CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the G. M. Colvocoresses Mining Collection

ACCESS STATEMENT

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

CONSTRAINTS STATEMENT

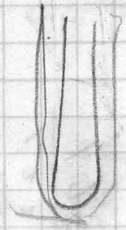
The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess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

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

QUALITY STATEMENT

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

F. G. Mitchell ind
known about them



Asks Sweeney about it.

Wait for Chas. A. Smith
who will write me [illegible]

710 N. Foothill Road Feb 5th 28th
Beverly Hills Cal.
Put Sweeney to [illegible]!

2169.76
35.00
2204.76
1584.66
620.10

1402.87
620.10
782.77

2169.76
18.00
2187.76
960.75
1227.01

1402.87
1227.01
175.86

7000.
2000
2000

6 Claims – Unpatented

Elizabeth
Colonel
Billy Boy
Victory
Helen
Little Ross

FRITZ
VI
Last Loc filed 1948

Tillie Starbuck Mines Co

George STACK
Yavapi County Savings Bank
Secretary of Company

Claims adjacent to the

TILLIE STARBUCK, OWNED By

FRITZ VIERTHALER.

Slate Creek

Tonnage

Vein in excess of 6'

$\frac{3}{4} \times \frac{4}{20} = 8$

$\frac{3}{4} \times \frac{14}{20} = .42$

8.42

4.50
1.75
2250
3150
450
7.8750

9
12 | 150
144

.17
32
34
51

au
ag

5.44
11.56
7.00
8.50

12.85
129
11.56

5.
12 | 79.
86.

175
5
8.75
4.00
12.75

4.65
175
2325
3255
465
8.1375

8.14
477
12.91

5.30
23
477

175
8
14.00

$$
\begin{array}{r}
4.5 \\
1103\overline{)4953.} \\
4412 \\
\hline
5410
\end{array}
$$

$$
\begin{array}{r}
1.75 \\
7 \\
\hline
12.25
\end{array}
$$

$$
\begin{array}{r}
4.50 \\
4.5 \\
\hline
2025 \\
443 \\
\hline
8.48
\end{array}
$$

$$
\begin{array}{r}
7. \\
1960\overline{)13064.} \\
13720 \\
\hline
\end{array}
$$

12000 –

200
60

12000

~~7~~ .4

149) 1103.
~~99~~
1043
600

.14
32) 443
32
123

~~8~~
4.43

1103) 4889.
4412
4770
4412
3580

3
1103) 3623.
3309

8.00

4.50 × 20
3.50 × 1 –

17.20

4.50
1.75
2250
3150
450
7.8750

am 7.88
aq 3.15
11.03
2.20
8.83
3.50
5.33

3.50
.35

11.03
.85
5515
8824
9.3755

8.83
7.00
1.83
.25
1.58
45

45000 150
9
540000

9.38
7.00
2.38
.25
2.13

CONSOLIDATED ARIZONA SMELTING COMPANY

HUMBOLDT, ARIZONA

COPY

October
Twenty-fourth
1919

Mr. A. B. Peach,
c/o Tillie Starbuck Mines Co.,
Prescott, Arizona.

Dear Sir:

We have completed a series of muffle tests on the Tillie Starbuck ore and with somewhat more favorable results than I had expected when I talked to you some while ago and suggested that you send us the sample. The muffle tests indicate that the ore is amenable to treatment by the chloridizing volatilization process with an extraction of about 80% of the gold and 90% of the silver content.

The sample with which we worked analyzed as follows:

Gold	0.17 o.p.t.	Iron	4.8%
Silver	12.85 o.p.t.	Lime	10.0%
Copper	trace	Sulfur	2.1%
Insoluble	67.5%	Zinc	2.0%
		Lead	trace

You will understand that the above tests were merely muffle tests in our laboratory furnace, and in speaking of extraction obtained it is meant that 80% of the gold and 90% of the silver was volatilized, but further than this we were not prepared to carry the work on muffle tests. That is, the fume was not collected nor reduced to bullion, but these last two stages should

present no difficulties.

In the course of a couple of months after we have gotten out of the way a large amount of work we now have before us in connection with our small kiln, we will be glad to discuss with you the matter of a larger scale test if you are interested.

Yours very truly,

FOR THE
WESTERN METALLURGICAL CO.

ESS EH

COPY
HUMBOLDT, ARIZONA
CONSOLIDATED ARIZONA SMELTING COMPANY

Volatilization

TESTS ON TILLIE-STARBUCK ORE

Tests #58, 59, 60.

Head Assay

Au	Ag	Cu	Insol	Fe	CaO	S	Zn	Pb
0.17	12.85	tr	67.5	4.8	10.0	2.1	2.0	Tr.

Test	Wt Ore	Wt Salt	Time	Temp	Wt.Calc.	Assay Calc. Au	Assay Calc. Ag	Extraction Au	Extraction Ag
58	50.0	5.0	2.3H	800	46.6	0.04	1.31	78.1	90.5
59	50.0	10.0	2.3	800	47.2	0.08	5.82	55.6	57.2
60	50.0	15.0	3.5	800	45.1	0.03	2.72	84.1	80.9

NOTE: Temperatures are estimated. It will be noted that with increasing salt in the charge the extraction is less than with the smallest amount of salt. This is possibly due to the fact that fuming had not ceased when the charges were withdrawn.

Humboldt/10/22/19
EH

Re: Tillie Starbuck Mine

March 30, 1931

(Extract from letter to A. B. Peach, Vulture Mining Company from G. M. Colvocoresses)

I have your letter of March 26th and thank you very much indeed for the information contained. I am distinctly interested in the TILLIE STARBUCK and would like to obtain additional information whenever you are in position to send me tha data which you say is now in Prescott.

I understand that you estimated between 70,000 and 100,000 tons of ore, the average width of the vein being in excess of 6'. Your reference to the values is not quite clear since you say that these were 2/5 gold and 3/5 silver and averaged about $7.00 a ton, when silver was 70¢ an ounce. On this basis the present average would only be about $4.50 a ton which seems rather too low grade to make the property attractive unless the higher grade ore to which you refer would represent a substantial tonnage. The sulphide ore is what really interests me most since I judge that furter development at depth might be expected to prove up a considerable quantity of this material which ought to be suitable for concentration, and, if the gold values were sufficiently high, could be handled with a reasonable margin of profit. Your opinion on this particular matter would be much valued and, whenever you can let me have further data, I would like to receive same, and might arrange to visit the property sometime in the near future since I am still looking after the Storm Cloud Mine and up in that vicinity every month or two.

(Signed) G. M. Colvocoresses

(Extract from letter to G. M. Colvocoresses from A. B. Peach) March 26, 1931

Your letter inquiring about the Tillie Starbuck mine in Yavapai county received and I have delayed answering thinking from day to day that I would be in Prescott where I could mail you what data I have on that property. Up to the time two of the lower tunnels caved near their portals I figured that there was between seventy thousand and one hundred thousand tons of ore fairly in sight. With

widths ranging from two to seventeen feet. With a safe average of six. The values being about two fifths gold and three fifths silver averaging about seven dollars a ton with silver at seventy cents an ounce, with some very attractive widths of $10.00, gold ore on the upper level now of course the value due to the low price of silver would be much reduced. Where ever sulphide was encountered through out the workings the value was much higher than average oxidized ore and in the bottom of a fifty foot winze which was sank from tunnel number three was exposed fourteen feet of $11.00, ore and while at the bottom of it there was still some oxide, there was also more sulphide in evidence than at another point in the mine. It was due to this fact that a fourth cross cut tunnel was started at two hundred ninety feet greater depth. This tunnel having now reached a length of twelve hundred feet with another thousand feet to go before coming under the ore bodies.

(Signed) A. B. Peach.

This is Major Pickrell's record of assays of ore samples from Tillie Starbuck Mine.

During his lifetime, Major Pickrell loaned this schedule to an engineer who was interested in the mine.

It was returned to us on November 24th by Mr. A. J. Johns.

November 25, 1931

RECORD OF TILLIE STARBUCK MINE

Raise No. 1
From No. 3 to No. 2.

No.	Location	Gold Oz.	Silver Oz.
1.	8" high grade, South end at 10'	.50	134.50
2.	8" high grade, South end at 20'	.30	99.70
3.	8" high grade, South end at 30'	.20	111.00
4.	8" high grade, South end at 35'	.30	7.10
5.	8" high grade, South end at 40'	.20	31.40
6.	14" high grade, North end at 45'	.25	39.25
7.	10" high grade, South end at 45'	1.10	7.10
8.	Grab sample fines from Raise #1	.20	14.6
9.	Oxide from hanging wall 45'	None	None
10.	4" high grade at 53' Raise #1	2.00	137.20
11.	16" high grade at 53' Raise #1	trs.	1.60
12.	Grab sample fines, Raise #2	.30	6.30
13.	18" high grade, South end 58'	2.60	18.80
14.	Few feet. Arnors Drift	.20	15.20
15.	6" high grade stread 62'	.10	
16.	14" ore Raise #1. 70'	.16	2.20

Drift from Raise No. 1.

1.	Left	.24	28.16
2.	Right	1.10	2.06
3.	Oxide	.30	7.10
4.	Left	.20	4.6
5.	Right	.10	5.9

Winze

No.	Location	Gold Oz.	Silver Oz.
1.	8' depth	.30	13.5
2.	15' depth	.10	4.5
3.	20' depth 2	.20	5.0
4.	25' depth	.20	10.80
5.	30' North	.22	1.80
6.	28' South Cross cut Cu.trs.	.20	9.80

Gardner Raise No. 2

1.	Raise at 5'	.10	3.3
2.	Raise at 10'	.20	3.4
3.	Raise at 25'	.10	3.9
4.	Raise at 30'	.20	7.4
5.	Riase at 35'	.20	5.2
6.	Raise at 40'	.15	4.05
7.	Raise at 45'	.10	5.7
8.	Raise at 50'	.15	3.95
9.	Raise at 55'	.20	5.2
10.	Raise at 60'	.15	7.10
11.	Raise at 65'	.40	10.8
12.	Raise at 70' Cross Cut Roof	.20	3.2
13.	Raise at 75'	.35	7.25
14.	80'	trs.	2.00
15.	85'	.20	2.5
16.	90'	.20	3.00
17.	95'	.25	7.95
18.	Raise at 100'	.20	6.80
19.	Raise at 105'	.10	3.50
20	Raise at 110'	.10	6.10
21.	Raise at 115'	.10	5.50

Raise No. 3.
Middle to Upper Tunnel.

No.	Location	Gold Oz.	Silver Oz.
1.	Raise at 15'	.10	.90
2.	Raise at 20'	.30	1.70
3.	Raise at 25'	trs.	1.00
4.	Raise at 30'	.10	1.40
5.	35'	trs.	1.40
6.	40'	.20	2.00
7.	55'	.15	5.45
8.	60'	.20	5.80
9.	65'	.10	2.30
10.	65' Cross Cut	.15	3.85
11.	70'	.120	4.80
12.	75'	.10	2.50
13.	80'	trs.	2.60
14.	85'	.10	2.90
15.	90'	trs.	1.60
16.	105' North	.20	4.60
17.	105' South	.30	14.50
18.	115'	.60	2.00
19.	120'	.20	3.40
20.	125'	.30	5.30
21.	130'	.25	5.75
22.	135'	.30	9.70
23.	140'	.20	5.20
24.	145'	.10	3.90

Raise No. 4.

No.	Location	Gold Oz.	Silver Oz.
1.	Raise at 10'	.10	7.70
2.	15'	.05	4.15
3.	20'	.10	4.30
4.	25'	.10	4.10
5.	25' (for Cu-None)	.10	3.90
6.	25' Drift No. 1 R.	.20	9.20
7.	25' " No. 1 L.	.15	1.85
8.	25' South Drift 10'	trs.	.90
9.	25' " " 15'	trs.	1.60
10.	25' " " 20'	.15	2.45
11.	25' " " 25'	trs.	2.00
12.	30'	.05	3.55
13.	35' Left	.05	3.35
14.	35' Right	.10	1.90
15.	40'	.20	6.40
16.	45' East	.10	1.90
17.	45' West	trs.	1.40
18.	50'	.05	2.55
19.	55'	.05	1.85
20.	60'	trs.	1.40
21.	65'	.10	2.90
22.	70'	.12	3.58
23.	80'	.10	2.50
24.	85'	.08	2.02
25.	90'	trs.	1.30
26	95'	.02	2.30
27	100'	.15	3.10
28	105'	.10	3.00
29	110'	.12	3.00
30	115'	.10	3.10

Raise No. 5.
Tunnel No. 3 to 2.

No.	Location	Gold Oz.	Silver Oz.
1.	Raise at 5'	trs.	1.40
2.	10'	.05	2.35
3.	15'	.10	4.50
4.	25'	.10	3.20
5.	30'	trs.	2.30
6.	35'	.18	2.10
7.	40'	.10	2.20
8.	45'	.10	1.90
9.	50'	.10	5.30
10.	55'	.15	5.05
11.	60'	trs.	2.40
12.	65'	.10	3.90

Raise No. 6.

1.	Raise at 5'	.18	15.00
2.	10'	.16	12.60
3.	15'	.10	6.10
4.	20'	.22	11.40
5.	25'	.10	4.50
6.	30'	.10	4.70
7.	35'	.10	10.30
8.	40'	.15	10.25
9.	45'	.08	8.10
10.	50'	.15	1.75
11.	55'	.10	3.30
12.	60'	.22	10.40
13.	65'	.03	12.80
14.	70'	.18	7.80
15.	80'	.10	11.10
16.	85'	.16	16.66

No.	Location	Gold Oz.	Silver Oz.
17.	Raise at 90'	.10	25.90
18.	95'	.18	4.00
19.	100'	.20	5.80
20.	105'	.10	6.90
21.	110'	.20	4.00
22.	115'	.10	19.10
23.	120'	.10	9.90
24.	125'	.10	12.00

Water Drift
Tillie Starbuck Tunnel No. 3.

1.	Breast of main tunnel at 1085'	.30	1.20
2.	" " " " Dr. at 1090'	.20	2.00
3.	" " " " Dr. " 1090'	.20	1.60
4.	" " " " " 1100'	trs.	1.20
5.	" " " " " 1135'	.10	9.50
6.	" " " " " 1140'	.25	6.30
7.	" " " " " 1145'	.25	1.80
8.	" " " " " 1160'	.10	4.90
9.	" " " " " 1165'	.15	3.85
10.	" " " " " 1170'	.15	1.85
11.	" " " " " 1175'	None	None
12.	" " " Footwall 1175'	trs.	7.40
13.	" " " Tunnel at 1180'	.10	1.50
14.	" " " " " 1185'	.10	9.90
15.	" " " " " 1195'	.15	3.65
16.	" " " " " 1190'	.20	16.80

copies for G. M. C.

This report on Tillie Starbuck Mine was prepared by Mr. A. J. Johns, a mining engineer, now residing at Surg Side Colony, Seal Beach Post Office, California.

He brought this report into us on November 24th advising that Major Pickrell loaned it to a mining engineer who was interested in the properties about a year ago and when he found it had not been returned to the Major he was instrumental in getting it for us.

The party who was previously interested in the mine does not want to make any offer for the property at the present time.

November 25, 1931

REPORT ON TILLIE STARBUCK MINE

PRESCOTT ------ YAVAPAI COUNTY

ARIZONA

LOCATION:

The Tillie Starbuck property comprises ten (10) patented and two (2) unpatented lode mining claims located at Slate Creek Hassayampa Mining District, about 15 miles southeast of Prescott, Arizona. The property is reached by a good highway from Prescott, which is the nearest supply point.

EXTENT OF REPORT AND CONSLUSIONS:

The mine is opened by three principal tunnels, the lowest tunnel of which exposes 4 ore shoots at depths of from 350 feet to about 600 feet. (See accompanying map showing longitudinal section along the Tillie Starbuck vein.) I did not sample any of the ore shoots on the two upper tunnel levels, but confined my examination to observing the ore conditions on the lower tunnel level, and took what I considered sufficient samples from various cross-cuts in the ore-bodies, and in particular from the Gardner Winze, so as to gain a reasonably accurate idea of ore values on this tunnel level.

In general terms the following conclusions stand out:

(1) The country rock is not the tight granitic formation which is common in the Prescott vicinity, but consists mainly of belts of soft porphyry and schists with some diorites which strike about S-17° W. The Tillie Starbuck vein occupies a very strong fault fissure which cuts the schistocity of the country rock at angle of 2o° to 30°. The strike of the vein varies from 5° to 10° southeast with dip of about 80° easterly.

(2) The vein on the lower tunnel level at depth of 600 feet on the Gardner ore shoot shows a well oxidized, loose vein structure with only occasional small patches of sulphides remaining.

The oxidized ore shows good evidence of leaching action with considerable development of limonite iron, which I consider is derived from oxidation and leaching of original sulphide ores. The vein has a very favorable appearance of containing several hundred feet below the present depth.

(3) The Gardner winze is centrally located for deeper development below tunnel level. By sunking this winze 200 to 300 feet, and drifting along the ore, should demonstrate ore conditions in the sulphide zone. The Gardner ore shoot shows $10.00 values in the oxide ores. The values are about equally divided between gold and silver in the oxidized ore. The sulphide ores show increasing silver. Silver is figured at $1.00 per oz. Indications point to higher values in the sulphides -- probably to $15.00 to $20.00 per ton. It appears quite probable that further development will open sufficient ore to warrant a 100-ton milling plant.

ORE SHOOTS:

My samples of the Gardner winze, now down 30 ft. below the tunnel level, show average values of about $11.00 across 10½ feet in the oxidized ore. Small patches of sulphide ore now coming in indicate that the sulphide zone may be reached in the next 200 ft. of sinking.

One sample of sulphide ore, showing only light sulphides of pyrite and galena, from drift on the Gardner shoot, 25 feet North of the Gardner winze on tunnel level, assayed $8.26 gold and 11.80 ozs. silver -- total $20.06.

A sample of oxide ore 7 feet wide at this point assayed $4.65 gold and 5.30 ozs. silver -- total $9.95. The value of $20.06 on the one sulphide sample as compared to an average of about $11.00 on the oxidized ore indicates that deeper development in the sulphide zone has a good chance of opening considerably higher grade sulphide ores than the present oxidized ores.

The Gardner and Oxidized Ore Shoots are raking toward each other, as shown on amp, and should merge into one ore shoot about 150 feet below the present tunnel. The vein on the tunnel level between the Gardner and the Oxidized Ore Shoots shows small irregular lenses of ore in a loose vein structure, and it appears quite possible that greater depth may show the Gardner and Oxidized Ore Shoots as one continuous ore shoot of from 300 to 500 feet in length with indicated width at present of 10 to possibly 15 feet.

In addition to the Gardner and the Oxidized Ore Shoots, the Johnson and the Silver Shoots offer equally good possibilities with deeper development. The Johnson shoot has length of about 200 feet with average width of about 10 feet. The Silver Shoot is about 60 feet long by 3 to 5 feet in width. I have made no estimate of ore values or tonnage above the tunnel level, but Company figures indicate that about 50,000 tons of about $9.00 ore can be mined from this area.

SAMPLES - Tunnel Level	Width Feet	Gold	Silver Ozs.	Total Value $
1 & 2 In drift North end of Johnson shoot		Tr.	Tr.	
3 Johnson shoot - middle xcut E.	6½	$6.20	5.70	11.90
4 Johnson shoot- south xcut (0-9) from hanging wall	9	3.72	1.00	4.72
5 Johnson shoot - continuation #4 (9-14') from hanging wall	5	4.54	.61	5.15
6 Gardner shoot - xcut at winze (0-6') from hanging wall	6	4.54	2.80	7.34
7 Oxidized shoot - (0-2½') from hanging wall	2½	6.20	7.10	13.30
8 Oxidized shoot -(2¼-9½') from hanging wall	7	3.72	1.80	5.52
9 Gardner shoot - 25' North of Winze (3-7') from footwall	4	4.13	4.80	8.93
16 Gardner shoot (0-3') " "	3	5.16	5.80	10.96
10 Gardner winze - down 30' south end (0-5½') from hanging wall	5½	6.20	4.90	11.10
11 Gardner winze - down 25' south end (0-5½') from hanging wall	5½	5.16	6.50	11.66
12 Gardner winze - down 30' north end (0-4½') from hanging wall	4½	5.16	4.75	9.91
13 Gardner winze - down 25' north end (0-7½') from hanging wall	7½	4.54	5.20	9.74
14 Gardner winze - down 25' north size xcut (7½-10½') from hanging wall	3	6.20	6.90	13.10
15 Gardner winze - down 15' north end (0-4') from hanging wall	4	4.13	6.50	10.63
17 Gardner winze - sulphides at #9		8.26	11.80	20.06

It is noticeable in the above samples that the gold content is fairly constant but that the silver contents vary from .61 oz. to 7.10 ozs. Separating these samples into two groups — those containing more than 3 ozs. silver in one group and those samples showing less than 3 ozs. silver in a second group, the following ratio of gold to silver is shown:-

Group I			Group II		
Sample	Gold	Silver	Sample	Gold	Silver
3	$6.20	5.70 ozs.	4	$3.72	1.00 ozs.
7	6.20	7.10 "	5	4.54	.61 "
9	4.13	4.80 "	6	4.54	2.80 "
16	5.16	5.80 "	8	3.72	1.80 "
10	6.20	4.90 "	Total	$16.52	6.21 "
11	5.16	6.50 "			
12	5.16	4.75 "			
13	4.54	5.20 "			
14	6.20	6.90 "			
15	4.13	6.50 "			
Total	$53.08	58.15 "			
Average	$ 5.31	5.81 "			

Group I shows roughly a ratio of one dollar gold to one ounce silver. Group II shows nearly three dollars gold to one ounce silver. In sample 17 of sulphide ore the silver ratio increases to nearly 1½ ozs. silver to one dollar gold. The lowe silver ratio of the samples in Group II, in conjunction with the well oxidized condition of the vein, supports the theory that a considerable portion of the silver values have been leached out, while the hold being less susceptible to leaching action would not be leached to the same extent.

With some 500 to 600 ft. of oxidized ore above the tunnel level, a very considerable zone of secondary enriched sulphide ore is quite possible at water level. The depth at which the sulphide zone will be encountered is quite indeterminate, but the appearance of scattered bunches of sulphides on the tunnel level and in the Gardner winze indicates that the sulphide zone may be reached within 200 ft. below the present tunnel level.

RECOMMENDATIONS AND GENERAL CONDITIONS:

I consider the present development as sufficiently favorable to warrant sinking of the present Gardner winze to at least the sulphide zone, with sufficient drifting along the ore from the bottom of the winze to determine the probable ore values. If this work responds favorably, a lower crosscut tunnel about 1700 feet in length should be driven so as to reach about 250 feet below the present tunnel. This tunnel would be used as an ore extraction tunnel for milling operations, and should afford reasonably cheap mining costs. Any deeper development could be done by sinking an underground shaft from this last tunnel level.

Cyanide tests made by the Company indicate that the ore is amenable to cyanide treatment, with extraction percentage about 90 per cent.

Electric power can be obtained from the Arizona Power Company by construction of about one and a half miles of transmission line.

There is an abundance of standing timber on the claims for mining purposes, and the mine will furnish ample water for milling purposes.

The general conditions for economic operation of the property are good. On basis of 100-ton milling plant, and keeping the overhead expense to the minimum, it would appear that mining and milling costs should not exceed six dollars ($6.00) a ton.

Respectfully submitted,

A. L. JOHNS.

To
Mr. A. J. Pickrell,
Los Angeles,
California.

January 20, 1923.

TILLIE-STARBUCK MINE

Wickenburg, Arizona
April 21st, 1932.

----- very attractive gold values were once found on the Artic vein -- expect to develop large ore body when present work intercepts said Artic vein.

The vein that is generally known as the Tillie Starbuck Vein is the same vein cutting through the Plevna Claim, and which is over a mile in length. The ore shoots are opened on three levels known as tunnels 1, 2, 3, and tunnel #4 is the one Fritz is now driving. Tunnel #1 is the upper, and is 700 to 800 ft. long, exact distance I cannot remember. In that tunnel was developed the Johnson shoot, then the Gardner shoot, and near the breast, the Gold shoot. Tunnel #2 is the tunnel that the road passes over before reaching camp and, due to its having been caved prior to the time I became interested in it with Major, I do not know its entire length but would say approximately 1800 feet. This tunnel is about 140 feet below tunnel #1 and developed the same ore and approximately the same grade as #1 with a slight increase in the ore shoots. Tunnel #3 is the one in the canyon just below camp. The first 700 ft. of it was a cross cut and the Plevna vein encountered and followed in a southerly direction for some 1200 or 1400 ft. to develop the Johnson, Gardner, the Gold, and the silver shoots. This is the only tunnel that had gone far enough to encounter the silver shoot and the breast of the tunnel, when stopped, still showed values. And, from surface indications I feel sure that more ore shoots could be developed in a Southerly direction if developments were continued for another 600 ft.

Three raises were driven from tunnel #2 to tunnel #3. One on the Gardner, one on the Gold, and one on the Silver shoot, and one driven from tunnel #1 to tunnel #2 on the Gardner shoot; which proved the ore to be regular in value, and continuous from level to level, with an average width of from six to eight feet. The vein varying from as much as 2 to 17 ft. wide, and 6 ft. for the average is very conservative. I feel very confident that there is very close to 70,000 tons of ore blocked out between tunnel #3 and the surface which depth is from 500 ft. on the Johnson shoot to 800 ft. vertical on the Gold. Tunnel #4 when completed will encounter the various shoots from 800 to 1100 ft. vertical. And from all evidence will more than double the tonnage available.

The values are entirely gold and silver, and the average proportions are two-fifths Gold and three-fifths Silver. When silver was a dollar, I figured the entire ore would average around $8.00. Of course at the present price it would be considerably reduced. But the one great attraction to the Tillie Starbuck is that whenever bunches of sulphide ore were encountered the grade increased substantially, and it is the opinion of those familiar with the geology of the Tillie, when the sulphide zone is reached, a very attractive ore will be encountered.

The shoot of tunnel #3 is still oxidized and no doubt impoverished from it to a considerable extent by leaching. Another very interesting feature is that all the ore shoots have continued to lengthen as greater depth has been gained. And

it is my opinion and also of the Major's, when tunnel #4 is completed that a continuous ore shoot will be developed to a distance of 1000 to 1200 feet. This was strongly evidenced by almost continuous values for the entire length of tunnel #3 from where the ore was encountered on the Johnson shoot for approximately 1000 ft. southerly.

In the Major's records there should be a blue print drafted by A. L. Johns showing the vertical section of the different ore shoots which will give you a better knowledge than it would be possible for you to gain otherwise. - - - -

Due to the ideal situation of the mine, even on a fifty cent silver market, the Tillie would be on a substantial productive basis for many years, as the cost of mining and milling should in no case exceed $2.50 per ton. There is plenty of timber on the property for all mining purposes, and an abundance of water coming to the mill by gravity, as well as the ore to a depth of 1100 feet when the present tunnel is completed.

A. B. PEACH.

NOTES RE METALLURGY OF TILLIE STARBUCK ORE

Flotation Tests by Southwestern Engineering Company.

Cyanide tests by Sill & Sill.

HEADS		CONC.		RATIO	RECOVERY %	
Au. Oz.	Ag. Oz.	Au. Oz.	Ag. Oz.	CONC.	Au.	Ag.
0.13	8.05	3.40	210.4	30 : 1	94.1	79.5
0.18	10.94	4.01	224.39	25 : 1	82.3	81.1
0.18	10.94	4.16	247.96	30 : 1	79.5	82.0
0.08	3.36	1.62	89.78	40 : 1	78.8	68.2

Lead in some of the ore 3.30%

Assays from Various Sections of Mine:

	Au.	Ag.
Oxide Shoot	0.13	9.55
Silver "	0.10	8.16
Johnson "	.05	4.21
Gardner "	0.12	5.30
Composite	0.10	7.05

Cyanide tests show recoveries of 90 to 95% of Au. and 81-88% Ag.

(COPY)

SILL AND SILL
CONSULTING MINING ENGINEERS
1011 South Figueroa St.,
Los Angeles.

May 25, 1922.

Major A. J. Pickrell,
c/o California Bank,
Los Angeles, California.

Dear Sir:

Enclosed herewith are the reports on the several tests made on the Tillie Starbuck ore.

Tests No. 1, 2, 3 and 4 were made on 500 grams (1.12 lbs.) of a composite sample of the Oxide, Silver, Johnson and Gardner shoots. The ore was ground to minus 80,100, 150 and 200 mesh and agitated continuously for 48 hours, by shaking in bottles. These tests do not represent commercial results but indicate the fineness to which the ore should be ground.

Tests No. 5 and 6 were made on 2000 grams (4.4 lbs.) and 8000 grams (17.6)lbs.) of solution and agitated for 30 and 36 hours respectively. These tests were made in small Pachuca tanks and continuously air agitated. They represent standard practice with the exception that all measurements and conditions were more accurately controlled than in commercial work. Test No. 7 was made under the same conditions as tests 5 and 6 using a dilution of 5 to 1 instead of 4 to 1.

Test No. 8 was made on 100 lbs. of a composite sample. The ore was crushed in a gyratory crusher and ground in a 3' Abbe tube mill. The product was all minus 150 mesh. It was agitated with 150 lbs. of cyanide solution in a Pachuca tank for 48 hours. Samples were taken at 36, 42 and 48 hours to determine cyanide and lime consumption and the extraction. This is a thorough, practical, commercial test duplicating field working conditions.

These tests indicate that this ore is readily amenable to cyanidation with a cyanide consumption of 1.9 lbs. at 36 hours, 2.25 lbs. for 42 hours and 2.7 lbs. for 48 hours. The extraction at 36 hours was 84.2% silver and 95% of the gold, at 42 hours it increased to 86% of the silver and 95% of the gold and at 48 hours the final extraction was 87.7% of the silver and 95% of the gold.

The longer contact of the cyanide solution with the base metals present gave an increase in the cyanide consumption.

The economical time of treatment seems to be 36 hours with an 84.2% extraction of the silver and 95% extraction of the gold, and a cyanide consumption of 1.9 lbs. The time of agitation will probably be cut to about 30 hours when grinding in cyanide solution.

Yours very truly,

(Signed) SILL AND SILL

Mining & Metallurgical Engineers.

NOTES RE TILLIE STARBUCK MINE

by G. M. Colvocoresses - August 1939

E. Anger, Mining Engineer, claims to have sampled the surface of claims in this vicinity but owned by Sweet and Max Vierthaler where he says that he found a great number of surprisingly good values in gold and thinks that these might prove more valuable than the adjacent Tillie.

Two claims adjoining the Tillie are owned by Fritz Vierthaler and could be leased or purchased along with the Tillie.

There has been but little development to date but some good ore outcrops on surface and in shallow pits and this was not doubt the material sampled by Anger.

In letter to me dated December 19, 1938 A. B. Peach, Mining Engineer and formerly in charge of the mine says:-

"As to the estimated tonnage developed I figure safely but there was 50,000 tons above the #3 tunnel which average $8.00 per ton with gold at old price ($20.00 per oz.) and silver @ $1.00 per oz. The average value now would be about the same as I remember the proportion of gold to silver." (When this letter was written gold was @ $35.00 per oz. and silver @ 64.64¢ in place of 71.1¢ as subsequent to June 1939).

Personal investigation of this property at intervals since 1915 and conferences with the late Major Pickrell, Max Vierthaler, A. B. Peach and Geo. D. Prince, all well acquainted with the mine have convinced me that this mine merits very careful investigation and holds promise of developing into a producer of medium grade gold-silver ore which can be milled

locally with good recovery of values and substantial margin of profit. Mining costs should be low but great care must be exercised in selecting a suitable mill-site, providing transportation facilities, water-supply and dumping ground for tailings.

I have never personally sampled this mine but in 1919 obtained a large sample believed to be representative of the higher grade of oxidized ore which had the following complete analysis:-

Au.	0.17 oz.
Ag.	12.85 oz.
Cu.	trace
Pb.	"
Zn.	2.0%
Fe.	4.8%
S.	2.1%
CaO.	10.0%
Insol.	67.5%

The value of this ore at present prices would be about $15.00 per ton and in my opinion it is about twice as rich as the average of the developed oxidized ore above the 3rd level.

The values in the sulphide ore is still problematical but the statements of Mr. Peach in his letter of March 26th, 1931, may be taken as absolutely reliable and are certainly encouraging.

The record of shipments made by the Bradshaw Company in 1936 is only of importance as showing the tonnage (about 3000) which has been mined during recent years. These people made no attempt at systematic development or mining but merely gouged out the ore that was most accessible and I have been informed and believe that there is much doubt as to the accuracy of their assays.

G. M. Colvocoresses

TILLIE STARBUCK MINE

"Extract from report of Bradshaw Mines Inc. made in 1936 presumably by Morris Elsing."

* * * * * * * * *

The Tillie Starbuck Mine is located near the head of Slate Creek Canyon a little over half a mile southeast of the Davis-Dunkirk mill. It is reached by a fair mountain road from the main haulage road to the Davis-Dunkirk. The property includes a group of twelve patented lode mining claims which cover the vein for about a mile along its strike.

The property was owned by Major A. J. Pickerell, who formed a corporation and proceeded to develop the mine by four main cross-cut tunnels and drifts along the vein. His object was the complete development of the mine and there was no ore extracted other than that removed in drifting along the vein. At the time of his death he was running a long cross-cut tunnel to tap the vein 285' below the lowest workings at that time. Under the present management this tunnel was completed in 1935.

The geology of the mine is well described by Lindgren, as follows: "The country rock of Yavapai schist intruded by dikes of light colored rhyolite-porphyry." The footwall is said to be followed by a dike of rhyolite 10 feet wide. The stike of the vein is N 10° W., the dip 80° east, and the width two to seventeen feet. The outcrop is persistent on the high ridge to the south , where the ore is largely oxidized. There are three ore shoots with backs of about 700 feet above the lowest tunnel level. (No. 2 level).

The ore as shown by 74 assays made by the Company of samples taken indiscriminately from various parts of the mine including cut samples, chute samples, and samples from mine cars and trucks contain an average value of $5.56 per ton. However, because these samples give no weight to the extent of the ore bodies or veins sampled, this value of $5.56 cannot be accepted as affording a true average of the ore which can only be determined by actual milling operations. The ore is rather fine grained, is milky with many small druses, and includes numerous sericitized rock fragments. Larger cavities are

coated with a later dolomitic or ankeritic carbonate in small rhombohedrons. The ore minerals are sparse pyrite and sphalerite in small grains and in places specks of pyrargyrite, which appears to be of hypogene origin.

The vein occupies a strong fault-fissure, along which there has been some post mineral movement as indicated by the fractured nature of the ore and the presence of thick clayey gouge on the walls. The ore occurs in lenticular masses irregularly distributed along the vein, and calls for large tonnage operation as extraction is comparatively cheap.

The vein is opened on five levels and according to records of Major Pickerell's operation, total workings amounted to 7,439' -- 61.8% being accessible at the present time. The lowest, No. 1, is a cross-cut, striking the vein about 1,860' from the portal and again about 2,217' from the portal. From this point the vein is followed by a drift 219' to the face. The ore here is 4' to 8' in width (a Company assay at this face showed $10.00 per ton values) and has been stoped for about 30' in length and about 30' above the drift floor. The block between this stope and the first intersection with the vein has been explored by a 30' cross-cut and 20' of drifting on the vein. This level has not been driven in to the best part of the vein as encountered in the levels above. Number 2 level, 285' above, is also a cross-cut, striking the vein 894' from the portal and following the vein about 475'. This level is open to 1,073' from the portal and the remainder is now being re-opened. Old reports indicating the presence of high values in those ore shoots cut by this level can soon be checked by present operators. No. 3 level, 122' higher is open about 214' from the portal, leaving 1,500' inaccessible. This level can be opened from No. 2 with which it is connected by four raises, to be explored as soon as No. 2 is open. Number 4 level, lying 146' above No. 3 is open 475' from the portal and shows about 80' of ore in the back averaging 4' in width (a Company assay at this face showed $10.00 per ton values). Number 5 level, about 43' above No. 4 is now caved and inaccessible.

All records and assay data given by old reports show the best ore shoots yet to be opened in levels No. 2 and No. 3 and proof of those values will soon be available. Should the ore in these caved portions prove good values, these ore shoots can then be opened by driving No. 1 level below. An organized mining program by which all faces can be worked simultaneously will allow sufficient tonnage of ore to warrant the construction of a suitable tramway to the Davis-Dunkirk mill prior to the construction of a mill on this property. A half mile aerial tram from the portal of No. 1 tunnel can be installed complete for approximately $5,000, which will transport ore to the mill at low cost, estimated to be less than 10 cents per ton.

The mine is equipeed with track, cars, air and water pipe lines and ventilating blowers in levels No. 1 and No. 2. Power has been provided by the 400 foot air compressor at the Davis-Dunkirk mill and adequate water is supplied by drainage of the cross-cut tunnels. A good haulage provides access to the portal of level No. 2.

The future exploitation of this property will depend on the results of present reconditioning operations. Careful mining methods, large tonnage production of low grade ore and cheap haulage are the important factors for profitable operation.

NOTES RE TILLIE STARBUCK MINE

by G. M. Colvocoresses - August 1939

E. Anger, Mining Engineer, claims to have sampled the surface of claims in this vicinity but owned by Sweet and Max Vierthaler where he says that he found a great number of surprisingly good values in gold and thinks that these might prove more valuable than the adjacent Tillie.

Two claims adjoining the Tillie are owned by Fritz Vierthaler and could be leased or purchased along with the Tillie.

There has been but little development to date but some good ore outcrops on surface and in shallow pits and this was not doubt the material sampled by Anger.

In letter to me dated December 19, 1938 A. B. Peach, Mining Engineer and formerly in charge of the mine says:-

"As to the estimated tonnage developed I figure safely but there was 50,000 tons above the #3 tunnel which average $8.00 per ton with gold at old price ($20.00 per oz.) and silver @ $1.00 per oz. The average value now would be about the same as I remember the proportion of gold to silver." (When this letter was written gold was @ $35.00 per oz. and silver @ 64.64¢ in place of 71.1¢ as subsequent to June 1939).

Personal investigation of this property at intervals since 1915 and conferences with the late Major Pickrell, Max Vierthaler, A. B. Peach and Geo. D. Prince, all well acquainted with the mine have convinced me that this mine merits very careful investigation and holds promise of developing into a producer of medium grade gold-silver ore which can be milled

locally with good recovery of values and substantial margin of profit. Mining costs should be low but great care must be exercised in selecting a suitable mill-site, providing transportation facilities, water-supply and dumping ground for tailings.

I have never personally sampled this mine but in 1919 obtained a large sample believed to be representative of the higher grade of oxidized ore which had the following complete analysis:-

Au.	0.17 oz.
Ag.	12.85 oz.
Cu.	trace
Pb.	"
Zn.	2.0%
Fe.	4.8%
S.	2.1%
CaO.	10.0%
Insol.	67.5%

The value of this ore at present prices would be about $15.00 per ton and in my opinion it is about twice as rich as the average of the developed oxidized ore above the 3rd level.

The values in the sulphide ore is still problematical but the statements of Mr. Peach in his letter of March 26th, 1931, may be taken as absolutely reliable and are certainly encouraging.

The record of shipments made by the Bradshaw Company in 1936 is only of importance as showing the tonnage (about 3000) which has been mined during recent years. These people made no attempt at systematic development or mining but merely gouged out the ore that was most accessible and I have been informed and believe that there is much doubt as to the accuracy of their assays.

G. M. Colvocoresses

PRODUCTION FROM

TILLIE STARBUCK MINES

COMPANY PROPERTY BY

BRADSHAW MINES INC., DURING PERIOD OF OPERATION

Date	Tonnage	Gold Oz.	Gold Value	Silver Oz.	Silver Value	Total Value
June, 1936	183.	27.449	900.87	802.75	587.22	1,488.09
July, 1st Hf.	377.	55.547	1,823.05	2,545.26	1,861.86	3,684.91
July, 2nd Hf.	543.	65.976	2,165.33	1,605.18	1,174.19	3,339.52
Total	1,103	148.972	4,889.25	4,953.19	3,623,27	7,512.52

Actual gold and silver contents not furnished for months of August and September, 1936, but following figures submitted on average value basis:-

Date	Tonnage	Value
August, 1st, half	404.28	3,572.68
2nd. half	685.38	4,914.11
September, 22 days	870.01	4,578.02
Total - - - - - - - -	1,959.67	13,064.81

Gold 32.82 oz.

Silver .7315 oz.

March 30, 1931.

Mr. A. B. Peach,
c/o The Vulture Mining Company,
Wickenburg, Arizona.

RE: TILLIE STARBUCK MINE

Dear Mr. Peach:

I have your letter of March 26th and thank you very much indeed for the information contained. I am distinctly interested in the TILLIE STARBUCK and would like to obtain additional information whenever you are in position to send me the data which you say is now in Prescott.

I understand that you estimated between 70,000 and 100,000 tons of ore, the average width of the vein being in excess of 6'. Your refereme to the values is not quite clear since you say that these were 2/5 gold and 3/5 silver and averaged about $7.00 a ton, when silver was 70¢ an ounce. On this basis the present average would only be about $4.50 a ton which seems rather too low grade to make the property attractive unless the higher grade ore to which you refer would represent a substantial tonnage. The sulphide ore is what really interests me most since I judge that further development at depth might be expected to prove up a con-

siderable quantity of this material which ought to be suitable for concentration, and, if the gold values were sufficiently high, could be handled with a reasonable margin of profit. Your opinion on this particular matter would be much valued and, whenever you can let me have further data, I would like to receive same, and might arrange to visit the property sometime in the near future since I am still looking after the Storm Cloud Mine and up in that vicinity every month or two.

Any time that you are in Phoenix, please drop in the office or call me up and, if I am in town, it would be a pleasure to have you lunch with me.

Hope things are going nicely at the VULTURE. Best personal regards.

Very truly yours,

GMC:EBH.

Tillie Starbuck

Wickenburg, Arizona,

March 26, 1931.

George M. Colvocoresses,

1108 Luhrs Tower,

Phoenix, Arizona.

Dear Mr. Colvocoresses:

Your letter inquiring about the Tillie Starbuck mine in Yavapai county received and I have delayed answering thinking from day to day that I would be in Prescott where I could mail you what data I have on that property. Up to the time two of the lower tunnels caved near their portals I figured that there was between seventy thousand and one hundred thousand tons of ore fairly in sight. With widths ranging from two to seventeen feet. With a safe average of six. The values being about two fifths gold and three fifths silver averaging about seven dollars a ton with silver at seventy cents an ounce, with some very attractive widths of $10.00, gold ore on the upper level now of course the value due to the low price of silver would be much reduced. Where ever sulphid was encountered through out the workings the value was much higher than average oxidized ore and in the bottom of a fifty foot winz which was sank from tunnel number three was exposed fourteen feet of $11.00, ore and while at the bottom of it there was still some oxide, there

was also more sulphid in evidence than at another point in the mine. It was due to this fact that a fourth cross cut tunnel was started at two hundred ninety feet greater depth. This tunnel having now reached a length of twelve hundred feet with another thousand feet to go before coming under the ore bodies.

If in the event that the above mentioned is interesting to you, let me know, and I will furnish you detailed information as far as possible. May at any time be in Phoenix and will be pleased to call on you while there.

Most sencere good wishes,

Yours very truly,

Sgd A. B. Peach,

Cost [illegible] [illegible] 2.50

Mill 1.00 [illegible]

3.50

[illegible] .50

4.00 [illegible]

[illegible] 6. [illegible]

[illegible] [illegible]

[illegible]

2,000,000

2.12

GENERAL:

Prior to visiting this mine I had been told in Phoenix that the work was positively to ~~have~~ been resumed early in July and I therefore expected to find a crew of men on the job with Barry or his representative in charge.

I had obtained two letters of introduction to Barry or his Superintendent and one of them coming from the State Dept. of Mineral Resources should have procured me access to the property under any ordinary conditions but the two Mexican caretakers were most firm in insisting that no one could enter the shaft or tunnel without a written order from Crosthwaite and one of them remained stationed in the entrance of the tunnel, the other close to the shaft during all the time that I was in that vicinity. take any samples off now

A suspicion naturally arises that the unusual secrecy surrounding this ~~situation arises from~~ showing is due to a desire to conceal the true conditions which are ~~certainly~~ vastly different from those which have been reported in the press and while I much regret that it was impossible for me to examine and sample ~~the vein in~~ the shaft and adit I am very well satisfied that the two samples taken from the lower dump are fairly representative of anything that could have been seen and that my opinion of the present and future value of the property would not have been materially changed by even the most thorough investigation.

I have made this report somewhat longer and more detailed than the conclusion might seem to justify with the idea

To be traced by Stokes J.
Some prints, others blue prints

TILLIE STARBUCK MINE

"Extract from report of Bradshaw Mines Inc. made in 1936 presumably by Morris Elsing."

* * * * * * * * *

The Tillie Starbuck Mine is located near the head of Slate Creek Canyon a little over half a mile southeast of the Davis-Dunkirk mill. It is reached by a fair mountain road from the main haulage road to the Davis-Dunkirk. The property includes a group of twelve patented lode mining claims which cover the vein for about a mile along its strike.

The property was owned by Major A. J. Pickerell, who formed a corporation and proceeded to develop the mine by four main cross-cut tunnels and drifts along the vein. His object was the complete development of the mine and there was no ore extracted other than that removed in drifting along the vein. At the time of his death he was running a long cross-cut tunnel to tap the vein 285' below the lowest workings at that time. Under the present management this tunnel was completed in 1935.

The geology of the mine is well described by Lindgren, as follows: "The country rock of Yavapai schist intruded by dikes of light colored rhyolite-porphyry." The footwall is said to be followed by a dike of rhyolite 10 feet wide. The stike of the vein is N 10° W., the dip 80° east, and the width two to seventeen feet. The outcrop is persistent on the high ridge to the south , where the ore is largely oxidized. There are three ore shoots with backs of about 700 feet above the lowest tunnel level. (No. 2 level).

The ore as shown by 74 assays made by the Company of samples taken indiscriminately from various parts of the mine including cut samples, chute samples, and samples from mine cars and trucks contain an average value of $5.56 per ton. However, because these samples give no weight to the extent of the ore bodies or veins sampled, this value of $5.56 cannot be accepted as affording a true average of the ore which can only be determined by actual milling operations. The ore is rather fine grained, is milky with many small druses, and includes numerous sericitized rock fragments. Larger cavities are

coated with a later dolomitic or ankeritic carbonate in small rhombohedrons. The ore minerals are sparse pyrite and sphalerite in small grains and in places specks of pyrargyrite, which appears to be of hypogene origin.

The vein occupies a strong fault-fissure, along which there has been some post mineral movement as indicated by the fractured nature of the ore and the presence of thick clayey gouge on the walls. The ore occurs in lenticular masses irregularly distributed along the vein, and calls for large tonnage operation as extraction is comparatively cheap.

The vein is opened on five levels and according to records of Major Pickerell's operation, total workings amounted to 7,439' -- 61.8% being accessible at the present time. The lowest, No. 1, is a cross-cut, striking the vein about 1,860' from the portal and again about 2,217' from the portal. From this point the vein is followed by a drift 219' to the face. The ore here is 4' to 8' in width (a Company assay at this face showed $10.00 per ton values) and has been stoped for about 30' in length and about 30' above the drift floor. The block between this stope and the first intersection with the vein has been explored by a 30' cross-cut and 20' of drifting on the vein. This level has not been driven in to the best part of the vein as encountered in the levels above. Number 2 level, 285' above, is also a cross-cut, striking the vein 894' from the portal and following the vein about 475'. This level is open to 1,073' from the portal and the remainder is now being re-opened. Old reports indicating the presence of high values in those ore shoots cut by this level can soon be checked by present operators. No. 3 level, 122' higher is open about 214' from the portal, leaving 1,500' inaccessible. This level can be opened from No. 2 with which it is connected by four raises, to be explored as soon as No. 2 is open. Number 4 level, lying 146' above No. 3 is open 475' from the portal and shows about 80' of ore in the back averaging 4' in width (a Company assay at this face showed $10.00 per ton values). Number 5 level, about 43' above No. 4 is now caved and inaccessible.

All records and assay data given by old reports show the best ore shoots yet to be opened in levels No. 2 and No. 3 and proof of those values will soon be available. Should the ore in these caved portions prove good values, these ore shoots can then be opened by driving No. 1 level below. An organized mining program by which all faces can be worked simultaneously will allow sufficient tonnage of ore to warrant the construction of a suitable tramway to the Davis-Dunkirk mill prior to the construction of a mill on this property. A half mile aerial tram from the portal of No. 1 tunnel can be installed complete for approximately $5,000, which will transport ore to the mill at low cost, estimated to be less than 10 cents per ton.

The mine is equipeed with track, cars, air and water pipe lines and ventilating blowers in levels No. 1 and No. 2. Power has been provided by the 400 foot air compressor at the Davis-Dunkirk mill and adequate water is supplied by drainage of the cross-cut tunnels. A good haulage provides access to the portal of level No. 2.

The future exploitation of this property will depend on the results of present reconditioning operations. Careful mining methods, large tonnage production of low grade ore and cheap haulage are the important factors for profitable operation.

1- Map - 27" x 21" Claim Map w. rec., pat. & inf.

1- Assay Map w values, Blocks, 8½ x 11
" "

1- Stope map - w. Probable Ore Reserves & Proposed
- 9-1-44 -

1- Assay map a. g. 2002 (1941)

Inf. dated up to 1950

[signature]

YAVAPAI COUNTY SAVINGS BANK

PRESCOTT, ARIZONA.

December 23d, 1938.

Tillie Starbuck file

Mr. G. M. Colvorcesses,
1102 Luhrs Tower,
Phoenix, Arizona.

Dear Mr. Colvorcesses:

Mr. Peach has referred your letter of the 15th to me, concerning the Tillie Starbuck Mines Company property.

Mr. Peach will be in Phoenix sometime the latter part of next week, when he will deliver to you the maps and other engineering data we have on the property, inasmuch as they are a trifle too bulky to mail.

Thanking you for this inquiry, we remain,

Very truly yours,

TILLIE STARBUCK MINES CO.,

G. H. Stack - Secretary.

GHS:C

A.w. Jones; Tillie Starbuck file

Cottonwood, Ariz.
Dec. 19, 1938.

Mr. G. M. Colvocorresses
Phoenix, Ariz.

Dear Mr. Colvocorresses:

Your letter of Dec. 15 advising of some possible operations in the Senator district just received, and I sincerely hope that you will succeed, thru your efforts to interest people with sufficient capital to put that group on a producing basis.

I might suggest that the Senator group can be had at a very low price, and if the Senator tunnel was reclaimed and driven under the Storm Cloud property, it would provide very low cost mining possibilities for the Storm

Cloud as well as plenty of water for a milling operation of at least 100 ton capacity; with a favorable possibility of sufficient ore being extracted from the Senator group to give some profit over the purchase price.

I have none of the Tillie Starbuck's records at hand but am writing G H Stack today to forward all available maps and records of every kind and description to you, which will, beyond a doubt, give you all the information available, unless it is possibly the estimated tonnage developed, which I figure safely there was 50,000 tons above the No. 3 tunnel which would average #8 $\frac{oz}{}$ (old price of metals). That was figuring gold at #20 $\frac{oz}{}$ per oz.

and silver at $1.00 per oz. The average value now would be the same as I remember the proportion of gold to silver.

In the event your crowd becomes interested in developing in that district, we will give them a privilege to operate the Lillie Starbuck property on a strictly royalty basis. I expect to be in Prescott within the next three or four days and in the event Mr Stack has not forwarded you all the data on Lillie Starbuck, I will see that it is forthcoming.

Assuring you that I will be glad to give you all information and assistance within my power to help you accomplish the desired results.

Mrs Peach joins me in extending compliments of the season to yourself & family. Very truly yours, A. B. Peach.

Copies
52 GMC

This report on Tillie Starbuck Mine was prepared by Mr. A. J. Johns, a mining engineer, now residing at Surg Side Colony, Seal Beach Post Office, California.

He brought this report into us on November 24th advising that Major Pickrell loaned it to a mining engineer who was interested in the properties about a year ago and when he found it had not been returned to the Major he was instrumental in getting it for us.

The party who was previously interested in the mine does not want to make any offer for the property at the present time.

November 25, 1931

REPORT ON TILLIE STARBUCK MINE

PRESCOTT ------ YAVAPAI COUNTY

ARIZONA

LOCATION:

The Tillie Starbuck property comprises ten (10) patented and two (2) unpatented lode mining claims located at Slate Creek Hassayampa Mining District, about 15 miles southeast of Prescott, Arizona. The property is reached by a good highway from Prescott, which is the nearest supply point.

EXTENT OF REPORT AND CONSLUSIONS:

The mine is opened by three principal tunnels, the lowest tunnel of which exposes 4 ore shoots at depths of from 350 feet to about 600 feet. (See accompanying map showing longitudinal section along the Tillie Starbuck vein.) I did not sample any of the ore shoots on the two upper tunnel levels, but confined my examination to observing the ore conditions on the lower tunnel level, and took what I considered sufficient samples from various cross-cuts in the ore-bodies, and in particular from the Gardner Winze, so as to gain a reasonably accurate idea of ore values on this tunnel level.

In general terms the following conclusions stand out:

(1) The country rock is not the tight granitic formation which is common in the Prescott vicinity, but consists mainly of belts of soft porphyry and schists with some diorites which strike about S-17° W. The Tillie Starbuck vein occupies a very strong fault fissure which cuts the schistocity of the country rock at angle of 20° to 30°. The strike of the vein varies from 5° to 10° southeast with dip of about 80° easterly.

(2) The vein on the lower tunnel level at depth of 600 feet on the Gardner ore shoot shows a well oxidized, loose vein structure with only occasional small patches of sulphides remaining.

The oxidized ore shows good evidence of leaching action with considerable development of limonite iron, which I consider is derived from oxidation and leaching of original sulphide ores. The vein has a very favorable appearance of containing several hundred feet below the present depth.

(3) The Gardner winze is centrally located for deeper development below tunnel level. By sunking this winze 200 to 300 feet, and drifting along the ore, should demonstrate ore conditions in the sulphide zone. The Gardner ore shoot shows $10.00 values in the oxide ores. The values are about equally divided between gold and silver in the oxidized ore. The sulphide ores show increasing silver. Silver is figured at $1.00 per oz. Indications point to higher values in the sulphides -- probably to $15.00 to $20.00 per ton. It appears quite probable that further development will open sufficient ore to warrant a 100-ton milling plant.

ORE SHOOTS:

My samples of the Gardner winze, now down 30 ft. below the tunnel level, show average values of about $11.00 across 10½ feet in the oxidized ore. Small patches of sulphide ore now coming in indicate that the sulphide zone may be reached in the next 200 ft. of sinking.

One sample of sulphide ore, showing only light sulphides of pyrite and galena, from drift on the Gardner shoot, 25 feet North of the Gardner winze on tunnel level, assayed $8.26 gold and 11.80 ozs. silver -- total $20.06.

A sample of oxide ore 7 feet wide at this point assayed $4.65 gold and 5.30 ozs. silver -- total $9.95. The value of $20.06 on the one sulphide sample as compared to an average of about $11.00 on the oxidized ore indicates that deeper development in the sulphide zone has a good chance of opening considerably higher grade sulphide ores than the present oxidized ores.

The Gardner and Oxidized Ore Shoots are raking toward each other, as shown on amp, and should merge into one ore shoot about 150 feet below the present tunnel. The vein on the tunnel level between the Gardner and the Oxidized Ore Shoots shows small irregular lenses of ore in a loose vein structure, and it appears quite possible that greater depth may show the Gardner and Oxidized Ore Shoots as one continuous ore shoot of from 300 to 500 feet in length with indicated width at present of 10 to possibly 15 feet.

In addition to the Gardner and the Oxidized Ore Shoots, the Johnson and the Silver Shoots offer equally good possibilities with deeper development. The Johnson shoot has length of about 200 feet with average width of about 10 feet. The Silver Shoot is about 60 feet long by 3 to 5 feet in width. I have made no estimate of ore values or tonnage above the tunnel level, but Company figures indicate that about 50,000 tons of about $9.00 ore can be mined from this area.

SAMPLES - Tunnel Level	Width Feet	Gold	Silver Ozs.	Total Value $
1 & 2 In drift North end of Johnson shoot		Tr.	Tr.	
3 Johnson shoot - middle xcut E.	6½	$6.20	5.70	11.90
4 Johnson shoot- south xcut (0-9) from hanging wall	9	3.72	1.00	4.72
5 Johnson shoot - continuation #4 (9-14') from hanging wall	5	4.54	.61	5.15
6 Gardner shoot - xcut at winze (0-6') from hanging wall	6	4.54	2.80	7.34
7 Oxidized shoot - (0-2½') from hanging wall	2½	6.20	7.10	13.30
8 Oxidized shoot -(2¼-9½') from hanging wall	7	3.72	1.80	5.52
9 Gardner shoot - 25' North of Winze (3-7') from footwall	4	4.13	4.80	8.93
16 Gardner shoot (0-3') " "	3	5.16	5.80	10.96
10 Gardner winze - down 30' south end (0-5½') from hanging wall	5½	6.20	4.90	11.10
11 Gardner winze - down 25' south end (0-5½') from hanging wall	5½	5.16	6.50	11.66
12 Gardner winze - down 30' north end (0-4½') from hanging wall	4½	5.16	4.75	9.91
13 Gardner winze - down 25' north end (0-7½') from hanging wall	7½	4.54	5.20	9.74
14 Gardner winze - down 25' north size xcut (7½-10½') from hanging wall	3	6.20	6.90	13.10
15 Gardner winze - down 15' north end (0-4') from hanging wall	4	4.13	6.50	10.63
17 Gardner winze - sulphides at #9		8.26	11.80	20.06

It is noticeable in the above samples that the gold content is fairly constant but that the silver contents vary from .61 oz. to 7.10 ozs. Separating these samples into two groups — those containing more than 3 ozs. silver in one group and those samples showing less than 3 ozs. silver in a second group, the following ratio of gold to silver is shown:-

Group I			Group II		
Sample	Gold	Silver	Sample	Gold	Silver
3	$6.20	5.70 ozs.	4	$3.72	1.00 ozs.
7	6.20	7.10 "	5	4.54	.61 "
9	4.13	4.80 "	6	4.54	2.80 "
16	5.16	5.80 "	8	3.72	1.80 "
10	6.20	4.90 "	Total	$16.52	6.21 "
11	5.16	6.50 "			
12	5.16	4.75 "			
13	4.54	5.20 "			
14	6.20	6.90 "			
15	4.13	6.50 "			
Total	$53.08	58.15 "			
Average	$ 5.31	5.81 "			

Group I shows roughly a ratio of one dollar gold to one ounce silver. Group II shows nearly three dollars gold to one ounce silver. In sample 17 of sulphide ore the silver ratio increases to nearly 1½ ozs. silver to one dollar gold. The lowe silver ratio of the samples in Group II, in conjunction with the well oxidized condition of the vein, supports the theory that a considerable portion of the silver values have been leached out, while the hold being less susceptible to leaching action would not be leached to the same extent.

With some 500 to 600 ft. of oxidized ore above the tunnel level, a very considerable zone of secondary enriched sulphide ore is quite possible at water level. The depth at which the sulphide zone will be encountered is quite indeterminate, but the appearance of scattered bunches of sulphides on the tunnel level and in the Gardner winze indicates that the sulphide zone may be reached within 200 ft. below the present tunnel level.

RECOMMENDATIONS AND GENERAL CONDITIONS:

I consider the present development as sufficiently favorable to warrant sinking of the present Gardner winze to at least the sulphide zone, with sufficient drifting along the ore from the bottom of the winze to determine the probable ore values. If this work responds favorably, a lower crosscut tunnel about 1700 feet in length should be driven so as to reach about 250 feet below the present tunnel. This tunnel would be used as an ore extraction tunnel for milling operations, and should afford reasonably cheap mining costs. Any deeper development could be done by sinking an underground shaft from this last tunnel level.

Cyanide tests made by the Company indicate that the ore is amenable to cyanide treatment, with extraction percentage about 90 per cent.

Electric power can be obtained from the Arizona Power Company by construction of about one and a half miles of transmission line.

There is an abundance of standing timber on the claims for mining purposes, and the mine will furnish ample water for milling purposes.

The general conditions for economic operation of the property are good. On basis of 100-ton milling plant, and keeping the overhead expense to the minimum, it would appear that mining and milling costs should not exceed six dollars ($6.00) a ton.

Respectfully submitted,

A. L. JOHNS.

To
Mr. A. J. Pickrell,
Los Angeles,
California.

January 20, 1923.

TILLIE-STARBUCK MINE

Wickenburg, Arizona
April 21st, 1932.

----- very attractive gold values were once found on the Artic vein -- expect to develop large ore body when present work intercepts said Artic vein.

The vein that is generally known as the Tillie Starbuck Vein is the same vein cutting through the Plevna Claim, and which is over a mile in length. The ore shoots are opened on three levels known as tunnels 1, 2, 3, and tunnel #4 is the one Fritz is now driving. Tunnel #1 is the upper, and is 700 to 800 ft. long, exact distance I cannot remember. In that tunnel was developed the Johnson shoot, then the Gardner shoot, and near the breast, the Gold shoot. Tunnel #2 is the tunnel that the road passes over before reaching camp and, due to its having been caved prior to the time I became interested in it with Major, I do not know its entire length but would say approximately 1800 feet. This tunnel is about 140 feet below tunnel #1 and developed the same ore and approximately the same grade as #1 with a slight increase in the ore shoots. Tunnel #3 is the one in the canyon just below camp. The first 700 ft. of it was a cross cut and the Plevna vein encountered and followed in a southerly direction for some 1200 or 1400 ft. to develop the Johnson, Gardner, the Gold, and the silver shoots. This is the only tunnel that had gone far enough to encounter the silver shoot and the breast of the tunnel, when stopped, still showed values. And, from surface indications I feel sure that more ore shoots could be developed in a Southerly direction if developments were continued for another 600 ft.

Three raises were driven from tunnel #2 to tunnel #3. One on the Gardner, one on the Gold, and one on the Silver shoot, and one driven from tunnel #1 to tunnel #2 on the Gardner shoot; which proved the ore to be regular in value, and continuous from level to level, with an average width of from six to eight feet. The vein varying from as much as 2 to 17 ft. wide, and 6 ft. for the average is very conservative. I feel very confident that there is very close to 70,000 tons of ore blocked out between tunnel #3 and the surface which depth is from 500 ft. on the Johnson shoot to 800 ft. vertical on the Gold. Tunnel #4 when completed will encounter the various shoots from 800 to 1100 ft. vertical. And from all evidence will more than double the tonnage available.

The values are entirely gold and silver, and the average proportions are two-fifths Gold and three-fifths Silver. When silver was a dollar, I figured the entire ore would average around $8.00. Of course at the present price it would be considerably reduced. But the one great attraction to the Tillie Starbuck is that whenever bunches of sulphide ore were encountered the grade increased substantially, and it is the opinion of those familiar with the geology of the Tillie, when the sulphide zone is reached, a very attractive ore will be encountered.

The shoot of tunnel #3 is still oxidized and no doubt impoverished from it to a considerable extent by leaching. Another very interesting feature is that all the ore shoots have continued to lengthen as greater depth has been gained. And

it is my opinion and also of the Major's, when tunnel #4 is completed that a continuous ore shoot will be developed to a distance of 1000 to 1200 feet. This was strongly evidenced by almost continuous values for the entire length of tunnel #3 from where the ore was encountered on the Johnson shoot for approximately 1000 ft. southerly.

In the Major's records there should be a blue print drafted by A. L. Johns showing the vertical section of the different ore shoots which will give you a better knowledge than it would be possible for you to gain otherwise. - - - -

Due to the ideal situation of the mine, even on a fifty cent silver market, the Tillie would be on a substantial productive basis for many years, as the cost of mining and milling should in no case exceed $2.50 per ton. There is plenty of timber on the property for all mining purposes, and an abundance of water coming to the mill by gravity, as well as the ore to a depth of 1100 feet when the present tunnel is completed.

A. B. PEACH.

NOTES RE METALLURGY OF TILLIE STARBUCK ORE

Flotation Tests by Southwestern Engineering Company.

Cyanide tests by Sill & Sill.

HEADS		CONC.		RATIO	RECOVERY %	
Au. Oz.	Ag. Oz.	Au. Oz.	Ag. Oz.	CONC.	Au.	Ag.
0.13	8.05	3.40	210.4	30 : 1	94.1	79.5
0.18	10.94	4.01	224.39	25 : 1	82.3	81.1
0.18	10.94	4.16	247.96	30 : 1	79.5	82.0
0.08	3.36	1.62	89.78	40 : 1	78.8	68.2

Lead in some of the ore 3.30%

Assays from Various Sections of Mine:

	Au.	Ag.
Oxide Shoot	0.13	9.55
Silver "	0.10	8.16
Johnson "	.05	4.21
Gardner "	0.12	5.30
Composite	0.10	7.05

Cyanide tests show recoveries of 90 to 95% of Au. and 81-88% Ag.

(COPY)

SILL AND SILL
CONSULTING MINING ENGINEERS
1011 South Figueroa St.,
Los Angeles.

May 25, 1922.

Major A. J. Pickrell,
c/o California Bank,
Los Angeles, California.

Dear Sir:

Enclosed herewith are the reports on the several tests made on the Tillie Starbuck ore.

Tests No. 1, 2, 3 and 4 were made on 500 grams (1.12 lbs.) of a composite sample of the Oxide, Silver, Johnson and Gardner shoots. The ore was ground to minus 80,100, 150 and 200 mesh and agitated continuously for 48 hours, by shaking in bottles. These tests do not represent commercial results but indicate the fineness to which the ore should be ground.

Tests No. 5 and 6 were made on 2000 grams (4.4 lbs.) and 8000 grams (17.6)lbs.) of solution and agitated for 30 and 36 hours respectively. These tests were made in small Pachuca tanks and continuously air agitated. They represent standard practice with the exception that all measurements and conditions were more accurately controlled than in commercial work. Test No. 7 was made under the same conditions as tests 5 and 6 using a dilution of 5 to 1 instead of 4 to 1.

Test No. 8 was made on 100 lbs. of a composite sample. The ore was crushed in a gyratory crusher and ground in a 3' Abbe tube mill. The product was all minus 150 mesh. It was agitated with 150 lbs. of cyanide solution in a Pachuca tank for 48 hours. Samples were taken at 36, 42 and 48 hours to determine cyanide and lime consumption and the extraction. This is a thorough, practical, commercial test duplicating field working conditions.

These tests indicate that this ore is readily amenable to cyanidation with a cyanide consumption of 1.9 lbs. at 36 hours, 2.25 lbs. for 42 hours and 2.7 lbs. for 48 hours. The extraction at 36 hours was 84.2% silver and 95% of the gold, at 42 hours it increased to 86% of the silver and 95% of the gold and at 48 hours the final extraction was 87.7% of the silver and 95% of the gold.

The longer contact of the cyanide solution with the base metals present gave an increase in the cyanide consumption.

The economical time of treatment seems to be 36 hours with an 84.2% extraction of the silver and 95% extraction of the gold, and a cyanide consumption of 1.9 lbs. The time of agitation will probably be cut to about 30 hours when grinding in cyanide solution.

Yours very truly,

(Signed) SILL AND SILL

Mining & Metallurgical Engineers.

This is Major Pickrell's record of assays of ore samples from Tillie Starbuck Mine.

During his lifetime, Major Pickrell loaned this schedule to an engineer who was interested in the mine.

It was returned to us on November 24th by Mr. A. J. Johns.

November 25, 1931

RECORD OF TILLIE STARBUCK MINE

Raise No. 1
From No. 3 to No. 2.

No.	Location	Gold Oz.	Silver Oz.
1.	8" high grade, South end at 10'	.50	134.50
2.	8" high grade, South end at 20'	.30	99.70
3.	8" high grade, South end at 30'	.20	111.00
4.	8" high grade, South end at 35'	.30	7.10
5.	8" high grade, South end at 40'	.20	31.40
6.	14" high grade, North end at 45'	.25	39.25
7.	10" high grade, South end at 45'	1.10	7.10
8.	Grab sample fines from Raise #1	.20	14.6
9.	Oxide from hanging wall 45'	None	None
10.	4" high grade at 53' Raise #1	2.00	137.20
11.	16" high grade at 53' Raise #1	trs.	1.60
12.	Grab sample fines, Raise #2	.30	6.30
13.	18" high grade, South end 58'	2.60	18.80
14.	Few feet. Arnors Drift	.20	15.20
15.	6" high grade stread 62'	.10	
16.	14" ore Raise #1. 70'	.16	2.20

Drift from Raise No. 1.

1.	Left	.24	28.16
2.	Right	1.10	2.06
3.	Oxide	.30	7.10
4.	Left	.20	4.6
5.	Right	.10	5.9

Winze

No.	Location	Gold Oz.	Silver Oz.
1.	8' depth	.30	13.5
2.	15' depth	.10	4.5
3.	20' depth 2	.20	5.0
4.	25' depth	.20	10.80
5.	30' North	.22	1.80
6.	28' South Cross cut Cu.trs.	.20	9.80

Gardner Raise No. 2

1.	Raise at 5'	.10	3.3
2.	Raise at 10'	.20	3.4
3.	Raise at 25'	.10	3.9
4.	Raise at 30'	.20	7.4
5.	Riase at 35'	.20	5.2
6.	Raise at 40'	.15	4.05
7.	Raise at 45'	.10	5.7
8.	Raise at 50'	.15	3.95
9.	Raise at 55'	.20	5.2
10.	Raise at 60'	.15	7.10
11.	Raise at 65'	.40	10.8
12.	Raise at 70' Cross Cut Roof	.20	3.2
13.	Raise at 75'	.35	7.25
14.	80'	trs.	2.00
15.	85'	.20	2.5
16.	90'	.20	3.00
17.	95'	.25	7.95
18.	Raise at 100'	.20	6.80
19.	Raise at 105'	.10	3.50
20	Raise at 110'	.10	6.10
21.	Raise at 115'	.10	5.50

Raise No. 3.
Middle to Upper Tunnel.

No.	Location	Gold Oz.	Silver Oz.
1.	Raise at 15'	.10	.90
2.	Raise at 20'	.30	1.70
3.	Raise at 25'	trs.	1.00
4.	Raise at 30'	.10	1.40
5.	35'	trs.	1.40
6.	40'	.20	2.00
7.	55'	.15	5.45
8.	60'	.20	5.80
9.	65'	.10	2.30
10.	65' Cross Cut	.15	3.85
11.	70'	.120	4.80
12.	75'	.10	2.50
13.	80'	trs.	2.60
14.	85'	.10	2.90
15.	90'	trs.	1.60
16.	105' North	.20	4.60
17.	105' South	.30	14.50
18.	115'	.60	2.00
19.	120'	.20	3.40
20.	125'	.30	5.30
21.	130'	.25	5.75
22.	135'	.30	9.70
23.	140'	.20	5.20
24.	145'	.10	3.90

Raise No. 4.

No.	Location	Gold Oz.	Silver Oz.
1.	Raise at 10'	.10	7.70
2.	15'	.05	4.15
3.	20'	.10	4.30
4.	25'	.10	4.10
5.	25' (for Cu-None)	.10	3.90
6.	25' Drift No. 1 R.	.20	9.20
7.	25' " No. 1 L.	.15	1.85
8.	25' South Drift 10'	trs.	.90
9.	25' " " 15'	trs.	1.60
10.	25' " " 20'	.15	2.45
11.	25' " " 25'	trs.	2.00
12.	30'	.05	3.55
13.	35' Left	.05	3.35
14.	35' Right	.10	1.90
15.	40'	.20	6.40
16.	45' East	.10	1.90
17.	45' West	trs.	1.40
18.	50'	.05	2.55
19.	55'	.05	1.85
20.	60'	trs.	1.40
21.	65'	.10	2.90
22.	70'	.12	3.58
23.	80'	.10	2.50
24.	85'	.08	2.02
25.	90'	trs.	1.30
26	95'	.02	2.30
27	100'	.15	3.10
28	105'	.10	3.00
29	110'	.12	3.00
30	115'	.10	3.10

Raise No. 5.
Tunnel No. 3 to 2.

No.	Location	Gold Oz.	Silver Oz.
1.	Raise at 5'	trs.	1.40
2.	10'	.05	2.35
3.	15'	.10	4.50
4.	25'	.10	3.20
5.	30'	trs.	2.30
6.	35'	.18	2.10
7.	40'	.10	2.20
8.	45'	.10	1.90
9.	50'	.10	5.30
10.	55'	.15	5.05
11.	60'	trs.	2.40
12.	65'	.10	3.90

Raise No. 6.

1.	Raise at 5'	.18	15.00
2.	10'	.16	12.60
3.	15'	.10	6.10
4.	20'	.22	11.40
5.	25'	.10	4.50
6.	30'	.10	4.70
7.	35'	.10	10.30
8.	40'	.15	10.25
9.	45'	.08	8.10
10.	50'	.15	1.75
11.	55'	.10	3.30
12.	60'	.22	10.40
13.	65'	.03	12.80
14.	70'	.18	7.80
15.	80'	.10	11.10
16.	85'	.16	16.66

No.	Location	Gold Oz.	Silver Oz.
17.	Raise at 90'	.10	25.90
18.	95'	.18	4.00
19.	100'	.20	5.80
20.	105'	.10	6.90
21.	110'	.20	4.00
22.	115'	.10	19.10
23.	120'	.10	9.90
24.	125'	.10	12.00

Water Drift
Tillie Starbuck Tunnel No. 3.

1.	Breast of main tunnel at 1085'	.30	1.20
2.	" " " " Dr. at 1090'	.20	2.00
3.	" " " " Dl. " 1090'	.20	1.60
4.	" " " " " 1100'	trs.	1.20
5.	" " " " " 1135'	.10	9.50
6.	" " " " " 1140'	.25	6.30
7.	" " " " " 1145'	.25	1.80
8.	" " " " " 1160'	.10	4.90
9.	" " " " " 1165'	.15	3.85
10.	" " " " " 1170'	.15	1.85
11.	" " " " " 1175'	None	None
12.	" " " Footwall 1175'	trs.	7.40
13.	" " " Tunnel at 1180'	.10	1.50
14.	" " " " " 1185'	.10	9.90
15.	" " " " " 1195'	.15	3.65
16.	" " " " " 1190'	.20	16.80

Re: Tillie Starbuck Mine

March 30, 1931

(Extract from letter to A. B. Peach, Vulture Mining Company from G. M. Colvocoresses)

I have your letter of March 26th and thank you very much indeed for the information contained. I am distinctly interested in the TILLIE STARBUCK and would like to obtain additional information whenever you are in position to send me the data which you say is now in Prescott.

I understand that you estimated between 70,000 and 100,000 tons of ore, the average width of the vein being in excess of 6'. Your reference to the values is not quite clear since you say that these were 2/5 gold and 3/5 silver and averaged about $7.00 a ton, when silver was 70¢ an ounce. On this basis the present average would only be about $4.50 a ton which seems rather too low grade to make the property attractive unless the higher grade ore to which you refer would represent a substantial tonnage. The sulphide ore is what really interests me most since I judge that furter development at depth might be expected to prove up a considerable quantity of this material which ought to be suitable for concentration, and, if the gold values were sufficiently high, could be handled with a reasonable margin of profit. Your opinion on this particular matter would be much valued and, whenever you can let me have further data, I would like to receive same, and might arrange to visit the property sometime in the near future since I am still looking after the Storm Cloud Mine and up in that vicinity every month or two.

(Signed) G. M. Colvocoresses

(Extract from letter to G. M. Colvocoresses from A. B. Peach) Mch 26, 1931

Your letter inquiring about the Tillie Starbuck mine in Yavapai county received and I have delayed answering thinking from day to day that I would be in Prescott where I could mail you what data I have on that property. Up to the time two of the lower tunnels caved near their portals I figured that there was between seventy thousand and one hundred thousand tons of ore fairly in sight. With

widths ranging from two to seventeen feet. With a safe average of six. The values being about two fifths gold and three fifths silver averaging about seven dollars a ton with silver at seventy cents an ounce, with some very attractive widths of $10.00, gold ore on the upper level now of course the value due to the low price of silver would be much reduced. Where ever sulphid was encountered through out the workings the value was much higher than average oxidized ore and in the bottom of a fifty foot winze which was sank from tunnel number three was exposed fourteen feet of $11.00, ore and while at the bottom of it there was still some oxide, there was also more sulphid in evidence than at another point in the mine. It was due to this fact that a fourth cross cut tunnel was started at two hundred ninety feet greater depth. This tunnel having now reached a length of twelve hundred feet with another thousand feet to go before coming under the ore bodies.

(Signed) A. B. Peach.

PRODUCTION FROM

TILLIE STARBUCK MINES

COMPANY PROPERTY BY

BRADSHAW MINES INC., DURING PERIOD OF OPERATION

Date	Tonnage	Gold Oz.	Gold Value	Silver Oz.	Silver Value	Total Value
June, 1936	183.	27.449	900.87	802.75	587.22	1,488.09
July, 1st Hf.	377.	55.547	1,823.05	2,545.26	1,861.86	3,684.91
July, 2nd Hf.	543.	65.976	2,165.33	1,605.18	1,174.19	3,339.52
Total	1,103	148.972	4,889.25	4,953.19	3,623,27	7,512.52

Actual gold and silver contents not furnished for months of August and September, 1936, but following figures submitted on average value basis:-

Date	Tonnage	Value
August, 1st, half	404.28	3,572.68
2nd. half	685.38	4,914.11
September, 22 days	870.01	4,578.02
Total - - - - - - - -	1,959.67	13,064.81

Gold 32.82 oz.

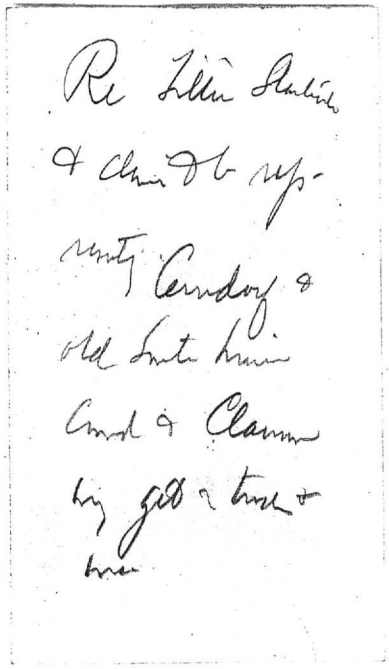
Silver .7315 oz.

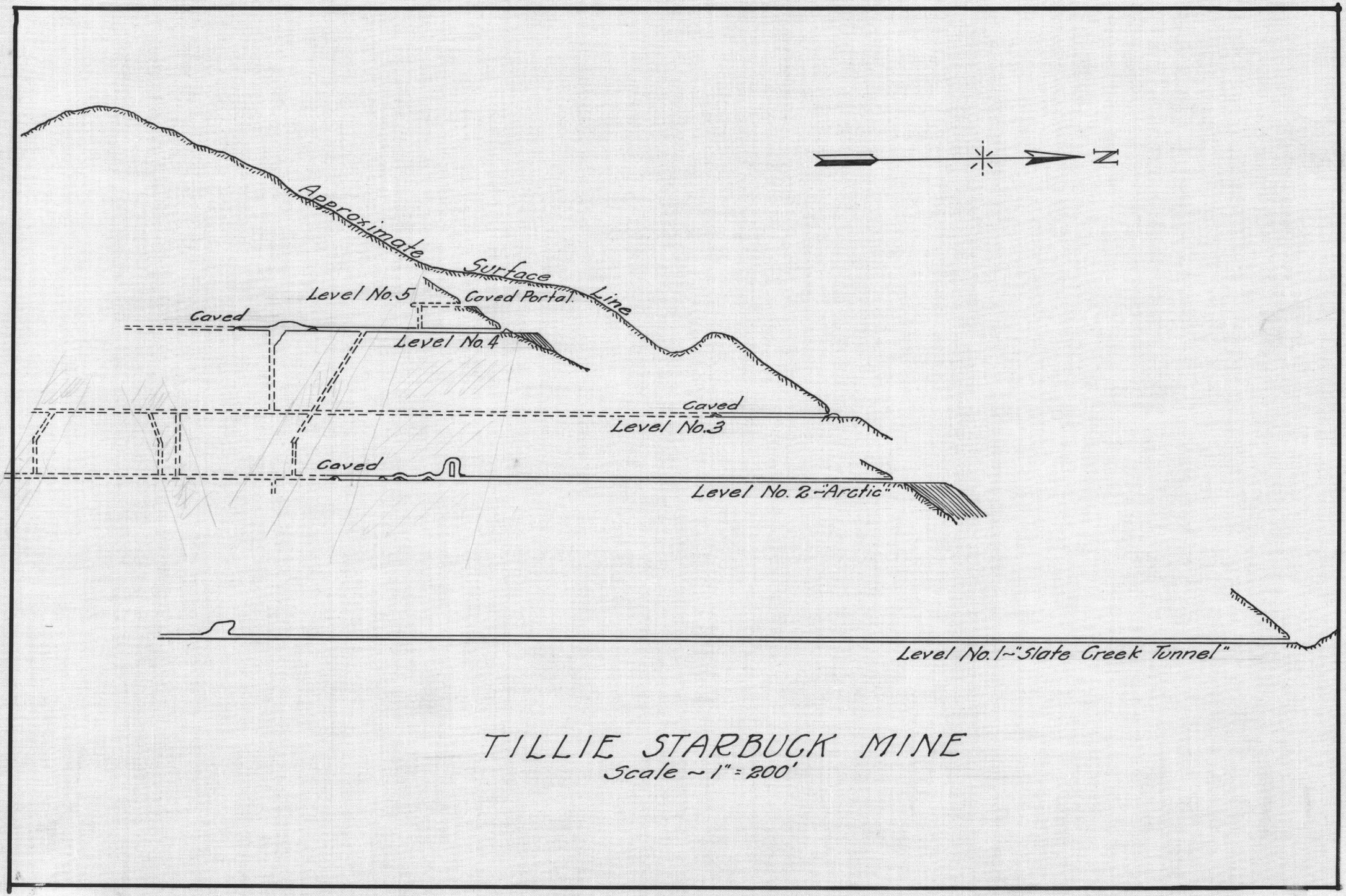
P.O. BOX 2022 PHONE 4-2354

(a 34783)

M AND M
EQUIPMENT COMPANY
1340-42 GRAND AVENUE
PHOENIX, ARIZONA

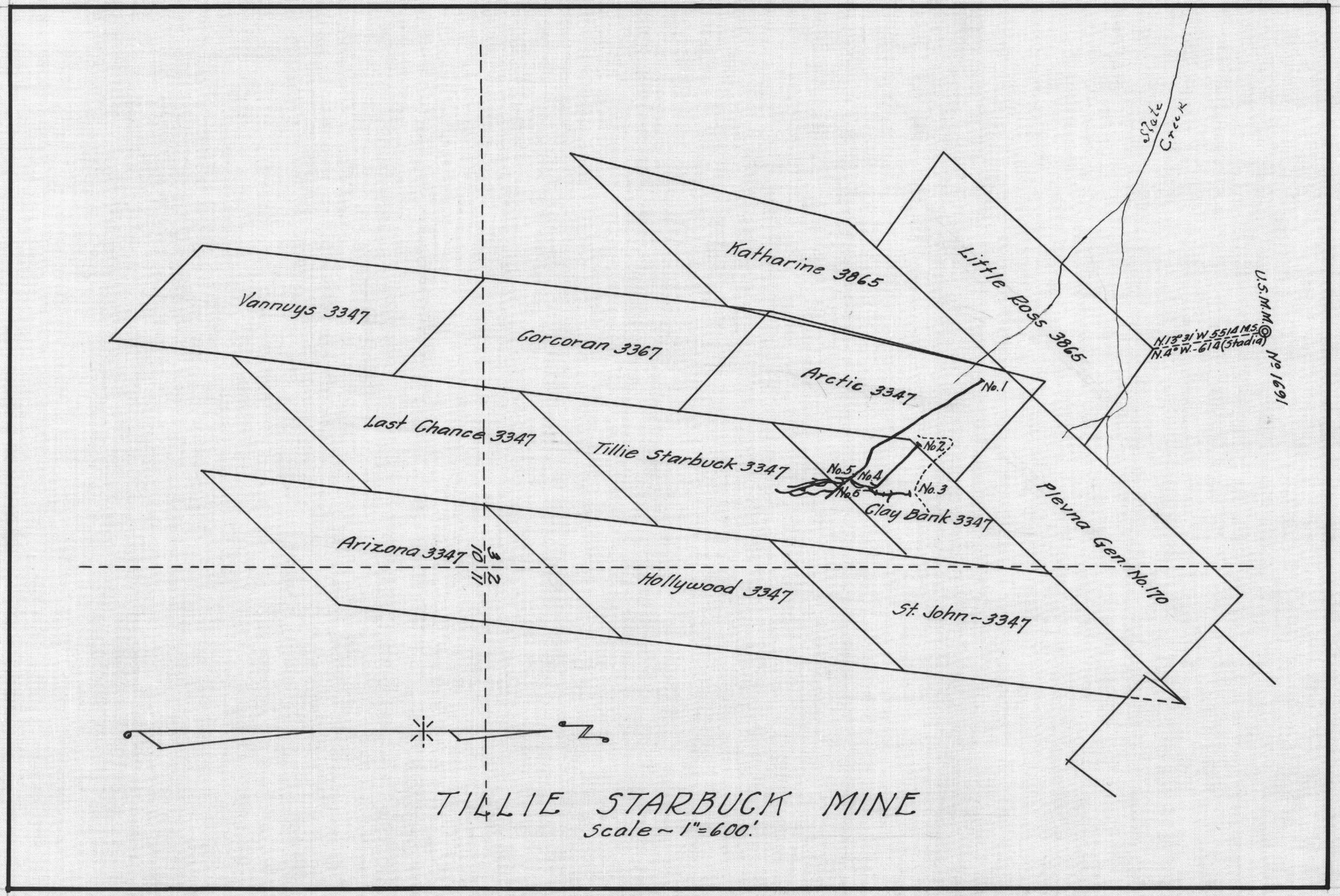
J. PAUL MOOSEAU, Called 7/24. 39 (mm)





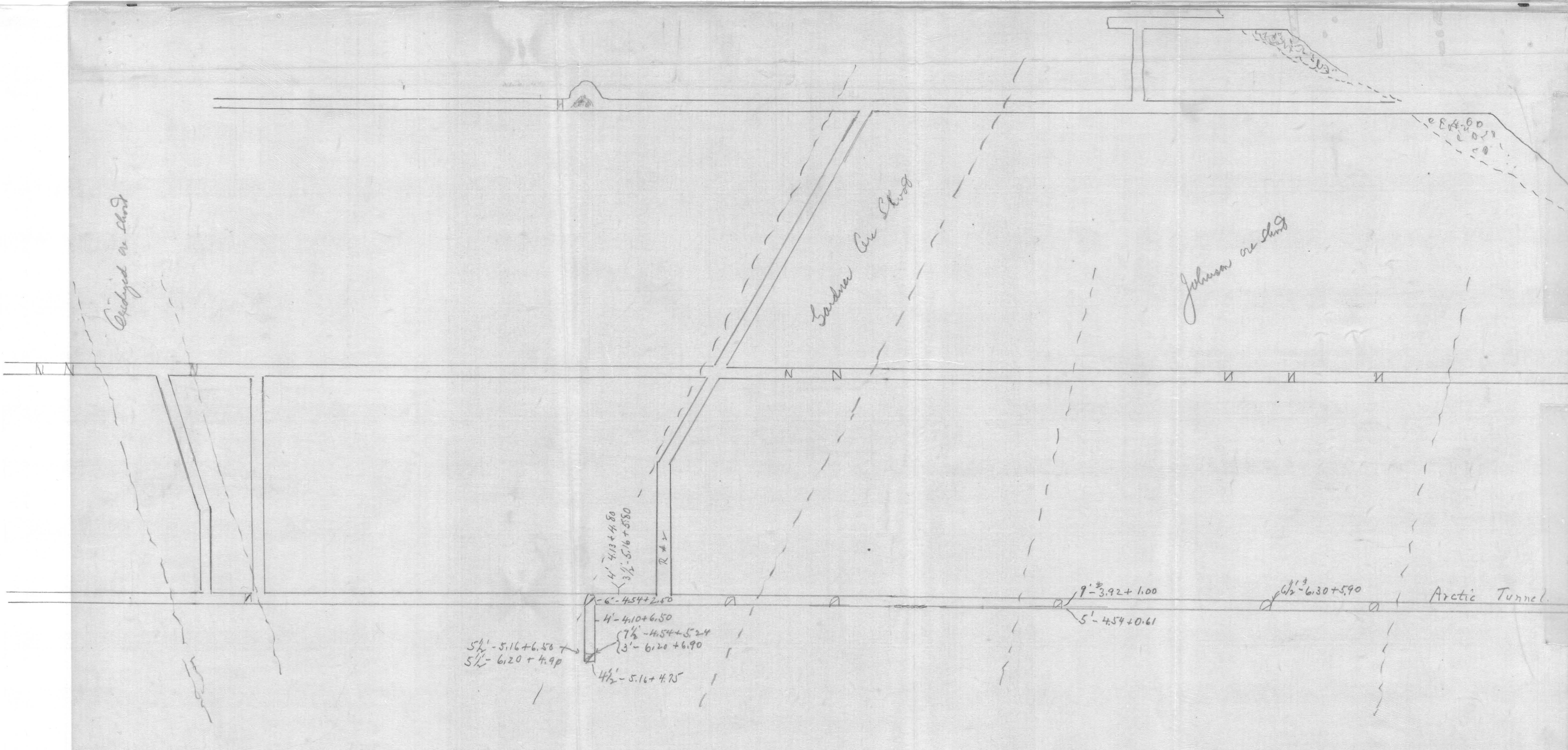
TILLIE STARBUCK MINE

Scale ~ 1" = 200'



TILLIE STARBUCK MINE

Scale ~ 1" = 600'



Part of Tillie Starbuck Workings.
1923
Scale 1" = 40

Assays.
1st figure = width
2nd " = value of gold @ $20.00
3rd " = " " silver @ 1.00 (?)