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**PRELIMINARY EXPLORATION
RECONNAISSANCE EXAMINATION
OF THREE AREAS
ON THE PAPAGO INDIAN RESERVATION**

Pinal County, Arizona

1. Sections 3 & 10, T 10 S, R 2 E, Pinal County, Arizona
2. Copperosity Area & Vicinity, Pinal County, Arizona
3. Jackrabbit Area & Vicinity

for
MR. JIM SNYDER

April 1964

by
**HEINRICHS GEOEXPLORATION COMPANY
P. O. Box 5671 Tucson, Arizona**

SUMMARY

At the request of and accompanied by Mr. Jim Snyder of Tucson, Arizona, E. Grover Heinrichs conducted a reconnaissance examination on April 20, 1964 of several different areas located on the Papago Indian Reservation in Pinal County, Arizona

The areas are designated as follows:

Area 1: Sec. 3 & 10, T 10 S, R 2 E.

Area 2: Copporosity Mine and Vicinity

Area 3: Jackrabbit Mine and Vicinity

The basic assignment was to determine if favorable mining exploration possibilities existed in the areas visited and to specifically define the favorable areas.

Small mine possibilities definitely exist at both Areas 2 and 3. The greater potential is likely in Area 3 perhaps because of a better record of past production. Area 1 possibilities may be more remote because of less known production and less favorable known geology.

Both Areas 2 and 3 suggest physical property contrasts may exist of the order which should permit effective exploration by all modern techniques, including geophysics, and such work is recommended.

AREA 1

A highly altered iron stained zone located on a small ridge in the south half of section 3, T 10 S, R 2 E is of interest.

Further sampling of the outcrop and some geophysical and geochemical work is recommended over the area.

Geology: The zone appears to be on the contact between the abrijo limestone, Santa Catalina, Ouray formations and a projection of the Copporosity fault. (See R. H. Carpenter 1947)

A random chip sample was cut from the outcrop and an assay for gold, silver, copper, lead and mercury was run with the following

results: Au-----Trace
Ag-----Trace
Cu-----0.09
Pb-----0.08
Hg-----0.01

Sample No. 1751 *TWC*
Certificate No 321950
Date: 4-22-64

On returning to the vehicle a small adit was observed almost directly south, approx. 1,800 ft. from the small ridge located on the north side of a large hill which occupies the major portion of Sec. 10, T 10 S, R 2 E. Time did not permit a visit to this adit but it is recommended that a sample be taken from the face of the adit. It appears that it is on the contact between the Pinal schist and the andesite (See R. H. Carpenter 1947).

AREA 2

COPPEROSITY AREA*

Unpatented mining claims identified by Mr. Snyder as being the Black Knight and the Golden Eagle located in SE $\frac{1}{4}$ Sec. 14, T 10 S, R 2 E were visited and samples cut as described below.

Black Knight: Unpatented Mining Claim. A small cut 8 ft. deep at the shallow end and 15 ft. deep at the deep end with a tunnel connecting the two. Located on east slope and 300 ft. east of prominent saddle 2,500 ft. easterly from Copperosity Mine. Formational contact between limestone and diabase. Strike is due E-W. Dip is 55° from vertical to the south. Fe stained zone 3" - 4" wide, 2 ft. long was sampled at west side of shallow end of cut with the results as follows:

Au-----0.640
Ag-----0.41
Cu-----0.17
Pb-----0.08

Sample No. 1752 TUC
Certificate No: 321950
Date: 4-22-64

A shaft, 50 ft. deep, located about 175 ft. northerly from the above described cut was looked at and a grab sample was taken from the dump material. Assay results as follows:

Au-----0.015
Ag-----4.64
Cu-----0.04
Pb-----7.49

Sample No. 1753 TUC
Certificate No: 321950
Date: 4-22-64

* Copperosity Mine mis-located about 1 mile NNNE of correct location on U.S.G.S. Map. -- See patent Survey #3556 and R. H. Carpenter 1947 Stanford Univ. Thesis "Geology & Ore Deposits, Vekol Mtns."

The mineralized zone in the shaft is 4 ft. wide approximately and striking E-W. The iron staining here is more intense than noted elsewhere on the property. However, lack of proper equipment prevented any sampling of this shaft. Because the dump grab sample is interesting, it is recommended that a rope ladder be obtained and a sample taken in place in the shaft across the mineralized zone and normal to the strike.

Golden Eagle Unpatented Mining Claim: Located to the east and contiguous with the Black Knight. A small 30 ft. adit located on the east side of a small wash due east 600 ft. of the prominent saddle aforementioned and under a lone organ pipe cactus.

Two samples were cut, 2 inches on channel 2 ft. long center of channel located 5 ft. 5 inches from floor of adit in face:

Au-----Trace

Ag-----Trace

Cu-----0.04

Pb-----0.34

Sample No. 1754 TUC

Certificate No. 321950

Date: 4-22-64

Two inch channel, 2 ft. long in floor of adit in face.

Au-----Trace

Ag-----0.1

Cu-----None

Pb-----None

Sample No. 1756 TUC

Certificate No. 321889

Date _____

General Observations

Because of the intense iron staining and structural controls associated with the Copperosity Mine and the granitic intrusive to

the west a favorable area to geophysically prospect for similar or better targets would be to the west under the alluvium and on strike with the Copperosity workings.

Other favorable areas to prospect geophysically would be along the mineralized easterly strike of the fault that intersects the Copperosity workings in the general area of the Black Knight and Golden Eagle unpatented mining claims and more easterly yet across the small valley in the center of Section 13, T 10 S, R 2 E.

AREA 3

JACKRABBIT AREA

A claim described by Mr. Snyder as being the Hidden Treasure unpatented mining claim located in Sec. 36, T 9 S, R 4 E and approx. 800 ft. SE of the Turning Point patented claim was visited.

A small adit about 10 ft. into the hill and 75 ft. south of the saddle in the ridge overlooking the Turning Point Mine was sampled as described below.

A chip sample of various dark minerals located on the west side of the adit on the contact between the andesite and Escabrosa limestone at eye level (5 ft.) above the floor of adit to check for radioactivity. Tests indicate no radioactivity, the minerals present are likely only manganese.

Chloride #1 & #2: Unpatented mining claims located in Sec. 30, T 9 S, R 5 E and parallel the paved highway, on a NE projection of the Dividend fault zone and is an area of exploration interest, particularly where the major fault structure is intersected by NW

trending subsidiary faults*. Because much of the Dividend fault is covered by alluvium, geophysics would be the cheapest way to explore the zone along the entire strike.

*See Donald F. Hammer, Thesis 1947, University of Arizona
"Geology and Ore Deposits Jack Rabbit Area".

Respectfully submitted,
HEINRICHS GEOEXPLORATION CO.

E. Grover Heinrichs

Approved:

Walter E. Heinrichs, Jr.
President & General Manager

April 23, 1964
P. O. Box 5671
Tucson, Arizona

April 28, 1964

Mr. Jim Snyder
610 Stratford Drive
Tucson, Arizona

Dear Jim:

Enclosed are the original and one machine copy of our report to you on "Reconnaissance Exploration Examination and Conferences related to certain unpatented mining claims on the Papago Indian Reservation, Pima and Pinal Counties, Arizona". In the back of the report are spectographic and assay reports. There are also copies of these two to be put in the preliminary you received earlier. The assay for manganese is not yet available.

If you wish to return the copy you now have, we will insert certificate numbers and dates. Please note on page 4 of the preliminary there was a typographical error. Sample No. 1754 should read "Cu ---- 0.04."

In this mail we are also sending one copy of the report, as completed to date to Mr. Robert Cattany, 201 North Court Ave., Tucson, Arizona.

If there are any questions about this report, please call us.

Very truly yours,

E. Grover Heinrichs, V. P.
HEINRICHS GEOEXPLORATION CO.

Pacific SpectroChemical Laboratory

CHEMICAL AND SPECTROGRAPHIC ANALYSIS

RESEARCH

2558 Overland Avenue
Los Angeles 64, California

April 23, 1964



Report of semiquantitative spectrographic analysis of sample 321880, submitted by

Hawley & Hawley
Assayers and Chemists, Inc.
Tucson, Arizona

321880

Silicon-	26. %
Iron-	4.8
Aluminum-	11.
Calcium-	0.052
Magnesium-	0.78
Copper-	0.0079
Titanium-	0.55
Lead-	0.23
Chromium-	0.016
Vanadium-	0.0077
Sodium-	0.17
Zinc-	0.17
Silver-	0.00074
Zirconium-	0.031
Potassium-	8.6
Strontium-	0.0078
Manganese-	0.048
Nickel-	0.0049
Barium-	not detected - less than 0.05
Cobalt-	" " 0.0006
Tungsten-	" " 0.05
Beryllium-	" " 0.0003
Gold-	" " 0.001
Molybdenum-	" " 0.002
Rare earths-	nil

Respectfully submitted

PACIFIC SPECTROCHEMICAL LABORATORY

Hal W. Johnson
Hal W. Johnson
Director

HWJ:lc

Golden Eagle Tunnel

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

1700 W. GRANT RD. at AZTEC • BOX 5934, ANNEX STATION • Main 2-4836

TUCSON, ARIZONA 85703

BRANCHES

DOUGLAS, ARIZONA
HAYDEN, ARIZONA
EL PASO, TEXAS
AMARILLO, TEXAS

IDENTIFICATION	GOLD OZS	SILVER OZS	LEAD %	COPPER %	ZINC %	INSOL. %	IRON %	Hg%
J. Snyder # 1751	trace	trace	0.08	0.09				0.01
1752	0.640	0.41	0.08	0.17				
1753	0.015	4.64	7.49	0.04				
1754	trace	trace	0.34	0.04				

CC: Heinrichs Geoexploration Co.

ADD: 806 West Grant

CITY: Tucson, Arizona

CITY:

REMARKS:

"Special"

ANALYSIS CERT. BY

W. O'Guin

\$ 3.00 preparation
31.50 analysis

ACC: HEINRICHS GEOEXPLORATION

DATE SPL. RECEIVED 4-21-64

DATE COMPL 4-22-64

\$ 34.50

TUC321950

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

1700 W. GRANT RD. at AZTEC • BOX 5934, ANNEX STATION • Main 2-4836
TUCSON, ARIZONA 85703

BRANCHES

DOUGLAS, ARIZONA
HAYDEN, ARIZONA
EL PASO, TEXAS
AMARILLO, TEXAS

IDENTIFICATION	GOLD OZS	SILVER OZS	LEAD %	COPPER %	ZINC %	INSOL. %	IRON %		
Golden Eagle <i>#1730</i>	trace	0.10							



CC: Heinrichs Geoexploration
 ADD: 806 West Grant Road
 CITY: Tucson, Arizona
 DD:
 CITY:

REMARKS:

 "Special"

ANALYSIS CERT. BY *W. O'Guier*

 \$.75 preparation
 3.00 analysis

ACC: Heinrichs Geoexploration Co.

DATE SPL RECEIVED 4-15-64

DATE COMPL 4-17-64

\$ 3175

\$21889

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

1700 W. GRANT RD. at AZTEC • BOX 5934, ANNEX STATION • MAIN 2-4836
TUCSON, ARIZONA 85703

BRANCHES

DOUGLAS, ARIZONA
HAYDEN, ARIZONA
EL PASO, TEXAS
AMARILLO, TEXAS

IDENTIFICATION	GOLD OZS	SILVER OZS	LEAD %	COPPER %	ZINC %	INSOL. %	IRON %		
Golden Eagle <i>X 1720</i>	trace	0.10							

CC: Heinrichs Geos exploration
ADD: 806 West Grant Road
CITY: Tucson, Arizona
OD:
NTY:

REMARKS:

ANALYSIS CERT. BY

H. D. Green

\$.75 preparation
3.00 analysis

"Special"

ACC: Heinrichs Geos exploration Co.

DATE SPL RECEIVED 4-15-64

DATE COMPL 4-17-64

\$ 3175

121889

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

1700 W. GRANT RD. at AZTEC • BOX 5934, ANNEX STATION • MAin 2-4836

TUCSON, ARIZONA 85703

BRANCHES

DOUGLAS, ARIZONA
HAYDEN, ARIZONA
EL PASO, TEXAS
AMARILLO, TEXAS

IDENTIFICATION	GOLD OZS	SILVER OZS	LEAD %	COPPER %	ZINC %	INSOL. %	IRON %		
<p>Golden Eagle Tunnel Spectrographic analysis as per attached report.</p>									
<p>CC: Heinrichs GeosExploration Company ADD: 806 West Gent Road CITY: Tucson, Arizona DD: TY:</p>	REMARKS			ANALYSIS CERT. BY <i>J. Douglas</i> \$.75 Preparation \$10.00 Spectrograph					
ACC: HEINRICHS GEOEXPLORATION COMPANY	DATE SPL. RECEIVED 4-13-64		DATE COMPL 4-25-64		\$ 10.75		TUC321880		



HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

1700 W. GRANT RD. at AZTEC • BOX 5934, ANNEX STATION • Main 2-4836

TUCSON, ARIZONA 85703

BRANCHES

DOUGLAS, ARIZONA
HAYDEN, ARIZONA
EL PASO, TEXAS
AMARILLO, TEXAS

IDENTIFICATION	GOLD OZS	SILVER OZS	LEAD %	COPPER %	ZINC %	INSOL. %	IRON %		
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<p>CC: Heinrichs Geos exploration Company ADD: 806 West Gunt Road CITY: Tucson, Arizona DD: ITY:</p>	<p>REMARKS:</p>				<p>ANALYSIS CERT. BY <i>J. Douglas</i></p> <p>\$.75 Preparation \$10.00 Spectrograph</p>				
<p>ACC: HEINRICHS GEOEXPLORATION COMPANY</p>	<p>DATE SPL. RECEIVED 4-13-64</p>		<p>DATE COMPL 4-25-64</p>		<p>\$ 10.75</p>		<p>100321880</p>		



HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

1700 W. GRANT RD. at AZTEC • BOX 5934, ANNEX STATION • Main 2-4836

TUCSON, ARIZONA 85703

BRANCHES

DOUGLAS, ARIZONA
HAYDEN, ARIZONA
EL PASO, TEXAS
AMARILLO, TEXAS

IDENTIFICATION	GOLD OZS	SILVER OZS	LEAD %	COPPER %	ZINC %	INSOL. %	IRON %		
<p>Golden Eagle Tunnel Spectrographic analysis as per attached report.</p>									



cc: Heinrichs Geoexploration Company
 ADD: 806 West Gant Road
 CITY: Tucson, Arizona
 DD:
 CITY:

REMARKS: ANALYSIS CERT. BY *J. Douglas*
 \$.75 Preparation
 \$10.00 Spectrograph

ACC: HEINRICHS GEOEXPLORATION COMPANY	DATE SPL RECEIVED 4-13-64	DATE COMPI 4-25-64	\$ 10.75	TUC321880
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Pacific SpectroChemical Laboratory

CHEMICAL AND SPECTROGRAPHIC ANALYSIS

RESEARCH

2558 Overland Avenue
Los Angeles 64, California

April 23, 1964



Report of semiquantitative spectrographic analysis of sample 321880, submitted by

Hawley & Hawley
Assayers and Chemists, Inc.
Tucson, Arizona

321880

Silicon-	26. %
Iron-	4.8
Aluminum-	11.
Calcium-	0.052
Magnesium-	0.78
Copper-	0.0079
Titanium-	0.55
Lead-	0.23
Chromium-	0.016
Vanadium-	0.0077
Sodium-	0.17
Zinc-	0.17
Silver-	0.00074
Zirconium-	0.031
Potassium-	8.6
Strontium-	0.0078
Manganese-	0.048
Nickel-	0.0049
Barium-	not detected - less than 0.05
Cobalt-	" " 0.0006
Tungsten-	" " 0.05
Beryllium-	" " 0.0003
Gold-	" " 0.001
Molybdenum-	" " 0.002
Rare earths-	nil

Respectfully submitted

PACIFIC SPECTROCHEMICAL LABORATORY

Hal W. Johnson
Hal W. Johnson
Director

HWJ:lc

4-25-64

Originals
returned to

J. Snyder

also 1 copy of
report.



STATE OF ARIZONA)
)ss.
COUNTY OF)

I hereby certify that the within
instrument was filed for record
in County, State of Arizona

No.

Book *45944* Page *378*

Witness my hand and Official Seal.

Indexed	Paged	Blotted

County Recorder

Date: _____
Request of: _____

By _____

Deputy

Fee: _____

Notice of Mining Location

LODE CLAIM

TO ALL WHOM IT MAY CONCERN:

This Mining Claim, the name of which is the *Jim Howard No. 1* Mining Claim, situate on lands belonging to the United States of America, and in which there are valuable mineral deposits, was entered upon and located for the purpose of exploration and purchase by *H. M. Snyder*

(Locater must insert either "a citizen of the United States" or "who has declared his intention of becoming a citizen of the United States.")

the undersigned, on the *24th* day of *January*, 1926

The length of this claim is *1500* feet,

and claim *500* feet,

in a *Northerly* direction and *1000*

feet in a *Southerly* direction from

the center of the discovery shaft, at which this notice is posted, lengthwise of the claim, to-

gether with *300* feet in width of the surface grounds, on each side of

the center of said claim. The general course of the lode deposit and premises is from the

North to the *South*

The claim is situated and located in the *Salt Well* Mining District, in

County, in the State of Arizona, about *2 Miles* in a

in a *Northerly* direction from *Elsa Bell Mine*

and about 3 1/2 miles in a Southerly

direction from the Green Back mine

of the claim are marked upon the ground as follows: Beginning

at _____

at a _____ direction _____ feet from

the _____ (as posted), being in the center of the _____

end line of said claim; thence _____ feet to a _____

being the _____ corner of said claim; thence _____

feet to a _____ being at the _____

corner of said claim; thence _____ feet

STATE OF ARIZONA) I hereby certify that the within No.
) ss. instrument was filed for record
 COUNTY OF) in County, State of Arizona

Book _____ Page _____

Witness my hand and Official Seal.

Indexed	Paged	Blotted

County Recorder

Date: _____
 Request of: _____

By _____ Deputy Fee: _____

Notice of Mining Location

LODE CLAIM

TO ALL WHOM IT MAY CONCERN:

This Mining Claim, the name of which is the Gold Dollar No. 1
 Mining Claim, situate on lands belonging to the United States of America, and in which there
 are valuable mineral deposits, was entered upon and located for the purpose of exploration
 and purchase by H. M. Snyder

(Locator must insert either "a citizen of the United States" or "who has declared his intention of becoming a citizen of the United States.")

the undersigned, on the 21st day of January 1926

The length of this claim is 1500 feet,
 and 200 feet,
 in a Easterly direction and 1300

feet in a Westerly direction from
 the center of the discovery shaft, at which the notice is posted, lengthwise of the claim, to-
 gether with 300 feet in width of the surface grounds, on each side of
 the center of said claim. The general course of the lode deposit and premises is from the
East to the West

The claim is situated and located in the Salt Well Mining District, in
Pima County, in the State of Arizona, about 2 Miles
 in a Northwesterly direction from Elsa Bell Mine
and about 3 1/2 miles from Green
Buck Mine

The corners of the claim are marked upon the ground as follows: Beginning
 at _____
 At a _____ direction _____ feet from
 the _____ this _____ being in the center of the _____
 end line of said claim; thence _____ feet to a _____
 _____ being the _____ corner of said claim; thence
 _____ feet to a _____ being at the
 _____ corner of said claim; thence _____ feet

By H. M. Snyder
 County Recorder
 at _____
 this _____ day of _____ 1926

STATE OF ARIZONA)
COUNTY OF)

I hereby certify that the within
instrument was filed for record
in County, State of Arizona

No. _____
Book _____ Page _____

Witness my hand and Official Seal.

Indexed	Paged	Blotted

County Recorder

Date: _____
Request of: _____

By _____
Deputy

Fee: _____

Notice of Mining Location

LODE CLAIM

TO ALL WHOM IT MAY CONCERN:

This Mining Claim, the name of which is the Gold Dollar 3
Mining Claim, situate on lands belonging to the United States of America, and in which there
are valuable mineral deposits, was entered upon and located for the purpose of exploration
and purchase by H. M. Snyder

(Locator must insert either "a citizen of the United States" or "who has declared his intention of becoming a citizen of the United States.")

the undersigned, on the 22 day of January 1926

The length of this claim is 1500 feet,
and 1400 feet,

in a Westerly direction and 100
Easterly direction from

the center of the discovery shaft, at which this notice is posted, lengthwise of the claim, to-
gether with 300 feet in width of the surface grounds, on each side of

the center of said claim. The general course of the lode deposit and premises is from the
East to the West

The claim is situated and located in the Salt Well Mining District, in
Pima County, in the State of Arizona, about 2 miles

in a Northerly direction from the Elm Bill

and about 3 1/2 miles in

a southerly direction from Green Back Mine

of the claim are marked upon the ground as follows: Beginning

at _____ direction _____ feet from

the _____ this _____ posted), being in the center of the _____

_____ and line of said claim; thence _____ feet to a _____

_____ being the _____ corner of said claim; thence _____

_____ feet to a _____ being at the _____

_____ corner of said claim; thence _____ feet

Witness my hand and Official Seal.

Indexed	Paged	Blotted

County Recorder

Date: _____
Request of: _____

By _____
Deputy

Fee: _____

Notice of Mining Location

LODE CLAIM

TO ALL WHOM IT MAY CONCERN:

This Mining Claim, the name of which is the Snyder No. I
Mining Claim, situate on lands belonging to the United States of America, and in which there
are valuable mineral deposits, was entered upon and located for the purpose of exploration
and purchase by H. M. Snyder

(Locator must insert either "a citizen of the United States" or "who has declared his intention of becoming a citizen of the United States")

the undersigned, on the 11th day of April 1916

The length of this claim is 1500 feet,

and d claim 150 feet,

in a Northerly direction and 1430

feet in a Southerly direction from

the center of the discovery shaft, at which this notice is posted, lengthwise of the claim, to-

gether with 300 feet in width of the surface grounds, on each side of

the center of said claim. The general course of the lode deposit and premises is from the

North to the South

The claim is situated and located in the Casa Grande Mining District, in

Pinal County, in the State of Arizona, about 30 miles

in a Southerly direction from Casa Grande

and onto the south end line

of the Copper Bell mining claim at the

at a group of mining claims

at a _____ direction _____ feet from

the _____ this notice is posted), being in the center of the _____

end line of said claim; thence _____ feet to a

_____ being the _____ corner of said claim; thence

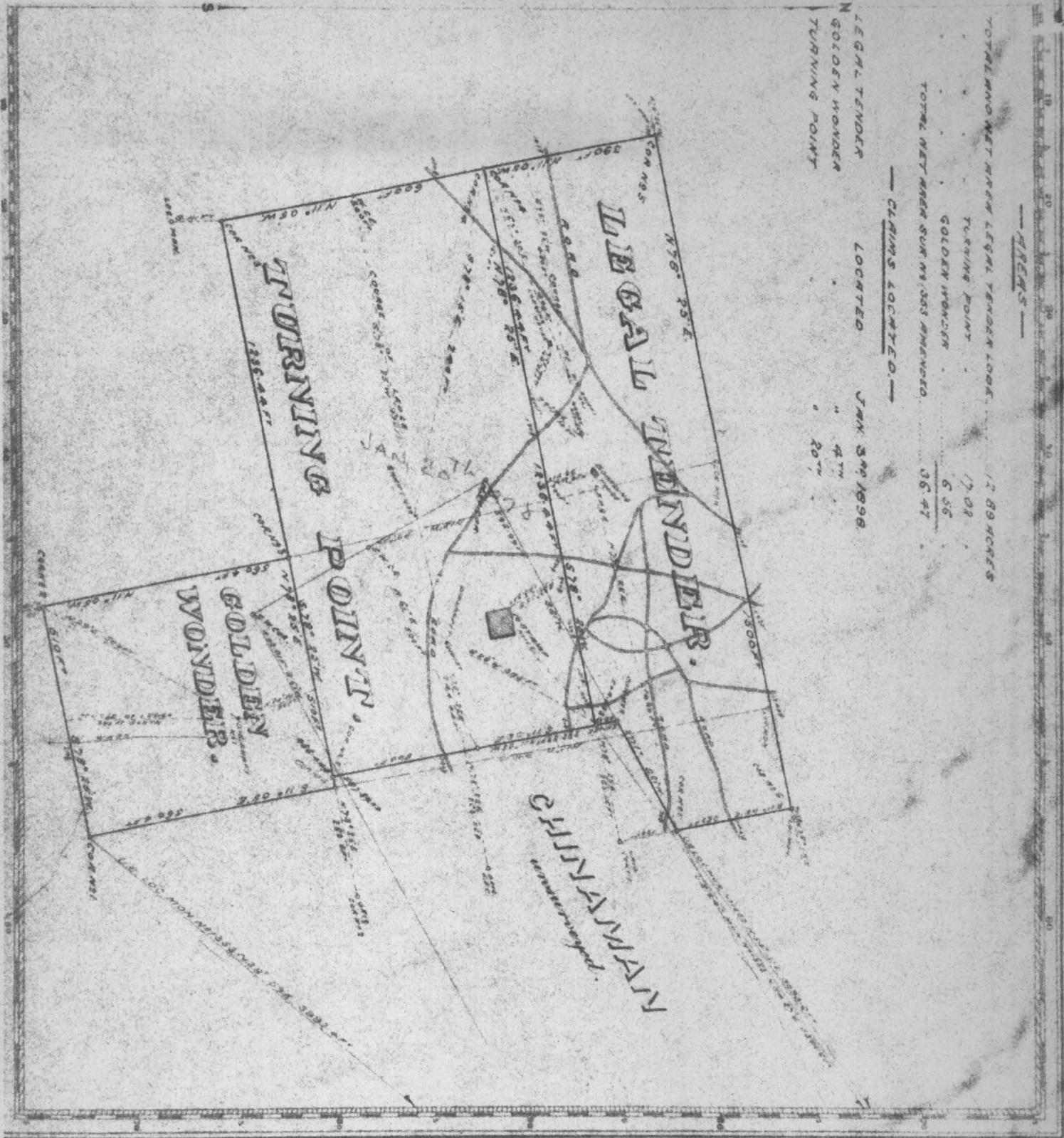
_____ feet to a _____

_____ corner of said claim; thence _____

_____ feet

AREAS —
 TOTAL MINED NET FROM LEGAL TENDER LOOK
 TURNING POINT 17.08
 GOLDEN WONDER 6.56
 TOTAL NET AREA SURVEYED AND AWARDED 23.64

CLAIMS LOCATED —
 LEGAL TENDER LOCATED JAN. 24TH 1898
 GOLDEN WONDER " " 20TH
 TURNING POINT " " "



Mineral Survey No. 1933 Amended
 Lot No. 1
 OF THE CLAIM OF
 THE TURNING POINT MINING AND MILLING CO.
 KNOWN AS THE
 LEGAL TENDER
 TURNING POINT
 GOLDEN WONDER
 IN GILA GRANDE, GUNTE, ARIZONA
 Containing an area of 23.64 Acres
 Scale of 200 Feet to the inch
 Made on 12TH 27^E
 SURED 12TH 27^E 1905 BY
 J. H. G. Co. Surveyors
 P. S. Squires, Record Surveyor

The Original Field Notes of the Survey of the Mining Claim of the Turning Point, Gunter and Milling Co. are on file in the office of the Surveyor General, Phoenix, Arizona, and are hereby certified that they comply with all the requirements of said Mining Claim as well as incorporated into a plat, copy filed to identify the premises, and that such requirements as made thereon be national objects or permanent measurements as will perpetuate and fix the locus thereof.
 I further certify that the standard bolts worth of rubber has been expended on improvements made upon said Mining Claim by descent or else granted, and that said improvements consist of a shaft 12 1/2 x 3 1/2 ft. and a set of 12 1/2 x 3 1/2 ft. of d. c. s. to a depth of 111 ft. etc.

That the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expense there upon any other claim.
 That I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.
 Wm. S. Squires, Surveyor
 Phoenix, Ariz. July 24 1905
 J. H. G. Co. Surveyors

Hidden Treasure Lode

Know all men by these Presents--that the undersigned have this the 10th day of January A.D. 1898 Located and do hereby claim 1500 Linear ft along the outcrop of this lode vein or deposit Together with 600 ft in width--300 ft on each side of the center thereof and all dips angles spurs and paralell lodes inside of the surface survey--Having complied with the local Territorial and United States Mining Laws we claim all rights as granted under the same. This Lode is Bounded and described as follows, To wit:-

Commencing at this Notice Placed at the discovery where an open cut is made in side of mountain and on the lode said cut being in length 18 ft and depth at Breast of Tunnell on the lode 10 ft. We now run S.S.W. 750 ft to S.S.W. end center stone monument No 1 thence W.N.W. 300 ft to stone monument WNW cor No 2 thence N.N.E. 750 ft to monument No 3. NW side center thence N.N.E. 750 ft to monument No. 4 NE cor thence E.S.E. 300 ft to monument No 5 S.E. end center monument thence E.S.E. 300 ft to cor No 6. SE corner thence SSW 750 ft to monument No 7. SE side center thence S.S.W. 750 ft to monument No 8 S.W. cor thence W.N.W. 300 ft to monument No 1 and the place of beginning

This Described Lode and claim is situated about 800 ft S.E. of the Turning Point Shaft House and crossing Diagonally the SE corner of the Golden Vinder Lode or claim in Casagrande Mining District Pinal County and Arizona Territory.

Surveyed for Record Feby 12th /98.

Witness
A. J. Hunter
Jerry Snyder

Locators Howard M. Snyder
and Clara August

Filed and Recorded at the request of E F Meyers on the 12th day of March A.D. 1898 at 1 Oclock P.M.

F C A Chamberlin Recorder

By C W Lemon Deputy

PRELIMINARY REPORT
TURNING POINT GOLD MINE

BY

MILES M. CARPENTER, E. M.

For

PAUL GATLIN, Owner

186 N. Stone Ave., Tucson, Ariz.

Phone 2297

12

PRELIMINARY REPORT
TURNING POINT GOLD MINE

by

Miles M. Carpenter, E. M.

LOCATION.

This property is located in the Casa Grande Mining District, 23 miles south-westerly from Casa Grande, Arizona, a live town of about 1,000 population on the Southern Pacific Railroad and on Arizona Highway No. 84. A graded road leading from Casa Grande into the Papago Indian Reservation crosses the mining property a few hundred feet from the main shaft. The Dry Lake, an old landmark several square miles in area, free from desert growth and level as a floor makes a good natural landing field less than three miles from the mine.

Topographically, the property is in the desert of Southern Arizona, a region of broad level valleys or mesas studded with mountains, sometimes isolated peaks, sometimes considerable ranges. It lies near the base on the north slope of a small mountain, an outlier of the Slate Mountains, on the north end.

AREA.

The property consists of five claims of which the Turning Point, Legal Tender and Golden Wonder claims are patented and the New Turning and Rainbow claims are recent locations.

The patented claims are designated as Mineral Lot No. 1353, and contain a total of 36.57 acres. The approximate positions of the several claims are shown on the accompanying map of the Turning Point Group.

While there are other workings on both the patented and unpatented claims, this report will be confined to the main working on the Turning Point claim.

GEOLOGY.

The general geology of the vicinity is but incompletely described in the publications of the State Bureau of Mines or the U. S. Geological Survey. It is mapped, however, as Paleozoic limestone, quartzite and shale associated with intrusive volcanics, a relation of rocks that has been productive of metals in many parts of southern Arizona.

The Turning Point mine covers the intrusion of a sill of granite porphyry into a block of thick bedded limestone. The porphyry apparently rose from the north and elevated the overlying block of limestone giving it a distant dip to the north. The crest of the mountain, which above the mine has a direction west to east, is "blue lime", rough, jagged and on the north precipitous. This is true except for a narrow pass above the east end line of the Turning Point claim where

the limestone has been entirely removed leaving the porphyry as the outcrop where it continues as the entire south slope of the mountain, contacting below with quartzite on the west end with limestone further east.

There is no evidence of important metamorphic action at the exposed contacts of the limestone and porphyry, and this feature is presumed to have little or no bearing on the formation of ore bodies.

The porphyry is varying shades of gray in color, weathering in places to brownish tint which predominates on the south slope of the mountain. The common structure is blocky, with phenocrysts of white feldspar, presumably orthoclase, in a gray ground mass. The most frequent alteration is toward kaolin, though there is silification locally where the rock appears fine grained with distinctly reddish tint. In some places, notable at the pass before mentioned, the porphyry is buff color, dense and lacking in phenocrysts, quite like an intrusive rhyolite in appearance.

THE VEIN.

It is a fissure, the strike averaging about N 70 deg. E, the dip being southward into the mountain at slopes varying from 48 deg. to 65 deg. averaging about 55 deg. The strike is persistent thru both limestone and porphyry and does not follow the contact, which, near the main shaft is south-easterly. The outcrop at the main shaft is in porphyry and continues in this rock for several hundred feet to the east, but to the west enters limestone within a few feet and continues in limestone as far as traced. In general the outcrop is not continuous and is but faintly marked. About 250 feet west from the main shaft the vein is indicated by a reddish discoloration in the slightly broken limestone. A sample taken at this outcrop showed the presence of gold to the amount of .02 oz. per ton.

While the outcrop of the vein is small and uninviting, the conditions underground are entirely favorable. Development at the main shaft shows the vein to have a well defined hanging wall from the surface to the lowest point accessible (230 feet) and in most places the footwall also is well marked, the two walls of the vein averaging about 6 feet apart. Drifts on the vein show ore widths from 2 feet to 12 feet.

Alteration of the wall rock is so complete that it is difficult to determine whether the vein, at any given point, is in limestone or porphyry.

The vein is not a single fissure, for on the second level, west drift a parallel vein has been opened 50 feet north of the vein on which the shaft is sunk and there is some evidence of a vein in a relative position on the first level.

The fading outcrop and the meager metal content of same suggest that the principal mineralization of the vein was below the level of

the present outcrop. That is, whatever valuable metals were originally deposited in the vein have not been broken down and scattered by erosion, but are still there except for the small tonnage already mined.

To show how the old timers viewed the vein system, copy of an old drawing is attached. It will be noted that two distinct veins are shown, one in the hanging wall of the main shaft, the other coming in from the north, the two veins making a junction at the 1st level. The correctness of this interpretation can be checked when a complete survey of the property is made and some cross cutting done on the 3d level.

FAULTING.

There is faulting in the vein, the most prominent being west of the main shaft, striking south-east and dipping north-east. It is quite evident that the north drift west of the shaft on the 1st level follows a fault in the porphyry that is very sparingly mineralized. From surface appearance there is faulting a few hundred feet east of the shaft. A correct solution of the fault problems must be based on an accurate survey, and any conclusion drawn in advance would be a guess, more or less dangerous to follow. However, as far as can now be seen, the displacement of the vein is small and the faulting will probably not prove troublesome or add seriously to the cost of exploration and sinking.

ORE.

The ore occurs partly as vein filling and partly as a replacement of wall or included rock, the replacement being notably complete. The vein filling appears chiefly as clear and white quartz with minor showings of feldspathic materials. A few vugs lined with quartz crystals were noted but banded structure is lacking. In most places, the ore is shattered and broken throughout the width of the vein and is stained a yellowish tint from limonite, also oxides of lead and lead molybdate. Oxidation of the ore is complete. Casts of fine grained pyrite are abundant but no sulphides were found even in the deepest workings.

The foregoing description of the ore holds good for all the ore examined except that occurring in the stope above the 3d level, west drift, where the ore comes as fragments of quartz in pulverant material stained with oxides of iron and manganese, the whole resembling a "sand carbonate run". This portion of the vein is definitely in the limestone, and it is possible that lenses of this type of ore will be frequent in this rock.

VALUES.

Only preliminary sampling was done, but the samples were carefully taken and it is believed that the values indicated can be accepted as a close approximation of what a complete sampling will show.

The approximate location of each sample is shown by number enclosed in circle on the "Plan of Main Workings" attached. Value is figured with Gold \$35.00 per oz., Silver \$0.64 per oz.

Location	Samp No.	Width	Oz. Gold	Oz. Silver	Value
Dump					
Gen Sample W of trestle	3	500 T.	0.18	1.5	\$7.26
" " E " "	4	500 T.	0.14	1.4	5.80
1st Level					
90 ft W of shaft (Stope)	8	2.0'	0.53	---	18.55
30 ft W of shaft (Footwall)	8A	6.0'	0.04	---	1.40
2d Level					
25 ft W of shaft (Stope)	9	5.5'	0.08	---	2.80
125 ft W of shaft (Stope)	9A	5.0'	0.17	---	5.95
40 ft E of shaft (N wall drift)	6	6.5'	0.33	---	11.55
80 ft E of shaft (Stope)	5	2.0'	0.20	---	7.00
3d Level					
35 ft W of shaft (N wall drift)	10	6.0'	0.18	---	6.30
25 ft above E chute (Stope)	11	4.5'	0.13	---	4.55
Grab of ore in E chute (No fines)	7	--	0.11	---	3.85

Averaging the above according to width and eliminating No. 8A, which is too low to be called ore, the seven samples taken underground in the vein have a width of 4.5 ft and assay Gold .208 oz. per ton, Value \$7.28 per ton. Silver was not determined in these particular samples, but mixtures of the same ores for mill test purposes averaged about 1.4 oz. per ton, so it will be safe to add \$.90 per ton for the silver value making a total value of \$8.18 per ton.

Further information on values can be gathered from the mixtures of samples made for mill tests. Rejects from samples No. 3, 4, 5, 6 and 7, mixed without regard to weight, assayed Gold 0.20 oz., Silver 1.52 oz., value \$7.97 per ton. Dump ore predominated in this mixture. Another sample for mill test containing 25% from the west end of dump, 25% from east end of dump, 25% from location of Sample No. 6 on the 2d level, and 25% from stope above the west chute of the 3d level assayed: Gold .25 oz., Silver 1.4 oz., value \$9.65 per ton.

DEVELOPMENT.

The principal development is an incline shaft 6 ft X 9 ft, with levels (incline distance below collar) approximately as follows:

	Depth	Drifts on Vein	Crosscuts
1st Level	62 ft	248 ft	188 ft
2d Level	126 ft	270 ft	80 ft
Intermediate Level	164 ft	75 ft	--
3d Level	191 ft	57 ft	12 ft
Water stands	229 ft		
Presumed depth	275 ft		
		<u>650 ft</u>	<u>280 ft</u>
Raises and winzas (estimated)		200 ft	

Due to lack of equipment it was impracticable to explore all of the stopes, raises and winzas, so the total is estimated at 200 ft., which is probably less than the actual footage. There are apparently connections from the 3d level to the air shaft on the surface in the workings west of the main shaft.

The drift footage on the 1st level includes 110 feet to the east beyond the caved or filled portion, this scaled from an old map.

TONNAGE.

It is realized that no close estimate of tonnage can be made until the extent of the ore bodies is determined by sampling, which means the cutting of a hundred or more samples at intervals depending on how uniformly the values are distributed. What is given below is submitted as my judgment, based on the data at hand and experience gained in sampling hundreds of mines. I believe the ore shoots will prove to be of good length; that is, more than one-half the drift length on the vein will be in ore of workable grade. I also believe that the width will average more than the 4.5 ft shown by the seven samples taken.

In the block from the 3d level to the surface and the length east and west of the longest levels, I should expect not less than 10,000 tons of ore carrying around \$8.00 per ton in gold and silver at current prices. Most of this ore is blocked out and the rest would be opened in the regular course of mining.

Let me repeat that these figures are not submitted as an estimate of tonnage but as my opinion as to the least amount of ore likely to be produced in mining out the present development. I realize that in giving a suggestion of tonnage on such incomplete data there is a chance of grossly underestimating the value of the property. I have seen from the files of one of the large Exploration Companies a digest of an old report on this property giving the tonnage developed as 50,000 tons at the time the property was closed down. The value of the ore is not stated in the records referred to.

In addition to the ore opened up underground there are dumps of second grade ore and of ore mixed with waste. At the head of the trestle is a dump of ore which I estimate to contain not less than 1,000 tons from which a general sample averaged Gold .16 oz. and Silver 1.45 oz., value \$6.50 per ton. Sampling was done by pits 1 ft in depth spaced at 6 ft intervals over the surface. This dump is evidently vein material that was too low grade to be put thru the mill under the old operation.

Adjacent to this dump on the west is a larger dump of mixed ore and waste that should be sampled and the chance investigated for screening out the coarse rock and recovering the fines.

A few hundred tons of tailing from the old stamp mill are still on the ground though much has been washed away. Two samplings were made of this material averaging Gold .12 oz., Silver 2.2 oz., value \$5.60 per ton.

To summarize, my preliminary examination indicates the following tonnages and gross values:

Mine surface to 3d level,	10,000 tons	\$80,000.00
Second grade ore dump	1,000 "	6,500.00
Tailing from old stamp mill	300 "	1,680.00
		<u>\$88,180.00</u>

MILL TESTS.

From the results of the preliminary sampling it is evident that the ore in sight is not of shipping grade. Hence the metals must be extracted on the ground and the profit from an operation will depend more on recovering a high percentage of the precious metals at a low cost than on any other feature. For that reason considerable work was done on experiments and tests, the more important results of which are set forth below.

Screen Test

To find where the values lay with respect to screen sizes, test was made on a mixture of dump and mine ore crushed thru 1/4 inch which assayed Gold .17 oz., Silver 1.8 oz., Only the gold was determined.

Screen Product	Weight Grams	Tons per 100 Tons	Gold per ton	Tons X Ounces	% Gold Content
On 6m.	2640	45.0	.19 oz.	8.55	49.7
On 10m.	914	15.3	.11	1.68	9.7
On 20m.	595	10.2	.10	1.02	6.0
On 35m.	565	9.7	.11	1.07	6.2
On 100m.	353	6.6	.14 -	.92	5.4
Thru 100m.	774	13.2	.30	3.96	23.0
		<u>100.0</u>		<u>17.20</u>	<u>100.0</u>

Flotation Test

This test was made on Denver Sub A machine at the State Bureau of Mines, using 2,000 grams of ore crushed thru 50 mesh with reagents per ton as follows: .2 lb Sod Aerofloat, .2 lb Amyl Xanthate .2 lb pine oil, 5 lb lime. The mixture was conditioned for ten minutes before placing in flotation cell. Froth collected the first five minutes was called concentrate, second ten minutes middling.

Product	Weight Grams	Wt per 100 tons	Gold per ton	Silver per ton	% Recovered Gold	% Recovered Silver	Value per ton
Heads	2000	100	.20 oz	1.52 oz			\$ 7.97
Con'te	21	1.05	10.11 "	11.30 "	46.1	8.0	361.08
Mid'ng	35	1.75	.44 "	1.53 "	3.3	1.8	16.38
Tailing	1944	97.2	.12 "	1.38 "	50.6	90.2	5.08

This test shows that the ore is not amenable to flotation concentration. The grade of concentrate \$361.08 per ton, is highly satisfactory but this favorable feature is nullified by the fact that the

recovery in the concentrate is less than one-half. Further tests would countless improve these results, but the loss of 50.6% of the gold and 90.2% of the silver in the tailing appears too great to overcome.

Cyanide Tests.

A preliminary cyanide test, also, was made at the Bureau of Mines on the same sample of ore used in the flotation test. Ore was crushed thru 50 mesh, using 400 grams treated with 500 cc of Sodium cyanide solution .1% strength, and 5 lbs hydrated lime per ton of ore and given 2 hours agitation on the rollers with the following results:

	Gold	Silver	Value per Ton	% Extracted	
	oz	oz	\$	Gold	Silver
Head sample	.20	1.52	\$7.97	55.0%	2.0%
Tail sample	.09 "	1.49 "			

Cyanide consumption .32 lbs per ton in two hours.

It is realized that the time of agitation was too short to expect a high extraction, but the laboratory was not available for a longer test at the time. The extraction of 55% of the gold in the short period of two hours was encouraging so arrangements were made for further cyanide tests at the office of E. A. Jacobs, Registered Assayer. All assays given in this report are by E. A. Jacobs except those in connection with the flotation and preliminary cyanide tests which are from the State Bureau of Mines.

Since percolation cyanidation requires less equipment and is cheaper to operate than any other method, it was tried out first. The first test was to determine the rate of percolation and relative extraction at different degrees of fineness. Head material on all samples was identical except as to fineness and assayed: Gold .18oz., Silver 1.4 oz., The strong cyanide solution was .12% Sodium cyanide and 5 lbs per ton of hydrated lime was used on each sample. A sample was taken from each percolator after 24 hours contact which were combined, washed free from solution, dried and assayed showing Gold .10 oz., Silver 1.2 oz per ton. Percolation was continued for 72 hours. Weak solution used the last 24 hour period was .04% strength. Residues were washed by percolation, samples Nos. 1 and 2 having 4 washes, Nos 3 and 4 having 2 washes in the same length of time.

Samp. No.	Thru Mesh	Rate of Percolation	Cyanide Consumption	Tail Assay		%Extraction	
				Gold	Silver	Gold	Silver
1	10	2" -14 mins	.84 lb pr T	.050	---	72.2%	---
2	20	2" -42 "	1.04 " " "	.045	1.2 oz	75.0%	14%
3	35	2" -95 "	1.20 " " "	.060	1.2 "	66.7%	14%
4	50	2" -100 "	1.42 " " "	.130	1.3 "	27.8%	7%

This test shows that the ore yields a substantial percentage of its gold at such a coarse mesh that percolation is rapid and washing is no problem. The higher tailing assays in Nos. 3 and 4 are believed

due to the slowness of percolation and imperfect removal of the pregnant solution in the final washes. However, the test was carried on to simulate a practical operation, which gave the results recorded.

The tailing loss was rather high, so a panning was made of the residue after percolation which gave a concentrate assaying: Gold 2.44, Silver 4.6 oz. per ton. Lead carbonate and lead molybdate were both plainly visible in the concentrate, but the lead was not determined. This product has a gross value of \$88.34 per ton for the gold and silver and with the lead content added would be profitable to recover and market at a smelter.

Concentration and Cyanide Test.

New ore was brought from the mine to test combined concentration and cyanide percolation. Ore used was a composite mixture of 50% dump ore, 25% from the vein on the 2d level E and 25% from the stope above the chute of the 3d level W, the mixture assaying: Gold .25 oz., Silver 1.4 oz. per ton.

A pan concentration test was made on 1830 grams of the ore crushed to pass 20 mesh screen, which recovered by weight 1.67% in a concentrate assaying: Gold 2.32 oz., Silver 6.5 oz. per ton and Lead 21.2%. Ratio of concentration 60 to 1.

The tailing from pan concentration assayed: Gold .17 oz., Silver 1.2 oz. per ton. This was treated with 4 lbs hydrated lime per ton and a cyanide solution of .12%. After 12 hours of contact followed by 12 hours of percolation, this solution was drawn off and a fresh solution containing .06% Sodium cyanide was added and percolation continued for 24 hours when this solution was drained and a sample of the ore taken, washed free from solution, dried and assayed. A fresh solution containing only .03% Sodium cyanide was added and percolation continued for 28 hours completing a 72 hour treatment with successively weaker solution. The residue was given three percolation washes, dried and assayed. Cyanide consumption was .8 lb per ton ore. Results are summarized below:

Heads		Tailing 44 Hr. % Extraction				Tailing 72 Hr. % Extraction			
Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silver
.17	1.2	.030	1.1	82.3%	8.3%	.020	1.2	88.2	0%

Based on the products assays of 2.32 oz gold for the pan concentrate and .17 oz gold for the pan tailing (cyanide heads), we have a computed assay of .205 oz gold for the ore, of which 18.5% is recovered in the concentrate and 67.1% is extracted in 44 hours and 71.9% in 72 hours by cyanide, making a combined saving of 85.6% of the gold in 44 hours and 90.4% in 72 hours.

This recovery of gold is quite satisfactory, especially as the method does not require an elaborate or expensive plant and the production costs will be moderate.

The recovery of silver, however, is a different story. In none of the tests or combinations was an extraction as high as 25% indicated. Flotation concentration recovered 8% of the silver content; gravity (pan) concentration recovered 7.7%. The highest extraction of silver by cyanide was 14%. The silver remaining in the old stamp mill tailing (2.2 oz) shows that the white metal did not yield to amalgamation. I have not yet discovered in what form the silver occurs, but further study may reveal some means of making a higher recovery.

At this time, it appears unsafe to count on a higher recovery than 20% for the silver and this must combine the 7.7% recovery in the gravity concentration with the 14% extraction in Samples Nos. 2 and 3 in Cyanide Test No. 1, a total of 21.7%.

Below is a summary to bring the matter of mill recoveries into concrete form:

Average gold content of ore, dumps and tailing, per ton	0.2 oz.	\$7.00
" silver " " " " " " " " "	1.4 oz.	.90
Add for lead recovered, smelter payments	" "	.13
Gross value	" "	<u>\$8.03</u>
Recovery of gold in concentrate and by cyanide,	85.6%	\$ 5.99
" " silver " " " " " " "	20.0%	.18
Add for lead recovered in concentrate	---	.13
Gross recoverable value per ton		<u>6.30</u>
Tailing loss per ton ore - - - - -		<u>1.73</u>
		<u>\$ 8.03</u>

The percentage recovery figured on the gold and silver alone is 79.7% of their combined assay value, practically 80%.

Cyanide Test on Old Mill Tailing.

A percolation test carried along on the tailing from the old stamp mill shows that this material reacts much like the ore ground to 35 and 50 mesh in Test No. 1. This tailing was discharged from a stamp mill where it had passed over amalgamating plates and been concentrated on vanners. Cyanide treatment was identical with the test next above.

Results:

Heads	Tailing 46 Hr.	% Extraction	Tailing 72 Hr.	% Extraction
Gold Silver	Gold Silver	Gold Silver	Gold Silver	Gold Silver
.10 2.2 oz	.045 1.1 oz	55% 50%	.050 1.2	45% 45.4%

The Percolation was slow on this material and the higher extraction in the shorter period was apparent only, due to clean washing of the residue while in the final sample the regulation percolation wash failed to remove all of the gold bearing solution.

There is no reason why the mill tailing should not cyanide as readily as the ore except that it is crushed finer than will percolate. The best way to treat this old tailing would be to mix it with the coarser ore in amount that would not retard percolation. 15% to 20% of the old tailing should not slow down the percolation rate enough to interfere with the cycle.

While the mill tests made are not considered complete enough to base the flow sheet for a permanent plant, they do indicate a treatment for this ore that is simple, practical and economical, viz. table concentration followed by cyanidation. Crushing need not be carried finer than 20 mesh (16 mesh, probably) for either treatment.

The small percentage of concentrate taken out and the high gravity of the minerals separated will give maximum table capacity.

No copper or other mineral detrimental to cyaniding was found in the ore. Cyanide consumption will be low, less than 1 lb per ton of ore. But little lime will be required, probably 3 lbs per ton of ore, for the ore is almost neutral.

Treatment cost will be low, depending much on the size and arrangement of plant. As a suggestion of what the milling costs should run, I shall say \$2.00 to \$2.50 per ton, including amortization of plant. This figure presumes a plant such as would be installed by experienced and capable management, and efficient operation.

HISTORY.

The Turning Point property was entered for patent April 23d, 1901 and patent for three fractional claims was issued two years later to the Turning Point Gold Mining and Milling Company.

I first saw the property in 1913, several years after the final shut down. The old mill was standing, housed in a frame building, a store and several other houses were grouped round, all in charge of a watchmen.

The mill consisted of a rock breaker and two five stamp batteries discharging onto amalgamating plates and followed by vanner tables. The meager information I have gathered from men who knew more or less about the operation is to the effect that the recovery of metals in amalgam and concentrate was low, probably around 60%. The only figures I have on values are "\$6.00 to \$7.00 per ton from the vein just as mined", and that pockets of high grade were sometimes found in the vein running over \$100 per ton. Another report from a reliable source is that several tons of very high grade silver ore taken from a pocket and marketed at the El Paso Smelter, brought returns that carried the mine pay roll for seven months.

Power was from a steam plant fired on wood brought in by the Indians. A steam pump in the shaft raised water to run the mill. At that time, the mine was making 40,000 gallons of water per 24 hours.

All buildings and machinery are now gone, the only surface improvement of value being the mill excavations, but as mentioned above, the shaft and underground workings are in excellent condition.

RANDOM OBSERVATIONS.

It appears that this mine missed being profitable by a very narrow margin, under the old operation. Today it can be made to earn good profits. This change is due primarily to the rise in the price of gold from \$20.00 per ounce to \$35.00, but the lower power cost of internal combustion engines compared with steam and the improvement in milling practice both react to increase profits.

This property has the advantage of some \$25,000.00 worth of development already done and ready to utilize in ore production. The shaft, drifts, raises etc., are in remarkably good condition. Even the timbers are sound and servicable.

It has every requisite for cheap mining, veins of ideal slope and width that break free from walls, walls that stand without timbering, much of vein matter shattered, solid portions will drill easy and break well, good air.

The stage is set for quick action. I know ~~of no~~ property of this type that could be brought into production so quickly.

It is almost a certainty that the mine will yield ore that averages higher than the most complete sampling of the present faces would indicate, for it has undoubtedly been stripped of "high grade", and no heading was stopped as long as it was in ore that could be handled at a profit. In other words, the cream has been skimmed from all in sight, but new work should carry its normal percentage of "cream".

This property should appeal to real mining people who are more interested in the prospects for making a mine of magnitude than in the ore in sight. I am confident that any capable engineer making a careful study will find ample reason for continuing development at depth and on the strike of the vein. A development campaign costing \$25,000 or even \$50,000 might be carried out before starting production and then a milling plant provided that will win the greatest profit from the increased tonnage of ore, the whole requiring an investment of about \$100,000.00.

On the other hand, one-tenth of the sum suggested above might finance a "raw-hide" equipment of the property that would start on the ore in sight and let the profits from this operation carry the further development of the mine.

Whether handled on a large scale or small, this property promises profits that are generous in comparison with investment required and carries elements of safety rarely found in a mining undertaking.

Tucson, Arizona,
August 20, 1934.

Respectfully submitted,
(Signed) Miles M. Carpenter, E. M.

Snyder

9/17/64

Golden Eagle Sample grab by
Trace: Aca Floyd.

Ag: 0.1 g.

by:
J. Hawley
"



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Land Office
3022 Federal Building
Phoenix 25, Arizona

IN REPLY REFER TO:
LO/PL 47
Contest 6-185,
et al.

July 26, 1962

Mrs. Rhoda Snyder Phillips
610 Stanford Drive
Tucson, Arizona
and
Mr. H. J. Snyder
5426 E. Lee Street
Tucson, Arizona

Certified Mail
Return Receipt Requested

Dear Mrs. Phillips and Mr. Snyder:

We are in receipt of your communication of July 18, 1962, which set forth certain claims, requests and proposals. We reply to each in order.

- 150TH ANNIVERSARY
1. Our records indicate that Stella Wagnon Snyder Wilson is the widow of H. M. Snyder and, excepting civil action of which we have not been apprised, as such she is the legal heir of H. M. Snyder under the law. In order for you to act for Mrs. Wilson in the matter at hand, it will be necessary that she officially assign to you a power of attorney to do so.
 2. This office has not in the past required and does not now require that Mrs. Wilson escort a mineral examiner to the subject claims; rather, it was suggested, as a courtesy to Mrs. Wilson and for her benefit, that she accompany members of our minerals staff to the claims in order that the exact location of the claims could be determined since boundary markers are no longer extant. It was anticipated that samples could be taken at that time by our examiners for assay purposes, which process is an integral part of determination of validity. Assay reports submitted by claimants are not considered by the government to be conclusive evidence of validity or non-validity.
 - 3.A. The Bureau of Land Management has not based its charges on the date of location with respect to the subject contests. The charges set forth in the complaints are:
 1. The land involved is non-mineral in character.
 2. No discovery of a valuable mineral has been made on the described claim(s).



(con't.)

- 3.A. The date of location does not enter into the proceedings. At the time of location the lands were open to mineral entry; however, location of a mining claim, by and of itself, does not confer any title or right of possession, per se.
- 3.B. Ordinarily mining claim reports are not available for public inspection, and it is highly unlikely that this office can obtain official sanction to issue to you certified copies of the pertinent mining claim reports. Be advised, however, that the charges enumerated above are those recommended by the mineral examiner in his reports and are based on his examination of the area of the claims in question.
4. Mrs. Wilson has received copies of all complaints issued in connection with the contests to which she is a party as heir of J. F. Wagon and/or H. M. Snyder. Undoubtedly she has the complaints in her possession and probably has copies of her answers to same, and other pertinent correspondence.
5. If you wish to accompany a minerals examiner to the claims, please contact Mr. Henry O. Ash, Division of Lands & Minerals, Bureau of Land Management, Room 3022 Federal Building, Phoenix 25, Arizona; the telephone number is 261-3357.
6. Information regarding mining locations is enclosed.

You have indicated that you are the heirs of Clara Snyder Myers, deceased, and we are enclosing a copy for each of you of an amended complaint in connection with contest 6-4266 in which Clara Myers, dec., is named as a contestee. Mrs. Wilson has accepted service of the complaint in this contest as heir of H. M. Snyder, dec., and J. F. Wagon, dec.

Also enclosed for your information is a list of all contests to which Mrs. Wilson is a party, all of which, with two exceptions, have been transmitted to the Office of the Hearing Examiner, 924 Boston Building, Salt Lake City 11, Utah, for further action. Excepted are two contests, 6-321 which will be sent to the Hearing Examiner August 8, 1962, and 6-4266 which was mentioned above.

Proceeding on the assumption that you intend to obtain legal authority to represent Mrs. Wilson, we are forwarding your letter to the Hearing Examiner with a request that you be notified of any action taken in connection with the contests.

Very truly yours,


Roy T. Helmandollar
Manager

Enc. (3)

Snyder

B. L. M. Claim List

Contests return
for further info

<u>Contest</u>	<u>Claim Name</u>	
185	Little Gem Daisy Lucky Hit Jumbo	} Copperosity AREA (1)
188	Black	
265	Red Chief #1 Red Chief #2 Red Chief #3 Red Chief #4	} Copperosity AREA
266	Sunnyside #1 Sunnyside #2 Sunnyside #3	
267	Annex No. 8 Annex No. 9	
318	Greenback Fraction Greenback No. 5 Aurora No. 2 Aurora No. 8 Black Chief Galconda No. 1 Galconda No. 2 Gold Queen	} GREENBACK AREA (2)
319	Center	
320	Silver Strike Sunny Guss	
321	Silver Eagle Silver Eagle #1 Silver Eagle #2 Silver Eagle #3 Red Chief Red Chief #2 Silver Eagle #4	ERROR Copperosity AREA
322	Sunny Side No. 1	
324	Aurora Fraction Aurora No. 1 Aurora No. 3	} GREENBACK (2)
325	Fox No. 1 Fox No. 2	
326	Greenback No. 1 Greenback No. 2 Greenback No. 4	
329	Ludlam Copper No. 1 Ludlam Copper No. 2 Ludlam Copper No. 3	(with Elsie Cantrell)

Contest

Claim Name

921

Apache

→ Greenback Area

1034

Hidden Treasure

Turning
point Mine

Slate Mtn. Area

1072

Brooklyn

1232

McKinley No. 2

1319

Snyder No. 1

Snyder No. 2

→ Lakeshore

3457

Shoe String

?

3490

Gold King

?

4266

Chloride No. 1

Chloride No. 2

→ Jack rabbit area

Contest

Claim Name

- 327 Desert Copper #1
Desert Copper #2
Desert Copper #3
Desert Copper #4
- 328 Gold Strike No. 1
Gold Strike No. 2
Gold Strike No. 3
- 462 Mogul No. 1
Mogul No. 2
Mogul No. 3
Mogul No. 4
Mogul No. 5
Mogul No. 6
North Side No. 1
North Side No. 2
North Side No. 2
North Side No. 3
North Side No. 4
North Side No. 5
North Side No. 6
Green Back Fraction
Green Back No. 3
Guleh
- 586 Golden Eagle
- 660 Little Lead
Gem No. 3
- 661 Little Gem No. 1
Little Gem No. 2
- 916 Reno
Golden Link No. 1
- 917 Gold Dollar No. 1
Gold Dollar No. 2
Gold Dollar No. 3
Jim Howard No. 1
Jim Howard No. 2
Jim Howard No. 3
- 918 Gold Dove No. 13
Gold Dove No. 14
Golden Dove No. 13
- 919 Ludlam No. 1
Ludlam No. 2
Ludlam No. 3
Ludlam No. 4
Ludlam No. 5
Ludlam No. 6
Ludlam No. 7
- 920 Great Expectations ?
South Side ?

GREENBACK AREA (2)

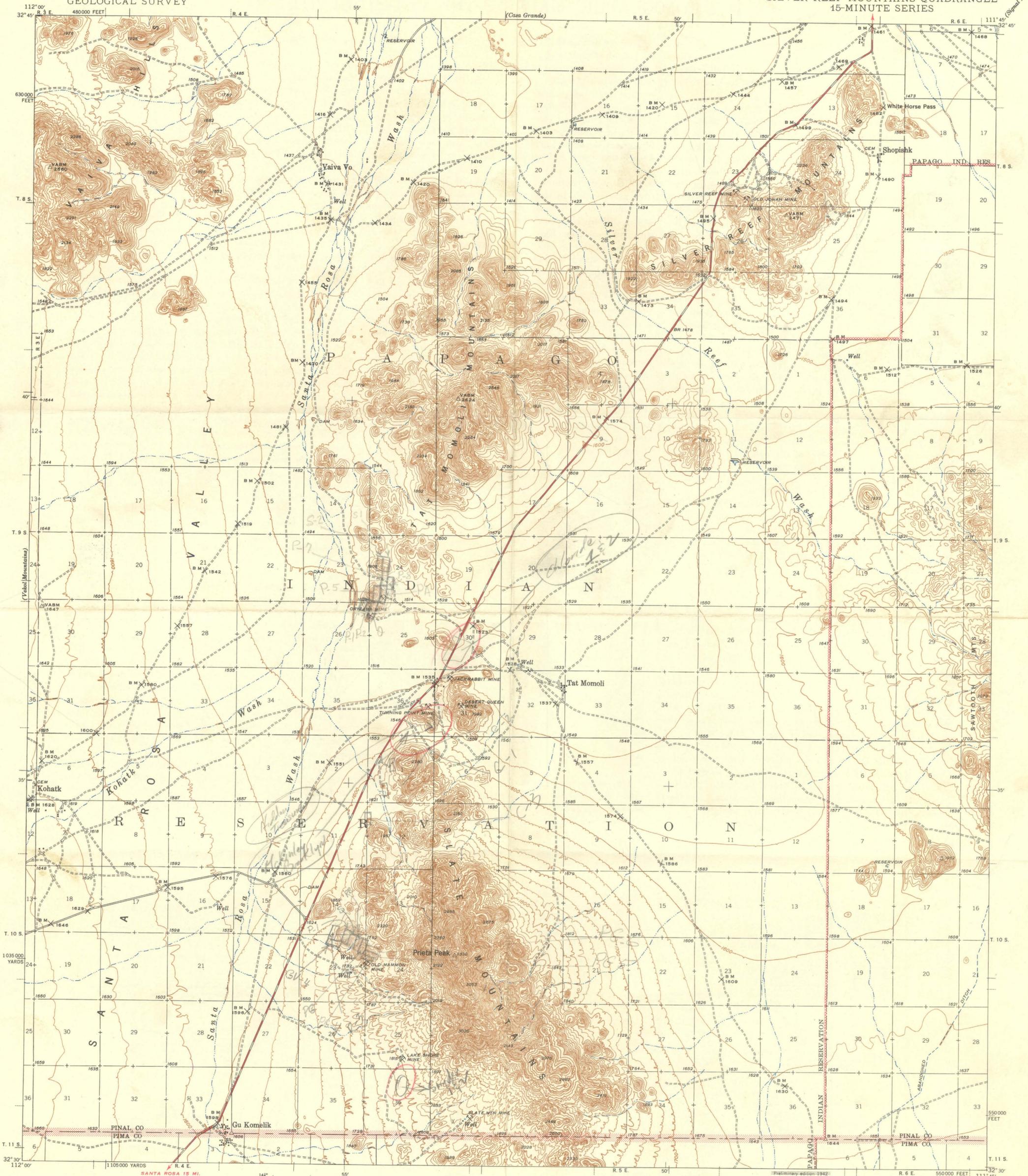
→ Copperosity

← 3 1/2 mi. S. of Greenback
2 mi. N. of Isabella Mine

3 approved
1 ?
3 disapproved
by B.L.M. (4)

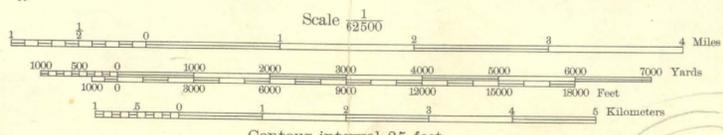
Sheridan Mts
Cannon Hills

Snyder file



Topography by E. S. Rickard and C. W. Birdseye
Surveyed in 1939 and 1940

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN
DECLINATION, 1940



Contour interval 25 feet
Datum is mean sea level

To join Casa Grande Map,
use dotted projection corners
ROUTES USUALLY TRAVELED
HARD IMPERVIOUS SURFACES
OTHER SURFACE IMPROVEMENTS
U. S. ROUTE 1942 STATE ROUTE

Polygonic projection. 1927 North American datum
5000 yard grid based on U. S. zone system, F
10000 foot grid based on Arizona (Central)
rectangular coordinate system

SILVER REEF MOUNTAINS, ARIZ.

N3230-W11145/15
Edition of 1942

Snyder

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a series of standard topographic maps to cover the United States. This work has been in progress since 1882, and the published maps cover more than 47 percent of the country, exclusive of outlying possessions.

The maps are published on sheets that measure about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, the areas that they represent are of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, miles, and kilometers. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 of the same units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys and the resulting maps have for many years been of three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{31,250}$ (1 inch = one-half mile) or $\frac{1}{24,000}$ (1 inch = 2,000 feet), with a contour interval of 1 to 100 feet, according to the relief of the particular area mapped.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 100 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, and the high mountain area of the northwest, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles) or $\frac{1}{250,000}$ (1 inch = nearly 4 miles), with a contour interval of 20 to 250 feet.

The aerial camera is now being used in mapping. From the information recorded on the photographs, planimetric maps, which show only drainage and culture, have been made for some areas in the United States. By the use of stereoscopic plotting apparatus, aerial photographs are utilized also in the making of the regular topographic maps, which show relief as well as drainage and culture.

A topographic survey of Alaska has been in progress since 1898, and nearly 44 percent of its area has now been mapped. About 15 percent of the Territory has been covered by maps on a scale of $\frac{1}{100,000}$ (1 inch = nearly 8 miles). For most of the remainder of the area surveyed the maps published are on a scale of $\frac{1}{250,000}$ (1 inch = nearly 4 miles). For some areas of particular economic importance, covering about 4,300 square miles, the maps published are on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile) or larger. In addition to the area covered by topographic maps, about 11,300 square miles of southeastern Alaska has been covered by planimetric maps on scales of $\frac{1}{100,000}$ and $\frac{1}{250,000}$.

The Hawaiian Islands have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

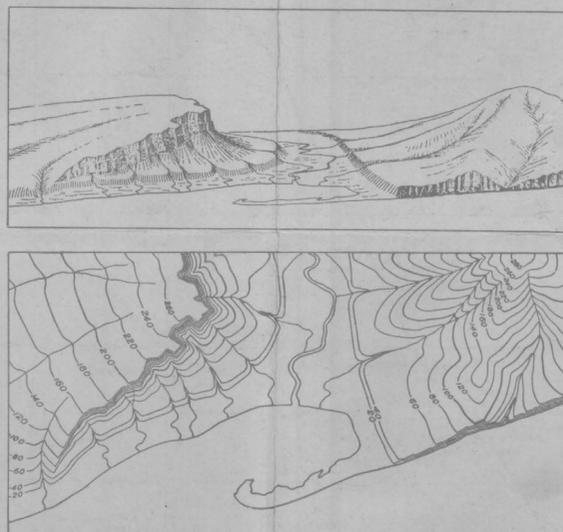
A survey of Puerto Rico is now in progress. The scale of the published maps is $\frac{1}{50,000}$.

The features shown on topographic maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams by double lines. The larger streams, lakes, and the sea are accentuated by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on a few maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The datum or zero of altitude of the Geological Survey maps is mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet above mean sea level. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope, lines that are close together indicate a steep slope, and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping

ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined tableland that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. In order that the contours may be read more easily certain contour lines, every fourth or fifth, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road intersections, summits, surfaces of lakes, and benchmarks—are also given on the map in figures, which show altitudes to the nearest foot only. More precise figures for the altitudes of benchmarks are given in the Geological Survey's bulletins on spirit leveling. The geodetic coordinates of triangulation and transit-traverse stations are also published in bulletins.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public roads suitable for motor travel the greater part of the year are shown by solid double lines; poor public roads and private roads by dashed double lines; trails by dashed single lines. Additional public road classification if available is shown by red overprint.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. More than 4,100 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

Geologic maps of some of the areas shown on the topographic maps have been published in the form of folios. Each folio includes maps showing the topography, geology, underground structure, and mineral deposits of the area mapped, and several pages of descriptive text. The text explains the maps and describes the topographic and geologic features of the country and its mineral products. Two hundred twenty-five folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 percent is allowed on an order amounting to \$5 or more at the retail price. The discount is allowed on an order for maps alone, either of one kind or in any assortment, or for maps together with geologic folios. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

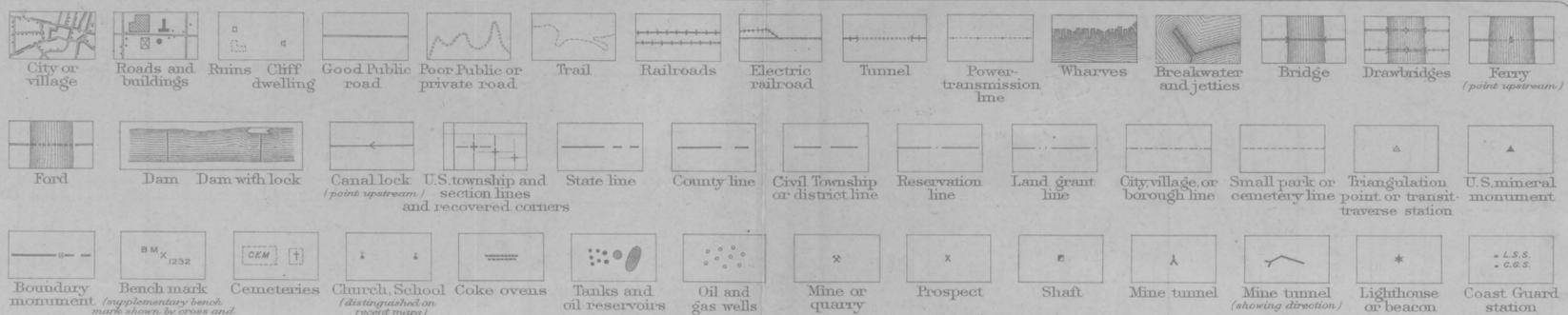
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

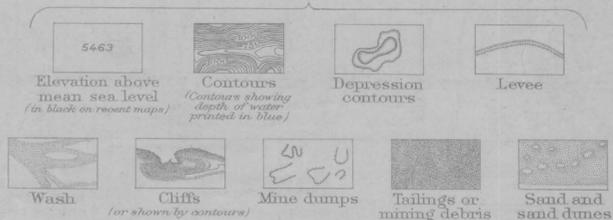
November 1937.

STANDARD SYMBOLS

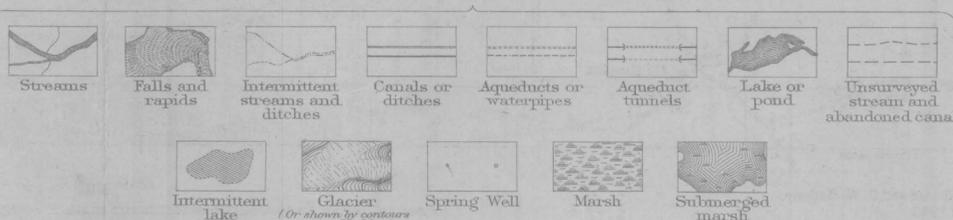
CULTURE (printed in black)



RELIEF (printed in brown)

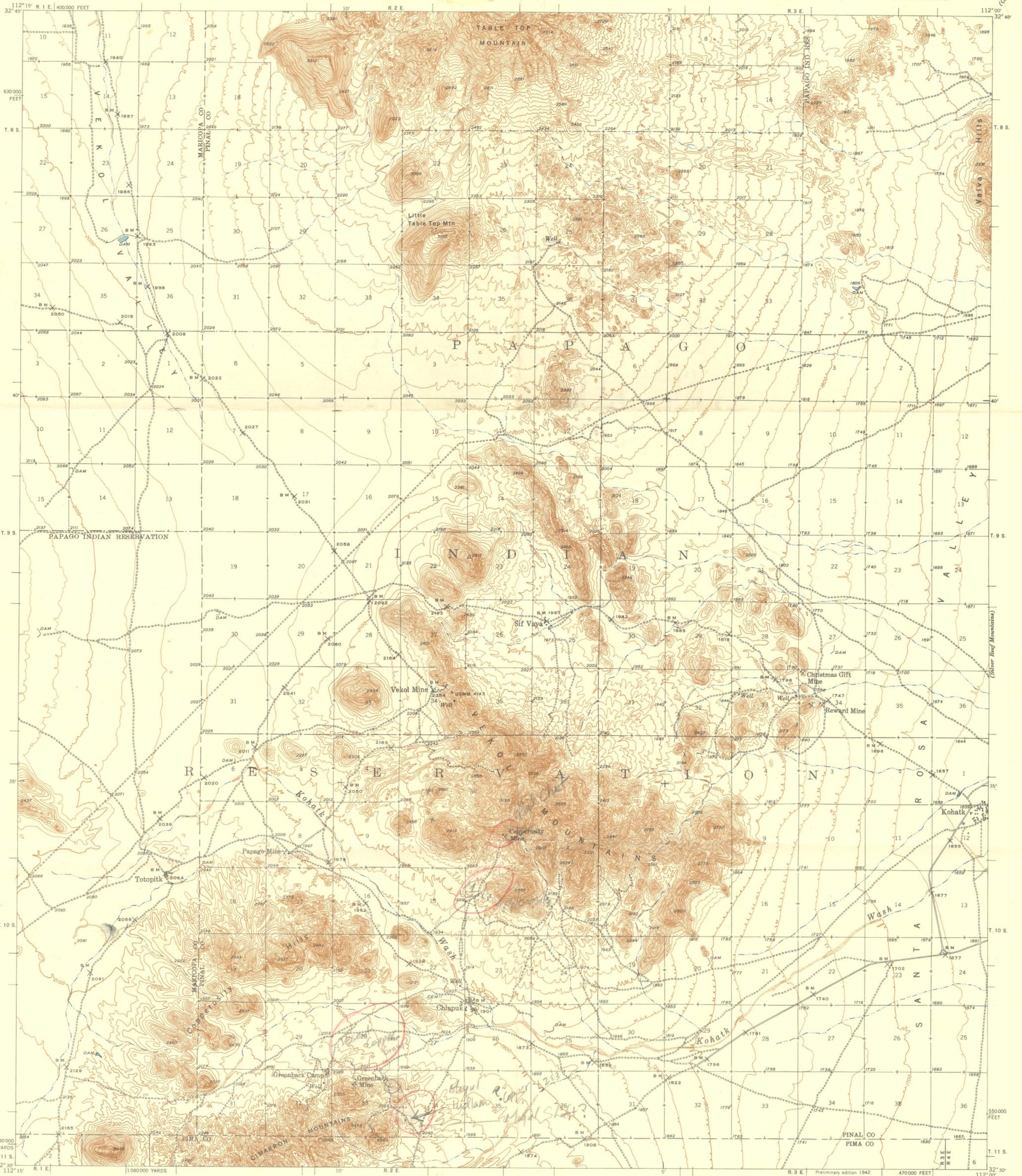


WATER (printed in blue)



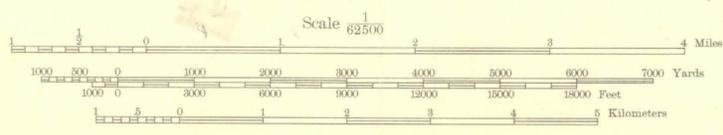
WOODS (when shown, printed in green)

Snyder file



Topography by Adolph Fankhauser,
C. W. Birdseye, and J. W. Lenehan
Surveyed in 1938-1939

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN
DECLINATION, 1939



Polyconic projection. 1927 North American datum
5000 yard grid based on U. S. zone system, F
10000 foot grid based on Arizona (Central)
rectangular coordinate system

VEKOL MOUNTAINS, ARIZ.
N 3230-W 11200/15

Contour interval 25 feet
Datum is mean sea level