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Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
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LAW OFFICES
ANDREWS, MARENDA & MOSELEY, P. A.
1432 NORTH SEVENTH STREET
PHOENIX, ARIZONA 85006

WILLIAM S. ANDREWS
DALE E. MARENDA
M. B. MOSELEY
DENNIS P. TURNAGE

AREA CODE 602
TELEPHONE 254-5051

April 2, 1975

Mr. George Morehouse
121 North 8th Street
Grand Junction, Colorado 91501

Re: Ash Peak Mine

Dear Mr. Morehouse:

I have a client who is interested in a possible lease of the above property. Mrs. Virginia Williams told me that your lease on the property is in effect but that you might be interested in subleasing it. If such is the case I would like to have the general terms upon which you would consider such a lease so I can relay them to my client.

Very truly yours,

ANDREWS, MARENDA & MOSELEY, P.A.

M. B. Moseley

MBM:AM

bcc: Mr. Roland B. Mulchay

6/29/62

DEAR ROLAND:

I THOUGHT THAT YOU MIGHT BE INTERESTED IN THE FOLLOWING:

GRAB SAMPLE OF "ORE" PILE AT EAST SHAFT, ASH PEAK, 6/12/62 - 5.28 oz. Ag/ton, 90.8% SiO_2

CONCENTRATES FROM MILL NEAR DUNCAN, 6/12/62 - 91.20 % CaF_2
3.90 % SiO_2
2.50 % $CaCO_3$

GRAB SAMPLE OF "ORE" BIN AT MILL NEAR DUNCAN, 6/12/62. trace Au, Ag, CaF_2

YOU CAN SEE THAT THOSE BAGS WERE MISS-MARKED.

BEST REGARDS,

ATG

value $6.00 +
2.00
8.00

Truck 1.25
Ft. 1.25
$2.50

5.50 = 3.00 2.50 $1.25 —

Cananea, Sonora, Mex.,
February 17, 1946

Mr. Charles H. Dunning,
304 Home Builders Bldg.,
128 N. 1st Ave.,
Phoenix, Arizona.

Dear Mr. Dunning:

During 1935 while doing some consulting work for a small private syndicate, I visited a tailing pile about 1.5 miles north of Fairbank, Arizona. These tailings, originally from Tombstone ores, have been reworked several times. I took five samples from material which I believe was a tailing from the last retreatment operation, and which laid flatly on earlier material.

These samples averaged 0.3 % copper, 0.75% lead, 2.0 oz. silver, and 0.05 oz. gold. Two samples assayed for silica showed 61 and 70% respectively. Five samples previously reported showed slightly higher values in lead and silver. No reliable estimate of the tonnage is available. Guesses have ranged from 50,000 to 165,000 tons.

Should a favorable smelting rate be obtained from El Paso on such material as that above, it might be possible to obtain a very substantial profit from an operation which would cost very little to start. In the event that you are interested in further investigation of the possibilities of the tailings, I hope you will consider Mr. Varela and myself as interested in the enterprise. In the event that you are not interested at this time, I believe we might be able to do something with the deposit. ourselves.

With best regards,

Yours very truly,

16

INDEX OF COMMODITIES, CARLOADS (EXCEPT AS NOTED)—Continued.

COMMODITY	ITEM NOS.
Cases, turbine water wheel guide	③
Casings, gear	③
Casings, sausage, dry or pickled	⑥
Caskets	④10
Castings, iron or steel	1580, 1630, 1640
Catsup	②2860
Cattle	1730, 1740, 2680 to 2730
Cattle, feeder	1750, 1760, 2700 to 2730
Celery	②2940 to 2970
Cement:	
Hydraulic	920
Insulating	900, 1010, 1020, 1030
Keene's	2150
Mineral wool	1790
Natural	920
Portland building	920
Roofing	1790
Cement Blocks, building	940
Cement Brick	940
Cement Products	930, 940, 2150, 2160
Cement Plaster	Ⓜ850, 2150, 2160
Cement Tile, hollow building	940
Cereal Food Preparations and other articles as described in and subject to provisions of List No. 11 of PFTB. Tariff No. 240-G (I. C. C. No. 1442, A. C. C. No. 336 of Agent J. P. Haynes)	1400, 1405, 2660
Cereal Products	1470, ②3030, ②3040
Cereals	1470, ②3030, ②3040
Chaff	1370 to 1405, 2660
Chain, iron or steel, elevator	③
Chain and Steel Flights, assembled	③
Chains, conveyor	③
Cherries	1340
Chili-Con-Carne, dry	⑥
Chili, ground	②2860
Chimney:	
Bonnets	990 to 1030
Caps, clay	990 to 1030
Top bases, clay	990 to 1030
Tops, clay	990 to 1030
Chloride of Calcium	③
Choppers, food, hand	③
Choppers, meat, hand	③
Chops	1370 to 1405, 2660
Chucks, drill, lathes or planers	③
Chutes, cotton	③
Cinders	970
Cinders, volcanic	980
Citrons	1340, ②2980
Clamps, rope or guy wire	1580
Clarifiers (milk), centrifugal	③
Classifiers, ore	③
Clay:	
Crude	1040, 1060
Fire	③990 to 1030, 1050
Ground	1040, 1060
Cleaners:	
Cotton	③
Vacuum	③
Vacuum, stationary	③
Clevises, iron or steel	1640
Clippers, oat or rice	③
Clippings	1370 to 1410, 2660, ②3020
Clippings, cotton tie	1670
Clips:	
Iron or steel	1580

Tailings under not over 10.00

Wayland
&
Fairbank } to E Rox 160

Cananea, Sonora, Mex.,
February 17, 1946

NOT SENT FROM

Mr. Charles H. Dunning,
304 Home Builders Bldg.,
128 N. 1st Ave.,
Phoenix, Arizona.

Dear Mr. Dunning:

During 1935 while doing some consulting work for a small private syndicate, I visited a tailing pile about 1.5 miles north of Fairbank, Arizona. These tailings, originally from Tombstone ores, have been reworked several times. I took five samples from material which I believe was a tailing from the last retreatment operation, and which laid flatly on earlier material.

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With best regards,

Yours very truly,

11.5175

0.3 % Cu = 6# × $6% = 4 @ 50¢ 2.00
0.75 % Pb = 15# × 90 = 13.5 @ (24-5)19 2.65
2.00 oz Ag = 20 × 90 = 1.8 @ 4.25 ± 7.65
0.05 " Au 0.05 × 90 = .045 × 170 7.65
19.95 / T.

.045 425 135
170 18 .19
2250 3400 1215
45 425 135
7650 7650 2565

2732 Wren Road
Salt Lake City, Utah
March 21, 1975

Cochise County Recorder
Bisbee, Arizona 85603

Dear Sir:

Recently, without success, we made several attempts to get in contact with the manager of the Boquillas Ranch at his headquarters near Fairbank.

If possible, we would like to have the name and address of the owner of the ranch which we understand extends from near Charleston for a considerable distance north of Fairbank, and if it is available, the name and address of the ranch manager.

A return addressed envelope is enclosed, and we will be very obliged to you if the above information can be sent to us.

Thanking you for your trouble,

I am

Yours very truly,

Roland B. Mulchay

RBM:m

Ore Dalm 100 & under

Hereford

Douglas 100

El Paso 250

Phil 60000

Twenty-fifth Revised Page....2
Cancels
Twenty-fourth Revised Page..2

SOUTHERN PACIFIC COMPANY (Pacific Lines)
FREIGHT TARIFF

No. 160-H

I.C.C. No. 4940
A.C.C. No. 352
N.M.C.C. No. 212

CHECK SHEET.

Pages 1 to 173 inclusive of this tariff are in effect on the dates shown on individual pages.
Original and revised pages listed below contain all changes from the original tariff that are in effect on the date hereof.

Page Nos.	Number of Revision Except as indicated
2	★25th
3	1st
6	2nd
7	2nd
8	1st
10	1st
11	1st
14	3rd
15	1st
17	2nd
19	1st
21	2nd
22	2nd
23	3rd
25	1st
27	2nd
28	3rd
29	2nd
30	1st
31	2nd
32	1st
33	1st
34	1st
39	★1st
41	3rd
52	1st
53	★3rd
55	★4th
60	1st
61	★2nd
63	1st
64	4th
90	1st
91	2nd
92	2nd
93	1st
94	2nd
95	1st
97	4th
98	4th
99	2nd
100	2nd
101	1st
102	★1st
103	2nd
104	2nd
105	3rd
107	2nd
108	★4th
111	2nd
118	1st
119	1st
120	1st
121	4th
122	2nd
123	2nd
124	4th
125	4th
126	5th
127	10th
127-A	Original
130	2nd
131	1st

3/26/75

2732 Wren Road
Salt Lake City, Utah
March 21, 1975

Cochise County Recorder
Bisbee, Arizona 85603

Dear Sir:

Recently, without success, we made several attempts to get in contact with the manager of the Boquillas Ranch at his headquarters near Fairbank.

If possible, we would like to have the name and address of the owner of the ranch, which we understand extends from near Charleston for a considerable distance north of Fairbank, and if it is available, the name and address of the ranch manager.

A return addressed envelope is enclosed, and we will be very obliged to you if the above information can be sent to us.

Thanking you for your trouble,
I am

Yours very truly,

Roland B. Mulchay

RBM:m

Tenneco Realty
Bf 380
B. C. 93302

SLC
3/26/75

COUNTY RECORDER
CHRISTINE RHODES

CHIEF DEPUTY
BETTY LOPEZ

DEPUTIES
NORMA PADOVAN
MYRTLE ATTAWAY
PEGGY SANDERS
DORA AMARILLAS
WILMA JONES

County of Cochise

OFFICE OF THE RECORDER
BISBEE, ARIZONA 85603

March 24, 1975

Dear Roland,

We have no listing for Boquillas Ranch. That land is listed under Tenneco Realty, Box 380, Bakersfield, CA. 93302. Perhaps the Realty can give you some information.

Sincerely,

Christine Rhodes

Christine Rhodes
County Recorder

cerm

2732 Wren Road
Salt Lake City, Utah
March 26, 1975

Tenneco Realty Co.
P. O. Box 380
Bakersfield, Calif. 93302

Dear Sirs:

Recently Mr. Robert Torrance of Tucson and the undersigned made several attempts to get in contact with the manager of the Boquillas Ranch property at Fairbank, Arizona, but were unsuccessful.

The purpose was to obtain permission to visit sites of old mining and milling operations along the San Pedro River on posted lands of the ranch. We are both interested in tne mining history of the Tombstone region, and would be very interested to see these sites and obtain some idea of the scope of the operations in thè early days.

We would be obliged if you can inform us of the proper person, or company, to address to ask for such permission. Any photographs or other notes taken would, of course, be only for our personal use.

Thanking you for your help, Iam

Yours very truly,

Roland B. Mulchay

RBM:m

I. C. 7119 JUNE 1940

UNITED STATES
DEPARTMENT OF THE INTERIOR
HAROLD L. ICKES, SECRETARY

BUREAU OF MINES
R. R. SAYERS, ACTING DIRECTOR

INFORMATION CIRCULAR

MINING AND MILLING METHODS AND COSTS AT THE ASH PEAK MINE OF THE VETA MINES, INC., DUNCAN, ARIZ.

BY

HERBERT L. LINES

I.C. 7119,
June 1940

INFORMATION CIRCULAR

UNITED STATES DEPARTMENT OF THE INTERIOR - BUREAU OF MINES

MINING AND MILLING METHODS AND COSTS AT THE ASH PEAK MINE OF THE VETA MINES, INC., DUNCAN, ARIZ.[1]

By Herbert L. Lines[2]

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1/ The Bureau of Mines will welcome reprinting of this paper provided the following footnote acknowledgment is used: "Reprinted from Bureau of Mines Information Circular 7119."

2/ One of the consulting engineers, Mining Division, Metal Mining Methods Section, Bureau of Mines, and general superintendent, Veta Mines, Inc.

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INTRODUCTION

This paper is one of a series on mining and milling methods and costs published by the Bureau of Mines.

The Ash Peak mine of the Veta Mines, Inc., Duncan, Ariz., is of particular interest in that the only metal of commercial value in the ore is silver. The silver is concentrated by flotation; the concentrate is shipped to a smelter for treatment.

ACKNOWLEDGMENTS

The writer is especially indebted to R. H. Sayre, president and general manager of Veta Mines, Inc., through whose courtesy this paper was made possible. Grateful acknowledgment is also extended to Harry E. Davis, mine superintendent, and Ralph Shiminin, mill superintendent, who kindly supplied details of operation. M. E. Volin, assistant engineer of the Bureau of Mines, assisted in preparing the paper.

SITUATION AND ACCESSIBILITY

The Ash Peak mine and mill are at the foot of Ash Peak in the Ash Peak mining district, Greenlee County, southeastern Arizona; it is 12 miles west of Duncan, a station on the Arizona & New Mexico Railroad, a subsidiary of the Southern Pacific Railroad running from Lordsburg, N. M., to Morenci, Ariz. Paved highway 70 goes through Duncan and passes within 1/4 mile of the mine, which is reached from the highway by a dirt road with an average 12-percent grade.

CLIMATE

Duncan has climatic conditions similar to those at the Ash Peak mine. According to the Weather Bureau,3/ the average daily temperature at Duncan over a period of 23 years was 65.9°, with a low average daily temperature of 44.5° in December and a high average of 85.2° in July. The lowest temperature recorded in 6 years was 4° in January and the highest temperature in the same period 112° in July.

The average annual precipitation in 8 years was 11.17 inches. The greatest average amount was 1.86 inches in August and the least, 0.25 inch in May.

The altitude of Duncan is 3,645 feet and at the mine 4,200 feet.

HISTORY

The early history of the Ash Peak mine is not known to the writer. According to a geological report made by Grant4/ in 1918, Goldfield Consolidated Mines Co. held an option on five lode claims and two millsites for which an application for patent had been made.

Development by the Goldfield company in 1918 and 1919 comprised an 800-foot shaft, the Shamrock; a 500-foot shaft, the Commerce; 110 feet of shallow shafts; and 6,167 feet of drifts and raises. Improvements to the property comprised roads, a water-supply system with its source at Ash Springs, living quarters, office and store buildings, and buildings for housing the mining equipment that was installed to develop the property.

The Veta Mines, Inc., took over the property in 1936 in substantially the condition described and commenced stoping in March 1937. There is no record of any silver concentrates being produced by milling ore from the Ash Peak mine until the present company began operations.

GEOLOGY

There are no sedimentary rocks in the vicinity of the Ash Peak mine except a little Gila conglomerate and recent wash. According to Grant, the formation consists of a series of surface flows and tuffs which have gentle southerly dips ranging up to 10°. There are also numerous dikes and volcanic plugs.

The Ash Peak vein occurs along a strong fault fissure of considerable displacement which shears the tertiary tuffs and flows of rhyolite and andesite; it is continuous for over 2 miles, forming hogbacks in places.

3/ Weather Bureau, Climatic Summary of the United States, Section 26, Southern Arizona: Pp. 11, 22-24.

4/ Grant, Wilbur H., Geological Report on the Ash Peak Mine, Duncan, Greenlee County, Ariz.: November-December, 1918.

The vein strikes N. 60° W. and dips 80° N. Vein matter occupies the footwall side of the fissure.

A diabase dike, which possibly was a feeder to basalt surface flows now eroded away, separates the vein matter from the hanging wall of the fissure. This feature presents a complication in that the diabase sloughs and fractures easily, making it difficult to mine the ore clean.

The ore ranges from 3 to 18 feet in width, averaging 7 feet. It decreases in grade from the dike toward the footwall. Typical Ash Peak ore is made up of abundant dense banded chalcedonic quartz and a silicified andesite showing some flow structure, varying amounts of calcite, rhodochrosite, and pyrite, and small amounts of silver occurring as clouds of fine argentite or as streaks associated with the quartz, evidenced by their unusual hardness. The argentite is readily recognizable. The calcite occurs in various sizes of crystals in colors ranging from grayish white to deep black.

MINING

Physical Characteristics of Ores and Enclosing Rocks

The physical characteristics of the wall rocks and of the ore in the upper levels of the Ash Peak mine are well suited to shrinkage stoping. Below the 800-foot level the presence of excessive water may cause a change to a cut-and-fill method owing to sloughing of hanging-wall gouges and the diabase.

The vein is narrow, tabular, and nearly vertical; the walls are silicified andesite that stand well unsupported. The footwall of the ore body is an economic rather than a structural one. The hanging wall is kept within the limit of the ore to prevent dilution by the diabase. Drawing of ore in stopes must be done evenly to prevent piping through of the diabase, which sloughs to some extent in the partly emptied stopes.

Ore shoots are fairly continuous and consistent in grade. The hard, dense ore is difficult to drill, but it breaks into small fragments requiring no secondary blasting in stopes. In the relatively dry upper levels of the mine, broken ore flows readily from closely spaced chutes.

Prospecting and Exploration

Exploration comprises drifting on the vein and at intervals determining its width by crosscutting for short distances into the hanging and foot walls. The drifts and crosscuts are sampled by the usual methods; however, close sampling is not required, as the ore is uniform and easily identified.

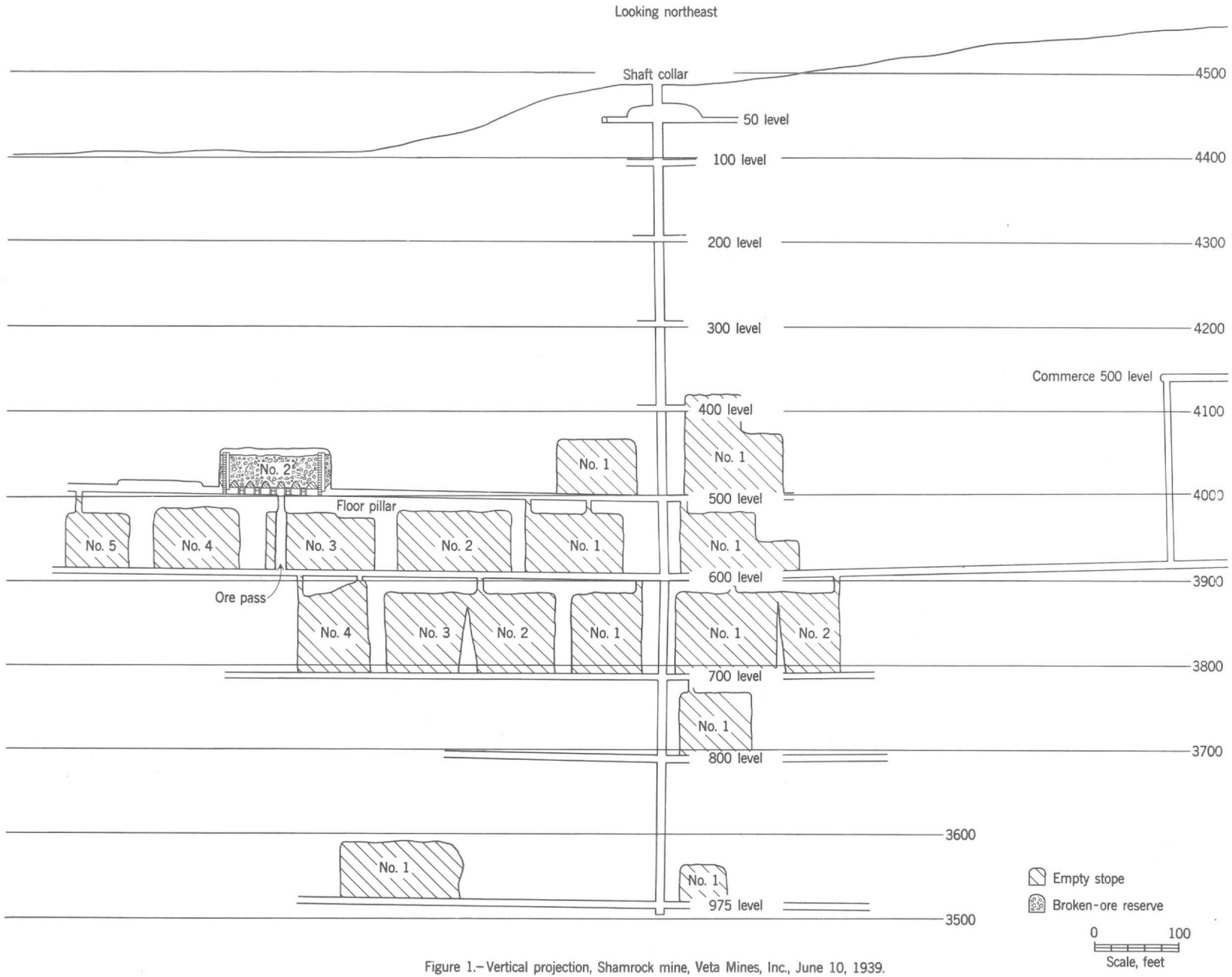


Figure 1.–Vertical projection, Shamrock mine, Veta Mines, Inc., June 10, 1939.

Some prospecting is done by diamond drilling. Three thousand feet of diamond core drilling was done during 1938 at a cost of $1.89 a foot, and from January to June 1938, 868.0 feet of diamond core-drilling was done, at a total cost of $1,582.16, or $1.82 a foot. At present (1939) all diamond drilling is contracted for at a rate of $1.25 a foot for holes up to 150 feet deep and $2.50 a foot for holes over 150 feet deep. A 5/8-inch core is recovered in shallow holes and a 7/8-inch core is obtained from the deeper holes.

Development

Figure 1 shows a vertical projection of development workings at the Shamrock mine. There are two groups of workings from which ore is mined, the Shamrock and the Commerce; the shafts are 2,000 feet apart on the surface. The 600 level of the Shamrock is connected to the 500 level of the Commerce to provide ventilation and outlets to the surface. The Shamrock has supplied about 75 percent of the ore and has been developed most extensively.

Entry to the Shamrock workings is by means of an 80° incline shaft in the vein footwall. The shaft is 975 feet deep; and the 10 levels, connected to the shaft by short crosscuts, are at 100-foot intervals, except for the 50 and 975 levels. The drifts driven on the vein for exploration are used as haulage levels. The present company has done most of its development on the 500, 600, and 700 levels.

The Commerce workings are opened by a two-compartment shaft 575 feet deep. The shaft is on an 80° incline in the footwall of the vein. The level interval is 100 feet, and crosscutting and drifting practice is similar to that in the Shamrock.

Development details

Shafts. - The Shamrock shaft is 9 feet, 6 inches, by 4 feet, 6 inches, in cross section inside the lining. It has three compartments, a 4-foot hoisting compartment, a 2-foot, 1-inch manway, and a 1-foot, 5-inch pipeway. The shaft is timbered with 6- by 8-inch Douglas fir sets throughout most of its depth. Where sets are not necessary, stulls of the same size are used. Lining is of 2- by 12-inch Douglas fir. Between compartments are full partitions of 2- by 12-inch Douglas fir hung on 4- by 6-inch fir dividers of the same. Manway landings are 18 feet apart, and ladders are staggered to conform to safety regulations.

The pipeway carries a 3-inch air line, a 1-inch water line, a water column, and electric conduits. The water line and a 2-inch air line extend to the various levels. Telephones are provided at each station.

The Commerce shaft has a hoisting compartment and a manway; the latter also serves as a pipeway. The full partition of 2- by 12-inch Douglas fir is hung on 6- by 8-inch stulls. The shaft is lined only where necessary. Hoisting is by bucket riding on skids.

Drifts and crosscuts. - The drifts driven in the vein along the footwall for exploration purposes also serve for development and ore extraction, the vein having no sharp turns. Most of the drifts are 5 by 7 feet in cross section. No support is required, as there is little pressure from the walls or back.

One-hundred-and-twenty-five-pound and 145-pound drifters mounted on 3-inch columns are used for drilling. Drill steel of 1-1/8-inch, round stock with lugged shank is hand sharpened. As loss of gage is excessive in drilling the abrasive silicified andesite, the steel is sharpened with 1/4-inch changes in gage. Starting bits have a gage of 2-3/8 inches and finishing bits a gage of 1-3/4 inches. Generally, a complete change is required for each 6-foot hole, using 18-inch changes. Detachable bits were tried but were unsuccessful because of the quick loss in gage. Used bits are ground to 1-3/4-inch gage and used with jack rods on the last change of drill steel for finishing up a hole. The purpose of this practice is to use up the supply of detachable bits on hand.

The average advance for a drift round is 4 feet. A standard round is not used as the holes are placed to take advantage of conditions at the face. Generally 18 to 20 holes are drilled and about 75 1-1/8-inch cartridges of 40-percent gelatin dynamite loaded for each round. All blasting is done at the end of the night shift.

Broken rock is loaded into cars by hand, except on the 500 level, where a mechanical loader is used in widening the drift in preparation for stoping. Tramming is done by hand.

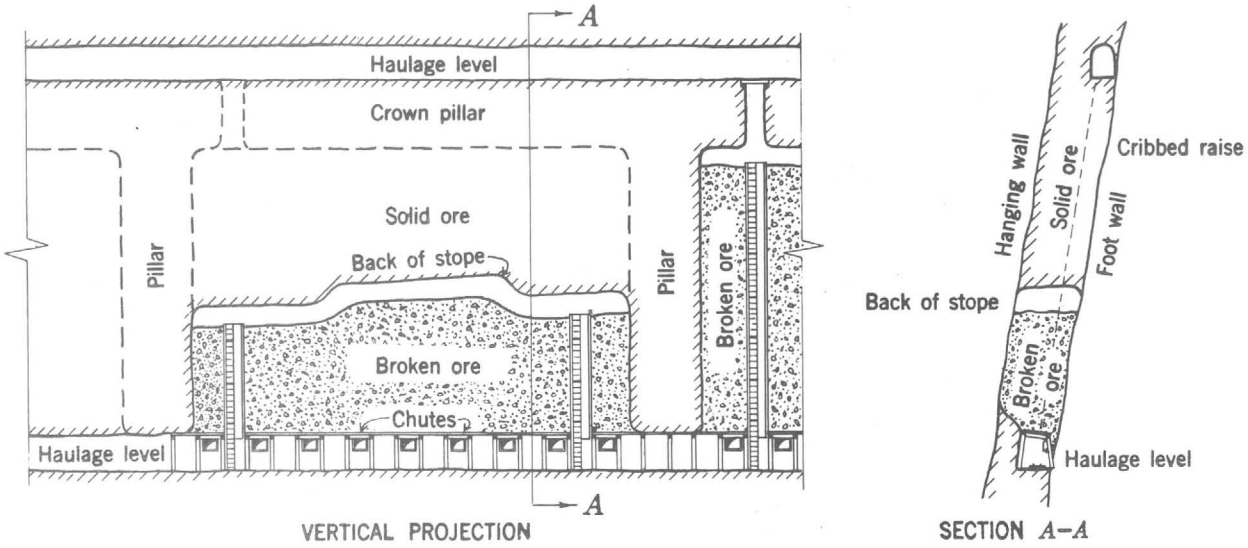
Most drifts are driven on contract at $8.00 a foot with a four-man crew, comprising a machineman and helper on one shift and two muckers on the opposite shift. The company supplies tools and compressed air.

Raises. - A raise was put up to connect the 600 level of the Shamrock workings to the 500 level of the Commerce workings. Short finger raises are put up to an undercutting level in beginning some stopes, but no raises are extended ahead of stoping.

Stoping

Ore is mined by shrinkage stoping. Stoping was begun in March 1937. In June 1939 ore was being drawn from two stopes on the Shamrock at the rate of 130 to 140 tons daily; one of the stopes was being drawn empty, while the swell was being drawn from the other. About 60 tons a day was being mined from the Commerce. A third stope filled with broken ore was held in reserve.

Formerly most of the ore was stoped on timbered-drift backs; the present practice is to stope on arch pillars, particularly in the wider ore bodies. Figure 2 illustrates the two practices. Maintenance and repair costs were found to be higher when stoping was done on timbered-drift backs in wide ore shoots with a bad hanging wall than on arched pillar backs.



SHRINKAGE STOPING ON TIMBER-DRIFT BACK

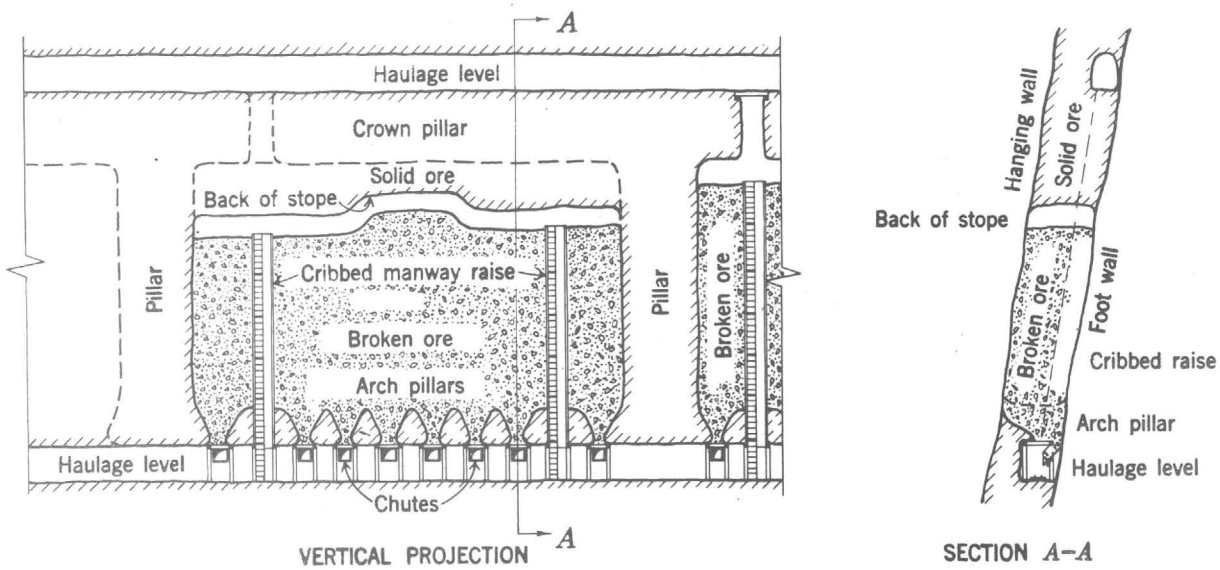


Figure 2.–Shrinkage stoping on arched-pillar back.

Stopes range in length from 100 to 130 feet. Pillars 10 to 20 feet thick, depending on the condition of the hanging wall, are left between stopes. Crown pillars 20 feet thick are left to support the haulageway on the next level above. No provision has been made to mine these pillars. Stopes are carried up on the width determined by sampling to be ore.

In narrow veins where the back of the development drift is in good ore, the drift is slabbed to the full width of the ore, and then a cut is taken out of the back. After the broken material is cleaned out, drift sets are put in on 4- to 5-foot centers, with chutes on 12- to 15-foot centers on the footwall side. The close spacing of chutes is necessary because the ore is damp enough to hang up in drawing. Drift sets are made up of 8- by 8-inch vertical posts, with 8- by 10-inch caps 8-1/2 feet above the track. Round lagging 4 to 5 inches in diameter supports the broken ore. Double posts are used where necessary. Plank spreaders are used instead of dapping the caps. Chutes are made of 3- by 12-inch material, and gates are 36 inches wide by 30 inches high. A feature of the chutes is the use of two lengths of 2-inch pipe, one on each side of the chute gates, to hold the gate boards. Timbered manways are carried up at each end of the stope along with stoping. These are 5 by 5 feet inside and have two compartments, one a manway and the other a timber slide. In wide stopes the manways are cribbed with 3- by 12-inch timber, and in narrow stopes stulls are used. A tight partition separates compartments in both types. There are 18-foot landings in the manways with staggered ladders.

To keep mining costs at a minimum, raises are not driven to the level above until the stope is nearly completed. This practice is permissible as the rock temperature is not high and natural ventilation is good.

Wide portions of the vein where the ore is lean above the back of the drift are mined by stoping on arch pillar backs. A pair of finger raises is begun at 12- to 15-foot intervals along the drift where the chutes are to be situated and driven in opposite directions in the plane of the vein on about 60° inclines. Raises from adjoining chutes intersect 15 feet above the back of the drift to form arch pillars for supporting broken ore. Chutes are installed in the footwall side of the stope on 6- by 8-inch vertical stulls or drift sets, depending on the width of the vein. The undercutting level is completed by slabbing down the ore in the V-shaped part of the stope above each chute.

Drilling is done with 120-pound automatic stopers, using 1-inch quarter-octagon hand-sharpened steel. Holes are drilled 7 feet deep, using 16-inch changes of steel.

The stope is advanced by taking a V-cut out of the center and then taking vertical slices advancing first toward one end of the stope and then toward the other. The miners stand on the broken ore to drill, and enough is drawn after each blast to leave 7 feet of headroom between the broken ore and the back. The rock breaks into small pieces, and no blockholing or bulldozing is necessary in the stopes. In 1938, 2.45 pounds of powder was consumed per ton of ore broken.

Stoping is contracted to a crew of eight men, four working on each of the two shifts. The usual arrangement is for a machineman and his helper and a timberman and his helper to work on one shift, and for another machineman and his helper and two trammers to work on the opposite shift. The day drilling-crew leaves the drill set up at the end of the shift; and the night drilling-crew completes the round, takes down the equipment, and loads and blasts the holes.

Depending on the tramming distance, the contract price for stoping is 80 to 90 cents a ton of 12 cubic feet measured in place. The contractors do all the drilling, carry up the manways, and tram all the swell. They also furnish their own explosives and pay their own compensation insurance.

All blasting is done at the end of the night shift, about midnight. From 30 to 60 holes are blasted in each stope, using 1-1/8-inch 40-percent gelatin dynamite. Air valves are left open to clear the stopes of fumes.

Underground Transportation

All tramming is done by hand with 16-cubic-foot cars, running on 18-inch gage track of 12-pound rails. The broken ore is drawn from the stopes and trammed to 25-ton ore pockets at the shaft. In 1938 the average tramming distance was 300 feet and in 1939, 500 feet. In the Shamrock workings, the ore pockets are situated on the 600,700, and 975 levels. Ore drawn on the 500 level is trammed to an ore pass in No. 3 stope and dropped through to the 600 level. Grizzlies made of 4-inch-diameter stamp stems spaced with a clear opening of 6 inches are situated over the pockets. One man for each two trammers breaks the oversize with a 16-pound hammer.

Ore is loaded into a 1-1/2-ton skip through air-operated gates and hoisted to the surface, where it is dumped automatically onto the pan conveyor leading to the coarse-ore bin. The skip serves all underground activity, including hoisting of men, supplies, and equipment. There is one skip tender on each shift to load the ore from the ore pockets, handle the supplies, and in general attend to proper operation of the skip.

Ore at the Commerce workings is hoisted in a bucket of 1,600 pounds capacity and dumped into a bin on the surface. It is loaded by gravity into a 4-ton truck and hauled one-half mile to the coarse-ore bin at the crushing plant. Truck haulage is done on contract at the rate of $0.20 a ton.

Percentage of Extraction

Nearly all the ore broken is recovered with little dilution in grade if the stopes are drawn completely empty in one operation and drawing is done evenly. No waste is sorted, either underground or on the surface. Where development or other workings are driven in country rock the broken material is loaded as waste and dumped into empty stopes if possible.

The total extraction of ore is about 85 percent where stoping is done on timbered-drift backs and about 75 percent where stoping is done on arched pillar backs.

Drainage

Underground water at the Shamrock workings is intercepted on the lower levels and collected in the shaft sump. About 30,000 gallons a day is collected under normal conditions. A duplex reciprocating pump with a capacity of 250 gallons a minute, driven by a 40-horsepower motor, handles the excess water in about 2 hours each shift.

Ventilation

A connection between the 600 level of the Shamrock workings and the 500 level of the Commerce workings provides good natural ventilation for both. Dead-end drifts are ventilated by means of electrically driven auxiliary blowers. The air is directed to the face through 8-inch canvas ventube. Raises and stopes are cleared by opening the compressed-air valves before blasting at the end of the night shift.

Mine Labor

As much of the mining as practicable is done on contract. It has been found that this practice attracts the best class of miners to the camp. The contractor pays compensation insurance and pays for his explosives. Contracts are made at the following rates:

Drifts, 5 by 7 feet in section.....	$ 8.00 per foot
Drifts, 7 by 9 feet in section.....	11.00 per foot
Raises, the company doing all loading and ore-drawing.....	6.00 per foot
Timbering for stope preparation.....	25.00 per chute
Timbering straight back stopes.....	2.00 per foot
Stopes - $0.60 to $0.80 per measured ton of 12 cubic feet. The $0.80 contract rate is made to a crew of 8 men, who do all breaking, tramming of swell, and timbering of manways.	
Tramming from stope and ore pass.....	0.30 per ton

Surface workmen and part of the men working underground are on straight company time. Two 8-hour shifts are worked for 6 days a week. Time is figured on the basis of a 6-hour shift, with the two extra hours as overtime at one and a half times the hourly rate.

The number of man-hours worked during 1938 in mine leasing, exploration, development, and ore extraction follows:

Breaking	-	15,275
Timbering	-	12,580
Tramming and loading	-	40,450
Total		68,305

The following table shows the average distribution of employees in June, 1938, in the mine and on the surface, including the mill.

Average distribution of employees in June 1938 in the mine and on the surface, including the mill

Shamrock Mine	
Underground	23
Surface, including hoisting	3
Commerce Mine	
Underground	9
Surface (hoisting)	2
General	
Diamond drilling	1
Mill (including crusher)	8
Powerhouse	4
Shops (including steel sharpening	7
Warehouse	1
Assaying	1
Superintendence	2
Engineering	1
Truck transportation	3
Tailings dam	1
Water supply	3
Daily average for June	69

The wage rates in effect in June 1939 are shown in the following table:

Classification	Rate per 8-hour shift	Hourly rate for 6 hours	Hourly rate for overtime
	$ 3.50	$ 0.38	$ 0.61
Surface labor	3.60	.39	.63
	4.00	.44	.68
Muckers, trammers, and mill helpers	4.05	.44	.705
Hoistmen	4.28	.46	.76
Miners and timbermen	4.50	.48	.81

Safety, First Aid, and Fire Protection

The regulations set forth in the Arizona State Code of Mining Safety are observed and practiced. All manways have staggered ladders with landings, and full partitions are installed between the manways and timber slides.

As a means of promoting safety and efficiency, electric cap lamps are used for individual illumination underground. Sixty lamps are available for renting to the employees at $1.00 a month, which takes care of charging, maintenance, and repairs. The greatest repair items are lenses and globes. Lamps are checked out at the beginning and checked in at the end of each shift. A special room off the change house is provided for storage and charging of the lamps. The capacity of the charger is 50 lamps each 6 hours. A surface employee is responsible for proper maintenance of the lamps; he also cleans up the change room, makes primers, and trams the waste hoisted.

No trained first-aid teams have been developed up to the present, but many of the miners have had first-aid instruction.

There is little danger of fire underground because of the natural dampness. The connection between the Shamrock and Commerce workings provides an exit in case of fire. Water is available from taps into the waterlines at intervals on the levels. Two fire-fighting helmets are part of the standard mine equipment.

The housing of surface equipment is in nearly all instances wood framework covered with corrugated-steel sheeting. Dwellings, the office building, and the dining room and commissary building are the chief fire hazards, as they are of wood finished with stucco.

Mining Costs

Direct stoping costs per ton mined and milled, in units of labor, lumber and timber, power, water, explosives, and other supplies, are shown in the following table for 1938, when 64,709.8 tons of ore was mined and milled at the Ash Peak mine.

Direct stoping costs per ton mined and milled in units of labor, explosives, lumber and timber, power, water, and other supplies for 1938

	Cost per ton mined and milled
Labor	$ 1.1174
Explosives	.2042
Lumber and timber	.0978
Power	.1179 1/
Water	.0075 1/
Other supplies	.1439
Miscellaneous	.1749
Total stoping cost per ton mined and milled	$1.8636
Total operating cost, 1938, per ton mined and milled	$ 4.9394 2/
Percent stoping cost of total cost	37.7 percent

1/ Percentage of total consumption estimated.
2/ Includes leasing, exploration, development, ore crushing and milling, handling and hauling concentrates, administration, and overhead per dry ton mined and milled (see "Combined Costs" p. .)

The cost of development work from January to June 1938, inclusive, was $16,665.36 for 1,038.8 feet of drifting, crosscutting, and raising, or $16.04 a foot. The cost of development work for the entire year 1938 was $15.94 a foot; the cost per ton mined and milled was $0.26.

The cost of principal mine supplies follows:

Explosives:

40-percent gelatin dynamite, 1-1/8 by 8-inch cartridges, per 100 pounds, delivered	$ 11.75

Timber:

Native, sawed, per 1,000 board feet	28.00
Douglas fir, not sawed:	
Stulls, 12-inch diameter small end, per foot delivered	.12
Stulls, 8-inch diameter small end, per foot delivered	.10
Stulls, 6-inch diameter small end, per foot delivered	.08

MILLING

The crushing plant and mill are situated at the mine near the Shamrock shaft. Gravity flow is used in the design, except that the ore discharged from the crushing plant is elevated by conveyor to the fine-ore bin.

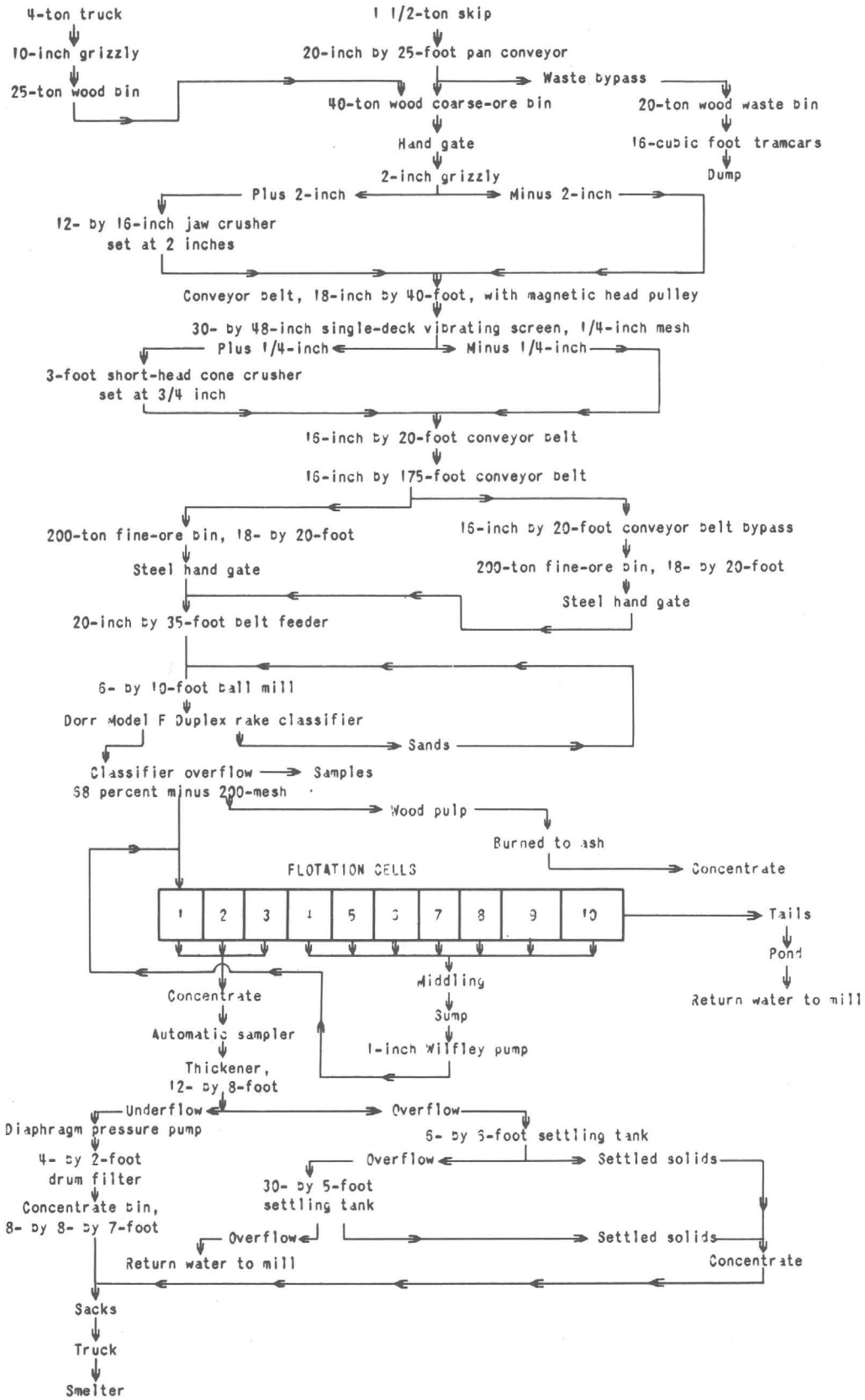


Figure 3.- Flow sheet of Ash Peak mill of the Vega Mines, Inc.; capacity, 190 tons.

The buildings housing the crushing plant and mill are of conventional wood-frame construction covered with corrugated-iron sheeting. Milling operations were begun in March 1937. In June 1939, about 190 tons of ore was being treated daily by flotation, producing 1.7 tons of silver concentrate.

The combined flow sheet of the crushing plant and mill is shown in figure 3.

Crushing and Grinding

Ore from the Shamrock is delivered to the crushing plant by a 1-1/2-ton self-dumping skip. The skip discharges into a trough loading a 20-inch pan conveyor, which carries the ore up a 25 foot, 10-percent slope to a 40-ton, wood coarse-ore bin. Waste can be by-passed from the discharge end of the pan conveyor to a 20-ton, wood waste bin, from which it is loaded by a hand-operated chute into a 16-cubic-foot car and trammed by hand to a waste dump. A 25-ton wood bin beside the main coarse-ore bin has a common opening with it. Trucks hauling ore from the Commerce shaft dump through a grizzly with 10-inch spacings into this bin. The grizzly bars are old stamp stems, 3-1/2 to 4 inches in diameter. Oversize is broken manually.

The coarse ore is discharged through a hand-operated gate onto an inclined grizzly with 2-inch spacings which by-passes undersize, the oversize being fed into a 12- by 16-inch Buchanan jaw crusher driven by a 25-horsepower motor. The discharge is set at 2 inches, but the majority of the crushed product is 3/4 inch in size. The crusher jaw plates are of manganese steel. They are changed each week and the worn ones built up by welding on a hard-facing metal. The ore is very abrasive.

The crushed ore and grizzly undersize discharge onto an 18-inch conveyor belt 40 feet long, running up a 20-percent incline. It is driven by a 2-horsepower motor, at a belt speed of 150 feet per minute. The magnetic head pulley picks tramp iron from the circuit. The conveyor discharges onto a 30- by 48-inch single-deck vibrating screen with 1/4-inch openings, driven by a 2-horsepower motor. The oversize from the screen discharges into a 3-foot, short-head, Symons cone crusher driven by a 60-horsepower motor. The crusher is set at 3/4 inch, but the majority of the product is about 1/4 inch in size. Liners last about 6 weeks. The discharge from the crusher and the undersize from the screen drop onto a 16-inch horizontal conveyor belt 20 feet long, driven by a 1-1/2 horsepower motor, which discharges onto a 16-inch crossbelt driven by a 5-horsepower motor. The second belt conveys the ore up a 30-percent incline 175 feet to the fine-ore bins. A flap of discarded rubber belting is arranged near the loading end of the second conveyor belt to close an electric circuit and sound an alarm if there is no ore on the belt. A similar arrangement is placed on the feed end of the Symons crusher to sound a warning if the crusher becomes choked with feed.

Two 18- by 20-foot, 200-ton fine-ore bins are situated side by side at the head of the mill building. The 175-foot conveyor discharges directly into one of these bins and by-passes to the other bin by a 16-inch conveyor belt 20 feet long, driven by a chain from the 175-foot conveyor. The by-pass conveyor is supported by a framework mounted on four car wheels running on 30-inch-gage tracks of 16-pound rail. The auxiliary conveyor is moved over by hand to by-pass the ore stream into the second bin when the first is full. Both bins are filled by Saturday night, as the mine is not worked Sundays. The crushing plant operates about 12 hours a day.

Ore discharges from the fine-ore bins onto a continuous flat feeder belt, 20 inches by 35 feet in length, driven by a 5-horsepower variable-speed motor. Discharge is regulated through steel gates arranged in tandem, so that ore can be fed from either or both bins. A flap arrangement of the type described sounds a signal electrically when the belt feeder is empty.

Crushed ore discharges into the feed box of a 6- by 10-foot Stearns-Roger ball mill, driven by a 200-horsepower synchronous motor at 24 r.p.m. and loaded with 30,000 pounds of 3-inch forged-steel balls. Manganese-steel liner consumption is about 0.7 pound and ball consumption 4.2 pounds per ton of ore. Cast-iron balls were tried, but their use was discontinued when it was found that consumption was more than double that of forged-steel balls.

The pulp from the ball mill discharges at 72 percent solids through the trunnion to a Dorr Duplex classifier, Model F, 6 by 24 feet, 3 inches, driven by a 5-horsepower motor. The classifier is in closed circuit with the ball mill. A circulating load of about 800 percent is maintained.

A unit flotation cell was placed in the grinding circuit between the discharge end of the ball mill and the classifier in an attempt to improve recovery. Its use was found to be not applicable to this ore.

The approximate distribution of sizes in the classifier overflow follows:

	Percent
Plus 100 mesh.....	4
Minus 100 plus 150 mesh.....	12
Minus 150 plus 200 mesh.....	16
Minus 200 mesh.....	68
Total.....	100

Chips and pulped wood caught on the overflow screen of the classifier are collected and burned periodically. The ash, containing about 80 ounces of silver and 1/2 ounce of gold per ton, is screened, sacked, and shipped to the smelter.

Flotation

The classifier overflow passes into the No. 1 cell of a 21-inch, 10-cell Stearns-Rogers flotation machine of the Minerals Separation type. The impeller of each cell is driven by a 5-horsepower motor. A finished concentrate is taken from the first three cells, which are in series. The tailing from these cells is fed to No. 4 cell. The middling concentrate taken from the seven remaining cells, which are in series, is returned by means of a 1-inch Wilfley pump driven by a 3-horsepower motor to the feed into No. 1 cell. Positive aeration is furnished at 2-1/2 pounds pressure by a No. 615 Acme blower driven by a 3-horsepower motor. The pulp density in flotation is low, being only 18 to 19 percent solids. An automatic sampler cuts the concentrate stream from the flotation machine at 15-minute intervals to give a composite sample of the mill operation for each shift.

Reagents are fed to the ball mill, to the classifier overflow, and to the fifth cell of the flotation unit. A two-compartment wet reagent feeder of the disc and-cup type, driven by a 1-horsepower motor through a speed reducer, feeds 0.07 to 0.08 pound of Barrett No. 4 and 0.3 pound of pine oil to the discharge end of the belt feeder. A reagent made up of half pentasol xanthate and half ethyl xanthate is fed at a rate of 0.083 pound for each ton of ore into the feed box of the ball mill from one compartment of a three-compartment wet reagent feeder of the disc and-cup type. The other two compartments feed the same amount of the reagent to the classifier overflow and to No. 5 flotation cell, respectively. The feeder is driven from the classifier drive shaft.

Tailings Disposal and Handling of Concentrate

The tailings from flotation flow by gravity to the tailings pond in a nearby gulch. Tailings are impounded to conserve water, which is returned to the mill circuit.

The concentrate from flotation is washed into a 12- by 8-foot Dorr thickener. The rakes are driven by a 3-horsepower motor at a speed of 1/6 r.p.m. Copper sulfate is fed to the thickener as a settling agent at the rate of 0.03 pound per ton of original feed.

Overflow from the thickener contains 2 to 3 percent solids; it flows by gravity to a 6- by 6-foot steel settling tank and from there to a larger steel 30- by 5-foot settling tank. The overflow from this last tank is returned to the mill circuit. The settled solids are cleaned out of the large tank every 60 days and sacked as concentrate; about 900 sacks is recovered at each clean-up. This material contains about 300 ounces of silver per ton of concentrate. The small tank is pumped out weekly.

The underflow from the thickener at 50 percent solids is pumped by a 2-inch Door pressure diaphragm pump driven by a 3-horsepower motor to a 4- by 2-foot Door drum filter. This filter is driven by a 1-horsepower motor. A 7-1/2 by 6-inch Chicago Pneumatic vacuum pump driven by a 5-

horsepower motor maintains a vacuum of 20 inches of mercury. The cake is blown off the drum by air from the same blower that furnishes air for flotation and falls into sacks hung on racks for the purpose. Filled sacks are stored in the concentrate room. Filtrate is pumped from the receiver back into the mill circuit by a 1-1/2-inch centrifugal pump driven by a 2-horsepower motor.

A 1-inch centrifugal pump driven by a 1-horsepower motor returns waste water collected in the sump.

Metallurgical data

An analysis of the typical mill heads follows:

Ag	ounces per ton	10.97
Ag as chloride and bromide	do	.30
Au	do	.025
SiO_2	percent	85.8
Sulfur	do	.045
Fe_2O_3	do	3.21
Al_2O_3	do	3.28
CaO	do	5.07
Mn	do	.45
Moisture	do	2.1

An anlysis of the average concentrate follows:

Gold	ounces per ton	1.50
Silver	do	550.50
Lead	percent	.3
Copper	do	.18
Zinc	do	.5
Sulfur	do	.3
Alumina	do	1.5
Silica	do	75.4
Iron	do	6.3
Undetermined	do	13.22

The moisture content of the concentrate just after filtering is about 25 percent. During shipment to the smelter the content is reduced to an average of 18 percent.

The ratio of concentration is 110 to 1 and about 65 percent of the silver is recovered. Tests indicate that the recovery of silver can be raised somewhat by finer grinding, but such practice raises grinding costs excessively. The recovery by cyaniding the crude ore or by cyaniding the tailings could be raised to only 80 percent. Efforts to improve recovery by using different amounts and other types of reagents have failed.

Mill Control

An automatic sampler for mill heads was installed with the mill as originally built, but later was discarded. Samples are now taken by hand at the classifier overflow and automatically from the concentrate discharged from flotation.

There is a small metallurgical testing laboratory in the mill. Equipment includes a batch ball mill, laboratory flotation cell, electric hot plates and drying ovens, and an analytical balance.

The mill operator on each shift makes a daily report of the operation of the mill. The form of this report, filled in to show the actual operation on the day shift on June 9, 1939, is shown in the following table.

Form of daily report, showing operation of mill.

Date: 6/9/39 Shift: Day.

Time	Feed	Percent solids		Reagents, c. c. per minute					
		1/ C. O.	2/ B. M.	Z-6 and Z-3 B. M.	Z-6 and Z-3 C. O.	Z-6 and Z-3 No. 5 cell	Barrett B. M.	P. O. B. M.	P. O. C. O.
8	280	19	72	54	50	44	5	8	2
9	276	18	71						
10	276	19	72	54	50	50	5	8	3
11	272	19	72						
12	280	19	73	50	52	54	5	8	3
1	276	18	72						
2	276	18	73	52	54	54	5	8	4
3	276	19	70						
	2,212								

1/ Classifier overflow. 2/ Ball-mill discharge.

Average percent solids:

Wet tons: 66.4
Percent moisture: 2.8
Dry tons: 64.5
Hours run: 8

Concentrate in store: 22
Concentrate sacked: 13
Total sacks: 35

Remarks:

Marketing Concentrate

Concentrates are hauled by truck in 225-sack lots of about 6 tons by way of Lordsburg, N. Mex., to the American Smelting & Refining Co. lead smelter at El Paso, Tex. The freight rate is $6.00 a ton for the distance of 215 miles, making the cost per ton-mile $0.028.

Settlement was made at the following rates in June 1939:

Silver, 97.50 percent of domestic price of 64.64 cents per ounce for concentrate assaying 500 ounces or more of silver per ton; 95.00 percent of domestic price for concentrate assaying less than 500 ounces of silver per ton.
Gold, $32.81 per ounce.

The company attempts to hold the grade of concentrate above 500 ounces of silver per ton.

Deductions were as follows (June 1939):

	Per ton
Base charge	$ 5.09
Handling sacks	.50
Sampling charge, including assaying, $6.00 for each truck-lot of about 6 tons	1.00
Total	$ 6.59

Where an appreciable difference exists between mining company and smelter assays, a sample is taken by representatives of both companies and submitted to an umpire for analysis; the cost of this work is borne by the party whose results are greatest in error.

Until early in 1938 crude ore was shipped to the International Smelting & Refining Co. at Miami, Ariz. Shipments were made by truck to Solomonville, Ariz. The freight cost to this point (24 miles from the mine) was $1.25 per ton. The smelter paid the freight from Solomonville to Miami. The base charge was $3.25 a ton, and there were no penalties. Settlement was made at the following rates:

Silver, all at 95 percent of domestic quotation.
Gold, $32.20 an ounce.

Mill labor

The mill operates three shifts daily for 7 days a week. The following table shows the labor and supervision required to treat 190 tons daily:

Number	Classification	Rate	Total per day
3	Mill operators	$4.50	$13.50
3	Mill helpers	4.05	12.15
2	Crusher men	4.50	9.00
1	Superintendent	6.00	6.00
			$40.65

Mill supply costs

The costs of the principal mill supplies follow:

Item	Cost 1/
Reagents:	
Pine oil	$0.079 per pound
Potassium ethyl xanthate	.140 per pound
Potassium pentasol xanthate	.275 per pound
Barrett No. 4	.075 per pound
Copper sulfate	.819 per pound
Lubricating oil	.62 per gal.
Manganese-steel crusher-jaw plates	105.00 per set
Manganese-steel cone-crusher liners	380.00 per set
Manganese-steel ball-mill liners	.125 per pound
Forged-steel balls	80.00 per ton
Flotation impellers	31.00 each

1/ Delivered to mine.

The costs of grinding balls, mill liners, and reagents per ton of ore milled for 30 days in May 1939 is shown in the following table.

Item	Total Cost	Ore milled tons	Cost per ton ore milled
Grinding balls	$970.05	5,295	$ 0.1832
Mill liners	750.00	5,295	.1416
Reagents	510.00	5,295	.0963

POWER

Electric power for the mine and mill is generated on the property. The power plant is near the mill and is housed in a frame building covered with corrugated-steel sheeting. Equipment includes four Union Diesel engines of 250 horsepower capacity each, direct connected to 250-kv. a. alternators of which one unit is a spare.

Electricity is furnished at four different voltages - 2,300 volts for the crusher and ball-mill motors, 440 volts for all other motors rated more than 1 horsepower, 220 volts for large-wattage lamps, and 110 volts for general lighting circuit and fractional horsepower motors. Power distribution is as follows:

	Percent
Mine	57
Mill, of which 20 percent is used in coarse crushing	40
Camp	3
Total	100

Stations and main levels in the mine are lighted electrically. Electric lighting for the mill is provided from ceiling and drop-cord lamps. The automatic sampler is operated from the 110-volt circuit also.

The connected power load for the mill follows:

Motor	Voltage	Horsepower
Ball mill	2,300	200
Ore feeder	440	5
Reagent feeder	440	1
Reagent feeder	440	5
Classifier	440	5
Flotation cells, 5 horsepower on each	440	50
Blower	440	5
Wilfley pump	440	3
Filtrate pump	440	2
Vacuum pump	440	5
Thickener	440	3
Diaphragm	440	3
Filter	440	1
Sump pump	440	1
Total		289

Five men are required to operate the plant on three shifts. Labor cost, including supervision, is $22.50 a day. The cost of Diesel fuel, the

principal item of supply, is $0.0625 per gallon delivered to the mine. The cost of operation for 1938 on the basis of 64,709.8 dry tons milled is shown in the following table.

Cost of operating power plant for 1938 in units of labor, supplies, and lumber.

Labor	$ 0.1603
Supplies	.2983
Timber	.0001
Total operating cost	$ 0.4587
Operating income	.0011
Total cost per ton milled	$ 0.4576

Outlying workings have independent power plants.

WATER SUPPLY

All the water supply is pumped from a well at Ash Springs sunk 5 feet by 5 feet in section a depth of 80 feet. A duplex reciprocating pump, driven by a 40-horsepower tractor Diesel engine, delivers the water through 7,000 feet of 3-inch pipe up a rise in elevation of 1,400 feet to a steel tank 30 feet in diameter by 12 feet in height.

The water for the mill is stored in two steel tanks 30 feet in diameter by 10 feet in height situated just above the mill. These act as surge tanks for water returned from the tailings pond. Additional water is drawn from the main supply tank as needed. The mill uses about 5 tons of water per ton of ore; about 50 percent is reclaimed.

An evaporative tower with a capacity of 3,000 gallons a day cools water for the Diesel engines and compressors.

Distribution of the total daily water consumption of 325,000 gallons follows:

	Percent
Mill	80
Mine	18
Camp	2
Total	100

The cost of supplying water for 1938 on the basis of 64,709.8 dry tons of ore milled is shown in the following table.

Cost per ton of ore milled of supplying water for 1938 in units of labor, supplies, and lumber

Labor	$0.0445
Supplies	.0416
Lumber	.0007
Miscellaneous	.0056
Total cost per ton milled	$0.0924

SURFACE PLANT

The surface plant is arranged to provide all the ordinary services required to keep the mine and mill in good operating condition. Buildings are mostly of wood frame construction covered with corrugated-steel sheeting. Besides the power plant already mentioned, the surface plant comprises the Shamrock shaft house, the Commerce shaft house, a machine shop, an electric shop, a change house, a warehouse, an assay office, and the administration office.

At the Shamrock shaft hoisting is done from a 60-foot steel head frame with a 6-foot-diameter drum hoist, driven by a 100-horsepower electric motor at a rope speed of 450 feet per minute. At the Commerce shaft hoisting is done with a 30-inch-diameter drum hoist driven by an automobile engine. The hoisted ore is dropped into a wood ore bin adjacent to the 30-foot wood head frame. Compressed air is supplied by a 400-cubic-foot-per-minute compressor driven by a 60-horsepower tractor Diesel engine.

Compressed air is supplied to the Shamrock workings by a 640-cubic-foot-per-minute compressor driven by a 100-horsepower electric motor and two 360-cubic-foot-per-minute compressors driven by 60-horsepower electric motors. This equipment is in the power house.

Machine-shop equipment includes a 40-volt, 200-ampere portable arc welder, a metal turning lathe with a 6-foot bed and 12-inch swing, a 21-inch drill press, a power cut-off saw, a power grinder, and a drill-steel sharpener remodeled to split diamond-drill core.

In the blacksmith shop are an air-operated drill-steel sharpener, a power grinder, a homemade oil-fired furnace, and a hand forge.

The electric shop is equipped to rewind motors and to do other electric repair work.

The change house is 20 by 40 feet in area and equipped with individual lockers and showers.

The warehouse contains supplies and replacement parts for the mining and milling equipment.

The assay office is equipped to make routine analyses by fire and wet methods for control of the mining and milling operations.

Fuel oil is stored in two steel tanks of 15,000-gallon and 5,000-gallon capacities.

LIVING ACCOMMODATIONS

Living accommodations for company employees comprise 11 four-room dwellings rented to individual families at $10 to $25 a month, two 40- by 60-foot bunkhouses with eight rooms each, and a 40- by 60-foot boarding house with dining room, kitchen, commissary, and storeroom. Board is furnished at the rate of $1.25 a day, and room in the bunkhouse at the rate of $4.00 a month.

ADMINISTRATION

Operations at the Ash Peak Branch are supervised by a general superintendent assisted by three shift bosses, and milling operations are directed by a mill superintendent. Also on the Company staff are a master mechanic, chief electrician, chemist, engineer, purchasing agent, and chief clerk.

SUMMARY OF COSTS

A summary of individual costs is shown in the following table.

Individual costs:

Exploration (diamond drilling) per foot	$ 1.8881
Development workings, per foot	15.9386
Ore extraction per dry ton mined and milled	1.8636

Combined operating costs for 1938 and total operating costs follow:

Combined costs, per dry ton mined and milled

Leasing, exploration, development, and ore extraction	$ 2.6831
Coarse crushing	.1635
Milling, general	.8074
Handling and hauling concentrate	.0910
Administration and overhead	1.2342
Total cost	$ 4.9822
Income from operation of camp	.0428
Total operating cost	$ 4.9394

Metals production during 1938 and cost per ounce of producing silver is shown in the following table.

Gold	ounces	1,751.86
Silver	do.	527,706.45
Copper	pounds	9,389.32
Lead	do.	26,246.97

Production cost per ounce of silver, $0.60463.

A summary of operating expense per dry ton of ore mined and milled at the Ash Peak mine for 1938 is shown in the following table.

Summary of operating expense per dry ton of ore mined and milled at the Ash Peak mine in 1938.

Dry tons mined: 70,274.8
Dry tons milled: 64,709.8
Dry tons shipped direct to smelter: 5,565.0

Account	Labor	Explosives	Power	Water	Lumber and timber	Other Supplies	Miscellaneous	Total	Percent of Total
Administration overhead and general	$0.4875	—	1/ $0.0283	1/ $0.0009	$0.0006	$0.1475	$0.5694	$1.2342	25.0
Mine leasing	.1611	$0.0336	1/ .0472	1/ .0028	.0111	.0461	.0905	.3924	8.0
Mine exploration	.0296	—	1/ .0189	1/ .0009	.0002	.0139	.0070	.0705	1.4
Mine development	.1391	.0670	1/ .0708	1/ .0046	.0008	.0181	.0562	.3566	7.2
Mine-ore Extraction	1.1174	.2042	1/ .1179	1/ .0075	.0978	.1439	.1749	1.8636	37.7
Coarse crushing	.0472	—	1/ .0377	—	.0002	.0786	.0028	.1665	3.4
Milling, gen'l.	.1961	—	1/ .1510	1/ .0739	.0007	.3556	.0301	.8074	16.3
H. & H. conc.	.0206	—	—	—	—	.0042	.0662	.0910	1.8
Camp	.0058	—	2/1/ .0142	1/ .0018	.0003	.0217	2/ .0582	2/ .0428	2/ .8
Total operating	2.2044	.3048	.4576	.0924	.1117	.8296	.9389	4.9394	100.0
Percent of total	44.6	6.2	9.2	1.9	2.3	16.8	19.0		

1/ Percentage of total consumption estimated. 2/ Operating income.

A summary of capital expense at the Ash Peak mine for 1938 follows:

Account	Labor	Explosives	Lumber	Other Supplies	Misc.	Total
Construction	$ 307.84	$ 55.03	$ 18.18	$ 183.10	$ 21.50	$ 585.65
Equipment	523.91	- -	285.96	3,078.21	4,981.06	8,869.14
Total capital	831.75	55.03	304.14	3,261.31	5,002.56	9,454.79

After this report has served your purpose and if you have no further need for it, please return it to the Bureau of Mines. The use of this mailing label to do so will be official business and no postage stamps will be required.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OFFICIAL BUSINESS

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ASH PEAK MINE

PAT. CLAIMS

GREAT EASTERN
COMMERCE
SUMMIT
HOMESTEAD
FRACTION

IN SECTIONS 3 AND 11
T 8 S, R 30 E.

TELEPHONE

INSPIRATION	473 - 2411
EASTLICK (HOME)	425 - 7388

SLC
3/24/75

NEW ADDRESS

1432 NORTH SEVENTH STREET
PHOENIX, ARIZONA 85006

LAW OFFICES OF
ANDREWS, MARENDA & MOSELEY, P.A.
LUHRS TOWER • PHOENIX, ARIZONA 85003 • PHONE 602-254-5051

MESSAGE

TO

DATE

1 PM
3/24

Suggested he call Ariz. Trust (he knows lawyer) and ask who could be contacted about a lease on claims.
RBM

He is sending additional data from Fernandez.

BY Also Joe included rent check

Form N-N73 © The Drawing Board, Inc., Box 505, Dallas, Texas 75221

INSTRUCTIONS TO SENDER:
1. KEEP YELLOW COPY. 2. SEND WHITE AND PINK COPIES INTACT.

REPLY

DATE

Forgot about Bird Spring. Here's the Arizona Trust Land Dept. number. Call them and see if you can lease the claims. Also see if you can get a title search done on them. Let me know what you find out.

Floyd

SIGNED

INSTRUCTIONS TO RECEIVER:
1. WRITE REPLY. 2. DETACH STUB, KEEP PINK COPY, RETURN WHITE COPY TO SENDER.

LAW OFFICES OF
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SUITE 803, LUHRS TOWER • PHOENIX, ARIZONA 85003 • PHONE 602-254-5051

MESSAGE

TO

DATE

BY

REPLY

DATE

SIGNED

DETACH AND FILE FOR FOLLOW-UP

LAW OFFICES OF

ANDREWS, MARENDA & MOSELEY, P.A.

SUITE 803, LUHRS TOWER • PHOENIX, ARIZONA 85003 • PHONE 602-254-5051

MESSAGE

TO

DATE

BY

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REPLY

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LAW OFFICES OF
ANDREWS, MARENDA & MOSELEY, P.A.
1432 NORTH SEVENTH STREET • PHOENIX, ARIZONA 85006 • PHONE 602-254-5051

MESSAGE

TO Mr. Roland B. Mulchay
2732 Wren Road
Salt Lake City, Utah

DATE March 31, 1975

Re: Mining Claims

Dear Mr. Mulchay:

Find enclosed the documents which I inadvertently failed to send you with Mr. Moseley's letter on Friday. I am very sorry for any inconvenience this may have caused you.

Very truly yours,

Anne Mauross

Secretary

/Encl.

BY

REPLY

DATE

SIGNED

INSTRUCTIONS TO SENDER:
1. KEEP YELLOW COPY. 2. SEND WHITE AND PINK COPIES INTACT.

INSTRUCTIONS TO RECEIVER:
1. WRITE REPLY. 2. DETACH STUB, KEEP PINK COPY, RETURN WHITE COPY TO SENDER.

LAW OFFICES OF
ANDREWS, MARENDA & MOSELEY, P.A.
1432 NORTH SEVENTH STREET • PHOENIX, ARIZONA 85006 • PHONE 602-254-5051

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Very truly yours,

Anne Marenda

Secretary

/Encl.

BY

REPLY

DATE

SIGNED

RECIPIENT KEEP THIS COPY, RETURN WHITE COPY TO SENDER

bcc: Mr. Roland B. Mulchay
2732 Wren Road
Salt Lake City, Utah

B. P. S. Enclosed find additional documents which Lloyd sent me pertaining to the mine and the status of the ownership. According to the record title the lease to the three Colorado people is still in effect. I will let you know what the beneficiaries have to say about the availability at this time.

Very truly yours,

M. B. Moseley

MBM:am
Encl.

LAW OFFICES
ANDREWS, MARENDA & MOSELEY, P. A.
1432 NORTH SEVENTH STREET
PHOENIX, ARIZONA 85006

WILLIAM S. ANDREWS
DALE E. MARENDA
M. B. MOSELEY
DENNIS P. TURNAGE

AREA CODE 602
TELEPHONE 254-5051

March 28, 1975

Ms. Virginia C. Williams
c/o P. O. Box 2692
Phoenix, Arizona 85002

Dear Ms. Williams:

I understand from Arizona Title that you are the attorney-in-fact for the beneficiaries under Trust #3182. According to the records of the Greenlee County Recorder the Ask Peak Mine, consisting of several different claims, is held in the above described trust by Arizona Title, as trustee.

The last matter upon the records of the Greenlee County Recorder is a Memorandum of Lease for Recording dated May 2, 1966 between the title company and Robert H. Sayre, Jr., A. George Setter and George E. Morehouse.

I understand the mine is not presently being operated. If the described lease is no longer in effect or could be terminated I have a client who would like to negotiate a lease for the property. Would you kindly contact me and advise me of the status of the lease, whether the property is available and, if so, what general terms would be acceptable to you.

I will appreciate hearing from you.

Very truly yours,

ANDREWS, MARENDA & MOSELEY, P. A.

M. B. Moseley

MBM:am

cc: David Fyke, Trust Administrator
Arizona Title Insurance & Trust Co.
111 West Monroe Street
Phoenix, Arizona 85003

LAW OFFICES
ANDREWS, MARENDA & MOSELEY, P.A.
1626 NORTH SEVENTH STREET
PHOENIX, ARIZONA 85006
AREA CODE 602
TELEPHONE 254-6626

WILLIAM S. ANDREWS
DALE E. MARENDA
M.B. MOSELEY
DENNIS E. TURENNE

March 28, 1978

Mrs. Virginia C. Williams
c/o P. O. Box 2892
Phoenix, Arizona 85002

Dear Mrs. Williams:

I understand from Arizona Title that you are the attorney in fact for the beneficiaries under Trust #8182. According to the records of the Greenlee County Recorder the Ash Peak Mine, containing of several different claims, is held in the above described trust by Arizona Title, as trustee.

The last matter upon the records of the Greenlee County Recorder is a Memorandum of Lease for Recording dated May 2, 1966 between the title company and Robert H. Sayre, Jr., A. George Sayre and George E. Mortenous.

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I will appreciate hearing from you.

Very truly yours,

ANDREWS, MARENDA & MOSELEY, P.A.

M. B. Moseley

MBM:am

cc: David Pyle, Trust Administrator
Arizona Title Insurance & Trust Co.
111 West Monroe Street
Phoenix, Arizona 85003

ASH PEAK MINES

This property consists of five patented claims, two patented milsite claims, eight unpatented lode claims, and nine unpatented milsite claims, located in sections 2, 3, 10, and 11 in T. 7 S., R 30 E. G. & S.R.B. & M. in Greenlee County, Ariz. Title to this property is, and for many years has been, vested in Ash Peak Mines, The property is located on the paved U.S. highway no. 180, ten miles west of Duncan, Ariz. and seven miles from Fox siding on the Clifton branch of the Southern Pacific Railroad.

The elevation at the mine is 4600 ft., at Fox siding 3600 ft. above sea level. The Gila river runs parallel to the railroad at Fox. Water has been developed and pumped to the mines from the patented milsite claims one mile north. The river is about 5 miles from the mine and will furnish unlimited water for all purposes.

Ash Peak Mines are located within a mining area comprising the camps of Morenci, Clifton, Bisbee, Douglas, Globe, Miami, and Superior in Ariz. and Silver City, Mogollon, and Santa Rita, N.M..

GEOLOGY

Rocks near the mines are tertiary lavas and consist of andesites, rhyolites, and rhyolite tuffs. The Ash Peak vein follows a fault fissure of about 100 ft. vertical displacement and with a somewhat greater lateral displacement. Following the hanging wall of the fissure which in turn is the hanging of the vein, is a diabase dyke of a few feet widths, probably a feeder to the late andesite flow referred to below.

LATE ANDESITE: A flow rock, basaltic in character overlies a rhyolite tuff, a volcanic ash lying flat and separating the late Andesite from an earlier andesite. The tuff is from 20 to 40 ft. thick and is very prominent. It is exposed for a mile along the north side of the Ash Peak fissure. The earlier andesite is of unknown thickness but probably around a thousand ft. at the site of the vein and presumably overlies the upper sedimentary lime-stone members. This earlier andesite varys in texture from porphyritic to aphanitic, and as this material forms the original breccia in the fault fissure, the porphyritic phase has been more readidly converted into ore than the aphanitic phase. This fact is of economic importance.

MINERALIZATION

The vein follows the original fissuring with the better values generally on the hanging wall. The fissure is from 25 to 60 ft. wide, the pay streak from 6 to 18 ft. wide. Following the original faulting there was first a quartz mineralization which altered and cemented the fault breccia; further faulting both laterally and vertically was followed by further mineralization, cemented and altering of the breccia, and quartz and ore deposition from the mineral bearing solutions pulsating through the fissured area, resulting in the present vein and ore bodies. It is probable that this fissuring has extended to the underlying lime-stones, and that ascending solutions in passing through the limestones lost much of their mineral content before reaching the upper tertiary zone. Practically no copper , zinc, or lead are found in the veins; the commercial mineral being principally argentite carrying gold values.

The original fault fissure was nearly vertical, the displacement about 100 ft.. Later and lateral faulting along the original zig-zagged fissure has resulted in elongated diamond shaped areas along the plane of the fault and the results is a series of recurrent lenses of enormous size in which are the ore bodies in the vein. This condition is well evidenced by developments to-date, The vein outcrops well above the ground and from end to end of the patented lode claims. The quartz is generally banded, evidencing a pulsating deposition. The best values are found in the banded quartz and in the highly altered breccia of originally porphyritic texture.

ORE

The ore is quartz and silicified andesite containing finely desiminated Argentite, Pyrite and associated minerals. Little oxidation has taken place within the vein. The ore is essentially a primary sulphide. When the ore occurs as ribbon quartz it is of higher grade. The pay streak is from 6 to 18 ft. wide and up to 600 ft. long within the area of each recurrent diamond shaped lense. There are six such ore shoots indicated on the property. Values generally tend to diminish as they approach the foot-wall. This makes an ideal condition for selective mining.

DEVELOPMENT

The principal work has been in the Shamrock and Commerce mines, although a great many surface cuts and shafts have been sunk along the vein outcrop. The Shamrock shaft is 800 ft. deep, levels cut and driven at 100 ft. intervals, and cross-cuts on all levels at 50 ft. intervals. In this development work much of the ore hoisted was shipped to the smelters and constitutes a very exact sampling of the mine. The Commerce mine is 500 ft. deep with levles at 100 ft. intervals. A great deal of the ore from this development was likewise shipped to the smelters.

In report (Sept. 1924) Mr. Henry M. Crowther states "The following estimates of ore tonnage divided into several segregations of widths and values are based on sample maps and shipments to smelters (for development) equal in tonnage to one ton of ore actually shipped to each twenty tons estimated as blocked, which test is considered ample proof of values since much of the tonnage is extracted in sinking shafts and driving drifts".

"Ore Blocked "A" Method".

Workings	Tons	Total Values	Width	Total
Shamrock Mine	130,000	$10.00	10	$1,300,000
Commerce Mine	39,000	11.00	6	350,000
Dumps	20,000	9.50		190,000

"Ore Blocked "B" Method".

Shamrock Mine	90,000	12.00	7	1,180,000
Commerce Mine	39,000	11.00	6	330,000
Dump	20,000	9.50		190,000

INDICATED ORE----------

All development, 300,000 tons $10.00. The 300,000 tons "indicated" has not been termed "blocked" for the reason that it was not exposed on three sides, but was believed assured at the balue stated in view of the existing conditions.

The above tonnage blocked and indicated is computed by the development of the Commerces shaft and levels,; the Shamrock shaft and levels and the ore on the dumps. (silver figures @70¢ per ounce. Gold @ $20.00 per ounce)

(signed) Henry M. Crowther

(copy of letter dated Sept. 15, 1924. to Southwest Mining Company, - Los Angeles, Cal.)

Dear Sirs:

I have known Mr. Henry M. Crowthers for the last twenty-five years; during which time I have been in consultation with him on many occassions. Mr. Crowther has had a very extensive experience in the west, not only in charge of properties

but also in working out economic geology of a number of districts. Mr Crowther is one of the highest standing men in the profession and I have the fullest faith in his ability and integrity.

(signed) Parke Channing.

(letter dated-Sept. 15, 1924)

Copy---
Southwest Mining Co.
Los Angeles, Calif.

Dear Sirs:

It is with Pleasure that I am able to state that I have personally known Mr. Henry M. Crowther for the past twenty years, during which time he has operated extensively in the mining industry. Mr. Crowther has had a very wide experience in many sections as manager and engineer of important operations. I have a high personal and professional regard for Mr. Crowther and would not hesitate to accept his report on mining property as accurate and reliable.

Yours very truly

(signed) Louis M. Cates

Following is from the report of Henry V. Snell of Globe, Arizona to Southwest Mines Co. dated Aug, 1924. (on file).

" In mining on a tonnage basis I think it safe to figure that on an average the ore will be broken on a width of from 7 to 8 feet, and useing this width as a basis, the blocked ore figures at about 150,000 tons, at $ 11.00 per ton or $ 1,650,000. Based on present mine opening and surface indications of ore shoots I have figured it safe to accept 300,000 tons indicated as probable ore with a value of $ 10,00 per ton.

Note: Mr. Snell is a graduate of Michigan School of Mines, was formerly engineer for Old Domininon Copper Co. of Globe, Arizona. He was in charge of the development of Ash Peak Extention mine which adjoins the Ash Peak property.

MINING AND MILLING COSTS.

(a) (From Crowther report.) The mines are dry to present depth and ore can be mined with little timber and with safety and econemy at an estimated cost of $ 2.00 per ton delivered into mill bin.

Milling by cyaniding process by which a saving of 95%

of assay values has been made in the test work is extimated at $ 2.00 cost per ton. By large tonnage operations these should be reduced.
Taking 90% mill saving (altho 95% is possible) by cyanide extraction, and basing costs on 250 tons daily output, on "A" method estimates, we have 480,000 tons $ 10.00, 90% recovery $ 9.00 less costs of $ 4.50 per ton indicated profit $ 4.50 per ton or $ 2,160,000. (Based on 70¢ silver and $ 20.00 gold).
(Cyanide tests indicate 95% extraction with 150 mesh grinding and 2.4# cyanide consumption per ton.
By Flotation a very high concentrate is possible with equally high recoveries. Fine grinding is likewise necessary.

SUMMARY. (From Crowther Report).

"The property has large and valuable ore reserves in sight and indicated. The enterprise of recovering generous profits therefrom will in reality be a manufacturing operation promises a generation of successful life. The outlook for the incidental development of bodies of rich shipping ore is promising with additional depth attained. I recommend the property as having every element for success and profit over many years of tonnage operations. From every viewpoint it is the best and biggest property that I have seen in years. "

CONCLUSIONS. (From report of H. V. Snell.)

It is certain that a large tonnage of ore will be developed in the vein in addittion to that which is now in sight. As it stands it is a virgin property, practically no ore having been stoped. It is very probable that additional depth will open higher grade direct shipping ore. The property should be equipped for operation on a scale not less than 250 tons per day. This will indicate a capital requirement of not less than $ 250,000.

The present indicated ore reserves insure the operation of such a plant for several years, with a likelihood that additional development will indicate the adviseability of increasing the scale of operations.

($igned) (H.V.Snell.)

(List of shipping returns follows showing same to average 15 oz silver and .053 gold per ton.)

FORM 130

INSPIRATION CONSOLIDATED COPPER COMPANY

INSPIRATION, ARIZONA

NEW YORK OFFICE
25 BROADWAY

TELEGRAPH OFFICE
INSPIRATION, ARIZONA

FREIGHT AND EXPRESS OFFICE
MIAMI, ARIZONA

May 14, 1935.

REFER TO FILE NO.

Mr. Roland Mulchay,
Cananea, Sonora, Mexico.

Dear Roland:

I was glad to receive your letter yesterday morning. The reason there has been no recent report on the Ash Peak property is that there has been no work done there since M.P.R. 463 was written. A few months ago, Arthur Murphy, the owner, stopped in here to see us and, judging from what he said, I believe that he would be easier to deal with than he was fifteen years ago. The mine development is in good shape, but is under water. When we talked to Murphy, he thought that by selective mining, 70,000 tons could be mined with a grade of 20 ounces in silver. After studying over the M.P.R. maps, I couldn't see where he was going to get it, and let the matter drop for the present.

To the west of the Ash Peak and on the same vein, is the Extention property. The 600 foot shaft is caved at the collar and leasors who worked there as late as 1925 told me they had mined out from the shaft as far as they could, so I presume it is in bad shape. On this property, 600 feet north of the Ash Peak vein, is what they call the Green vein. This outcrops for 1000 feet, striking parallel to the Ash Peak vien, but dipping 80° to the north. Where the 80 ft. shaft has been sunk, the main vein is higher grade than the Ash Peak vein. I could only get down to the 50 ft. level, but cut the following samples there:

	Oz.Ag.	Oz.Au.
East face - 10 ft. from c. of shaft - 3 ft. width -	11.1	- 0.02
West " 25 ft. " " " " 3 ft. "	21.7	- 0.06
Face of X-cut, driven south 10 ft. from the drift 8 ft. west of the shaft - 3 ft. "	12.5	- 0.06

Neither foot nor hanging wall had been cut, so I judge that the vein is 12 - 15 ft. wide at this point. It is a good prospect, but the vein lacks the persistence with strike that the lower grade Ash Peak vein has The next time I get over that way, I'll stop off and check up on what they are doing there. I understand one man is doing a little work on the Green vein. (I know the man, so that I'm sure it is mighty little.)

I haven't spent much time in New Mexico. The only other district which I visited was the Chloride district, up in the Black Range.

I am enclosing two recent M.P.R.'s for your file. Had I known you examined the Pilgrim several years ago, I wouldn't have done it myself. You might send me a copy of your report for our files. I think we should have copies on file here of any work done in Arizona, New Mexico or California by a member of the organization, to prevent duplication.

I suppose you know the Tyro story. At any rate, they are going to try and do certain work before the middle of June, at which time we may go into the matter again.

With best regards to yourself and family, I am

Sincerely yours,

Brick -

CMB-clh Charles M. Brinckerhoff.

MINE PRODUCTION RECORD

Name of Mine ASH PEAK MINING CO.

Operated by Arthur Murphy, Jr.,

P. O. Address Duncan, Arizona.

Located 9 miles N. W. of Duncan.

Mining District Ash Peak,

County Greenlee, *State* Arizona.

Average Production *tons per*

Types of Product *Under Contract to* *Contract Expires*

Silver.

Remarks.

Phoenix, Arizona.
September 11, 1919.

Examined by:
P. G. Spilsbury, and
C. W. Botsford.

CONCLUSION: A well defined fissure vein in andesite carrying lenses of silver ore at intervals. Developed ore 145,000 tons, valued at $10.00 per ton (Silver $1.00) down to 800' depth with good possibilities for future development.

Goldfields Consolidated gave it up 1918 at $1.00 silver. It has no merit at purchase price of $500,000 but on a leasing basis would be attractive for a small scale operation.

Is too small for our interests.

LOCATION: On the western line of Greenlee County, Arizona,- 9 miles northwest of Duncan, on the Arizona and New Mexico R. R. branch from Lordsburg to Morenci and 6 miles from Sheldon, the nearest railroad point.

PROPERTY: 13 claims - 5 patented and 13 mill site claims - two patented - In all 79 acres patented mineral land and 10 acres patented mill sites.

HISTORY: A Nevada Corporation One Million shares $1.00 par. About 440,000 shares outstanding, of which 110,000 shares are held by E. A. Julian for the Goldfields Consolidated and 290,000 shares are controlled by Arthur Murphy, Jr.

A working option was taken in 1916 by the Goldfields Consolidated. They spent $233,700 in development below the 500' level, under the direction of Julian with Charles C. Starr as superintendent. In December 1918 they stopped work, taking stock for money spent.

GEOLOGY: The Ash Peak silver-bearing vein is of the type commonly found associated with the Tertiary eruptive rocks; usually the andesites. The vein is a typical fissure on which a small amount of

fault movement has taken place. It generally follows the north or footwall side of an augite-andesite dike (diabase on the maps), which in many places is the hanging-wall of the vein. This wall is distinct in the mine and mineralization has followed it, grading out gradually into the foot-wall andesites.

MINERALIZATION: The first process in the vein formation was silicification which formed the prominent outcrops now marking the course of the vein. A succeeding brecciation along more or less the same fissure permitted the ascent of the silver bearing solutions and ore was formed by replacement of the andesites but not the quartz. Much filling of small fractures also occurred. The large masses of quartz are nearly or quite barren. Some later brecciation took place and calcite formed in many openings.

ORES: Silver occurs mainly as argentite with a little pyrite in a quartz gangue with some adularia. Traces of copper can be found when the ores are oxidized and here the silver may occur as a chloride. All the ores estimated in the mine are primary sulphides.

Ores of this kind frequently become more basic with depth, carrying lead, zinc and copper but there is no indication of this in the Ash Peak ores from the bottom levels.

The ore-shoots so far developed are rather large and of fair but irregular value.

VERTICAL RANGE OF ORES: The upper limit of commercial ore was found about 300' below the present surface and above this line no ore seems to have formed. This was evidently the upper limit of ore-deppsition.

Ore deposits of this type usually have a vertical range of from 1000 to 1500 feet or more and this would indicate the probability of ore at much greater depth than has been attained in the Ash Peak mine. No change in the character of the wall-rocks may be expected at these greater depths.

LONGITUDINAL EXTENSIONS: On the east the vein is covered by wash and no work has been done to prove its value. There is no apparent reason why ore should not exist here. On the Ash Peak property itself several outcrops show ore but no development has been done. Chances seem very good for more ore-bodies than the two already opened.

ASH PEAK EXTENSION: (Snell Property) The Ash Peak vein extends several thousand feet through this property. The outcrop is generally good and one ore body has been opened to 200' depth with ore similar to that of the Ash Peak in character and value. The property is promising.

BLUE VEIN: About 600' north of the Ash Peak another vein has been found and traced for about 1000 feet. A 90' shaft and several pits show ore like the Ash Peak but containing slightly more copper. The vein is very promising but developments are insufficient to prove its value.

ORE RESERVES: As estimated by Goldfield Consolidated.

By Cut samples	130,010 tons	$11.18 per ton.
By Lot sample	107,280 "	12.02 " "

Estimating 10% dilution.

By Cut samples	143,011 tons	$10.16 per ton
By Lot sample	118,008 "	10.93 " "

It will probably be safe to estimate 145,000 tons of $10.00 ore available at $1.00 silver, down to the 800' level of the Shamrock and 500' level of the Commerce workings.

PROBABLE ORE: From the character of the lenses already developed it is probable that similar deposits occur laterally with fair regularity and that they will be found to depths of 1000 to 1500 feet. It is also probable that values, although spotty, will average up to the lenses now open.

ULTIMATE PROFIT: Erection of a small cyanide mill about 200 tons capacity per day is warranted and with careful development ahead a fair profit could be won from the enterprise, based on actual cost of improvements and development. The operating profit above development but before taxes would be about $1.50 per ton under present conditions. The purchase price is $500,000. Cost of mill and necessary improvements before operation would be approximately $200,000. Total $700,000. This would require 466,000 tons of ore to retire before any actual profit would be gained, and a wait of almost 7 years.

For a direct purchase the property is not attractive. It has merit for small scale production on a bond and lease at say 15% royalty as the 145,000 tons developed would cover the cost of the mill leaving future profit dependent on development which, I consider, a legitimate risk.

SILVER PRICE: As the profit is based on $1.00 silver a drop to 75 cent silver would wipe out any possible profit.

(Note) Full reports by Wilbur H. Grant and Herman Wendler on file New York, Warren, Phoenix.

ASH PEAK MINES COMPANY
DUNCAN, ARIZONA

10/17/35

Oct. 10, 1935.

Dr. L. D. Ricketts,
Pacific Southwest Bank Bldg.
Passadena, California.

Re: ASH PEAK MINES.

My Dear Dr. Ricketts:

Mr. Alfred Paul of Douglas has asked me to send you some information covering Ash Peak Mines. I am consequen tly enclosing herewith summary taken from reports on file at the mine office. I have complete maps and other data but no blue prints available for mailing. If you are interested the statements included herewith will perhaps serve until such time as you may be able to look into things here or have it done by someone representing you.

This property is on U.S. Highway # 180, 31 miles west from Safford, or about 3 hours drive from Miami. Its value should be for siliceous flux for the smelters of the southwest as it is around 85% silica with very low alumina, iron and lime. I have shipped several thousand tons from development to the smelters as siliceous flux.

Present day metallurgy indicates, fine grinding and flotation, followed by cyanidation of the flotation concentrate and melting into bullion. This practice if direct shipment to smelters is not more profitable.

I will be much interested in your reaction to and interest in this property, and appreciate this opportunity of calling it to your attention.

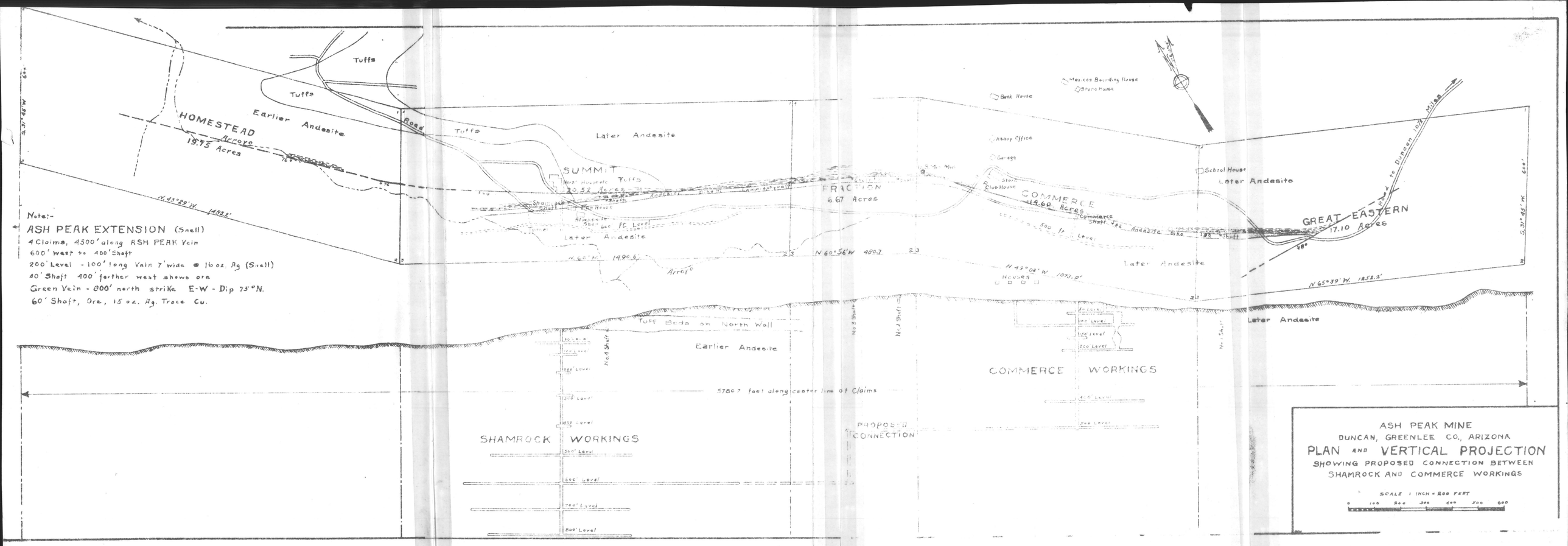
Very truly yours,

Arthur Murphy

Arthur Murphy
Duncan, Arizona.

Phoenix address:

Arizona Appartments,
3rd St. at Roosevelt,
Phoenix, Arizona.



Note:-

ASH PEAK EXTENSION (Snell)

4 Claims, 4500' along ASH PEAK Vein

600' west to 400' Shaft

200' Level - 100' long Vein 7' wide @ 16 oz. Ag (Snell)

40' Shaft 400' farther west shows ore

Green Vein - 800' north strike E-W - Dip 75° N.

60' Shaft, Ore, 15 oz. Ag. Trace Cu.

ASH PEAK MINE

DUNCAN, GREENLEE CO., ARIZONA

PLAN AND VERTICAL PROJECTION

SHOWING PROPOSED CONNECTION BETWEEN SHAMROCK AND COMMERCE WORKINGS

SCALE 1 INCH = 800 FEET

0 100 200 300 400 500 600

Roland B. Mulchay
Consulting Geologist
2732 Wren Road
Salt Lake City, Utah 84117

Phoenix
March 10, 1975

Mr. Jack Eastlick
Inspiration Cons. Copper Co.
Inspiration, Arizona 85537

Dear Jack:

I recently visited the Ash Peak Mine, near Duncan, Arizona, which was at one time operated by Inspiration for silica flux ore. I expect to determine the identity of the present owners to ascertain whether or not suitable arrangements might be made to reopen the mine. It would be very useful to review old Inspiration data on the property. Do you believe the information, particularly stoping records and assays, might be made available for review?

I was interested to learn that Inspiration's Sanchez Prospect might be open for an option for additional exploration of ore possibilities and possible acquisition. As you know, during the past several years I have acted as a geological consultant for several large organizations, both within the mining community and without, who have expressed interest in any prospect I thought would warrant it. The Sanchez Prospect might be worthy of close consideration after examination of the recent data obtained through Inspiration's exploration.

I would be most interested to know the status of the Sanchez Prospect in regard to recent investigation by other mining companies, and to have a general outline of the terms upon which an option for future exploration might be arranged. This would necessarily involve Inspiration's future commitments on the property, and any other obligations and ownership interests that might be involved.

I am returning to Salt Lake City this afternoon, and I hope you will have an opportunity to write me there in the near future.

With best regards, and hopes that you will recover rapidly from your recent operation

Sincerely yours,

Roland B. Mulchay

FORM 665 6-7-57 20M

ASHARTAN MINE

Sample Tag

DATE 6/12/62

WORKING Grab sample of ore (?) pile at shaft to east; fragmental vein material, abund SiO_2 cementing alt. andesite(?) frag; ~1% xls in vugs; dk. grey-black specks Ag_2S (?)

№ 56620

Run For

Au (Ag) Pb Zn Cu (SiO_2) 90.8%

5.28 oz/ton

THE ANACONDA COMPANY
EXPLORATION DEPARTMENT

FORM 665 6-7-57 20M

Near Duncan MINE

Sample Tag

DATE 6/12/62

WORKING Concentrates from mill NW of Duncan; high grade CaF_2 ?

№ 56621

Run For

Au Ag Pb Zn Cu (CaF_2) 91.20%

SiO_2 3.90%
$CaCO_3$ 2.50%

THE ANACONDA COMPANY
EXPLORATION DEPARTMENT

FORM 665 6-7-57 20M

Near Duncan MINE

Sample Tag

DATE 6/12/62

WORKING "Ore" bin at mill NW of Duncan

№ 56622

Run For

(Au) (Ag) Pb Zn Cu (CaF_2) tr

tr tr

THE ANACONDA COMPANY
EXPLORATION DEPARTMENT

LRG/sr(X-2)6-8-66

STATE OF ARIZONA, County of Greenlee ss. Fee $2.25 No. 115-7
I hereby certify that this instrument was filed for record
at request of Greenlee Title Co. June 22 19 66 at 3:45 P.M.
in Dkt. No. 15 Page 265-267 Witness my hand and official seal.
By Lori Ann L. Deputy Recorder. Elsie Hall County Recorder.

RETURN TO-
AMER. TITLE INS. & TRUST CO.
101 W. Monroe St.
Phoenix, Arizona 85003

Trust 5182
Escrow 3

QUIT CLAIM DEED

THIS QUIT CLAIM DEED is made and executed to vest title with the Grantee herein, as Trustee, and to recite the events leading up to the conveyance of the property hereinafter described.

RECITALS:

1. On April 22, 1942, the legal title to the property herein conveyed, to-wit: the HOMESTEAD patented mining claim, was vested in the Ash Peak Mines Company, a Nevada corporation.

2. On April 22, 1942, a special meeting of the Stockholders of Ash Peak Mines Company was held and in the course of said meeting, it was resolved that Ash Peak Mines Company convey all of its property, both real and personal, to its President and sole stockholder, Arthur Murphy. Said resolution authorized the President or Vice-President and Secretary to execute, on behalf of Ash Peak Mines Company, the necessary deeds and bills of sale concerning the assets of the corporation. At that time, Arthur Murphy was President of the corporation, Alice Campbell was Vice-President and Blaine B. Shimmel was Secretary.

3. On April 24, 1942, a Deed was executed wherein the Grantor was Ash Peak Mines Company and the Grantee was Arthur Murphy. Alice Campbell executed said Deed as Vice-President of Ash Peak Mines Company. Said Deed included all of the patented mining claims owned by the corporation in Greenlee County, Arizona, except for the HOMESTEAD patented mining claim, which was inadvertently omitted from said Deed. Said Deed was recorded in the office of the County Recorder of Greenlee County, State of Arizona, in Book 3 of Mining Deeds, at pages 89-90 thereof.

4. On or about the 19th day of November, 1945, the said Arthur Murphy died, testate. The Will of Arthur Murphy (sometimes known as Arthur Murphy, Jr.), deceased, was probated in the Superior Court of the State of Arizona in and for the County

of Maricopa under Case No. 20178. Among the assets inventoried in said estate was the HOMESTEAD patented mining claim.

5. On January 7, 1947, by Decree of Distribution in the Arthur Murphy estate, the HOMESTEAD mining claim, among others, was distributed to Phoenix Title & Trust Company, a corporation, as Trustee, to be held under the Testamentary Trust created by Arthur Murphy's Will.

6. On January 16, 1962, a Decree of Distribution of Trust Residue was filed by Phoenix Title & Trust Company, as Trustee, with the Clerk of the Superior Court of the State of Arizona in and for Maricopa County. That Decree distributed the HOMESTEAD patented mining claim, among others, to the residuary devisees as follows:

One-third (1/3) to AILEEN OSBORN, formerly Aileen Murphy;

One-third (1/3) to PATRICIA MURPHY;

One-ninth (1/9) to FRANK R. WILLIAMS, JR.;

One-ninth (1/9) to MRS. JEANNETTE K. ROSS, formerly Jeannette K. Williams;

One-ninth (1/9) to MARGARET E. WILLIAMS.

Said Decree of Distribution of Trust Residue was recorded in Docket 10 at pages 236-239 in the records of the County Recorder of Greenlee County, Arizona.

7. On April 3, 1962, Patricia Murphy died, testate. Her Will was probated in the Superior Court of the State of Arizona in and for the County of Greenlee, under Case No. 1834.

8. On March 21, 1966, a Decree Settling First and Final Account and Report and Decree of Distribution under Patricia Murphy's estate was entered with the Clerk of the Superior Court of the State of Arizona in and for the County of Greenlee. That Decree distributed the HOMESTEAD patented mining claim, among others, to Mrs. William Osborn (Aileen Osborn) as the sole beneficiary of the decedent's Will. Said Decree was recorded on

March 29, 1966, in Docket 18 at pages 345-348 of the records of the County Recorder of Greenlee County, Arizona.

9. On April 16, 1966, Aileen Osborn, Jeannette K. Geiser (formerly Jeannette K. Ross), Margaret Edith Corwin (formerly Margaret E. Williams), and Frank R. Williams, Jr. executed a Warranty Deed to Arizona Title Insurance & Trust Company, as Trustee, conveying, among others, the HOMESTEAD patented mining claim. Said Warranty Deed has been delivered to said Trustee, but has not been recorded with the County Recorder's Office of Greenlee County, Arizona.

10. The only surviving officer of Ash Peak Mines Company is Alice Campbell, who, on behalf of said corporation, is the signatory of this Deed.

NOW, THEREFORE, for the consideration of Ten Dollars ($10.00) and in view of the premises above recited, ASH PEAK MINES COMPANY, a Nevada corporation, hereby Quit Claims to ARIZONA TITLE INSURANCE & TRUST COMPANY, as Trustee, all right, title or interest in the following real property situated in Greenlee County, Arizona:

That certain patented lode mining claim, named and designated:

HOMESTEAD,

United States Patent No. 783751, which is recorded in the office of the County Recorder of Greenlee County, Arizona, in Book One of Patents at pages 277-281.

DATED this 9th day of June, 1966.

ASH PEAK MINES COMPANY

By Alice Campbell
Alice Campbell, Vice-President

STATE OF ARIZONA)
) ss.
County of Maricopa)

SUBSCRIBED AND SWORN TO before me this 23 day of June, 1966, by ALICE CAMPBELL.

Notary Public

My Commission Expires:
4-23-67

BOOK 18 PAGE 708

STATE OF ARIZONA } ss.
County of Greenlee }

I hereby certify that the within instrument was filed and recorded in Book 18 of Deeds, page 708 - 710 and indexed in deed records of said County.

Fee Non 1.50

at the request of Arizona Title Co.

Witness my hand and official seal.

When recorded mail to:

ARIZONA TITLE INSURANCE & TRUST CO.
102 W. Monroe Street
Phoenix, Arizona 85003

County Recorder

By Deputy Recorder

Compared
Photostated
Fee .50

Title 5182
Order No.

WARRANTY DEED

For the consideration of Ten and 00/100 Dollars, and other valuable considerations, I or we, ALEEN OSBORN, JEANETTE R. GEISER (formerly JEANETTE R. ROSS), MARGARET EDITH CORTEN (formerly MARGARET E. WILLIAMS) and FRANK R. WILLIAMS, JR., the GRANTORS,

do hereby convey to

ARIZONA TITLE INSURANCE AND TRUST COMPANY, an Arizona corporation, as Trustee, the GRANTEE,

the following described real property situate in Greenlee County, Arizona:

Those certain patented lode mining claims named and designated:

GREAT EASTERN
COMMERCE
FRACTION
SUMMIT
HOMESTEAD

and those certain patented mill-site claims named and designated COMMERCE and SUMMIT, United States Patent No. 783751, which is recorded in the Office of the County Recorder of Greenlee County, Arizona, in Book 1 of Patents, at Pages 277 to 281.

CONSIDERATION LESS THAN $100.00
NO REVENUE STAMPS REQUIRED

And the Grantors do warrant the title against all persons whomsoever, subject to the matters above set forth.

Dated this 16th day of April, 1966.

Aleen Osborn

Jeanette R. Geiser

Margaret Edith Corten

Frank R. Williams, Jr.

STATE OF ARIZONA } ss.
County of LOS ANGELES } CALIFORNIA

This instrument was acknowledged before me this 18 day of April, 1966, by the Grantors Aleen Osborn, Jeanette R. Geiser, Margaret Edith Corten and Frank R. Williams, Jr.

Bob Kaub
BOB KAUB Notary Public

My commission will expire: My Commission Expires April 27, 1967

STATE OF ARIZONA } ss.
County of PIMA }

This instrument was acknowledged before me this 16 day of April, 1966, by the Grantor Jeanette R. Geiser.

Notary Public

My commission will expire: June 24, 1970

Dated this 16th day of April, 1966

STATE OF CALIFORNIA)
) ss.
County of RIVERSIDE)

This instrument was acknowledged before me this 18th day of April, 1966 by the Grantors, Margaret Edith Corwin

CATHERINE E. HARRIS
NOTARY PUBLIC
RIVERSIDE COUNTY
CALIFORNIA
My Commission Expires February 15, 1969

Catherine E. Harris
Notary Public
Catherine E. Harris

My Commission will expire

STATE OF CALIFORNIA)
) ss.
County of LOS ANGELES)

This instrument was acknowledged before me this 19 day of APRIL 1966 by the Grantors, FRANK R. WILLIAMS, JR.

Notary Public

My Commission will expire
CHARLES [illegible]
My Commission Expires [illegible] 14, 1967

LRC/ed(3)-5/3/66

RETURN TO:
ARIZ. TITLE INS. & TRUST CO.
101 W. Monroe St.
Phoenix, Arizona 85003

Trust 5182

DOK. # 18 PAGE 710

MEMORANDUM OF LEASE FOR RECORDING

MEMORANDUM OF AGREEMENT made the 2nd day of MAY, 1966, between ARIZONA TITLE INSURANCE & TRUST COMPANY, an Arizona corporation, as Trustee, hereinafter called "Lessor," and ROBERT H. SAYRE, JR., A. GEORGE SETTER, and GEORGE E. MOREHOUSE, hereinafter called "Lessees."

WHEREAS, Lessor and Lessees did on the 2nd of May, 1966, make, execute and deliver a certain Lease, wherein and whereby Lessor leased to Lessees certain patented lode mining claims and patented mill-site claims situate in Greenlee County, Arizona, more particularly described as follows:

Great Eastern (lode claim)
Commerce (lode claim)
Fraction (lode claim)
Summit (lode claim)
Homestead (lode claim)
Commerce (mill-site)
Summit (mill-site)

United States Patent No. 783751, which is recorded in the Office of the County Recorder of Greenlee County, Arizona, in Book 1 of Patents at pages 277 to 281.

NOW THIS AGREEMENT WITNESSETH that Lessor has leased and hereby does lease to Lessees the mining property described above upon the terms and covenants contained in said Lease.

IN WITNESS WHEREOF, Lessor and Lessees have signed this Memorandum of Lease as of the day and year first above written.

LESSOR: ARIZONA TITLE INSURANCE & TRUST CO.,
as Trustee

By _____

ATTEST:

_____

LESSEES:

_____
Robert H. Sayre, Jr.

_____
George E. Morehouse

LAW OFFICES
COOK, PRESTON & SARGEANT
SUITE 1903 - THE TOWNEHOUSE - 100 WEST CLARENDON
PHOENIX, ARIZONA 85013

A. George Setter

STATE OF ARIZONA)
) ss.
County of Maricopa)

On this the 15 day of June, 1966, before me, the undersigned officer, personally appeared Evelyn L. King, who acknowledged himself to be the Vice President of ARIZONA TITLE INSURANCE & TRUST CO., a corporation, and that he, as such Officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation, as Trustee, by himself as Vice President.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

Notary Public

My Commission Expires: 3/31/70

STATE OF Colorado)
) ss.
County of Mesa)

On this the 6th day of May, 1966, before me, the undersigned officer, personally appeared ROBERT H. SAYRE, JR., known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

Notary Public

My Commission Expires: My Commission Expires Sept. 14, 1968

STATE OF Colorado)
) ss.
County of Mesa)

On this the 1st day of May, 1966, before me, the undersigned officer, personally appeared A. GEORGE SETTER, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

Notary Public

My Commission Expires: My Commission expires Sept. 14, 1968

LAW OFFICES
COOK, PRESTON & SARGEANT
SUITE 1005 - THE TOWNHOUSE - 100 WEST CLARENDON
PHOENIX, ARIZONA 85013

STATE OF Colorado)
) ss.
County of Mesa)

On this the 16th day of March, 1966, before me, the undersigned officer, personally appeared GEORGE E. MOREHOUSE, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

Notary Public

My Commission Expires:

My Commission expires Sept 14 1968

STATE OF ARIZONA, County of Greenlee ss. Fee $ 3.25 No. 1755
I hereby certify that this instrument was filed for record at request of Cornelia Fritts Co., June 22 19 66 at 4:00 P.M. in Dkt. No. 18 Page 710-712 Witness my hand and official seal.

By Opal Hunt
Deputy Recorder

County Recorder

LAW OFFICES
COOK, PRESTON & BARGEANT
SUITE 1003 - THE TOWNEHOUSE - 100 WEST CLARENDON
PHOENIX, ARIZONA 85013

ARIZ TITLE INS & TRUST CO

101 W MONROE ST

PHOENIX AZ 85003

LAND CL	%	FULL CASH VALUE
66	180	3070

IMPROVEMENTS CL	%	FULL CASH VALUE

DEED REF. DKT	PG

TR DATE MO	DA	YR
00	00	00

PARCEL NUMBER CO	BOOK	MAP	PARCEL	AREA CODE	E/P
06	400	14	004	0200	

SPECIAL DISTRICT CODE	UNITS

CHANGE NOTICE

APPROVED BY (AUTHOR. SIG.)

DATE APPROVED

CHANGE REQ. BY

DATE REQUESTED

TWP	RGE	SEC
10	8S	30E

GREAT EASTERN, FRACTION, SUMMIT, HOMESTEAD
THROUGH SECS 10 & 11 T8S R30E 61.396 ACRES M/L

ACRES
61.39

PRINT DATE
062074

PERSONAL PROPERTY CL	%	NUMBER	FULL C. VALUE

REASON FOR CHANGE

- 1 TRANSFER, ADDRESS OR LEGAL CHANGE
- 2 SPLIT (SHOW NUMBERS BELOW)
- 3 ASSESSMENT RATIO CHANGE
- 4 NEW ITEM
- 5 Addition to, or Removal of Improvement
- 6 REVALUE OR RECLASSIFY
- 7 DEPRECIATION
- 8 Board of Equal. ☐ Board of Appeals
- 9 CANCEL
- 10 OTHER

ASSESSED	FULL CASH

EXEMPTIONS WIDOW	VET.	MERCHANDISE

TOTAL ASSESSED VALUE
553

TOTAL FULL CASH VALUE
3070

DISAPPROVED BY

AUTHOR. SIGNATURE

DATE DISAPPROVED

3/24/75

ARIZ TITLE INS & TRUST CO

101 W MONROE ST

PHOENIX AZ 85003

LAND		
CL	%	FULL CASH VALUE
66	180	450

IMPROVEMENTS		
CL	%	FULL CASH VALUE

DEED REF.	
DKT	PG

TR DATE		
MO	DA	YR
00	00	00

PARCEL NUMBER					
CO.	BOOK	MAP	PARCEL	AREA CODE	E/P
06	400	14	001	0200	

CODE	UNITS	SPECIAL DISTRICT

CHANGE NOTICE

APPROVED BY (AUTHOR. SIG.)

DATE APPROVED

CHANGE REQ BY

DATE REQUESTED

ACRES
9.00

PRINT DATE
062074

PERSONAL PROPERTY			
CL	%	NUMBER	FULL C. VALUE

TWP	RGE	LOT
2	8S	30E

COMMERCE M S & SUMMIT M S SEC 2 T8S R30E

REASON FOR CHANGE

- 1 TRANSFER, ADDRESS OR LEGAL CHANGE
- 2 SPLIT (SHOW NUMBERS BELOW)
- 3 ASSESSMENT RATIO CHANGE
- 4 NEW ITEM
- 5 Addition to, or Removal of Improvement
- 6 REVALUE OR RECLASSIFY
- 7 DEPRECIATION
- 8 Board of Equal. ☐ Board of Appeals
- 9 CANCEL
- 10 OTHER

ASSESSED	FULL CASH

EXEMPTIONS		
WIDOW	VET	MERCHANDISE

TOTAL ASSESSED VALUE
81

TOTAL FULL CASH VALUE
450

DISAPPROVED BY AUTHOR. SIGNATURE

DATE DISAPPROVED

ASH PEAK MINE

PRESCOTT ARIZONA

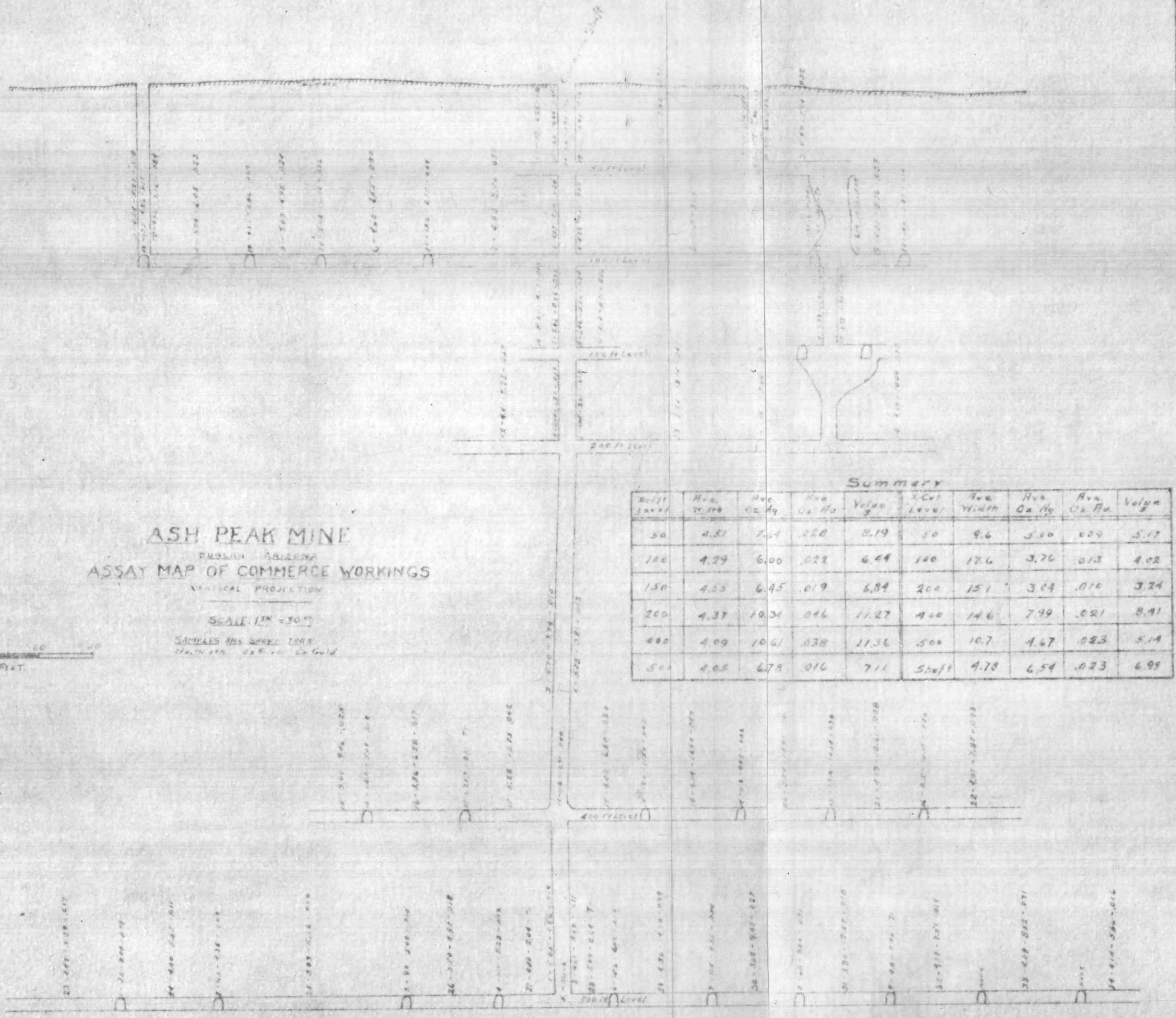
ASSAY MAP OF COMMERCE WORKINGS

VERTICAL PROJECTION

SCALE 1IN = 30FT

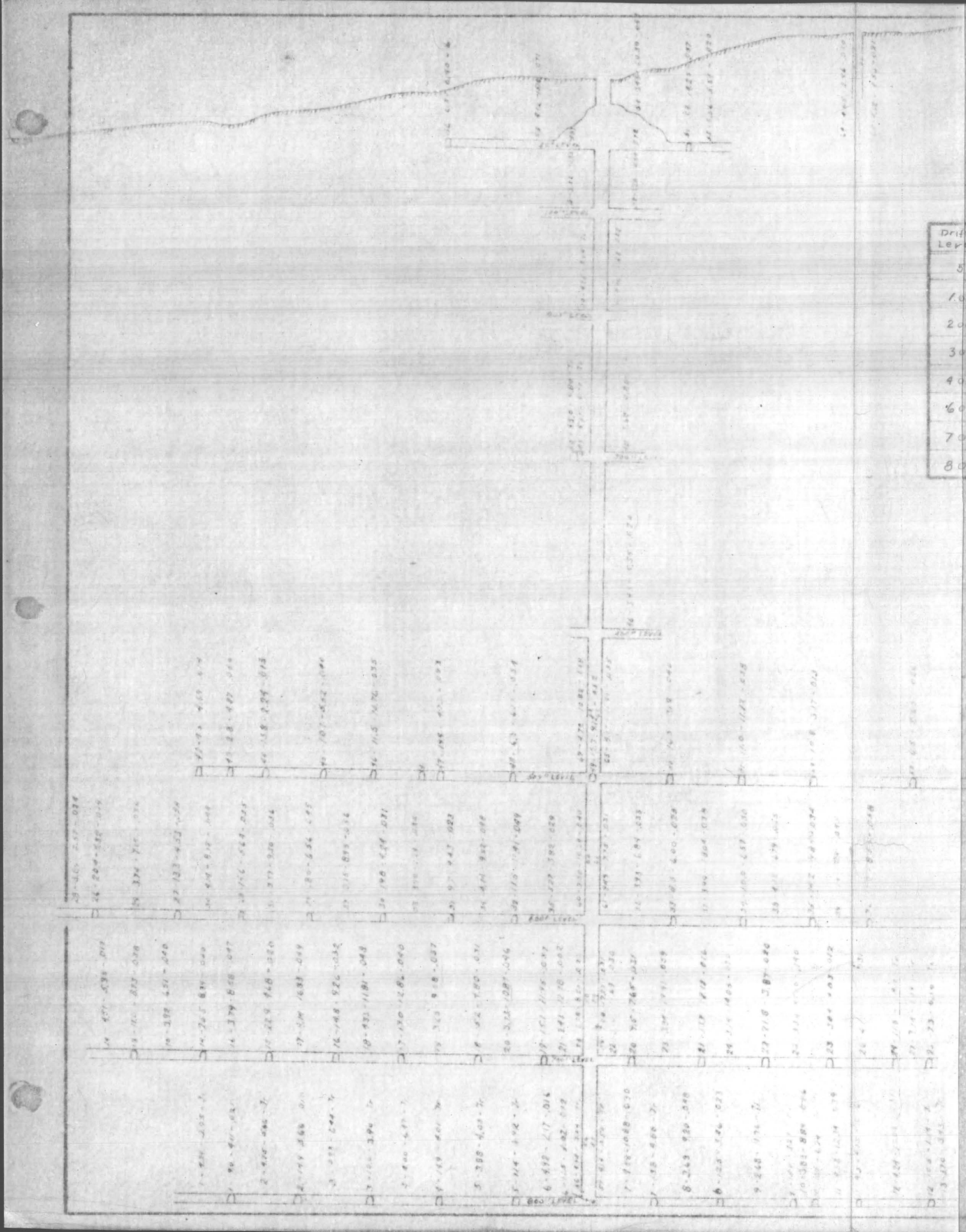
SAMPLES ARE SHOWN THUS
Width in ft. Oz Silver Oz Gold

0 30 60 90
Plat



Summary

Drift Level	Ave. Width	Ave Oz Ag	Ave Oz Au	Volume	% Cut Level	Ave Width	Ave Oz Ag	Ave Oz Au	Volume
50	4.51	7.64	.028	8.19	50	9.6	5.00	.009	5.17
100	4.29	6.00	.022	6.44	100	17.6	3.76	.013	4.02
150	4.53	6.45	.019	6.84	200	15.1	3.09	.010	3.24
200	4.37	10.34	.046	11.27	400	14.6	7.99	.021	8.41
400	4.09	10.61	.038	11.36	500	10.7	4.67	.023	5.14
500	4.05	6.78	.016	7.11	Shaft	4.78	6.54	.023	6.99



Summary

Drift Level	Ave Width	Ave Oz Ag	Ave Oz Au	Value $	X-cut Level	Ave Width	Ave Oz Ag	Ave Oz Au	Value
50	4.24	13.46	.0441	14.34	50	6.20	6.64	.0115	7.34
100	3.35	10.48	.0349	11.17	100	5.00	0.80	Tr.	0.80
200	4.66	4.63	.0185	5.48	300	10.19	6.36	.0242	6.96
300	4.23	0.82	Tr.	.08K	600	12.63	5.81	.0279	6.67
400	3.43	5.56	.0236	6.02	700	16.28	7.28	.0308	7.90
600	3.32	8.21	.0310	8.83	800	12.24	3.77	.0060	3.89
700	3.74	11.72	.0474	12.67	Shaft	3.80	8.05	.0256	8.56
800	4.17	7.03	.0144	7.32	Hole	4.64	3.84	.0161	4.16

ASH PEAK MINE

ASSAY MAP OF SHAMROCK WORKINGS

SCALE 1" = 20'

BOOK 400 , MAP 14

SUMMIT M.S. COMMENCE R.R.S.
3076-B 3076-B

2 43.83 | 1 43.87 | 4 43.93 | 3 44.04 | 2 44.14 | 1 44.25 | 4 44.36 | 3 39.85 | 2 39.52 | 1 44.74 | 4 44.69 | 3 44.47 | 2 44.25 | 1 44.03

3 | 2 | 1

6 39.84 | 5 38.86 | 1084/288 617.44

HOMESTEAD 3076-A

8 11.61 | 7 45.73 | 5 37.09

SUMMIT 3076-A | FRACTION 3076-A | COMMERCE 3076-A | GREAT EASTERN 3076-A

1 38.08 | 2 19.02 | 1 29.27 | 3 31.55 | 4 30.34

(MAP 16)

10 | 11 | 12

GRAHAM COUNTY

Greenlee County

To Duncan

15 | 14 | 13

(MAP 15)

3/24/75

GREENLEE COUNTY
ASSESSOR
1963
T.8S., R.30E.
Scale 1"= 1320'