONSTRUCTION FINANCE CORPORATION

MINING DIVISION

REPORT OF SUPERVISING ENGINEER

Docket No. C-ND-7949 . . . Frank H. Grannis
Date of Examination . . . April 23, 1943
Date of Report . . . May 22, 1943

NOTE: The project has been operating under a preliminary development loan in the sum of \$5,000.00, granted in December, 1942.

The original application for a loan proposed cleaning out the Emerson Tunnel and this work was accomplished. The length of the tunnel proved to be 437', instead of 950', as reported, and the caved condition in which the work was begun was found to continue practically to the face. No ore was disclosed during the course of the work and the operations were transferred to the "Hidden Treasure" property. This tunnel is driven on the Emerson Vein at some 200' higher elevation than the Emerson Tunnel. Several caves were cleaned out and the upper Hidden Treasure workings were made accessible through an existing raise at the end of this lower tunnel.

The loan funds have been expended and the borrower has applied for additional funds (application received May 15, 1943) with which to continue the development. The following report is concerned with this application.

1. NAME AND ADDRESS OF APPLICANT

FRANK H. GRANNIS
P. O. Box 147
Chloride, Arizona

Correspondent: Same

2. CHARACTER OF PROJECT

Development of lead-zinc-silver deposit.

3. LOCATION OF MINE

The mine is located in Section 11, T. 23 N., R. 18 W., in the Wallapai Mining District, Mohave County, Arizona. The town of Chloride is four (4) miles northwest from the mine by steep mountain road and the nearest railroad point is at Kingman, Arizona, approximately thirty (30) miles from the mine, via Chloride. The road from Chloride to Kingman is paved highway and the mine is accessible at all seasons, except during rare storms, when the road between Chloride and the mine is sometimes impassable for short periods.

RECONSTRUCTION FINANCE CORPORATION

MINING DIVISION

REPORT OF SUPERVISING ENGINEER

Docket No. C-ND-7949 Frank H. Grannis
P. O. Box 147
Chloride, Arizona
Date of Examination . . April 23, 1943
Date of Report May 21, 1943

NOTE: The project has been operating under a preliminary development loan in the sum of \$5,000.00, granted in December, 1942. ~~The loan funds have been expended and the applicant has requested additional funds with which to continue the development.~~

The original application for a loan proposed cleaning out the Emerson Tunnel and this work was accomplished. The length of the tunnel proved to be 437', instead of 950', as reported, and the caved condition in which the work was begun was found to continue practically to the fore. No ore was disclosed during the course of the work and the operations were transferred to the Hidden Treasure property. This tunnel is driven on the Emerson Vein at some 200' higher elevation than the Emerson tunnel. Several caves were cleaned out and the upper Hidden Treasure workings were made accessible through an existing raise at the end of this lower tunnel. *Done*

The loan funds have been expended and the borrower has applied for additional funds (application received May 15, 1943) with which to continue the development. The following report is concerned with this application.

1. NAME AND ADDRESS OF APPLICANT

FRANK H. GRANNIS
P. O. Box 147
Chloride, Arizona

Correspondent: Same

2. CHARACTER OF PROJECT

Development of lead-zinc-silver deposit.

3. LOCATION OF MINE

The mine is located in Section 11, T. 23 N., R. 18 W., in the Wallapai Mining District, Mohave County, Arizona. The town of Chloride is four (4) miles northwest from the mine by steep mountain road and the nearest railroad point is at Kingman, Arizona, approximately thirty (30) miles from the mine, via Chloride. The road from Chloride to Kingman is paved highway and the mine is accessible at all seasons, except during rare storms, when the road between Chloride and the mine is sometimes impassable for short periods.

4. APPLICANT

The applicant is a comparatively young man who has had many years of practical milling experience and some, but not a great deal of experience in mining. The work performed under the preliminary development loan has been handled in an efficient manner.

5. LOAN REQUESTED

\$30,000.00, including repayment of preliminary development loan of \$5,000.00.

6. DESCRIPTION OF PROJECT

A. General Features

- (1) There are no mine workings, mill or other appurtenances which are not included in the applicant's ownership.
- (2) The proposed project would comply with State Compensation and Safety-First Statutes.
- (3) There are no apparent legal discrepancies in the project.
- (4) There are no impeded right-of-way facilities.
- (5) There is no likelihood of surface or sub-surface trespass during the project.

B. Existing Development

- (1) The mine is opened by tunnels and a winze.
 - a. The sketch accompanying this report was made from maps furnished by the applicant, supplemented in the more interesting portions with details obtained by compass and tape surveys.
 - b. Samples were out with pick and maul, and gathered upon canvas.
 - c. The mine was only partially accessible and the accessible portions were in only fair condition.
 - d. General features of the deposit, etc.

The mine is located in the low hills lying on the western edge of the Cerbat Range. The predominant country rock of the immediate locality is a coarse granite, which has been cut by a number of steeply dipping quartz veins striking approximately N. 50 W. The most important of these, known as the "Emerson Vein", is traceable by prominent cropping for several thousand feet on the surface. Practically all of the work on the property has been done upon this vein and its branches.

Past work on the Emerson property consisted

principally of a tunnel on the Emerson Vein with a small stope and a shallow winze (inaccessible) near its portal. There is no record available regarding this production, but it was quite small and the value was in gold with some silver. As noted above in the description of the work performed under the preliminary development loan, nothing of interest was found in the cleaning out of this tunnel. *cleaning*

The tonnage treated during
The Hidden Treasure mine was actively developed during several years, including and prior to 1927. A flotation plant was built near Chloride and an aerial train was constructed from the mine to the mill, which operated during part of 1927. The tonnage treated during that period, *the* as listed by the Salt Lake Office of the U. S. Bureau of Mines, was 9,300 tons with recovered metals:

Gold: . . . 61 oz.	Silver: .6,932 o:
Copper: 6,176 lbs.	Lead: 133,300 lbs.
Zinc: 252,174 lbs.	

This works out at recoveries per ton of:

<u>Oz. Au.</u>	<u>Oz. Ag.</u>	<u>Lbs. Cu.</u>	<u>Lbs. Pb.</u>	<u>Lbs. Zn.</u>
.01	.75	6.6	14.4	27.1

The project was a promotional enterprise and it is apparent from the above that, even allowing for very poor recoveries, the material treated was far below a commercial grade. Other production from the Hidden Treasure property has consisted of a small amount of sorted gold-silver ore, mined from scattered surficial workings on the vein croppings above the main workings.

The principal workings on the Hidden Treasure property consists of two long crosscuts to the vein and upwards of 3000' of drifting on three (3) levels. Several hundred feet of this drifting was done on parallel or branch veins. Additional work, tributary to these workings, includes several crosscuts and raises, and a two-compartment winze sunk to a depth of 100' with 100' of drifting at that depth. Also, a short tunnel and a number of small irregular openings have been made on the vein croppings above the main workings.

Following is a description of the workings and the sampling: (see accompanying sketch:)

Main Level

A crosscut tunnel is driven into the hill in a northeasterly direction for a distance of 840'. At 615' a strong vein was intersected

and at 720' the main vein was out. The balance of the crosscut is in barren ground. The first vein at 615' strikes approximately N 50° W and stands almost vertically with a slight inclination Southwest. The vein has been drifted upon for a short distance in both directions. The vein is composed of hard quartz and crushed wall rock with considerable gouge material. It is heavily iron stained throughout and in the southeast drift, it is mineralized with pyrite and sphalerite and galena. Samples Nos. 3 to 8 were out in the back of the drift. The assays show erratic and generally low values. N

The main vein encountered at 720' from the portal of the crosscut has been drifted upon in both directions. The vein strikes about N 50° W and dips 65° NE. Former operators carried on stoping operations above the drift, beginning at a point 60' northwest of the crosscut and extending at least 160' southeast from that point. The drift is caved at 100' Southeast from the crosscut. An old map of this area shows two more stopes on the vein southeast of the presently accessible portion of the drift. The 9,300 tons milled from the property was, no doubt, largely derived from the stopes in this part of the vein.

The stope above the level at the crosscut is inaccessible, except in the northwest portion, where at 20' above the level, the back though caved is visible for a length of 20', showing only low-grade material. The main part of the stope is said to have been carried to a maximum height of 75' and there is no opening to the surface from this stope or the other stopes in the inaccessible part of the drift. Although chutes have been installed at intervals and the ground appears to have been stoped continuously for a length of at least 160', the material mined must have been very poor, judging from the appearance of the muck in the chutes and the samples (Nos. 2B to 5B) out in the floor of the level, and also from the record of metals recovered in mining this area. The floor of the drift here was covered with debris and some water and could be sampled at only a few places. The samples show very low metal contents and do not indicate the presence of an ore body below the stope.

At 75' northwest from the crosscut, a two-compartment winze has been sunk on the vein to a depth of 100' and about 100' of drifting was done at that level. The shaft was filled with water to within 40' of the level. There was no ore on the level at the collar of the shaft. It is said that the southeast drift was "beginning to come into ore." about

the drift connects with
the drift connects

At 360' northwest from the crosscut with the top of a raise from the "Lower Tunnel," hereinafter described. At 140' northwest from the top of this raise a small lens of ore has been stoped above the level for an average height of 35' and a length of 50'. A raise (inaccessible) has been driven on a low slope to connect with the end of the "Thornton Tunnel," hereinafter described, some 35' above this level. Sample No. 3 and B-6 were out in the floor of the drift below this stop. The assays show fair values across narrow widths.

At 200' northwest from the above described stop, another lens of ore has been mined between this level and the Thornton Tunnel above. The stop is about 35' long and at its highest point, in about the center, it breaks through into a stub crosscut in the hanging wall of the Thornton Tunnel 35' above. Apparently the lens here was thin and irregular. There is no ore remaining in the stop. The location of the break-through into the Thornton Tunnel indicates that the lens lies in the hanging wall of the main vein at a distance of about 10' from it. The balance of the level shows nothing of interest.

Thornton Tunnel

on the south
more south

The Thornton Tunnel is driven into the hill in a southeasterly direction on the vein. At 120' a branch drift which is driven some 135' in a more southerly direction develops a vein which strikes approximately N 35° W and dips about 65° S.E. A small stop has been opened in the end of this drift. Samples No. 1 and 2 were out respectively in the end and 20' from the end of the drift. The samples show rather low lead and zinc (sulphide) but good gold values, particularly in Sample No. 2. The ore shoot shows a length of about 30'. The stop is filled and inaccessible.

The main drift at 390' from the portal encounters a thin lense containing sulphides (and some oxidized) iron, zinc and lead. The lens is 18' long. The walls are not definite and the ore streak weaves on strike. Sample No. 1B was out across the best and widest portion of the lens.

At 365' from the portal a stop has been opened for a length of 60' and a maximum height of 40' above the level. The back of the stop shows thin stringers of sphalerite across a width of 4 or 5', but no ore. Beyond the stop, and to the end of the drift and top of the raise from the level below, the back of the drift has been broken out for a height of

10 to 15' above the level and in places shows stringers of sphalerite with some galena and pyrite. In places these minerals occur in small lenses or pods up to 12" in width. The hanging wall is definite and the foot-wall is irregular. The ground is loose and the mineralization is not sufficiently strong or regular to constitute ore.

Lower Tunnel

A lower tunnel approximately 85' lower than the main level and about 90' below the Thornton Tunnel is driven westerly into the hill. The tunnel begins as a crosscut and at 270' the vein is intersected and a drift continues for a distance of 510' on the vein. At the end of the drift a raise which inclines upward on the vein connects with the main level. There is nothing of interest in the course of the tunnel until at about 640' from the portal a lens of mine, lead and iron sulphide material is encountered. This lens is exposed continuously for some 60' in the back of the drift. The clean-out job in the drift had not yet reached this point and the working place was very sloppy underfoot and in places dangerously loose overhead. Samples were out at 10' intervals, except in about the center of the lens where the conditions of the back would not permit sampling. The lens at this point could be seen however with width and grade apparently the same as that shown in the samples on either side. The assay (Nos. B-7 to B-11) showed an average width of 30" and a weighted average metal content of:

<u>Oz. Au.</u>	<u>Oz. Ag.</u>	<u>%Cu.</u>	<u>%Pb.</u>	<u>%Zn.</u>
.13	1.18	.07	2.78	3.28

This lens is evidently the downward extension of the ore which was stoped on the main level above where Samples No. 3 and B-1 were out in the floor of the drift.

C. Proposed Development

The applicant proposes to unwater the winze and drift southwest and southeast on the vein from the 100' level in the winze. Of the amount requested (\$25,000.00) he proposes to spend \$14,800.00 for equipment. The largest equipment item is a Diesel-generator plant costing \$13,800.00 or, alternately, a power line extension into the property, costing about \$7,000.00. There is no developed body of ore in the mine upon which to estimate probable rate of out-put, costs, etc.

- D. There is no equipment on the property, beyond rails, ore car and miscellaneous hand-tools.
- E. In the absence of proven or indicated ore, it

is not possible to estimate probable ore to be developed by the loan.

7. OBJECTIONS TO PROJECT

There is no justification for the proposed development northwest on the 100' level in the winze since the vein on the main level above here shows no mineralization for a distance of some 300' from the present face of the northwest drift in the winze. Justification for the proposed work in a southwest direction in the winze is predicated upon the stoping in this direction above the main level. As pointed out earlier in this report, the available record regarding this work is not favorable and the floor samples show only uninteresting values.

8. COMMENTS OF SUPERVISING ENGINEER

As noted above under "Objections to Project," the proposed work in the winze is not justified by the previous performance record of this part of the mine, nor by the sampling on the level.

The ore showings elsewhere in the mine are too small and low grade and irregular to justify favorable consideration of their further development. It is possible, however, that if a local custom milling outlet becomes available, one or more of these showings might support individual lesser operations at top bonus prices for metals.

An additional loan to the project is not recommended.

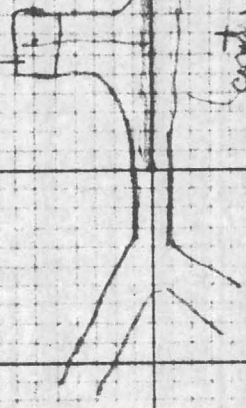
T. F. LANE
Supervising Engineer

Stage A. Top of ...
 off level is completely ...
 sulphide. length about 40' (vertical)

Stage B. ...
 w/ lens 4-12" at
 455-468 (min)
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 mud milled
 mud. or idyllic mud

N 72 1/2 W

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cont.

still ...

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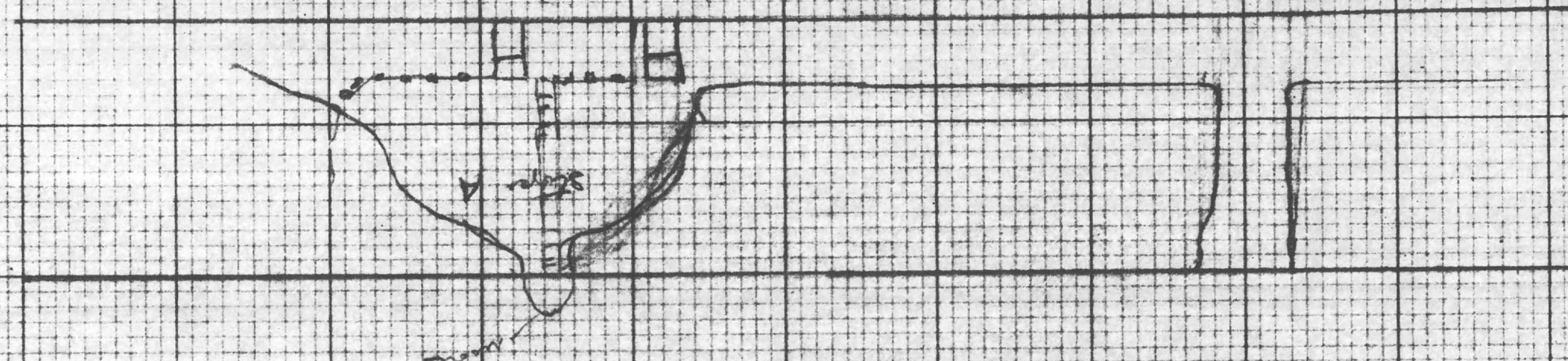
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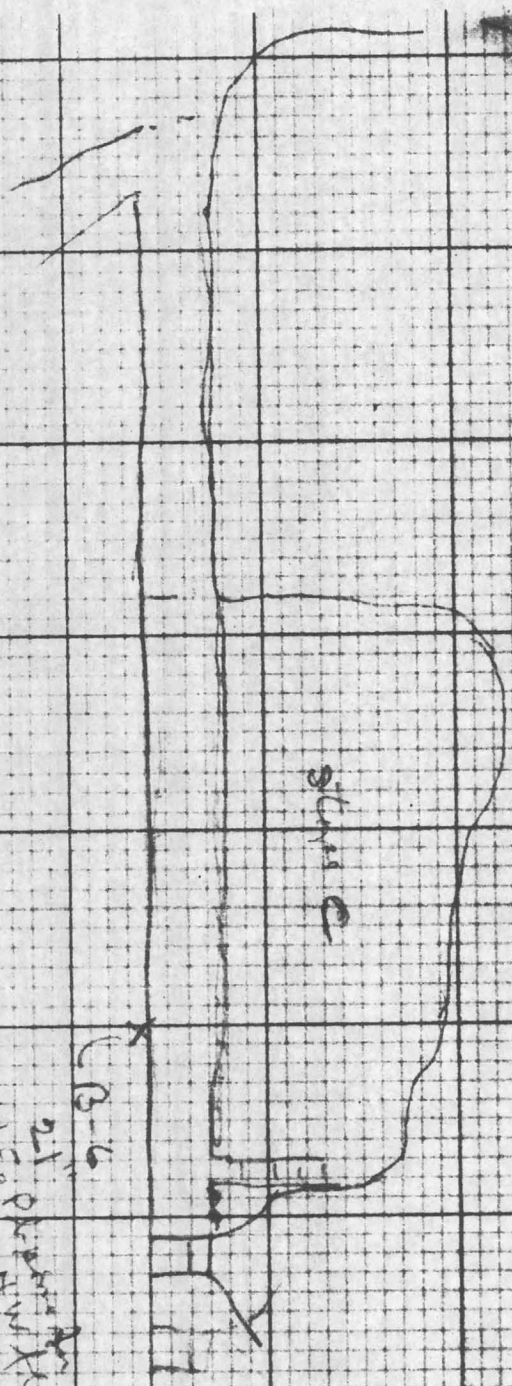
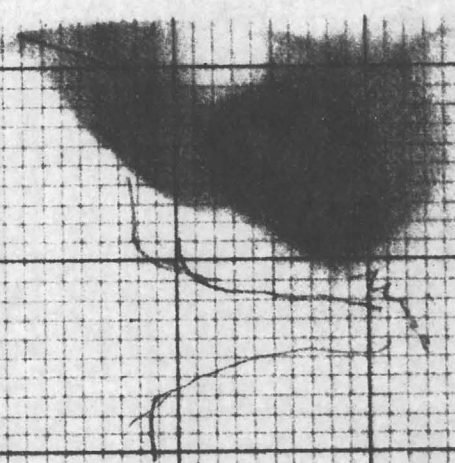
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From office only my low grade not
with supply



3-1-63



stems

B-4

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2-98
2-99
2-100

#1 6 acres with 2.5' out 54

43% cu

1.22 Pb

.70 Zn

#2 8'

2.1' out

94% Pb

.72% Zn

15' shaft

1.75' out

61% cu

.41% Pb

.65% Zn

RECONSTRUCTION FINANCE CORPORATION
MINING SECTION
LIQUIDATION REPORT

Borrower: Frank H. Grannis
Docket No: C-ED-7949
Date of Report: May 25, 1945

Hidden Treasure mine

1. NAME AND ADDRESS OF APPLICANT:

Frank H. Grannis
Box 147
Chloride, Arizona

2. LOCATION OF PROJECT:

In Section 11, T. 23 N., R. 18 W., Wallapai Mining District, Mohave County, Arizona, about four miles from Chloride, Arizona.

3. AMOUNT OF LOAN AND DATE OF AUTHORIZATION:

On December 9, 1942, a loan of \$5,000.00 was approved to Borrower.

4. PURPOSES FOR WHICH LOAN WAS EXPENDED:

To clean out and rehabilitate a tunnel on Borrower's property.

5. EQUIPMENT:

a. List of equipment bought with loan funds:

3 tons of track and fish plates.

b. List of equipment on hand worth salvaging:

None

c. List of equipment sold:

All equipment sold in September, 1943.

(See letter of September 10, 1943, to Tully which states:

"Enclosed please find check for \$200.00 made out to the Reconstruction Finance Corporation. This represents the sale of three tons (more or less) of 12' rails and fish plates; about 750' of lumber; a few mine ties and small tools. This is the complete equipment bought under the loan.")

d. No equipment remaining to liquidate.

6. PROPERTY:

Property was held by lease, but on July 24, 1943, Borrower received letter from owners requesting the termination of contract on Hidden Treasure.

7. COMMENTS:

Borrower, on May 19, 1945, sent a letter to Mr. W. B. Gehring stating that he was stopping work on the Hidden Treasure and requesting instructions to close. Mr. Grannis has been operating the property on a royalty basis, leaving 10% of smelter returns and 10% of all premiums

Frank H. Grannis
Doclet No. C-111-7919

Liquidation Report
May 25, 1945

7. COMMENTS: (Cont.)

in the bank. On May 21, 1945, a check for \$216.60, representing 10% of all returns, was sent to the Custodian of the Federal Reserve Bank to be credited against Borrower's indebtedness. Borrower shipped 114.4 tons of .13 ounces gold, 9.37 ounces silver, .62% copper, 5.65% lead, and 9.50% zinc which brought \$541.25 in smelter settlements and \$1601.75 in premiums.

On September 21, 1943, Mr. Gehring sent to Washington a check from the Borrower for \$70.78 representing a refund on cancellation of insurance policy. There are no other refunds.

8. CONCLUSION:

The proposed project failed to develop any material quantity of ore and the property is believed to have little merit at the present time; consequently, the loan should be considered a loss.

9. RECOMMENDATION:

It is recommended that this account be closed.

CAR
CHARLES A. RASOR
Supervising Engineer

CAR:gak

Superior Engineer Report

Frank H. Grannis

A

Docket No C-NO-7949 Box 147

Date of Examination April 23

Date of Report May 22

Note: The project has been operating under a preliminary development loan in the sum of \$5000 granted in Dec. 1942. The loan funds have been expended and the applicant has requested additional funds with which to continue the development. ~~The original application for a loan proposed clearing out the Emerson ^{tunnel} and this work was accomplished. ~~The tunnel ^{was} found to be ~~practically~~ its entire length. This length ^{of the tunnel} was found to be 437 feet instead of 950 feet as reported and the ~~condition~~ ^{condition} in which the work was begun was found to continue in that condition practically to the fore. No ore was disclosed by the during the course of the work and the operations were transferred to the lower tunnel on the Hidden Treasure property ~~and the~~ ~~the same vein ~~was~~ ~~at~~ ~~was~~ ~~also~~~~ ~~the portal of this tunnel is on the hillside~~~~~~

MRP

This tunnel is driven on the ~~same~~ ^{Emerson} vein and its portal is ^{at} some 200 feet higher elevation than the Emerson tunnel. Several cross veins cleaned out ~~up several cross veins and making the~~ and the upper Hidden Treasure workings were made accessible thru ^{an existing raise at the end of} this lower tunnel.

~~The following report~~

Q

The loan funds have been expended and the borrower has ~~requested~~ ^{applied} for additional funds ^(Application received May 12) into which to continue the development. The following report is concerned with this application.

1. Name and Address of Applicant

Name Frank ^{H.} Grammis
Address P.O. Box 147
Chloride, Arizona

2. Character of Project

Development of lead-zinc-silver deposit

3. Location of Mine

The mine is located in sec 11, T. 23N.
R. 18 W., in the Mollapai Mining District,
Mohave County, Arizona. The town
of Chloride is 4 miles northwest from
the mine by steep mountain road.
The nearest railroad point is at
Kingman, Arizona, approximately 30
miles ^{from} the mine via Chloride. The
road from ^{Chloride to} Kingman is paved highway.
The mine is accessible at all seasons
except during rare storm periods
when the road ~~from~~ between Chloride
and the mine is ^{sometimes} impassable for short
periods.

4

Applicant

The applicant is a comparatively young man. He has had ~~some~~ ^{of practical} but apparently not a great deal of ^{experience} many years ^{experience} and some ^{experience} ^{exp}. The work performed under the preliminary development ~~work~~ ^{loan} has been handled in an efficient manner.

5

Loan Requested

\$ 30,000, including repayment of preliminary development loan of \$ 5,000.

6

Description of ProjectA. General Features

1. There are no mine workings, mill or other appurtenances which are not included in the applicant's ownership.
2. The ~~proposed~~ ^{proposed} project would comply with State compensation and Safety-First statutes.
3. There are no apparent legal discrepancies in the project.
4. ~~There are no~~ ^{There are no} ~~likelihood of~~ ^{likelihood of} impeded right-of-way facilities.

5

There is no likelihood of surface or sub-surface trespass during the project

B. Existing Development

1. Mine is opened by tunnels and a ~~mine~~ ^{winze}.

a. The sketch accompanying this report ~~was made from~~ ^{was made from} ~~traces~~ ^{traces} maps furnished by the applicant, ~~with~~ ^{with} supplemented in the mine interesting patterns, with details obtained by compass and tape surveys.

b. Samples were cut with pick and maul and gathered upon canvas.

c. The mine was ~~was~~ only partially accessible and the accessible portions were in only fair condition.

d. General features of deposit etc.

The mine is located in the low hills lying on the western edge of the ~~Carbat~~ ^{Carbat} range. The predominant country rock of the immediate locality is a coarse granite. The granite has been cut by a number of ^{steeply dipping} ~~near or low~~

~~parallel quartz veins which strike approximately N 50° E~~ ^{of these} ~~and the one which has received most of the~~ ^{the most important}

4

Known as the Emerson vein, ^{is} traceable by prominent cropping for several thousand feet on the surface. Practically all of the ~~past~~ work on the property has been done upon this vein and its branches.

Past work on the Emerson property consisted principally of ^a tunnel on the Emerson vein with a small stop and a shallow ^{unif.} (unif.) near its portal. There is no record available regarding this production but it was quite small and the ^{was} values ~~was~~ in gold ~~and~~ ^{with} ~~and~~ ^{possibly} with some silver. As noted above in the description of the work performed under the preliminary development loan ~~there is~~ nothing of interest ^{was found} ~~appeared~~ in the ~~tunnel~~ clearing out of this tunnel.

The Hidden Treasure mine was actually developed ^{during} ~~the~~ several years including and prior to 1927. ~~An aerial tramway was built and~~ A flotation plant was built near Chloride and an aerial tram was constructed from the mine to the mill.

~~The statistical records of the~~ The mill

operated ~~for~~ during part of 1927 and ~~the material treated~~ ^{as} listed by the ^{salt lake} office of U.S. the Bureau of Mines, was 9300 tons ~~recovered~~ with recovered metals: Gold 61.03 lbs, silver 6,932.00 lbs, Copper 6,176 lbs., lead 433,500 lbs. and zinc 252,174 lbs. This works out at recovery percent of:

oz Au	oz Ag	lb Cu	lb Pb	lb Zn
.01	.75	6.6	14.4	27.5

The project was a promotional enterprise and it is apparent from the above that, even ~~if~~ allowance is made for very poor recoveries, the material treated ~~did not~~

Mr P

was far below a commercial grade.
The production from the paper Hidden
Treasure property has consisted of a
small ^{amount} ~~tonnage~~ of sorted ^{gold-silver} material or
mined from scattered superficial workings
on the vein cropping above the main workings.

The principal workings on the
Hidden Treasure property consist of
two long ~~adits~~ ^{crosscuts} to the vein and upraises
approximately of ~~200~~ ³⁰⁰ feet of drifting on
3 main levels. Several hundred feet of
this drifting was done on parallel or branch
veins. Additional ^{tributary to these workings} ~~work~~ includes several
crosscuts and raises and a two compart-
ment mine sunk to a depth of 100
feet with 100 feet of drifting at that depth
~~foot level~~. Also, a short tunnel and
a ^{number} ~~small~~ amount of ^{small} irregular openings
has been made on the ^{vein} ~~croppings~~
above the main workings. Following

Following is a description of the
workings and the sampling (see
accompanying sketch) ~~at Main level~~
~~at Main level~~

A crosscut tunnel is driven into
the hill ^{in a northeasterly direction} for a distance of 840 feet.
~~At 615 feet a strong vein was intersected.~~
~~At 750 feet the main vein was~~
~~intersected. At 615 feet~~
615 feet a strong vein was intersected.

and at 720 feet the main vein was ~~cut~~ ^{cut}.

The balance of the crosscut is in barren ground. The first vein at 615 ft ~~is~~ strikes approximately N 50° W and stands almost vertically with a slight inclination ~~toward~~ ^{for a short distance} SW. The vein has been drifted upon in

~~(sampled)~~ in both directions. The vein is composed of hard quartz, and crushed well rock with ~~not~~ considerable gouge material. It is ~~hardly~~ ^{thruout} ~~is~~ ^{the} drift. It is ~~rich~~ ^{rich} in pyrite and ~~small amounts of~~ ^{small amounts of} sphalerite and galena. ~~drift and~~ Samples Nos. 3 to 8 were cut in the back of the drift. The assays show erratic and generally low values.

No. 11

The main vein encountered at 720' from the portal of the crosscut has been ~~drifted~~ ^{drifted} about N 50° W and ~~is~~ ^{is} drifted upon in ~~both~~ ^{both} directions. Further operations carried on stoping operations above the drift ~~from~~ ^{beginning} at a point 60 feet northward of the crosscut and extending ~~at least~~ ^{at least} 160 feet southeast from that point. The drift is ~~caved~~ ^{caved} ~~at 100 ft SE from the crosscut~~ ^{at 100 ft SE from the crosscut}. One old map of this area ~~shows~~ ^{shows} two more stopes on the southeast of the ~~accessible~~ ^{accessible} portion of the drift. The stope above the level ^{at the crosscut} is inaccessible except in the northwest portion where the back ~~is~~ ^{is} ~~visible~~ ^{visible} for a length of 20 ft. ~~There is no ore to be seen here however.~~ ^{The main part of the} ~~the~~ ^{the} stope is said to be

HP
drift
is
milled from
the
main
drift
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drift
is
in
the
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of
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drift

been carried to a maximum height of
 75 feet and there is no opening
 to the surface from this stop or ~~any~~ the
 other stops in the inaccessible part of the
~~lead drift. Judging from this fact, the~~
~~and ~~some~~ grade of material in the chutes~~
 Although chutes have been installed at
 intervals and the ground ^{appears to} have been stopped
 continuously for a length of ~~160~~ at least
 160 feet the material mined ^{must have been} ~~from~~
~~floor, judging from the appearance of the~~
 much in the chutes and the samples
 (Nos 2B to 5B) cut in the floor of the
 level, and also from the record of
 metals recovered in mining this area.
 The floor of the drift ^{here} ~~was~~ covered with
 much ~~and~~ debris and some water and
 only could be sampled at ^{only a few} ~~only a few~~ places
~~The samples show~~ ^{the samples show} very low ^{metal contents} ~~and do not~~
 indicate the presence of an ore body below
 the stop.

at 75 feet Northwest from the
 cross cut ^{2-compartment} a ~~large~~ has been sunk on the
 vein to a depth of 100 feet and about
 100 feet of drifting was done at that
 level. The shaft was filled with water
 to within 40 feet of the level. There
 was no ore on the level at the collar
 of the shaft. It is said that the
 the southeast drift was "beginning to
 come into ore".

At 360 ft. northwest from the crosscut with the top of a raise from the "Lower Tunnel", hereinafter described.

At 140 feet northwest from the top of this raise a small lens of ore has been stoped above the level for an ^{in the slope} ~~average~~ height of 35 ft and a length of 50 feet. A raise (inaccessible) has been ^{driven} ~~run~~ on a low slope to the connect with the end of the "Thornton Tunnel", hereinafter described, some 35 feet above this level. Sample B-3 and B-6 were cut in the floor of the drift below this slope. The assays show only fair values across narrow widths.

At 200 ft northwest from the above described slope another thin lens of ore has been mined between this level and the Thornton tunnel above. The slope is about 35 feet long and at its highest point, ^{is} ~~is~~ about the center, it breaks through ~~into a sub crosscut with the lower wall of~~ the Thornton Tunnel 35 feet above. Apparently the lens ^{here} was thin and irregular. There is no ore remaining in the slope.

The balance of the level shows nothing of interest.

Thornton Tunnel. The Thornton tunnel is driven into the hill in a southwesterly direction on the vein. At 120 feet a branch drift ~~explains~~ which is driven some 135 ft in a southeasterly direction develops a vein which

the bottom of the level. This level is a distance of 10 ft from it. It indicates that the lens is called this.

strikes approximately $N 35^{\circ} W$ and dips about $65^{\circ} SE$. A small slope has been opened in the end of this drift. Samples 1 and 2 were cut ~~in the~~ respectively in the end and 20 from the end of the drift. The samples show rather low lead and ~~zinc~~ ^{sulphide} but good gold values, particularly ~~low~~ in sample No. 2. The ore shoot shows a length of about 30 feet. The stopes filled and inaccessible.

The main drift at 340 feet from the portal encounters a thin lens of ~~zinc iron and lead sulphide~~ ^{material} with ~~some pyrites~~ containing ~~iron, zinc and~~ ^{containing sulphides (and some ~~pyrites~~) iron, zinc, and lead, with sulphides predominating.} The lens is ~~an~~ 18 feet long. ~~Samples No. 1 & 2 were cut out at the ends of the lens and appear to represent the ore.~~ The lens is ~~in the ore streak~~ The walls are not definite and the ore streak weaves on strike. Sample No. 13 was cut across the best and widest portion in the center of the lens. ~~???~~

At 365 feet from the portal a stope has been opened for a length of 60 feet and a ^{maximum} height of 40 feet above the level.

The back of the stope shows ^{thin} stringers of sphalerite across a width of 4 or 5 feet

and to the end of the drift and top of the raise from the level below but no ore. Beyond the stope ^{the} back of the drift has been broken out

a height
 fr. 10 to 15 feet above the level, and in
 places shows stringers of sphalerite with some
 and pyrite
 galena. In places these ~~sulphide stringers~~
 minerals occur in small lenses or pods up to
 12 inches in width. The ground is fairly hanging
 wall is definite but the and the foot wall
 is irregular. The ground is loose and the
 mineralization is not sufficiently strong or
 regular to constitute ore.

Lower Tunnel. A lower tunnel approximately
 550 feet lower than the main level and about
 90 feet below the Thornton Tunnel is
 driven westerly into the hill. ~~at 270 feet~~
~~from the portal the~~ The tunnel begins
 as a crosscut and at 270 feet the vein
 is intersected and a drift continues
 for a distance of 510 ft on the vein. At
 the end of the drift a raise ^{which} inclines
 upward ~~on the~~ on the vein connects
 with the main level. There is nothing
 of interest ^{in the course of} the tunnel until at
 about 640 ^{ft} from the portal a lens of zinc,
 lead and ^{iron} sulphide material is encountered.
 This lens ~~continues for some~~ is exposed
 continuously for some 60 ft in the back of the drift.
 Samples ~~were~~ ~~cut~~ ~~across~~ ~~the~~ ~~lens~~
 10 feet intervals ~~except~~
 The clean out job in the drift had not
 been ~~completed~~ yet reached this ^{point} place
 and as a consequence the working

place was very sloppy underfoot and
in places dangerously loose overhead.
Samples were cut at 10 foot intervals
except in ~~about~~ ^{about} the center of
the lens where the conditions of the
rock would not permit sampling. The
lens ^{at this point} could be seen ~~the~~ ^{from} lens with width
and grade apparently the same as
that shown in the samples on either
side. The assay (Nos B-7 to B-11)
showed an ~~average~~ ^{average} width of 30"
and a weight average metal content of:

Oz Au	Oz Ag	% Cu	% Pb	% Zn
.13	1.18	.07	2.78	3.28

This lens is evidently the downward
extension of the ore which was stopped
with main level ~~above~~ ^{where} samples 3 and B-1
were cut in the floor of the drift.

© Proposed Development

The applicant proposes to
undermine the mine and drift southwest
and southeast ~~from the~~ ^{from the} 100 ft. level in the mine.
Of the
amount requested (\$2,000) he proposes to
spend \$14,800 for equipment, the
largest equipment ^{item} is a Diesel-generator
plant costing \$13,800, or, alternately, ~~on~~ a
power line extension into the property
costing about \$7,000.

12

There is no developed body of ore in the mine upon which to estimate probable rate of output, costs etc.

D. There is no equipment on the property beyond rails, ~~one~~ car and miscellaneous hand tools.

E.

F.

It is ~~no~~ ^{known} ~~in the absence of a developed ore body~~ ^{or as} indicated on ~~body~~ it is not possible to estimate probable ore to be developed by the loan.

Objections to Project

There is no justification for ~~the~~ the proposed development northwest on the 100 FT. level in the mine since ^{the} on the main level ~~down~~ ^{above} ~~in this direction~~ shows no mineralization for a distance of some 300 feet from the present face of the northwest wing ~~last~~ drift in the mine. ~~As for the proposed development southeast in the mine~~ Justification for the proposed work in a southeast direction ~~from~~ in the mine is predicated upon the stoping in this direction ^{above} ~~on~~ the main level. As ^{pointed out} ~~noted~~ earlier in this report the ^{available} records regarding this work is not ~~very~~ ^{favorable} and the floor samples show only uninteresting values.

Comments of Supervising Engineer

As noted above under "Objections to Project" the proposed work in the mining ~~area~~ is not justified by ~~any~~ ^{record} of the previous performance of this part of the mine nor by the sampling on the level. H.

~~If I have any interest in
any priorities which the company
might be able to secure~~

The shovels elsewhere in the mine
are ~~not~~^{too} small and low grade and
irregular to justify favorable consideration
of their ^{further} development.

It seems possible, that however, that with
two hours ~~per~~ ^{more} ~~in~~ ^{more} ~~the~~ ^{more} ~~night~~ ^{more} ~~and~~ ^{more} ~~less~~ ^{more} ~~operation~~ ^{more}
providing a ^{local} custom mill, not
for the ^{no} ~~become~~ ^{become} ~~possible~~.

An additional loan to the project is ~~not recommended.~~

The ^{one} showings elsewhere in the mine are too small and low grade and irregular to justify favorable consideration of their further development. It ~~is~~ ^{is} possible however that, if a local custom smelting outlet for the ore becomes available, one or more of these showings might

14
support individual lease operations
at top bonus prices for metals.

An additional loan to the
project is not recommended.

ing the same distance northwest and southeast of the shaft. The 600-foot level, however, extends northwestward from the main shaft along the vein, intersecting the surface at a point about 2,400 feet beyond the shaft. Southeast of the shaft this level is reported to extend for 400 feet. No drifts are reported between the 1,200-foot level and the bottom of the shaft (1,400-foot level).

The Golconda vein strikes northwest and dips to the northeast (pl. 18). The angle of dip varies, but it is reported to average about 65° in the underground workings. The vein pinches and swells, ranging in thickness from 2 to 7 feet. On the surface the vein can be traced, chiefly by small prospect pits, for about 4,000 feet. Near its northwest end it splits into several branches, two of which form approximately parallel prongs and have opposing dips. The Oro Plata mine is located on the southwest prong. A branch, about 1,700 feet long, trending in a more northerly direction, is known as the Primrose vein.

The country rock is chiefly the pre-Cambrian complex, mostly granite. Numerous small, irregular bodies of the Ithaca Peak granite, too small to be shown on the geologic map, are exposed on the surface in the area along and adjacent to the trend of the vein.

The principal metallic minerals, as determined chiefly from material on the mine dumps, are sphalerite, galena, pyrite, and chalcopryrite, contained in a milky quartz gangue. Much of the sphalerite is dark brown to almost black. Sphalerite is greatly in excess of galena. This is in marked contrast to the Tennessee-Schuylkill mine, which has produced about the same amount of zinc as the Golconda mine (table 2) yet has produced almost as much lead as zinc.

Information of a general nature indicates that the best ore shoots on the Golconda vein were found northward from the main shaft for about 1,000 feet. Most of the ore has been removed from the surface to the 600-foot level. Reports vary greatly regarding the grade and quantity of ore left in the workings below the 1,000-foot level.

About 500 feet southeast of the shaft on the 700-foot level a crosscut to the southwest connects with the mine workings along the Tubb, or Middle Golconda, vein. One of the higher levels in the Golconda mine also is reported to be connected by a crosscut to the Tubb vein. The Tubb vein roughly parallels the Golconda vein and, like it, dips to the northeast. On the surface the Tubb vein is 350 to 600 feet distant from the Golconda vein. Four levels, with a total of about 3,500 feet of drifts, are reported on the Tubb vein.

GROSS COPPER PROSPECTS

A low-grade deposit of chalcocite occurs on the Gross ranch near the western border of the main exposure of the Ithaca Peak granite

south of Mineral Park. The inaccessible mine workings are reported to consist of a 200-foot shaft and two drifts, each about 600 feet long. One drift is to the east, and the other is to the northeast. The workings were driven in 1926 by the C. and A. Mining Co. No ore has been shipped. Material on the mine dump shows malachite, azurite, and specks of chalcocite disseminated in minor quantities in pyritized and silicified granite. Several veinlets of chalcocite 0.05 to 0.2 inch thick were observed, and one such veinlet is reported to have been 2 inches thick. A few specks or paper-thin stringers of molybdenite also were seen. Native copper, occurring as small leaf forms, is reported to be present in minor quantities but was not observed during the visit to the prospect.

GROSS MOLYBDENITE PROSPECTS

In Bismark Canyon, 1,400 feet east of the Gross ranch house, two adits have been driven to explore a low-grade molybdenite deposit (pl. 18). The work was done about 1926 by the C. and A. Mining Co., but no ore has been shipped. The adit on the north side of the canyon bears almost due north for about 800 feet. Molybdenite occurs most commonly in specks and small stringers in quartz veinlets that cut the Ithaca Peak granite. The veinlets are 0.02 to 1.5 inches thick, but thicknesses of 0.5 inch or less predominate. Some molybdenite occurs in small disseminated specks in the granite or as paper-thin stringers with little or no quartz.

The adit on the south side of the wash is inaccessible but is reported to bear a little east of south. Near its south end a crosscut to the east encounters a rhyolite dike about 20 feet wide in nearby exposures. The material on the dump shows numerous narrow molybdenite-bearing quartz veinlets and stringers of pyrite cutting the rhyolite. The minerals extend into the granite in the same manner that was noted where they are exposed in the adit on the north side of the wash.

HIDDEN TREASURE MINE

The Hidden Treasure mine is nearly 2 miles southeast of Chloride on the lower western slope of the mountains (pl. 18). The property consists of five claims along and bordering the Hidden Treasure vein held by Frank H. Grannis, of Chloride. The mine has been worked intermittently for many years by numerous operators. Schrader (1909, p. 72) reports mining operations prior to his visit to the district in 1907. The mine has produced, in addition to gold, silver, and copper (table 2), a little more than 115 tons of metallic zinc and nearly 80 tons of metallic lead during the period of recorded production from 1901 to 1948.

The mine workings, which were partly accessible when the mine was visited, include several shafts, three crosscutting adits bearing northeast, and three levels vertically spaced about 50 feet apart. Drifts total about 3,000 feet.

The Hidden Treasure vein, on which the mine is located, has an average strike of about N. 50° W. and dips steeply to the northeast. It is correlated with the vein on which the Emerson mine is located (pl. 18). The vein pinches and swells to thicknesses ranging from 0.5 to 15 feet. Many branches and spur veins are disclosed in the underground workings of the Hidden Treasure mine. Crosscuts indicate several thin veins, some of which are probably branches of the main vein, trending about parallel to it. These smaller veins or branches, with few exceptions, could not be traced on the surface.

The country rock is the pre-Cambrian complex of granite, gneiss, schist, and amphibolite. In numerous places the country rock adjoining the vein is greatly altered to sericite or impregnated with pyrite for distances ranging from a fraction of an inch to several feet. Locally seams or thin zones of gouge an inch or two thick border the quartz veins.

The metallic sulfides, which are in a quartz gangue, include pyrite, sphalerite, galena, and minor quantities of chalcopyrite. Ore shoots that were observed in the underground workings are generally small bodies only a few feet long and a foot or less thick consisting of an intimate mixture of the various metallic sulfides and little or no quartz.

KEYSTONE MINE

The Keystone mine is in Mineral Park at an altitude of about 4,375 feet. Schrader (1909, p. 82) states that it was located in 1870 and that its surface ores were very rich in gold and silver, by reason of which it became the first important producer in the district. The mine, consisting of three patented claims, has changed ownership many times and, when visited, was reported to be owned by the Beach Estate. It was then idle, and water filled the underground workings and the shaft to a depth of about 50 feet below the surface. Table 2 indicates that the greatest values have been in silver and gold, although the mine has also produced substantial amounts of copper, lead, and zinc.

The mine was developed by a shaft, reported to be about 400 feet deep, and four levels at 150, 200, 300, and 400 feet. Drifting on the 150-foot level is reported to have reached a distance of 850 feet northwest of the main shaft and 450 feet southeast of it. On the 300-foot level drifts extend about 275 feet both northwest and southeast of the shaft. On the 400-foot level is about 125 feet of drifting,

mostly to the northwest. The greater part of the ore above the 300-foot level is reported to have been worked out.

The vein on which the mine is located strikes northwest and dips to the northeast at angles ranging from about 65° to 80°. About 800 feet northwest of the shaft the vein splits into two main branches; the southern branch dips prevailing to the southwest at a steep angle and near its west end cuts a wide rhyolite dike. Another vein about parallel to the main vein is reported to lie approximately 100 feet northeast of the Keystone shaft, although no evidence could be found of this vein in surface outcroppings northwest of the shaft.

Vein matter on the mine dump is milky quartz with abundant pyrite and lesser amounts of sphalerite, chalcopyrite, and galena. Argentite, although reported to be present in the ore, was not found.

PAYROLL MINE

The Payroll mine is about 1.5 miles east of Chloride, near the head of Payroll Gulch, at an altitude of about 4,500 feet. The property, which includes the patented Payroll and Black Prince claims, is held by the Thomas B. Scott Estate. The property is an old one, having been located in 1887, and much of the early work consisted of shallow diggings along the Payroll vein chiefly for high-grade gold ore. Considerable mining had been done prior to Schrader's (1909, p. 62) visit to the district in 1907, as he reports three shafts, about 400 feet of drifts, over 600 feet of tunnels, and some crosscuts and stopes. The main shaft was 225 feet deep. The mine was idle and the workings were inaccessible when visited by the writer in 1943. The main shaft is now reported to be a little more than 600 feet deep. The mine was developed by four main levels, the 50-, 200-, 400-, and 600-foot levels. Drifting and stoping from these levels has extended chiefly southeastward along the vein, the maximum distance from the shaft being 500 feet on the 600-foot level. The total length of all drifts is reported to be about 2,000 feet.

Production from the mine during the period 1901-48, as given in table 2, shows that during these years the mine was essentially a producer of zinc, although the early, unrecorded production may have been mostly in gold and silver.

The country rock consists of many types of the pre-Cambrian complex, although light-gray, fine-grained granite, dark, medium-grained biotite granite, hornblende schist, and amphibolite predominate. A diabase dike, not shown on the geologic map, is poorly exposed for a short distance along the northeast side of the vein near the main shaft. It could not be found in its projected position on the northwest side of the gulch, and it apparently has been cut off by the northeastward-trending fault shown on plate 18.

STOCKTON HILL DISTRICT.

General outline.—The Stockton Hill district joins the Cerbat district on the east, being situated on the opposite slope of the mountains, about 10 miles north of Kingman. It is about 4 miles in diameter and ranges from 3,500 to 5,500 feet in elevation. It is generally rough, but the mines are all accessible by wagon roads, in the main of easy grade. The drainage issues eastward into Hualpai Valley. The principal camp is Stockton Hill, situated in the eastern part of the district. The veins in general strike northwestward. The district contains about 10 mines, of which the principal are the Banner Group, Treasure Hill, Little Chief, Cupel, Prince George, De la Fontaine, C. O. D., and '63.

Banner Group mine.—The Banner Group mine is situated near the center of the district. It is developed by more than 2,000 feet of underground work, including the "tunnel" or drift, which extends in 1,000 feet on the vein. The vein dips steeply to the northeast. It is 6 to 8 feet in width, and the ore shoot is 2 to 2½ feet thick and favors the foot-wall side. In some localities the ore consists of pure galena, but usually it contains gold, silver, zinc, iron, and copper, the gold in places amounting to several ounces per ton. The amount of zinc increases in the deeper north portion of the mine. The production is reported to be many thousand dollars in gold, silver, and lead, the zinc thus far being culled and left on the dump. The ore is shipped to the Needles smelter.

Treasure Hill mine.—The Treasure Hill mine is located in the foothills in the southeastern part of the district. It is developed by inclined shafts and drifts, and yields a large supply of good water. The veins, six in number, dip steeply to the northeast. They average about 5 feet in thickness at the surface and widen downward. They are associated with what seems to be a small stock of the aplitic granite, and the two next to it are now being worked. The ore favors the hanging wall and occurs in shoots 100 to 200 feet in extent, with intervening clay or talcose gouge and sulphides. It runs about 100 ounces of silver and \$5 to \$16 in gold per ton, and 7 to 10 per cent of lead. The total production is stated to be \$100,000.

Cupel mine.—The Cupel mine is situated at Stockton Hill camp. It is now being reopened and an excellent 200-ton mill and plant of the Joplin type have just been installed. It is developed to a depth of 400 feet, principally by shafts, drifts, and stopes, and is said to yield about 25,000 gallons of water per day. It is located on three veins, whose general trend is northerly. The ore in general contains ruby and horn silver, together with black sulphide of silver, but in some places is rich in high-grade galena and carries about \$5 per ton

in gold. About 2,000 tons are on the dump. The production is about 100,000 ounces of gold.

Prince George mine.—The Prince George mine is about a fourth mile southeast of the Stockton Hill camp. It is developed by shaft and drifts, and is said to have produced about 100,000 ounces of gold. The vein dips steeply to the northeast. The total production is about 100,000 ounces of gold.

De la Fontaine mine.—The De la Fontaine mine is on the west side of the district, and comprises about 1,400 feet of underground work, and dips steeply to the northeast. It is rich in lead and zinc, and contains a thick and of considerable amount of the mine.

'63 mine.—The '63 mine is 200 feet deep and is said to be mostly in rich silver ore.

Little Chief mine.—The Little Chief mine is west of Stockton Hill camp, and is developed by 1,000 feet of underground work. The veins of the Treasure Hill mine strike northeast. The production is about 100,000 ounces of gold, all shipping ore, averaging about 10 ounces per ton, with about 10 per cent of lead.

C. O. D. mine.—The C. O. D. mine is at Stockton Hill camp, in the upper part of the district. It is developed by a shaft 400 feet deep, drifts, and two subordinate levels, and is said to have produced about 100,000 ounces of gold. The principal vein is about 7 feet thick, and runs about as follows: Silver, 100 ounces per ton; lead, 12 per cent; with about 10 per cent of low-grade ore, it is mostly in high-grade ore, it is mostly in high-grade ore, it is mostly in high-grade ore. The mine closed in 1906. The total production is reported to be \$1,300,000, of which \$1,000,000 is in gold.

The Gold Basin district is in the Gold Basin hills, in the Gold Basin hills, about 6 miles in diameter, and ranges from 2,000 to 5,000 feet in elevation.

CONCENTRATES

A Concentrated Summary of the Mining Activities in the Southwest

COCHISE

In the Dos Cabezas Mining District, 15 miles east of Wilcox, a number of mining enterprises are under way, including the Central Copper Company, which is working a good force of miners and intends to build a reduction plant, the Gold mine, where a 300-ton concentrating mill is being constructed, the Davies property is operating a small mill; the LeRoy property is now installing oil tanks, preparatory to bringing in development machinery.

It is said a lease has been taken on an old Hesper Mine located in the Winchester Mountains. It is the intention of the lessors to work over the large dumps on the property for the high grade silver as well as to mine the vein.

Phelps Dodge Corporation's smelter at Douglas produced 7,931,000 pounds of silver copper in March as follows: 5,355,000 pounds from Copper Queen; 1,786,000 pounds from Moctezuma Copper Company, and 790,000 pounds from custom ore.

The Beras Leasing Company has resumed operations after having been shut down on account of the railroad strike.

The Leadville Mining Company at Fortland is reported to be working a crew of 20 men.

The Commonwealth Mining Company is reported to be working 70 men. A cyanide plant is in operation.

The Gray Metals Company has recently been organized in Phoenix for the development of property in the Huachuca Mountains near Hereford. Assays are said to have shown silver, lead, zinc and gold.

Work will begin at once on the Soler Mine, known as the Old Winters mine. A small force of men will be put to work until proper machinery and equipment can be installed.

The rumored sale of the property of the Arizona Copper Company, Ltd., has been consummated, according to Mr. Michael, who has returned from New York, the matter having been held over for months for more mature consideration. The report mentioned the Phelps Dodge Corporation as the possible purchaser and the price at 6,000,000 pounds sterling.

There was an increase of a half million pounds of copper at the Copper Queen smelter during the month of March over February output, while the output at the C. & A. smelter remained at practically the same as for February.

GILA

The Miami Copper Company, Miami, is showing a steady increase in copper output. The March production totaled 5,011,000 pounds. In March of last year the output was 2,511,110 pounds, and in the month of 1918 it amounted to 5,174,000 pounds.

The Inspiration Copper Company has leased its holdings in the Miami District the purchase of the Porphyry Consolidated Copper and Barney Copper companies, comprising 567 acres, adjoining the Inspiration mine.

Miami parties have leased the McPherson-Ryan group of claims which will be worked for silver. A 50-foot shaft is being sunk.

Shipments of silver ore are being made to the Selby smelter from the Jumbo Mine near Globe.

The Louis D'Or Mining Company, near Miami, has just completed the building of 3000 feet of 9-foot road for diamond and church drill operations.

The Warrior Copper Company has disposed of most of its holdings to the Inspiration Consolidated Company for \$400,000. This deal includes mill houses, machine shops and other property.

The Porphyry Consolidated Copper Company are preparing to renew churn drill operations.

Much interest is being displayed with regard to the diamond drill work being done by the Superior & Boston to determine if the Great Eastern vein is mineralized in the underlying Pinal schist. Recently this company made a strike of two feet of covellite ore, rich in copper and silver, on the 600-foot level.

GREENLEE

The Shannon Copper Company, which has operated extensively in the Clifton District, according to General Manager Bennie, has turned its attention to oil land leases.

The Duncan Mining & Milling Company has just completed a milling and cyaniding plant at a cost of \$125,000, its capacity being 120 tons a day.

It is reported on good authority that the American Smelting & Refining Company has completed negotiations for the purchase of the Ash Peak Mine near Duncan.

MARICOPA

A company called the Arizona Cave Creek Mines Corporation was recently organized to take over a number of claims in the Cave Creek District, among which are the Norma Girl, the Maricopa, the Pocahontas and a number of others.

The Key Copper Company's president, George Long, has signed a contract with the Arizona Power Company for electric power. They have also purchased a compressor from the Ingersoll-Rand Company.

MOHAVE

The National group of mines, about six miles west of Pine Springs, is being developed by a small force of men, is the report in Kingman.

To finance its treasury and provide working capital, the Emerald Isle Copper Company, Kingman, has increased its capital stock from 500,000 to 1,500,000. It is said the company will begin development work soon.

It is understood that the Home Pastime and Sabbath Bell mines near Mineral Park, may be soon taken over by a strong company and development work done.

The shaft at the Adams, near Oatman, is being repaired and put in shape to sink another 150 feet.

It is announced that just as soon as the Blossom ledge of the Arizona Ore Reduc-

tion is cut they can make plans for future development.

The Shaft of the I. X. L. mine of the Dudley properties, Kingman, has reached a depth of 250 feet. When the shaft has reached the 300-foot level, crosscuts will be carried into the vein.

The regular annual meeting of the stockholders of the Arizona Western Mines Company was held at Chloride the 3rd of May for the purpose of electing a board of directors and transaction of other business.

It is understood that the Doyle properties in the Aubrey district are to be developed.

The United Eastern at Oatman is reported to be paying close to \$200,000 per month, the shipments of bullion since the first of the year have been larger than that of any other gold mine in the United States.

The Diamond Joe mill, Kingman, has recently shipped six carloads of ore.

Col. Rankin and Mr. Copley of Pittsburg, were in Chloride recently looking over the tunnel project of the Payroll and Marabelle mines. It is said work on the tunnel and mines will start as soon as the necessary arrangements can be made.

The crosscut from the tunnel of the Kingman Consolidated, at Kingman, has encountered good ore, carrying values of 50 to 230 ounces in silver.

The Hackberry Consolidated Silver Mines Company has been incorporated and has taken over the properties of the Hackberry Consolidated and the Senate Silver mines, near Hackberry. The new company expects to have the mines in shape for production within a short time.

A recent report from the Hidden Treasure is to the effect that the drift on No. 3 vein has reached a depth of 65 feet.

The Tuckahoe is working in the drift on the 550 level and the drift is now in about 170 feet.

An excellent strike was reported recently at the Molly-Gibson-Chloride. The ore being rich galena and carries around 40 ounces of silver, making the ore run around \$150 per ton.

The Arizona-Brunswick, Chloride, reports a good vein of ore in the drift on the 250 level. There is about five feet of ore assaying \$24 per ton across the vein.

Superintendent Humphrey is getting matters shaped up for resumption of active operations of the Cyclopic mine. Improvements in the mill with installation of machinery for the mine is in immediate contemplation, is report coming from Kingman.

The Wallapai Mining Company's camp about 50 miles northeast of Seligman, is reported to be opening up copper ore of every variety to be known in the oxidized zones.

Surveyors are at work on the ground plans if the big mill to be built by the Mossback mine, near Kingman. The main shaft of this mine has reached a depth of 700 feet on the incline and on every level vast bodies of ore are reported as having been found.

(Continued to Page 52)

The new tunnel on the **Hidden Treasure, Chloride**, is progressing rapidly toward the 106-ft. shaft, having already advanced nearly 200 feet. When that point is reached, an uprise will be driven to connect with the shaft for air and the ore-body of No. 3 will be advanced as far as necessary. Connections will be made with No. 1 vein after which drifts will be run both ways.

The old **Champion** mine, at Cerbat Point is crosscutting the big vein from the 100-level.

It is understood that the **Gold Dust, Oatman**, has opened a good quartz vein on the 300.

The main shaft of the **United American** is now down to 450 feet. They will continue to the 500 and from there will crosscut. The values on the 500 show an improvement over that found on the 300.

The **Tuckahoe** mine, west of Chloride, in sinking to the 450-level has entered four feet of exceptionally good ore.

Owing to the encountering of a strong flow of water below the 300 level the **Diana**, in the Chloride district, has slowed up its shaft sinking. This company intends carrying the shaft to the 500-foot level, but it is possible it may have to reinforce the equipment.

PIMA

W. D. Hickman, mine manager of the **Sherwood Copper** company, Tucson, reports that a recent strike of four feet of ore in that property ran nineteen ounces of silver and five per cent copper. This ore was from 300 feet depth.

The report of the manager of the **El Tiro Leasing** company, Silverbell, shows 353 feet of development work done last month. Production has been maintained and 185,897 lbs. of copper has been produced from the 100 and the 50-foot levels principally. Although the month was spent largely in development a profit of \$3,000 resulted.

It is reported that ore is being taken out of the **Arizona** group of mines, southwest of Tucson. The ore is a silver-lead, carrying especially good values in silver. This group was formerly known as the **Dick Star** mine.

The **El Tiro Leasing** company, Silverbell, produced during the month of December, 262,601 pounds of copper, two-thirds of which came from stoping and the balance from development work.

The **Old Mission** group of mines, about five miles southwest of Tucson, made a 50-ton shipment from the old dump to the smelter and the returns show same to be 6.9 ounces silver per ton and eighteen one-hundredths per cent copper. The net returns, after deducting freight and treatment charges was \$5.65 per ton.

The first diamond drill hole on the **Cornelia Extension, Ajo**, has been completed and the second one commenced. The one just finished was drilled to a depth of 800 feet.

PINAL

The mess hall at the **Silver King** mine, together with its contents has been destroyed by fire. The blaze is supposed to have originated from an oil range, which was lighted about an hour before the fire was discovered. The loss is placed at about \$1500 with no insurance.

It is rumored that the **Ray Silver-Lead** Mining company will resume operations in the near future. Active operations

IS COPPER MINING DYING?

Come forth from the shades of night ye old prospector and give us the trail and the burro. Blot out the gas and the flivver and again find for us the strands of red and gold.—Rocky Mountain News.

Your comment and opinion for the April "Mines of Tomorrow" Edition will be appreciated.

of the property were discontinued April, 1919, and since that date the property has been closed down.

Arizona Hercules at Ray has resumed operations after a short shutdown.

SANTA CRUZ

Good returns are reported on shipments made by the **California** group which adjoin the **Flux** mine in the Patagonia district.

The **Hardshell Mining** company at Patagonia is about ready for production is the report from that section. The new shaft being sunk by this company has reached a depth of about 400 feet and will continue to a depth of 500 and then a crosscut will be driven to cut the lode. Owing to the amount of water encountered during the past few weeks, it has been necessary to install new and larger pumps.

Mill tests and a mill design for the **Blue Nose** mine of Patagonia are being made by Metallurgist T. G. Chapman of the University of Arizona.

Judge A. S. Henderson and Fred Sayers have taken a bond and lease on four properties in the **Alto** district, twelve miles from Patagonia, that have had considerable development work done on them. The group is a silver and lead proposition.

It is reported that a company is being formed which will be incorporated as the **Flux Extension Mining** company, to take over the **California** group of mines. The company will be capitalized at \$400,000.

Drilling at the **Three-R** mine at Patagonia is being done by Tom Ryan, who has charge of the diamond drilling program of this company.

J. M. Little, who has taken over the **Sunnyside** group of mines in the Patagonia district, has changed the name back to the **Volcano**, one of the principal mines of the group.

YAVAPAI

Announcement is made of the revival of the **Tiptop** mine, Prescott. A force of laborers are rebuilding the old wagon road to bring in machinery of which a large amount is being purchased.

A representative of the **O. K. Copper** company, situated between Turkey station and Black Canyon, was in Prescott recently and stated that all arrangements were completed for development to begin March 1st.

A strike was recently reported in the **Tillie Starbuck** on Slate creek, an ore body having been cut carrying over 100 ounces to the ton.

The **United Verde Extension** company at Jerome is doing some new development

work. Recently a long drift south from the **Audry** shaft, on the level. It was turned west, below crosscut and has now intersected 200 feet of ore, mostly low grade coprite. It passed about 25 feet of the winze where the ore was better and carried some chalcocite drift was run south to the winze good ore. At the winze a picket from the roof assayed 22 per cent drift stopped at the winze, which ample ventilation for the 1500 men.

It is currently reported that all the Jerome have been completed for the location of a gasoline hoist on the Jerome property and the shaft pushed to the 300-foot level as soon as possible.

The **Verde Copper** News says the **Jerome Verde** has cut the 950 level and the quality is as good as that taken from above the 900 level.

The **Verde Combination** reports samples taken on the 1080 level show 10 per cent copper. Drifting is going on crosscuts on the 1300 and is being done to show mineralization.

The force of men on the **Jerome** prior has had an authorized increase since the recent arrival of the 100 men instead of 50 will be as soon as accommodations can be provided. The mine is being prospected by diamond drill.

Because of a decline of more than 10 per cent in gross revenue, the **Verde Extension Mining** company is obliged to report for 1919 a deficit of \$235,155 and no dividend paid for the year. In 1918 the operations of the company resulted in a surplus of \$1,054, besides \$1,575,000 paid during the period in dividends on the capital stock.

The gross revenue for 1919, as shown in the report published yesterday, only \$5,058, 669, against \$14,919, 000 in 1918, and a total income of \$5,444, 1919, against \$15,156, 716 in 1918. Expenses were reduced very substantially. Federal taxes which totaled \$2,000 in 1918, were not chargeable in 1919 operations.

Some decline in revenues and resulting losses were explained in the report as follows: "On account of the unfortunate strike in the mines of the district, mining operations were forced to stop for four months of the year. Smelting operations were resumed June 9. On the other hand, the laboratory was run most of the time alternating with the blast furnaces in a short period."

Word has recently been received from the **Shea** mine, Prescott, that the new opening 120 feet north of the one previously worked is of sufficient size to content to put the **Shea** in the production class. Assays running to 417 ounces silver and 14 per cent in copper has been secured from samples from this vein.

The **Franco-American** company, Prescott, is being developed on an extensive plan.

The **Verde Inspiration** mine near Jerome has sunk a shaft to a depth of 100 feet and is being continued to the 100-foot level. At each 100-foot level a tunnel has been established and a tunnel bored into the mountain.

A very important deal recently completed was the purchase of the Mayer estate by the **Arizona Copper & Mining** company. Officers and board of directors of the company is made up of the following: E. Doane, president, Cleveland, O.

(Continued on Page 49)

CONCENTRATES

A Concentrated Summary of the Mining Activities
in the Southwest

COCHISE

The officers and directors of the Flux Mining Company held their meeting recently in the offices of J. & Purdum of Nogales. O. L. was elected president, E. E. Bethel, president and W. S. Wilson secretary treasurer.

It is reported that the lessees of the Co-Arizona silver mine, near Dragoon, made a strike of silver-lead ore. The working shaft has been sunk to a depth of 300 feet, the new strike having been made at a depth of about 275 feet. The Keystone Copper company, operating at Johnson, sixty miles east of Nogales, are reported to be putting in a plant preparatory to extensive operations.

The Boras Lumber company are developing their property. A drift on the foot level has opened up the same ore on which the company has been working 100 feet above, the ore running at 20 per cent copper.

It is claimed that the Cochise Mineral company is doing some development work and will soon be in the production class.

A fire on the 1300 level of the mine of the C. & A. was extinguished without loss of life or serious damage to the property.

President Briggs in the annual report of the Gadsden & Arizona, has the following to say regarding the Gadsden Copper company:

"Work at Gadsden failed to show any value and unless work planned at the end of the year is fruitful of results, operations will be discontinued."

The Gratis Ride mine, 15 miles north of Villcox, is being dismantled, according to word received here recently.

The Swisshelm Gold-Silver company has been shipping ore to the C. & A. for carrying 88.5 ounces which has been taken for use as converter lining material. Incidentally the ore carried \$8.60 a ton and \$23.20 silver. A compressor has been ordered.

The Cochise Mines company have installed an engine for its compressor tunnel. The tunnel is in 150 feet and will be 17,000 feet long.

A strike of copper ore is reported as having been made at the Middlemarch mine, nine miles from Pearce. Ore carrying high values in silver and gold was discovered in the main shaft at the 800-foot level.

Development work of great promise is being started in the Nighthawk mine near Don

The new \$150,000-mill and cyanide plant of the Duncan Mining & Milling Company, located at the Mount Royal Camp, nine miles northwest of Duncan, is ready for operation. The mine is at present unwatered and will be ready for active operation soon.

It is reported that A. S. & R.'s engineers are examining the Murphy's Ash Peak mining property, near Duncan.

GILA

The Van Dyke company's general manager has recently purchased a new steam hoist and other mining machinery.

It is rumored that a large producing company of the Globe district has made an offer for the property of the Porphyry Consolidated Copper company. A drilling program is being carried on by this company, churn drilling being done from the bottom of the 650 shaft and diamond drilling in another part of the property, the drill being driven from the 600-foot level.

The Louis D'Or Mining company is reported to be carrying on a program of churn and diamond drill development work. Two drills, one a churn and the other a diamond, are drilling continuously, two shifts per day.

The Globe Copper company is drifting from the No. 1 shaft to connect with the No. 2 shaft. A distance of about 1200 feet will have to be driven. A crushing plant will be installed.

A strike of chalcopryite ore is reported in the mine of the Arizona-Globe Copper company. The ore was encountered on the 480-foot level, in the crosscut from the east drift, in an undeveloped part of the property.

Work on the Iron Cap's 350-ton mill is progressing rapidly, the necessary equipment is arriving, the grading on the new railroad leading from the shaft to the mill has been completed and about fifty per cent of the track laid.

The Superior and Boston, the vein on the 600-foot level has been intersected and drifting on the vein is now in progress to get under the rich ore encountered on the 400-foot level, is the report from that section.

It is rumored that the Inspiration has taken over the Porphyry property. The Porphyry has stopped drilling and its officers are in Kansas City attending to details of the transfer.

Operations have been resumed at the Castle Dome mine, located about three miles from the Inspiration at Miami.

The Gibson will resume operations soon is the report coming from that district.

The Iron Cap Copper company has joined the Globe-Miami Rescue and First Aid Association.

One of the largest mining deals that has taken place in the Globe-Miami district in years was consummated recently, when the Inspiration Con. Copper company took over the holdings of the Warrior Copper company.

The Old Dominion is doing development work, its main operating shaft being sunk from the 18th to the 20th level; K shaft from the 19th to the 20th; the Gray from the 14th to the 16th level.

MARICOPA

The Eyrich Gold Mines company, whose property is situated in the Winifred mining district 18 miles north of Phoenix, is installing a 15-ton stamp mill. The shaft on the property is down 360 feet and drifts have been extended both north and south.

MOHAVE

The Gold Bug property, in the Minnesota district, is to be sold under the hammer, the company having passed into innocuous desuetude.

It is reported that the Telluride at Oatman has cut a vein showing about four feet of ore. Drilling east and west will commence at once.

The lease of the Copper World and Antler mines has been taken over by eastern interests represented by Geo. B. McDevitt, and it is said the new owners will begin immediate operations, installing new equipment, etc.

The stockholders of the Oatman Amalgamated Mines company met recently at Oatman and voted to increase the capitalization of the company to 1,500,000 one-dollar shares instead of \$150,000 in ten cent shares. The shaft of the Amalgamated has reached a depth of 600 feet, a station cut and the work of crosscutting to the big veins is under way.

The Dean mill will start operation soon, is the report from Kingman.

W. O. North, former assistant manager of the United Eastern mine, has purchased the dumps of the old Rand mine, at Searchlight, and will have the ores hauled to Duncan to be treated by the cyanide mill.

Reports from the Pine Springs mine, near Kingman, are to the effect that about 200 tons of high grade ore has been taken out in the past several months.

The Red Lion is reported to have two shifts at work putting the main shaft to 500. The flow of water from the fissure vein near the top of the shaft has been eliminated.

The Potosi Mines are reported to have reached the 200-foot level and have commenced drifting and will continue for 100 feet, after which they will resume sinking in the shaft.

The Chloride Mining company is developing its Hidden Treasure group of eight claims.

The main shaft of the United American will reach the 500 level soon, is the report received from that section.

It is announced that the Onyx Quarry, situated north of Kingman, has changed ownership who will begin shipments as soon as a heavier crane is put in.

The Dardanelles Mining company is reported to be showing excellent ore in the drift on the 100-foot level. Samples of the general run of the ore assay over \$20.

C. B. Manville of the Johns-Manville company of New York, went over the property of the Thumb Butte Gold Mines company. This property is among the systems of the Union Pass section. New machinery is being installed.

The IXL mine is now sinking a shaft. The mine is being equipped with compressor and other necessary machinery.

(Continued to Page 60)

GREENLEE

Stockholders of the Shannon Copper company at the annual meeting voted 295 shares in favor to 100 shares against to authorize the directors any portion of the \$431,000 in the purchase and location of oil land leases.

The directors of the Arizona Copper company have been making an inspection of their holdings in Clifton, Metcalf and Miami. Annually, at the visit of the A. directors, rumors are afloat regarding possible sale of the Phelps Dodge holdings to the Scotch company.

J. H. Hall

Date		Midvale	an	ag	cu	Pb	zn	Ins	Fe	S	cu	Tons	Total midvale	Net value	Freight	Royalty	Shippin	Bono	Total				
			an	ag	cu	Pb	zn	Ins	Fe	S	cu	Tons	Total midvale	Net value	Freight	Royalty	Shippin	Bono	an	ag	cu	Pb	zn
6-1-43	1	7885-A	.08	3.6	.35	1.3	15.2	17.6	11.0	12.6	.6	41,431	12.78	877	4.95	1081	139.17	304.77	3.345	149.15	290	1077.1	12595
8-7-43	2	7893-A	.07	2.5	.50	.6	10.1	64.3	8.2	9.3	.3	50,785	895	499			816	232.55	3.569	127.46	510	612.	10299
1-27-44	3	8143-A	.075	2.5	.20	.5	11.8	62.1	8.0	9.6	.5	46,445	1000	604			3988	464.20	3.483	116.11	186	464	10961
			.075	2.8	.35	.77	12.19					138,861					170,59	1001,52	10,367	372.7	984	2153	33,855
Museum Park.																							
3-10-46	4	73	.09	1.72	.14	.65	6.60		7.8			22,583					-11,52	203.25	2,032	38.8	-	294	2981
3-30-46	5	92	.02	2.0	.09	.62	5.56		9.2			44,971					-23,54	344.10					
4-24-46	6	92	.05	2.5	.17	.52	7.39		8.67			41,747					-36.33	412.55					
A-B on Pb & Zn																							
4-10-44	1	Ena Remains 8179-A	.145	8.7	.50	5.3	7.6	43.5	15.7	16.8	1.9	40,873	16.97	12.49		4879	155.32	483.84	5927	355.60	408	4333	6213
6-17-44			.13	10.0	.60	6.0	9.1	37.0	18.7	20.7	2.7	34,606	1866			1944	174.97	483.09	4,499	346.1	415	4153	6295
11-17-44	3		.11	9.5	.75	5.7	12.1	17.1	27.3	18.0	.8	38,954	1888	14.29		2599	233.94	571.12	4,285	370.0	584	4441	9427
			.129	9.37	.615	5.65	9.58					114,433				94.22	564.25	1586.77	14,711	1071.7	1407	12927	21938
1-31-43	1	U.S. Navy	.01	3.6	.72	8.7	14.2					18,49	15,885	10.41		1520	109.78	194.86	66.6	266	3217	5231	
2-17-43	2		.02	3.7	.62	7.8	14.3					5,92	1514	10.19		365	32.89	57.72	21.2	71	572	1636	
	3															190	17.13	82.01					
5-5-42	4	47	.03	7.6	1.30	5.8	15.1					6.6	16687	12.24		2426	56.50	67.83	.20	50.2	171	766	1993
				4.5	.82	7.9	14.4					30.81					21630	402.12	138.0	568	4875	8880	
5-5-46	7		.05	2.7	.30	.74	9.15		10.3			99,411					-67.60	1257.19					
5-13-46	8		.06	3.6	.27	.55	10.40					83,720					34.33	1168.53					
5-23-46	9		.14	2.9	.21	.51	7.38		11.2			93,104					96.86	765.33					
5-30-46	10		.10	1.95	.17	.29	4.20		8.75			97,141					-100.06	429.51					
6-21-46	11		.10	1.60	.08	.28	6.80		7.0			73,339					-21.09	650.85					
6-30-46	12		.065	1.20	.10	.15	8.15		7.2			68,676					-41.81	711.06					
7-14-46	14		.08	1.6	.06	.38	9.50		7.0			80,769					96.9	994.82					
8-20-46	15		.065	1.65	.12	.36	7.29		8.8			111,182					-90.06	1029.78					
9-10-46	16		.065	1.0	.12	.19	6.10		7.15			84,091					-136.23	651.66					
9-13-46	17		.04	1.2	.07	.07	8.24		7.5			50,551					-71.28	529.23					
9-23-46	18		.045	1.0	.10	.03	7.49		7.3			59,787					-100.36	576.49					

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2063
18078

