



CONTACT INFORMATION

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09/25/86

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SILVER CREEK

ALTERNATE NAMES:

OLD MCGRAW
MANIFEST MINING CO CLAIMS
HANNA PROPERTY

GILA COUNTY MILS NUMBER: 60

LOCATION: TOWNSHIP 2 S RANGE 15 E SECTION 34 QUARTER W2
LATITUDE: N 33DEG 12MIN 55SEC LONGITUDE: W 110DEG 48MIN 17SEC
TOPO MAP NAME: EL CAPITAN MTN - 7.5 MIN

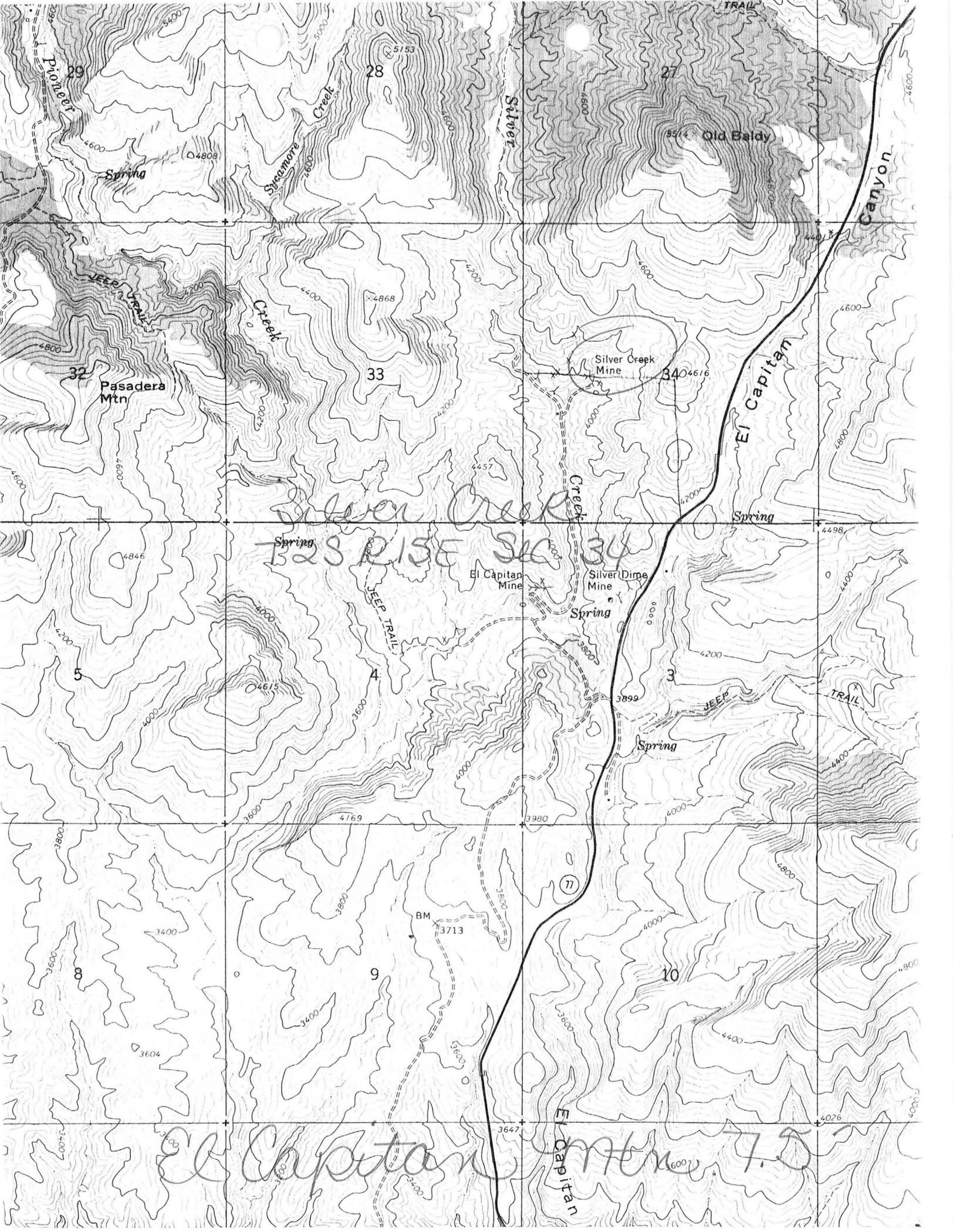
CURRENT STATUS: PAST PRODUCER

COMMODITY:

SILVER
LEAD
COPPER
GOLD

BIBLIOGRAPHY:

ADMR SILVER CREEK MINE FILE
ADMR "U" FILE CU 19



Silver Creek
T2S RISE SEC 34

El Capitan Mtn 7.5

Spring

Pasadera Mtn

Old Baldy

Silver Creek Mine

El Capitan Mine

Silver Dime Mine

Spring

Spring

Spring

BM 3713

Pioneer

Creek

Silver

Canyon

El Capitan

TRAIL

El Capitan

9

10

33

34

5

4

3

8

28

27

32

3604

4868

4868

4457

4846

4615

4169

3980

3899

4498

4600

4800

4400

4400

4087

4800

4026

4600

3647

3400

3400

4000

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DEPARTMENT OF MINERAL RESOURCES

**REPORT TO OPA ON
ACTIVE MINING PROJECT**

DEPT. MINERAL RESOURCES
RECEIVED
NOV 3 1944
PHOENIX Filing Information

Date Oct. 30 / 44
Name of Mine Williams Lead
Owner or Operator Nester Spoford
Address Superior, Ariz
Mine Location Capitan Mgd Dist Gila Co. Ariz

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

PRESENT OPERATIONS: (check X)

Production ; Development.....; Financing.....; Sale of mine.....;
Experimental (sampling) ; Owner's occasional trip 4; per mo.
Other (specify) This is for extra Gas to allow of 4 visits per month from Superior to mine

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months
Approx. present rate per 3 months 30
Anticipated rate next 3 months 80
If in distant future check (X) here

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars
Light or Service Trucks
Ore Hauling Trucks
Compressors
Other Mine or Mill Eqpt.

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Lead Silver

REMARKS:

Property to be prepared for production. Recommend not to exceed 50 Gals. per mo. for his personal travel.

By A. MacFarlane

August 15, 1946

✓ Mr. Nester Sjofeld
Box 42
Superior, Arizona

Dear Mr. Sjofeld:

We are in receipt of your recent mine owner's report dated August 5, 1946, on the Silver Creek property.

Would you please advise us at your earliest convenience whether this is a new property, or whether you have changed the name of "Williams Lead."

Thank you.

Yours very truly

Roger I. C. Manning
Field Engineer

RICM/ba

BOARD OF GOVERNORS

WELDEN C. HUMPHREY, NOGALES
CHAIRMAN

H. F. MILLS, HUMBOLDT
VICE-CHAIRMAN

LOYDE C. EDMONSON, COOLIDGE DAM

DR. N. H. MORRISON, PHOENIX

J. E. LAYTON, CHLORIDE

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
304 HOME BUILDERS BLDG.
PHOENIX, ARIZONA



CHAS. H. DUNNING
DIRECTOR, PHOENIX

W. C. BROADGATE, PHOENIX
ASSISTANT DIRECTOR

G. A. BALLAM, TUCSON
ASSISTANT TO THE DIRECTOR

FIELD OFFICES AT
PRESCOTT - TUCSON

REPLY TO

August 15, 1946

Mr. Nester Sjofeld
Box 42
Superior, Arizona

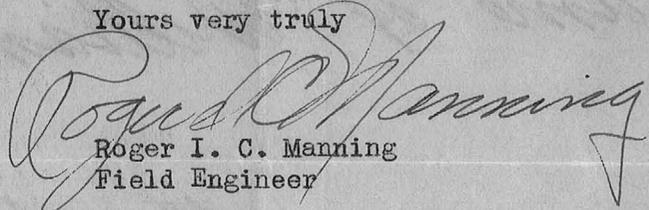
Dear Mr. Sjofeld:

We are in receipt of your recent mine owner's report dated August 5, 1946, on the Silver Creek property.

Would you please advise us at your earliest convenience whether this is a new property, or whether you have changed the name of "Williams Lead."

Thank you.

Yours very truly


Roger I. C. Manning
Field Engineer

RICM/ba

Superior, Arizona
August 23, 1946

DEPT. MINERAL RESOURCES
RECEIVED
AUG 24 1946
PHOENIX, ARIZONA

New Sir,

I would like very much to know where you got the name of "Williams Lead". The name has always been known as "Silver Creek Claim".

On Globe I went through the mine record and I found no such name listed.

Tom Williams was my partner in earlier years but he has no more interest concerning the mine. The name has never been in the name of "Williams Lead".

Thank you,
Mr. Victor Spield
Box 42
Superior, Arizona

September 3, 1946

Mr. Nestor Sjöfeld
Box 42
Superior, Arizona

Dear Mr. Sjöfeld:

The only information we have on your property is a report made out to the O.P.A., dated October 30, 1944, for the purpose of obtaining gasoline. The name shown on this report is Williams Lead; owner and operator, Nestor Sjöfeld, Superior, Arizona; location, Capitan Mining District, Gila County, Arizona.

We hope this will help you straighten out the matter.

We are changing our records, showing this property as Silver Creek.

Yours very truly,

Roger I. C. Manning
Field Engineer

RICM:LP

Mike Pennell and Bob Holmes regarding the Hustler 16 claims in Silver Creek. Suggested they make sure that the Hustler claims did not locate over existing claims which appears to be the case. They were going to make a closer check on Silver Creek mine claims.
FTJ WR 7/3/74

NJN WR 11/19/82: Paul Naden visited and requested information on the the Silver Creek Mine, Gila County. A Mr. Brosco and Mr. Lewis Ellsworth have asked him to invest \$40,000 to clean out an 800' drift on the property. They told him the last shipments from the property were made in 1969 by Ken Olson and shipped to ASARCO. The shipments were reported to have averaged 125 oz. Ag/ton, .06 oz. Au/ton, 20% Pb and 7.81% Cu. A call to Marge Hinton with ASARCO's Ore Purchasing Department failed to confirm any shipments by Ken Olson from the mine. Mrs. Hinton did report that the last shipment on record for the Silver Creek was made in 1970 by Arizona Gypsum. That shipment was of 15.9 tons of material which contained no gold, 16.675 oz. Ag/ton, 5.6% Pb and 1.29% Cu.

NJN WR 8/26/83: R. Mannis of Silver Creek Properties visited to look at the Silver Creek file, Gila County and to see the USGS El Capitan geologic quad map (we don't have it). Mr. Mannis reported he is the sole importer of Russian gold nuggets into this country.

Box 42

ASSAY CERTIFICATE
EAGLE-PICHER MINING & SMELTING CO.
Sahuarita Mill Operations

*Please return
all samples*

Shipper Mr. Nestor Sjofeld

Date

Mine _____

Sampled July 23, 1946

Address Superior, Arizona

DESCRIPTION	AU. Ozs. per ton	AG Ozs. per ton	PB. PER CENT	ZN. PER CENT	CU. PER CENT	FE. PER CENT		
Nestor Sjofeld	.005	9.7	11.3	.4	1.70			
Box 43, Superior								
<i>On the stope</i>								

Assayer M

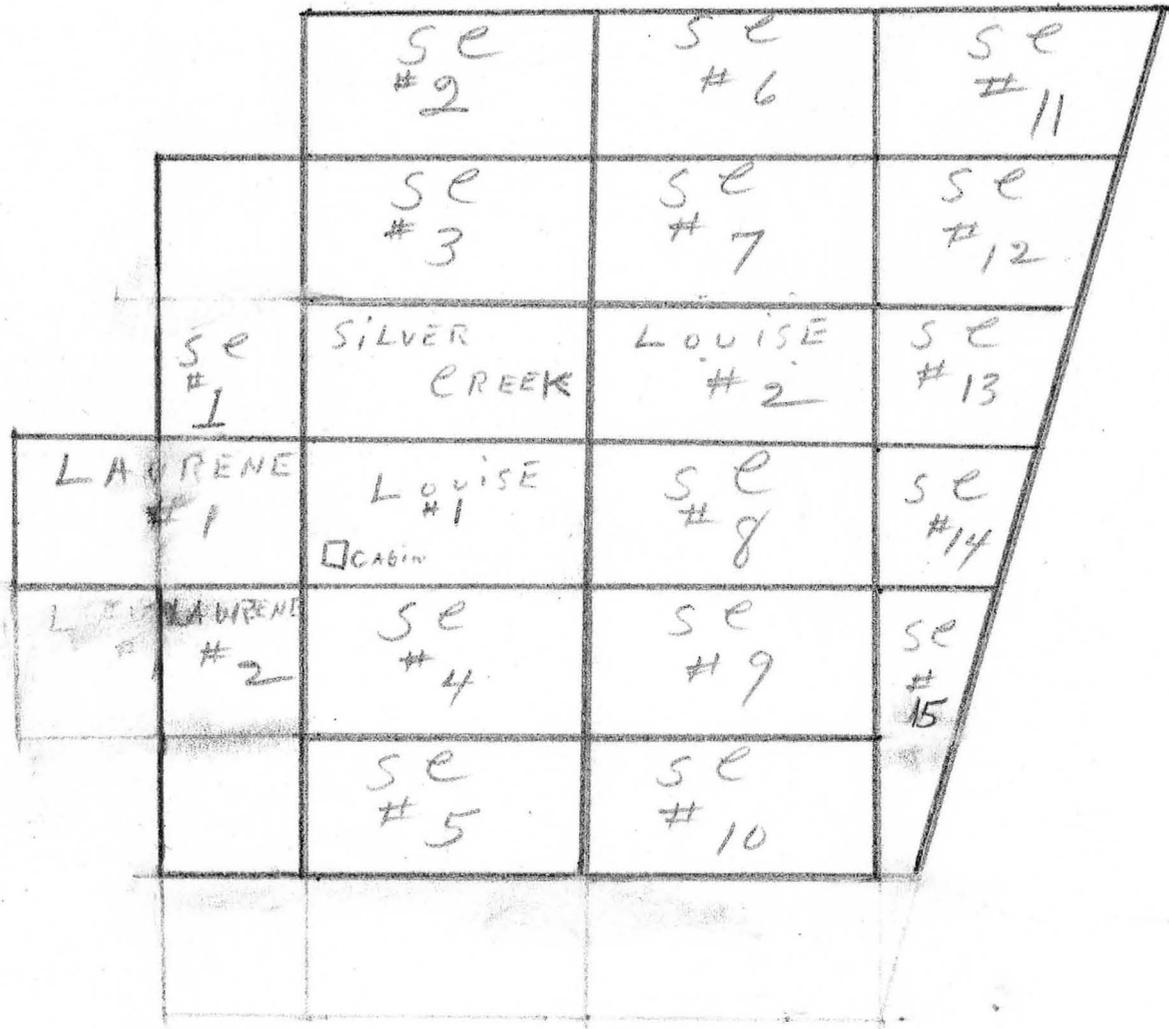
SILVER CREEK CLAIMS
EL CAPITAN DIST.

GILA COUNTY

Interview with Wm Daley, Globe 9/26/63.

Mr. Daley said that Bosley Mining Co., ceased work at their Silver Creek Property, as they ran out of funds. He also said, that Bosley estimated that he had spent upwards of \$40,000 on exploratory work that did not reach a conclusive stage.

MEMO LAS 9/26/63



NAME OF MINE: SILVER CREEK
OWNER: (same as Williams)

COUNTY: Gila
DISTRICT: El Capitan
METALS: Pb, Ag, Cu

OPERATOR AND ADDRESS		MINE STATUS	
Date:	Box 42	Date:	
12/44	Nestor Sjöfeld, Superior	12/44	Developing
		1/47	Idle

NAME OF MINE: SILVER CREEK
OWNER: Nestor Sjöfeld & Robert Olson

COUNTY: GILA
DISTRICT:
METALS: Pb, Ag, Cu

OPERATOR AND ADDRESS		MINE STATUS	
Date:		Date:	
4/47	Nestor Sjöfeld and Robert Olson, Box 1785, Globe, Ariz.	4/47	Developing

DEPARTMENT OF MINERAL RESOURCES

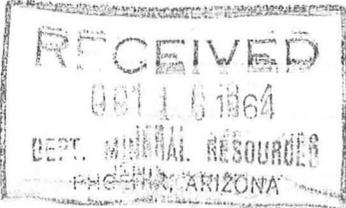
OCT 14 1964

State of Arizona

MINE OWNER'S REPORT

86 DIR INT REV SVC
PHOENIX, ARIZONA

Date 10-12-1964



- 1. Mine: SILVER - CREEK
- 2. Location: Sec. 25.636 Twp. 25E Range 15E Nearest Town GLOBE Distance 2.1 MILES
Direction NE Nearest R.R. GLOBE Distance 17.2 MILES
Road Conditions 3/4 MILE DIRT - REST PAVED HWY
- 3. Mining District and County: EL-CAPITAN - GILA COUNTY
- 4. Former Name of Mine: SILVER - CREEK
- 5. Owner: HOWARD BOSLEY - W. DAILEY, + SCO FIELD
Address: P.O. Box 327 SEDONA, ARIZONA
- 6. Operator: HOWARD BOSLEY
Address: P.O. Box 327 SEDONA, ARIZONA
- 7. Principal Minerals: LEAD, SILVER + COPPER
- 8. Number of Claims: Lode 20 Patented Unpatented 20
Placer Patented Unpatented
- 9. Type of Surrounding Terrain: VERTICAL - INCLINING

10. Geology and Mineralization: See Report attached

11. Dimension and Value of Ore Body: Mineralization covers 150 ft wide and 400 ft long ore body not blocked out. Mineralization + faulting covers some 3/8 of mile in length + 1500 ft wide

Please give as complete information as possible and attach copies of engineer's reports, shipment returns, maps, etc. if you wish to have them available in this Department's files for inspection by prospective lessors or buyers.

12. Ore "Blocked Out" or "In Sight":.....
.....
.....

Ore Probable:.....
.....
.....

13. Mine Workings—Amount and Condition:.....

No.	Feet	Condition
Shafts.....		
Raises.....		
Tunnels.....		
Crosscuts.....		
Stopes.....		

14. Water Supply:.....
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.....

15. Brief History:.....
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16. Remarks:.....
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17. If Property for Sale, List Approximate Price and Terms:.....
.....
.....

18. Signature:.....
.....

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine SILVER CREEK CLAIMS Date 5/29/63
District EL CAPITAN DIST. GILA COUNTY Engineer LEWIS A. SMITH
Subject: MINE VISIT WITH HOWARD V. BOSLEY & W. W. DALEY 5/29/63

CLAIMS: 15 unpatented claims.

LOCATION: 14 3/8 miles south of the junction between the Globe-Christmas Hwy. and Hwy. 70, thence 3/4 air miles west toward El Capitan Mountain. Approx. S 25,36, T2S, R15E.

OWNERS: Howard V. Bosley, Sedona, Arizona (282-7714) (Mining Engineer).
W. W. Daley, Coolidge, Arizona.

Minerals: Silver, Lead, some oxide copper (azurite).

Work: 1 old adit (reopened) 364 feet long trends in a Northeasterly direction. An old Stope, that is 35 feet high 8-9 feet wide & 25-30 feet long, is 120' from the portal. Remnants of the ore, according to Bosley, show good silver values, and some highgrade. 4 main cuts, partly bulldozer and partly hand dug.

- (1) On top of the high hill to the northwest of the present workings. This cut is over 100 feet long, a maximum of 15 to 20 feet of the face and 10-15 feet wide.
- (2) An L-shaped cut, varying from 5 to 20 feet deep and, in places, 30-40 feet wide. Two winze like shallow inclines, each of which, several feet deep, were cut into the bottom of the cut.
- (3) West end of the mineral zone, 3/8 mile NW of No2 Cut, this cut is longer and shallower than No2 Cut.
- (4) A Cut, up a branch canyon, from No2 Cut.

PROPOSED WORK: To continue sinking the two inclines.

Geology: The principal exposed mineralization lies in an intimately sheared zone 150-400 feet wide and 3/8-mile long, and trending N 55-60 degrees W. This dips 80 Degrees SW to vertical. This zone crosses the Apache group of sediments, locally consisting of Mescal, limestone (?) and quartzite. A diabase sill lies in between beds of the Mescal Limestone (?) bedding. The limestone is overlain by quartzite that is fine textured and thin bedded. This quartzite is relatively thin, in the ore zone, as compared to surrounding areas. The so called limestone (?) is a severly altered rock that could have been a clacareous phase of the quartzite.

All of these formations are capped, to the east by a quartz diorite porphyry sill that is massive and about 30-50 feet thick. To the west, on El Capitan Mountain, the Apache formation is unconformably overlain by Paleozoic formations (mainly massive light colored limestone). The massive quartz diorite porphyry is well up in the Apache column.

At least three transverse faults cross the ore formations. These trend N20 to 40 Degrees E and are apparently steep dipping. These have small throws but have evidently exerted considerable shattering effect and are mineralized.

In the west 1/3 of the exposed mineralized area the ore formations are cut by a felsitic dike and by a granitic dike that could be either monzonite or a more basic dioritic rock.

1400 ft.

3400 ft.

No.
4

No.
3

No.
2

Silver
Creek

No. 5

Map

Scale 1" = 600'
Date 8/5/46

Section

Scale
Date

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Silver Creek Mine (Old McGraw (?) Date October 22, 1959
Property)
District Dripping Springs (Banner) District Engineer Lewis A. Smith
Gila County
Subject: Reported by Ken Olsen, Superior (to Lewis A. Smith)

FILED
NOV 9 1959

Owners: Ken & Bob Olsen (Ken Olsen, Box 642, Superior, Arizona)

Property: 9 unpatented claims

Location: 3-4 miles north of Christmas and $1\frac{1}{4}$ miles west of the highway. (Road now inaccessible.) *(old file showed about 15 mi from Christmas)*

Work: 335 feet of tunnel to vein. The tunnel is in hard, tough diorite. (The Olsens drove the last half of the tunnel.)

Geology: A 12 foot vein was encountered in the end of the tunnel, on the diorite-limestone contact. The vein appears to trend nearly NS and is nearly vertical. The vein material is a mixture of calcite, quartz, azurite, lead oxides, silver and gold. The average grade of the 12 foot vein is about \$25.00 per ton and a narrower band within the vein (16") ran \$30.00 in lead, \$26.00 in gold, 1.9% in copper and 18 oz. in silver. The surface outcrop has been intermittently traced for 2400 feet. The width varies, throughout this length, from 2 to 25 feet, and general surface samples run about \$8.00 to \$9.00.

History: The old Manifest Mining Co. had the prospect from 1897 to 1900, before McGraw had it. It was idle for many years before the Olsens acquired it.

DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date 1/5/46

1. Mine: ~~WILLIAMS LEAD~~ Silver Creek

2. Location: Sec..... Twp..... Range..... Nearest Town Globe, Ariz.

Distance 22 mi. Direction Winkelman ^{Hgh} Road Condition fair

3. Mining District & County: El Capitan - about 1 mi. north of El Capitan Mine

4. Former Name of Mine: Silver Creek

5. Owner: Nester Sjofeld

Address: Box 42 - Superior, Arizona

6. Operator: Nester Sjofeld

Address: Box 42 - Superior, Ariz.

7. Principal Minerals: Lead, Silver, & Copper

8. Number of Claims: Five (5) Lode..... Placer.....

Patented..... Unpatented Unpatented

9. Type of Surrounding Terrain: Rolling

10. Geology & Mineralization: Between lime and tibase.

Dip is 60 ft below surface

11. Dimension & Value or Ore Body: About four feet (dimension)

Enclosed you will find latest sample receipts.

12. Ore "Blocked Out" or "In Sight": 400ft. tunnel that is all in ore.

Ore Probable: Approximately 25 ton of ore per week with two laborers.

13. Mine Workings—Amount and Condition: Driving a tunnel

	No.	Feet	Condition
Shafts	One	45 ft	bad condition
Raises	None		
Tunnels	One	500 ft.	good
Crosscuts	Two	50' - 20'	good
Stopes	One	20'	good

14. Water Supply: An ample supply

15. Brief History: There were past productions but nothing came of them. Earliest workings were to drive a tunnel. Discovery was made by Manifest Co. - Date unknown.

16. Signature: Orestes Sjofeld

17. If Property for Sale, List Approximate Price and Terms: Price for property, \$100,000.00 Terms - \$40,000.00 down and the balance after two years.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
MINE OWNER'S REPORT

Date August 5, 1946

- 1. Mine Silver Creek
- 2. Location 22 miles from Winkelman Hwy. near Globe, Arizona
- 3. Mining District & County El Capitan Dist., about 1 mile N. of El Capitan Mine Gila County
- 4. Former name Silver Creek
- 5. Owner Nester Sjofeld,
- 6. Address (Owner) Box 42, Superior, Arizona
- 7. Operator Same
- 8. Address (Operator) Same
- 9. President, Owinging Co.
- 9A. President, Operating Co.
- 10. Gen. Mgr.
- 14. Principal Minerals Lead, silver, copper
- 11. Mine Supt.
- 15. Production Rate
- 12. Mill Supt.
- 16. Mill: Type & Cap.
- 13. Men Employed
- 17. Power: Amt. & Type
- 18. Operations: Present

19. Operations: Planned

20. Number Claims, Title, etc. 5 unpatented

21. Description: Topography & Geography Rolling

22. Mine Workings: Amt. & Condition Driving a tunnel
1 shaft - 45' - bad condition
1 ~~rai~~ tunnel - 500' - good condition
2 crosscuts - 50' & 20' - good condition
1 stope - 20' - good condition

Geology & Mineralization Between limestone and diabase. Dip is 60 ft. below surface.

Ore: Positive & Probable, Ore Dumps, Tailings 400' tunnel that is all in ore. Approximately 25 tons of ore per week with two laborers.

A. Dimensions and Value of Ore body About 4 ft. (dimensions). Sample receipts on file.

Mine, Mill Equipment & Flow-Sheet

Road Conditions, Route Fair

Water Supply An ample supply.

Brief History There were past productions but nothing came of them. Earliest workings were to drive at tunnel. Discovery was made by Manifest Co. - date unknown.

Special Problems, Reports Filed

Remarks

If property for sale: Price, terms and address to negotiate. Price for property is \$100,000.00 terms - \$10,000.00 down and the balance after two years.

32. Signature.....Nestor Sjofeld

Use additional sheets if necessary.

DEPT. MINERAL RESOURCES
RECEIVED
JAN 9 1947
PHOENIX, ARIZONA

SUPERIOR, ARIZONA
JAN 8
6:30 PM
1947



DEPARTMENT OF MINERAL RESOURCES
~~413 Home Builders Bldg.~~
128 North 1st Avenue
PHOENIX, ARIZONA

Date: 11/8/47

✓

Name: Silver Creek Mine

Location: El Capitan Dist. Silver County, Idaho
Arizona

Operator: Nesbit & Powell

Address: Box 42 Superior, Arizona

Metals Produced: Lead, Silver, Copper

Developing

Shipping

Financing

Planning Operations Soon

Idle

	Ozs Au	Ozs Ag	% Pb	% Cu	
1946 7/23	0.005	9.7	11.3	1.7	"on the stake"
7/22	0.01	9.0	9.1	1.6	"W Face"
"	0.02	18.0	7.9	1.6	"Surface"
7/9	0.01	5.2	19.2	1.45	"Face"
1945 2/14	0.01	7.6	12.72		"Between 2 veins"
1/8	0.13	11.2	39.0	0.25	"Bottom shaft"
1944 9/22	0.01	15.0	32.6	1.50	"On the W"

Copied from assay sheets - F.P.K.
Libra Creek File

	Ozs Au	Ozs Ag	% Pb	% Cu	
1946 7/23	0.005	9.7	11.3	1.7	"on the stake"
7/22	0.01	9.0	9.1	1.6	"W Face"
"	0.02	18.0	7.9	1.6	"Surface"
7/9	0.01	5.2	19.2	1.45	"Face"
1945 2/14	0.01	7.6	12.72		"Between 2 veins"
1/8	0.13	11.2	39.0	0.25	"Bottom shaft"
1944 9/22	0.01	15.0	32.6	1.50	"On the W"

Copied from assay sheets - F.P.K.
Libra Creek File

R E P O R T

on

CLAIMS

owned by the

SILVER CREEK MINING COMPANY

by

Gordon R. Steuart. M. E.

Copy

MIAMI. ARIZ.

January 19th. 1906.

F. R. Sherwin Esq.,
NEW YORK.

Sir,

I herewith beg to hand you my Report on the SILVER CREEK group of claims in accordance with your instructions.

As you are aware, I have made three separate visits to the claims and spent a total of 30 days thereon covering a period of about three months, so that you will realize that my conclusions thereon are not based on any hasty inspection.

LOCATION: The properties are situated about twelve miles due south of Globe, Gila Co., Arizona on the S.W. slope of the Pinal Mountains, and about three miles south of the summit thereof. They are very close to the pass which separates the Pinals from the Mescal Range, the two Silver creek claims laying on the N.W. slope of this pass.

Globe and the district adjacent thereto lays right in the heart of the mountain belt of Arizona, which belt varies from 80 to 150 miles in width and runs in a N.W.-S.E. direction, being bounded on the N.E. by the elevated Colorado Plateau and on the south by the desert region. It is in this mountain belt are situated the great mining Camps of Bisbee, Clifton, Morenci, Globe, Miami, Superior, Ray, Jerome, Oatman etc. etc.

HISTORY: Mining was first commenced in the Globe district in the early 70's, when rich silver ore was discovered in the Buffalo mine, now a part of the Old Dominion. It was also about this time that the rich Silver King was located and which is situated a short distance to the West of the Properties under consideration, and near the remarkably rich new copper Camp of Superior, where it is reported that 36 feet of calcocite has been developed in the Magma Mine. For the next few years following the location of the Buffalo, several new finds were made in the district, but at no time does it seem that

mining was carried on very vigorously. This may be attributed to the fact that means of transportation were such that only the very richest ores could be made to pay, and also that the smaller out-of-the way properties were considerably hampered by the hostility of the Indians, being situated in the heart of the Apache country.

Shortly after the discovery of the Globe Mines, rich silver and copper ore was discovered in the Pioneer Basin and Silver Creek areas. The Silver Creek mine was given the name of "El Capitan" and for some years shipments of high-grade ore were made therefrom. The total amount produced from this neighbourhood appears to have been, in the few years work was carried on, around \$700,000.

While the El Capitan and Pioneer Mines were working, the surrounding hills were being prospected by shallow pits and tunnels. There is plenty of evidence that shipments of ore were made from several of these prospects; however, transportation was even more of a problem here than at Globe, and when the price of Silver dropped, work practically ceased. Development was continued at Globe^b however and gradually, with increasing depth, copper began to supplant silver as the main ore. Finally the R. R. was completed in from Bowie on the S. P. main line, and after many vicissitudes several properties were amalgamated into what is now the Old Dominion Company, a Smelter built, and the Mines there, under efficient management, put on a permanently paying basis.

For many years the existence of Copper ores had been known a few miles to the west of Globe. Several locations were made and work carried on in a spasmodic manner. Lack of Capital, high freight charges, and the small scale on which production was carried on served to hold this part off the District back. When the phenomenal success of the Bingham Mines in treating low grade copper ores had been firmly established, renewed attention was devoted to this portion of the Globe camp and, finally, with the advent of the present Company controlling what is known as the Miami Mine, with unlimited Capital and technical experience, this greatest of low grade copper deposits was soon proved to be of great commercial value, with the

result that the monthly production will soon be better than 20,000,000 lbs. The Inspiration Mine has already blocked out 97,000,000 tons of ore and have not yet finished prospecting their property.

AREA, TOPOGRAPHY, ETC: The Properties under consideration comprise three distinct groups:-

- : ALLOY Group..... 7 Claims
- * SILVER CREEK..... 2 Claims
- : EL CAPITAN EXTENSION. 6 Claims

These groups are situated close together and are already interconnected. A few extra claims should be located to round out the Property. The present area is in the neighbourhood of 300 acres.

The Pinalis are a range of mountains about 50 miles long running in a N.W.-S.E. direction. The highest point attains an elevation of 7,850 ft., and is 3 miles N. of the Claims which are some 2,500 ft. lower.

The surrounding country is hilly and very rugged and is cut up by many canons with extremely precipitous sides. Under an elevation of 6,000 feet ^{are} trees absent, except along the creek beds, where walnut, cherry, sycamore and cottonwoods attain a fair size. Above 6,000 feet pines begin to make their appearance, and on the N. slope of the Pinalis there is a considerable forest of these trees.

The general average rainfall for the district is about 20 inches at an elevation of 3,500 feet, being somewhat more in the mountains and less in the lower valleys. The general lack of vegetation would not seem to be in accordance with the above figures. This is doubtless due to the fact that as a general rule the rainstorms are so violent that the water tends to run off into the creeks, and also that the greater part of the surface is so steep that such part of the rock which has decomposed into soil is almost immediately washed down into the valley, leaving the hill-sides composed solely of rocks and gravel - also the humidity is so low that evaporation proceeds at an excessive rate.

GEOLOGY: For a full discussion of this Ransome's Report on the Globe Quadrangle is available. While the area covered by this Report does not include the Silver Creek District, the conditions are similar.

Generally speaking, the main formation consists of Cambrian quartzites and conglomerates which are locally designated as the Apache formation, and which lay unconformably on Archean Schists and Grano-Diorites. Subsequent to the deposition of the Apache formation profound dynamic movements resulted in the upward thrust of what is now the Pinal mountains, which at the present time consist of a large monolithic block of schists and diorites, the quartzites having been eroded therefrom. Later- enormous quantities of diabase were intruded in the form of sills, sheets and dykes throughout all formations, but mainly adjacent to and outside of the Pinal monolith. This intrusion was accompanied by extensive faulting and dislocation of the sedimentary rocks and resulted, especially in the Silver Creek area, in the formation of a number of roughly parallel monoclinical folds.

At a still later date, porphyry dykes were intruded into all the earlier formations. This latter occurrence does not seem to have been accompanied by any extensive or even noticeable dynamic changes. From that time to the present the only important change appears to have been the very general and extensive degradation of the surface.

The geological conditions pertaining to the various groups are similar. A large part of the area included by the claims is capped by the Apache formation which, so far as has been observed, in no place exceeds 300 feet in thickness. This is directly underlain over the whole area by diabase. No estimate of the local thickness of the diabase can be made as in no place is the underlying formation visible. It is certainly of considerable depth, and the opinion is held that it is a sill which has been intruded between the Apache formation and the basal schists and diorites.

In speaking of this diabase, Ransome in his Report notes

that it apparently all carries a small but distinct amount of copper as an original constituent. The rock is apparently a normal olivine diabase.

At, or after the time of this great diabase intrusion, the whole area was faulted and thrown up into a great number of roughly parallel monoclinical folds with a N.W.-S.E. strike, so that when viewed from the N.E. a number of steep fault scarps are presented ranging in height from 200 to 800 feet, while from the S.E. the country has quite a rolling appearance, due to the gentle slope of that side of the monoclinical

Cutting all these rocks, and consequently of later date, are several porphyry dykes. No analyses of this rock have been made, and field examination, owing to their amorphous form, is unsatisfactory for arriving at their composition. The unaltered rock is heavy, light grey and apparently contains considerable lime. The phenocrysts are generally quartz, but sometimes feldspar. While generally very resistant to weathering, a number of these dykes have apparently undergone sufficient alteration to render them equally as susceptible to atmospheric influence as the enclosing diabase, so that at times the outcrops are very bold and others are poorly defined ~~are~~ ^{or} totally absent.. There is conclusive evidence that while undoubtedly existent in the underlying diabase, these porphyry dykes in the majority of cases have not succeeded in piercing the overlying Apache quartzite. This point is considered of very great importance as it makes it highly probable that but a fraction of the veins and ore-bodies, which undoubtedly exist, have as yet been discovered, owing to the extent of this tough and impervious capping.

So far as has been observed these dykes do not appear to have any common strike, but their dip is in all cases nearly or quite vertical. In connection with these dykes and a factor of considerable importance, it was noted that in several places the unaltered rock contained considerable amounts of lead or copper sulphides in addition to some silver. Close examination leads the writer to conclude that the metallic content is an original constituent of the

rock. Further reference to this point will be made in discussing the ores.

VEIN SYSTEMS:

Preliminary to describing the veins it may again be stated that there is no doubt of the possibility of their being several veins in existence which have not been disclosed by the present extent of prospecting. In more than one instance and where surface conditions make it possible, it is clearly evident that some of the known veins or portions thereof do not show in and through the Apache formation. Since so much of the area is capped by the latter, the writer considers that the discovery of at present unknown veins may be considered a certainty as soon as cross-cutting is undertaken in the underlying diabase.

Taking first the ALLOY Group there has, so far, been proved to exist three parallel veins. These veins strike about 20 degrees N. of West and are each about 300 feet apart.

The southerly or #1 vein is apparently the most important. It varies in width from a minimum of five feet to over fourteen feet, where cut at a depth of 12 feet by a crosscut prospect tunnel. This vein is over 1,200 feet long and occurs mainly in the diabase. At one point, about the centre, the quartzite capping extends over the course of this vein and here the outcrop is nowhere distinct and is generally absent. A shaft has been sunk in the quartzite and in it the increase in size and strength of the vein as well as the increased metal content is clearly evident as the diabase is approached. For a distance of about 300 feet on the strike and a width of over 75 feet the quartzite is much shattered and discolored and contains a number of ramifying quartz stringers carrying lead and copper minerals. From deductions made from observations of the immediate surrounding conditions the writer inclines strongly to the opinion that, when the diabase is reached at a depth of from 75 to 120 feet the probabilities are greatly in favour of here finding a considerable enlargement of the porphyry and its accompanying ore-bodies.

The vein matter is composed of altered and silicified porphyry which has been brecciated and cemented together and partly replaced by quartz and ankerite together with various metallic sulphides,

galena predominating at the surface.

No faulting of this vein has so far been observed. This is important from the view of cheap and efficient mining methods being employed.

From its continuity in length, good walls and its direct association with the porphyry dyke the writer is firmly of the opinion that the greatest confidence can be felt in its extension to considerable depth.

No. 2 and No. 3 Veins, lying parallel to and 300 and 800 feet respectively N.E. from No. 1 have not been prospected to the same extent as the latter. While their outcrops can be traced for a considerable distance they occur almost wholly in the quartzite and the opinion is held that it will prove necessary to sink down to the diabase before their real extent and value can be realized. Their origin is undoubtedly similar to that of No. 1 vein, the same minerals and characteristics being common to the three. It is considered that eventually, between No. 1 and No. 3 veins, will be disclosed a zone containing a number of veins and ore-bodies not at present in evidence. This opinion is based on the already proven reliable indications of the quartzite capping which is much broken and seamed in many places similar to the above mentioned occurrence in No.1 Vein.

Distinct from the above veins and zone there are several places where copper stains and stringers are in evidence on the surface. In addition to being of value in illustrating how thoroughly mineralized this area is they will undoubtedly, in some cases, be the source of considerable ore-production.

SILVER CREEK VEINS: The Silver Creek group of two Claims is situated about 3,000 feet easterly from the Alloy Group. The Claims run in line N. and S. and consequently the Group has a length of 3,000 feet. They have been located along the strike of another porphyry dyke similar to that on the Alloy group and which seems to have a length of several miles, separating the Pinals from the Mescal Range.

Considerable surface work has been done on this group,

but nowhere has sufficient depth been attained to reach the unweathered portion of the ore-bodies and so far, while containing considerable values, all the vein matter has clearly been considerably impoverished by leaching. Here, again, the quartzite capping is much in evidence and precludes the full extent and value of the veins being seen on the surface.

This dyke and mineralized area is some 80 feet wide and has been proved to be over 400 feet in length. It is undoubtedly considerably larger but is capped by the quartzite its extension therefore being invisible.

EL CAPITAN EXTENSION GROUP: In addition to other veins, one of these claims contains the easterly extension of the El Capitan vein from the point where it leaves the old El Capitan Claim to where it enters the Silver Creek Group. But little work has been done here and as the formation is Quartzite surface conditions are no indication of what may be expected from this vein as soon as the diabase is reached. The junction point of the El Capitan and Silver Creek ~~minima~~ veins is covered by the Quartzite capping, but important results may be expected from development at this point.

ORES: The metal content of the veins so far as has been discovered by the present development are similar in the three groups and consist of silver, gold, copper and lead. The latter, by weight, is the most abundant. At the surface and in the upper and softer portions of the veins it occurs as a carbonate, but at a depth of a few feet and in the less easily weathered zones it occurs as galena, which is doubtless the primary form of the ore. This galena has in all cases been found to carry silver values in important amounts. Next in point of quantity occur various ores of copper. At and near the surface it is in the form of various oxides and carbonates, the latter predominating, though here and there appreciable amounts of the sulphides are in evidence, such as to indicate that the permanent copper values will occur in this form. An investigation of the upper portions of the various veins clearly

demonstrates that considerable amounts of copper have been leached out and, from the universal occurrence of copper stains throughout the known length of all of them and the many shoots of rich ore already developed, the writer is strongly of the opinion that with depth this will become the predominating ore.

Silver is present in all veins. No samples so far taken have failed to disclose this metal in important amounts. So far it has not been shown that it is preferentially associated with either the lead or copper. Equally as high assays have been obtained from samples which contain only one of the latter metals. Also high silver values are not necessarily accompanied by high base metal contents.

Gold, so far as sampling has shown, occurs almost universally throughout the veins but seldom in larger quantities than \$3.00 per ton, and seems to be associated with the copper and, to a less extent, with the silver. When a mill is in operation and a concentrate being produced, the value of the gold per ton of the latter will be considerably higher and should prove a satisfactory source of revenue.

VALUES AND DEVELOPMENT:

ALLOY GROUP: The main vein of this group at all points where at present opened up contains silver, copper, lead and gold ores. In the cross-cut tunnel above the Camp the width is 15 feet at a depth of 10 feet. From this point a drift 4 feet wide has been run easterly for 25 feet connecting with an old Shaft. The depth of this old shaft is probably 10 to 15 feet below the tunnel level, but has been filled up to that level with caved ground. For this distance there is exposed a good streak of high grade silver-lead ore which will average 20% lead, 3% copper, 52 ozs. silver and \$2.00 gold (\$68.00 per ton) over 12 inches. In addition, there is about 6 feet of milling ore averaging 6% lead, 1½% copper and 12 ozs. silver and worth \$21.00 per ton. Ore on the dump which has, apparently come from the bottom of the adjacent shaft, shows considerably higher copper values than the tunnel. Much of this ore will run 15% lead, 20% copper and 35 ozs. silver, value \$123.00 per ton. The unaltered porphyry here contains galena evenly disseminated. This galena has every appearance of being an original

constituent of the dyke material and is considered to be a very important factor and to considerably enhance the probability of the ore-shoots having great permanence.

Between this tunnel and an ore-shoot recently uncovered - a distance of 800 feet - the vein has been exposed in several places by shallow pits and trenches. At every place good ore is in evidence, often high grade, though at no place has sufficient depth been attained to get below the leached zone. The new ore-shoot above referred to has been exposed for a length of 12 feet and at a depth of 8 feet from the surface averages 10 inches in width and assays 40% lead, 3½% copper and 25 ozs. silver or \$74.00 per ton. For 6 feet in width the vein here shows a value of \$19.00 per ton. In connection with the above it is important to note that until a depth of 1½ feet is attained there is no ore to be seen. From a mere stringer at that depth it steadily widens out to its present average of 10 inches at 8 feet and has every appearance of continuing to increase in size. From the general existing conditions and the result of development to date, the opinion is held that a large proportion of this 800 feet of No. 1 Vein will prove to be a good grade of mill ore, and that the probabilities are very strong for encountering therein much additional high grade.

No. 2 and No. 3 veins where opened up are smaller than No. 1 and run from 3 to 8 feet in width with a probable average of 5, and carry the same metals as No. 1. From a tunnel driven on No. 2 and 30 feet in length, considerable good ore has been taken out, including high grade copper. Three samples taken across a width of 4½ feet in this tunnel averaged 3% lead, 1½% copper and 6 ozs. silver or a value of \$11.00 per ton, which will make good mill ore.

As previously mentioned these veins are in the quartzite and it is considered that very much better results will be obtained by sinking down to the diabase. A most favorable feature is that the ore is not in the least lumpy but is distributed evenly throughout the veins where exposed.

SILVER CREEK GROUP: This group has had a considerable amount of prospecting

performed thereon, most of which was done over 20 years ago. The ores are similar to those of the ALLOY Claims, except that there is more copper.

The ore shoots are again associated with a porphyry dyke and have been more or less opened up for a width of 75 feet, and a length of 400 feet. In this area several pits and shallow shafts have been sunk and each one shows excellent ore. One shaft is stated to be 80 feet deep and silver ore running as high as 4,000 ozs. is reported to have been taken out and shipped. This is considered to be correct as several silver samples of that grade were picked up on the dump.

Irrespective of this however, the surface showing is sufficient to warrant the statement that considerable bodies of commercial ore exist right on top, and that when the unleached zone is reached far better results will be obtained. Ore containing up to 20% Copper and 80 ozs. silver is plentiful on the various dumps. From the above mentioned 80 feet shaft the majority of the porphyry is shot through with calcocite which assays up to 8% copper. The width of this has not yet been determined, as no cross-cut has been driven, and at the surface the quartzite capping intervenes.

EL CAPITAN EXTENSION GROUP:

One of the claims of this group contains the extension of the El Capitan vein from the old El Capitan mine on the west to its junction with the Silver Creek vein on the east. While no development work has been done on this claim the El Capitan vein a short distance to the west produced large amounts of high grade silver ore. No written records are available as to the output but there is no doubt it was considerable.

The El Capitan workings are altogether in the quartzite with the exception of the last 20 feet of an 80 foot winze which was sunk about two years ago. At this point the diabase was entered and high grade silver-lead ore encountered.

About 250 feet south from this vein and on another claim of this group a stringer from 8 to 16 inches wide outcrops for sev-

eral hundred feet. It contains a streak of Galena and Copper up to 4 inches in width and assaying 42% lead, 3% copper and 26 ozs. Silver value \$74.00 per ton. As this occurs wholly in the quartzite capping, development here is fully expected to have results commensurate with those obtained in other places where similar conditions are existant.

GENERAL: There are several more veins containing metal values in existance on the various groups, but at present these are considered of minor importance, though known to be of prospective value. It is not thought necessary to describe these in detail, it being sufficient to state that high grade ore, both copper and lead, have been taken from them and that a due amount of development work should be undertaken thereon at a later date with every prospect of locating pay-ore.

DEVELOPMENT: The laying out of development work presents no special difficulties, owing chiefly to the fact that work can be started in several places in very good ore on each of the groups.

As a result of the above existant conditions it will be possible to employ a considerable number of men right from the start on nothing but productive work.

For the preliminary phase of development it is recommended that an average depth of 200 feet be attained on each group, as above that depth it is not expected that the richest ore will be reached. Also that at least one Shaft be sunk to 500 feet.

This should be followed by lateral development of the various veins and the driving of certain cross-cuts, at the conclusion of which there is little doubt that a very large tonnage of ore will have been developed, at the minimum sufficient to warrant an out-put of 5000 tons per month. Coincident with the above it is fully expected that several of the known high grade shoots will have yielded considerable amounts of shipping ore.

The nature of the deposits is such that while the above work is being prosecuted a core-drill can be employed to very great advantage in largely extending the knowledge of the ore-bodies at a very slight cost.

ORE TREATMENT: While an undoubtedly large income can or will be obtained from the exploitation of the various known high-grade deposits, the very large tonnages of concentrating ore are looked upon as the main future source of income.

The recovery, in a marketable form, of the metal values in this ore will require the erection of a concentrator.

No mill tests have, so far, been made, but, since the ore presents no great metallurgical differences to that which is being satisfactorily treated in many other places, no hesitation is felt in stating that the ore can be subjected to very successful concentration.

Until, however, considerable development underground has been accomplished so that a full knowledge of the nature of the ore has been obtained, it would be most unwise to begin the plans for the erection of anything like a permanent mill.

So many processes and combinations thereof are now available for employment that, in order to obtain the highest possible results, than which no other end should be aimed at, a thorough knowledge and study of the physical and chemical properties of the ore, together with the practical testing thereon of the various processes, is necessary.

For the achievement of the above it is strongly recommended that, as soon as initial development has disclosed some of the above features, a small test mill be erected to treat say from 20 to 40 tons per diem and embodying a design determined to be the most suitable from the result of mill tests to be previously made. This small plant will permit of thorough investigation and experimentation to determine the methods to be employed in the larger and permanent plant.

From the extent of the known and prospective ore-bodies it is fully anticipated that nothing less than a 150-ton mill will be found warranted, and it is probable that eventually from 300 - 400 will be the daily out-put, or 12,000 tons monthly.

So far as has been determined, a combination of hydraulic concentration on ordinary sand tables and oil flotation will give the best results and should permit of the production of a highly marketable concentrate with a large percentage of extraction.

TRANSPORTATION: This has been, so far, the cause of the non-exploitation of the properties under consideration. Up to the present the nearest road is over 5 miles away. This statement does not begin to convey any meaning of the difficulties which are met with in traversing these five miles of precipitous country. Suffice it to say that it is just barely possible to reach the road with pack animals. The construction of a connecting road offers such difficulties that so large an initial expenditure necessary to complete same has prevented the opening up of the Silver Creek district.

This problem, however, will be very shortly non-existent as the County Authorities have just completed the sale of \$370,000 worth of Road Bonds, \$100,000 of which has been appropriated for the construction of a first class auto road connecting Globe and Hayden, this being a link in one of the main transcontinental tourist route and more especially between El Paso-Tucson and Phoenix, via the Roosevelt Dam.

It is intended to commence work on this road about the middle of next month and it will be rushed through to completion.

The survey for this road is through the two Silver Creek Claims and consequently, by means of the construction of short connecting stretches, will give access to the three groups. This new road will bring the Properties within 12 miles of the Railroad and with a down grade thereto and a return grade of nowhere over 7%, and this for only one short stretch. It will be seen therefore that by means of the use of one or more auto-trucks of large capacity the cost of hauling to and from the R. R. will prove to be a very small item.

WATER: This district is by no means as arid as is commonly

supposed. With an average precipitation of over 20 inches and the snow laying late in the upper reaches of the Pinals, there are many perpetual springs available and an abundance of water for all purposes is assured.

GENERAL CONDITIONS: Being close to so many leading mining camps, skilled labor of all kinds is abundant. The ruling scale of wages is high, but with a corresponding increase in efficiency. Supplies of all kinds can be obtained at reasonable rates when purchased in quantity. The fuel used for Power production should be crude oil obtained from the California oil fields.

Being situated at an altitude of 4,000 feet, the climate is, the year round, extremely pleasant and salubrious. The nights are cool and even in mid-winter the days are comfortably warm. At that elevation snow rarely lays for more than a few hours.

WORKING COSTS & PRODUCTION: No conditions are now known to exist or at time expected to arise which will make production costs excessive. Enough of the general conditions is known to definitely state that the ore can be mined and concentrated and the latter delivered to the Smeltery for not over \$7.00 per ton, on the basis of a 200 ton daily production.

A very conservative estimate of the grade of ore to be sent to the mill is \$16.00, after deducting smelting charges.

It is confidently expected that a considerably greater production can be maintained, and the above estimate of 200 tons a day, or say 70,000 per annum, is considered a conservative minimum.

On the above basis the annual profits will be as follows:-

70,000 Tons at	\$16.00 per ton.....	\$1,120,000
Working Costs ::	7.00 : :	<u>490,000</u>
Net Profit ::	9.00 : :	<u>\$ 630,000.</u>

CONCLUSION:

The writer has rarely, if ever, before in a wide experience seen such persistent surface evidence of ~~the~~ ore on any property

with an equal amount of development.

The known and visible length of two of the main veins alone exceeds 2,000 feet, and throughout this whole length there is a constant showing of metallic ores.

Wherever prospecting has been carried out, high grade ore in no mean quantity has been disclosed, and, of even more importance, considerable widths of concentrating ore have been co-incidentally developed.

As all other known factors are favorable, the writer does not hesitate to make the statement that the above properties contain to a high degree the elements necessary for the eventual making of a large productive mine, and on the terms on which it can be secured the investment therein of the funds required to bring it to the producing stage should result in very handsome returns being realized.

(Signed) Gordon R. Steuart.

Consulting Engineer,

January 19th, 1916.

MIAMI. ARIZ.

To,

Mr. F. R. SHERWIN,

ST. DENNIS HOTEL,

NEW YORK CITY.