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The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

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PRINTED: 03/22/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: MOSSBACK GROUP

ALTERNATE NAMES:
MOSSBACK EXTENSION MINE
GOLD REED MINING CO.
IDA MINE
ALICE B
GLADYS MINE

MOHAVE COUNTY MILS NUMBER: 54B

LOCATION: TOWNSHIP 20 N RANGE 20 W SECTION 28 QUARTER NE
LATITUDE: N 35DEG 05MIN 48SEC LONGITUDE: W 114DEG 24MIN 31SEC
TOPO MAP NAME: OATMAN - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
GOLD LODE
SILVER
BERYLLIUM
FLUORINE FLUORSPAR
QUARTZ CRYSTAL
COPPER
LEAD

BIBLIOGRAPHY:
ADMMR MOSSBACK GROUP FILE
LAUSEN, "GEO & ORE DPSTS OF OATMAN & KTHRN DIST, AZ" AZBM BULL 131, P 12,13; 1931
RANSOME, F.L., "GEO OF OATMAN GOLD DIST, AZ" USGS BULL 743, MAP, P. 30-50
WILSON, E.D. ET AL "AZ LODE GOLD MNS & GOLD MNG" AZBM BULL 137, P 168-170; 1934
ADMMR UNITED EASTERN FILE, HAFT & COLWELL MAP
SCHRADER, F.C. "MIN DPSTS OF CRBT RNG, BLCK MTNS & GRND WSH CLFS" USGS BULL 397 P 168-70
GARDNER, E.D. "GOLD MNG & MLNG IN BLCK MTNS, WSTRN MOH. CO." USBM IC 6901, P 33-36; 1936
ADMMR AZ IND MIN RPT NO. 2, P 41,44; 1978
MOORE, R.T., "MIN & WTR RES OF AZ" AZBM BULL 180, P. 107; 1969
AZ MNG JNL, VOL 3, NO. 1, 6/19, P 72-73

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CONTINUED ON NEXT PAGE

CONTINUATION OF MOSSBACK GROUP

RABB, DAVID "REC OF METAL VLS PRIOR TO RECLAM OF MND AREAS IN THE SW" (ADMMR GEOLOGY FILE)
SCHRADER, R.C. "MIN DPSTS OF CRBT RNG, BLCK MTN & GRND WSH CLFS, MOH CO" USGS BULL 340, P 77-78; 1907
WARNER, L.A. "OCCUR OF NONPEGMATITE BERYL IN US" USGS PP 318, P 102-103; 1959
USGS GARNET MTN QUAD
USGS PP 1361, P. 159, LOC. 900, 902

09/12/85

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ALTERNATE NAMES:
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MOSSBACK EXTENSION MINE
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ALICE B
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GOLD REED MINING CO.

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LATITUDE:N 35DEG 05MIN 48SEC LONGITUDE:W 108DEG 24MIN 31SEC
TOPO MAP NAME: OATMAN - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
GOLD-(M)LODE-PRIMARY
SILVER-COPRODUCT
BERYLLIUM-BYPRODUCT
FLUORINE-(M)FLOURSPAR-BYPROD.
QUARTZ CRYSTAL-BYPRODUCT

BIBLIOGRAPHY:

LAUSEN, "GEOLOGY & ORE DEP. OF OATMAN & KATHE RINE DIST, AZ" AZBM BULL 131, P 12,31; 1931
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RANSOME, F.L., 'GEOLOGY OF THE OATMAN GOLD DI ST., AZ' USGS BULL 743, MAP, P. 30-50
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ADMMR MOSSBACK GROUP MINE FILE
SCHRADER, F.C., "MINERAL DEPOSITS OF THE CERB AT RANGE, BLACK MTNS, & GRAND WASH CLIFF, MO HAVE CO., AZ" 1909; USGS BULL 397, P.168-170
ADMMR UNITED EASTERN FILE,HAFF & COLWELL MAP
GARDNER,E.D., "GOLD MINING & MILLING IN BLACK MTNS, WESTERN MOH. CO." 1936,IC 6901 P.33-36
ELEVATORSKI, E.A., ADMR AZ. IND. MIN. MINERAL REPORT NO. 2, P. 41 & 44
MOORE, R.T., AZBM BULL. 180, P. 107 "MINERAL AND WATER RESOURCES OF ARIZONA" 1969
RABB, DAVID "RECOVERY OF METAL VALUES PRIOR T O RECLAMATION OF MINED AREAS IN THE SW" (ADM MR GEOLOGY FILE)
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Finger Butte
Mossback Mine
Wash
Mossback
Grapevine
Silver Creek Spring
Spring
Hardy Mtn
Silver
Negrohead
JEEP
TRAIL
PIPELINE
USMM M2
USLM 2670
BM 2028
BM 2282
BM 2396
20
21
22
27
28
29
32
33
34
5
4
3
Mossback
T20N R20W Sec 28
NE

Mossback (p)

NAME: MOSSBACK COUNTY: MOHAVE

T 20N R 20 W SEC. 28 E 12400 DISTRICT: SAN FRANCISCO
OATMAN

Oatman 7½

Mineralization: Strike NW dip 80° SW.

Au, Be

Geology:

Type Operation: 700' Shaft

Production:

References: USGS 743

USGS 397 P 165

ABM 137 P. 98

Mohave Cty Card File

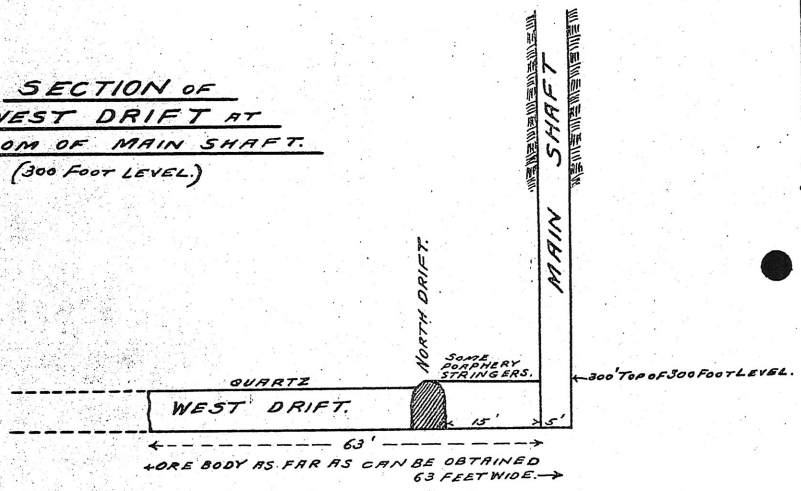
Moss Back Mine 5 M. N.E. Oatman, Ariz.
7-29-38

Report by U.V. and other Eng.
60,000 - 70,000 Tons above 500 level
Average 0.19 Au.
Held by Luzzon and Weeks
$120,000.00 10% Roy. July 1942
Shaft 700 ft. Dev. at Dept. May produce large tonnage of higher grade.

- -

SECTION OF WEST DRIFT AT BOTTOM OF MAIN SHAFT.

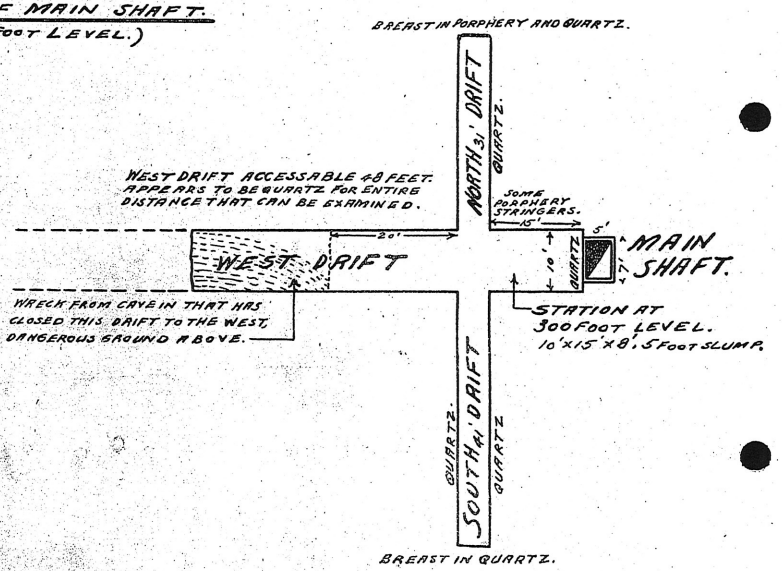
(300 FOOT LEVEL.)



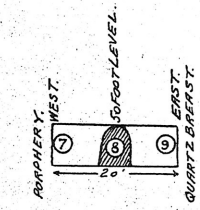
PLAN OF THE NORTH, SOUTH AND WEST DRIFTS.

BOTTOM OF MAIN SHAFT.

(300 FOOT LEVEL.)



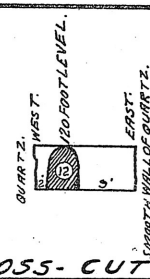
JUNE, 1917.
S. B. REEVE. C.E.
LOS ANGELES, CAL.



CROSS-CUT 20 FEET WIDE.

ACROSS ORE BODY 18 FT WIDE.

(AT NUMBER 8.)



CROSS-CUT

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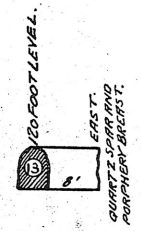
(AT NUMBER 12.)



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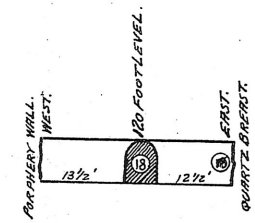

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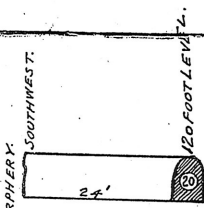
ORE BODY 25 FEET WIDE.

(AT NUMBER 18.)

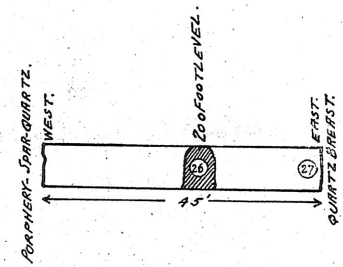
CROSS-CUT.

(AT NUMBER 17.)



CROSS-CUT TO SOUTH-WEST.

(AT NUMBER 20.)



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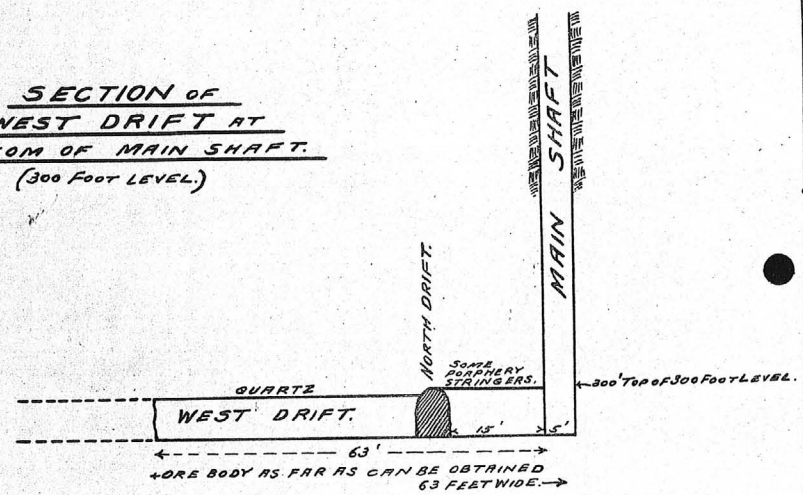
(300 FOOT LEVEL.)



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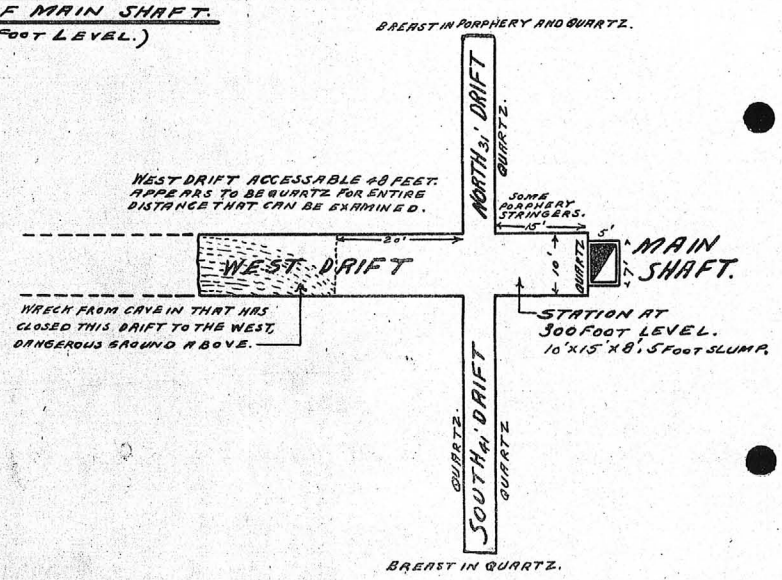

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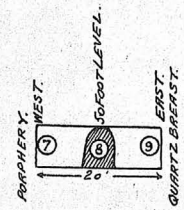

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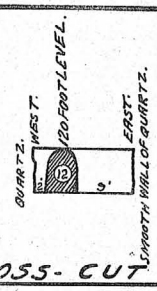

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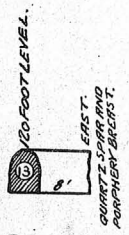

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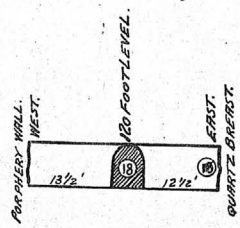

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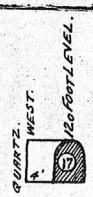
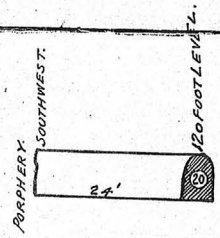


CROSS-CUT.

(AT NUMBER 17.)



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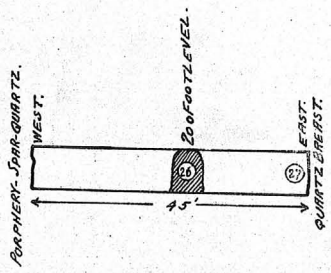

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Moss Back Mine 5 M. N.E. Oatman, Ariz.
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Report by U.V. and other Eng.
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Shaft 700 ft. Dev. at Dept. May produce large tonnage of higher grade.

- -

AALENIAN RESOURCES LTD.

DRILL PROGRAM RESUMED ON ARIZONA GOLD PROPERTY - Garry L.Anselmo, president and managing director of Aalenian Resources Ltd., has reported that drill testing of the company's 75% interest Mossback gold property resumed July 28,1975. The property is located 29 miles southwest of Kingman, Arizona,and 88 miles southeast of Los Vegas, Nevada. Work to date by Aalenian has included silt and surface sampling. The silt sampling survey located an anomalous gold zone over a strike length of 4,000 feet and a minimum 200 foot width. One surface sample from the anomalous area, where mineralization is exposed, assayed 1.46 oz. gold per ton across 1.5 feet. The Mossback property has been subjected to previous exploration programs several years ago with some encouraging grades being encountered. In 1907 a 330 foot shaft was sunk which was extended to 700 feet deep in 1919 together with a number of production levels. By 1934 a concentrator was erected and some production was recorded. In a May 7,1975, property report,W.G.Stevenson,P.Eng., pointed out that there are three vein systems on the Mossback having widths of 8 to 25 feet and grades from 0.29 to 0.64 oz. gold per ton. He also recorded a surface sample of 0.72 oz. gold per ton across three feet.

B.C.ATTORNEY GENERAL CORPORATE & FINANCIAL DIVISION - WEEKLY SUMMARY OF RULINGS

EXCERPTS RE WEEK ENDING 25JULY75 - The Superintendent of Brokers rescinded his order to cease trading in shares of Consolidated Cinola Mines Ltd.

The Superintendent ruled that the following issue/transfer/sale of shs. would not be trades in course of primary distribution to the public and need not be registered: Issue of 200,000 shares of Rio Sierra Development Ltd. to Leland Olheiser. Transfer of 7,500 shares of Payfair Industries Ltd. from Frank Bush to Ronald Cooper, Sr. Sale of 237,541 shs. of Cima Resources Limited by Cyprus Anvil Mining Corporation to Wm. B.Warke.

The Superintendent consented to the transfer within escrow of 53,742 shs. of Calox Industries Ltd. from Stanley E.Adams to 14 persons, the largest number being 9,000 to Denis C.Clarke.

CONSOLIDATED COLUMBIA RIVER MINES LTD.

NEW DRILL RESULTS - M.M.Pardek, president of Consolidated Columbia River Mines Ltd., has reported that the results of recent underground drilling on the silver, lead and zinc property at Golden, B.C., show the following:

Hole No.	Interval	Length	Silver oz/Ton	Lead %	Zinc %
S-6-75	31 - 36	5.0 feet	5.40	4.90	7.50
	36 - 41	5.0 feet	2.60	1.90	3.55
	41 - 46	5.0 feet	1.20	0.35	0.65
	46 - 51	5.0 feet	2.20	0.70	3.95
	51 - 57	6.0 feet	2.50	0.70	2.85
	57 - 62	5.0 feet	2.00	2.05	2.70
	62 - 67	5.0 feet	1.90	0.50	1.60
	67 - 72	5.0 feet	1.30	0.90	1.85
	72 - 77	5.0 feet	1.60	0.35	1.65

Weighted average grade: 2.80 oz.silver/ton; 1.36% lead; 2.86% zinc over 46 feet.

NOTE: From 31 - 36 feet is vein and stringers. Balance of intersection in replacement type mineralization.

124 - 131 ft. = 7.0 ft. grading 5.30 oz. silver/ton; 3.15% lead; 0.05% zinc.
166 - 168.5ft.= 2.5 ft. grading 4.20 oz. silver/ton; 0.05% zinc.

This hole was drilled at 60 degrees in the same direction as hole #S-1 drilled at 39 degrees and is passing through the footwall of the Nelson Replacement Ore Zone extending the ore zone slightly.

FOR THE RECORD

Tibeck Asbestos Corporation Ltd. amendments to the 28Nov74 prospectus reviewed in GCNL 9(75) show that directors B.L.Hatch,president; C.P.Hatch,secretary, and R.J.Smith have been joined on the Board by C.P.L[illegible]

REPORT CONCERNING THE MOSSBACK GROUP OF MINING CLAIMS AT OATMAN, MOHAVE COUNTY, ARIZONA.

FOREWORD

The Mossback group of five patented mines are situated in what is now known as the Oatman Mining District, formerly known as the Gold Road District in the Northwestern part of Mohave County, Arizona. This gold producing area in which a number of new and important strikes have been made within the two years last past, is located in the Black Mountains, sometimes called the River Range trending northwest to southeast, the extreme heighth of the mountains being 5000 feet with an average distance of 14 miles east from Colorado River.

The U. S. Geological Bulletin 397, Page 34, referring to this district states that the field is one of tertiary volcanic lavas; the rocks consist of andesites, trachytes, rhyolites, latites and basalts, which lie in broad superimposed sheets or flows with intercalated beds of ash tuffa and breccia; in extent the district measures seven by ten miles upon the west flank of the Black Range with all drainage into the Colorado River.

The mineralized zones are traversed by rhyolite dykes in connection with which nearly all of the development has proceeded, the veins in a majority of the mines opened thus far, being found in close proximity to the dykes, although recent discovery seems to indicate the existence of paying fissures distant from any dyke material. Characteristic of the dykes and veins are their great width and length, some being from ten to two hundred feet in width, their outcrops extending over hill and valley like a veritable Chinese wall. The vein filling is largely quartz and spar,

large masses of oxidized material, crushed quartz and pebbles, akin to the conglomerate of the South African reef "blanket" or "banquet" coming in with depth, the oxidization apparently becoming more marked as depth is gained. Nearly all of the dykes and veins are capped and it is necessary to carry the working below the capping to reach ore of the best grade. The depth at which ore of the best grade has been so far discovered in the mines that have already reached the stage of productive development ranges from 450 feet to 550 feet and it is the consensus of opinion of the mining operators of this district that no mines can reach the maximum of pay ore production in this district under 500 feet in depth. It is a matter of general knowledge that all of the mines in this district which are now producing or which have reached pay ore in quantities did not attain this desired result until they had passed the 500 foot level; before this peculiarity, if it may be so called, of this district was generally known some of the properties which are now numbered among the large producers were temporarily abandoned before they had reached the now known depth of the best grade of ore and it remained for later owners of these properties to push them down to the 500 foot depth, when they were rewarded with the present large and continuous producers. That the values continue with depth after the best grade ore has been reached is proven beyond question by the Tom Reed Gold Mine which is located at about the center of this district and is now over 1400 feet in depth with its reserve ores increasing each year and with an average production of around $1,000,000. per annum. The Gold Road Mine is said to have carried its best grade of ores down to the 1200 foot level, and has been continuously producing for many years. The United Eastern Mine cut into its best grade ores at about 500 feet and is now one of the marvels of this district and is said to have

$12,000,000 worth of ore in sight. The Big Jim Mine reached its best grade ore at about 500 feet, and the same is true of the Aztec Mine, and the most recent strike of rich ore at about the 500 foot depth in the Big Jim Mine of this district. It is confidently stated by mining operators of experience in this district that there are practically no blanks but wherever one of these large well defined ledges exists the vein filling at depth will assume the characteristics of large pay chutes of good ore at intervals.

The ores are easily crushed and are free milling, and in most instances the mines carry water sufficient for milling purposes or other water is available.

THE MOSSBACK GROUP

The Mossback Group is composed of Five full length patented claims, three of them upon the Mossback ledge, namely the, "Mossback Mine", "Mossback Extension Mine", and "Alice B.", the"Gladys Mine" which joins the Mossback Extension on the East and the "Ida Mine" which end lines upon the Mossback and is said to include fifteen hundred feet of the "Moss" vein after it intersects the "Mossback" vein, which supposed intersection of these two prominent veins of the district occurring on the ground of the "Mossback Mine" is hereinafter more particularly referred to.

The "Mossback Mine" was originally located in 1860, it is said by some soldiers who were at that time camped at Silver Creek 2½ miles away at a Government camp located there to protect emmigrants following the Frisco trail, from marauding bands of Indians. These soldiers ran an open cut of some 20 feet and then a tunnel through the country rock another 20 feet, at a point about 20 feet down the hill below outcroppings of the ledge, which is said at that point to

have shown surface values; they used black powder and when they struck the casing to the vein matter which is of an exceedingly hard white spar they were unable to break through into the softer vein filling within; the marks of their tools and of their ineffective shots may still be seen in this tunnel. There seems to have been no further effort to work this property until the year 1900 when its present owner located the property, and has during the past 17 years, made the developments which are hereinafter specifically outlined. He is a man of small financial means but with untiring courage and industry, and it may be said to his credit, that during the past 17 years a development work which has cost in the neighborhood of $125,000, has been done upon this property and the depth of 330 feet attained, with considerable drifting and cross cuts.

The Mossback Mines are about 3½ miles northwest of the Gold Road Group of mines and about the same distance northwest from the Tom Reed Group of mines, and mining experts who have carefully followed and studied the Mossback ledge assert it to be the fact, that the Mossback ledge is the one that furnished the values to the above named famous gold producers and is identical with the Tom Reed ledge. A careful examination of the ores from the surface to the 300 foot level of the Mossback mine and a comparison of these ores with those observed in the above named property and a careful following of the Mossback ledge where it can be observed upon the surface leads the writer to the conclusion that the Mossback ledge is the mother lode or parent vein of this district. The altitude of this group is about 2500 feet and they are reached by unusually good roads from Kingman, the county seat of Mohave County, Arizona, which is about 35 miles distant, and from Oatman the most considerable town in northern Mohave County about eight miles distant by wagon road from the Mossback Mine. The main traveled road through what is known as Secret Pass from Oatman northwest to

Union Station and Chloride where the Railroad is reached about 20 miles north, passes across the Mossback group.

The main development work so far done upon this group is upon the Mossback Mine, at a point on a hill, rising above a little valley in which the camp is placed, the spot is an ideal one for a working shaft as the steep side hill immediately below gives an admirable location for a mill with the little valley above mentioned to be used as tailing compounds; the ores reaching the top of the shaft can be carried through treatment processes by gravity.

A Mill site known as the Cottonwood Mill site together with four miners inches of water is owned by this group and is located two and a half miles further east; the water is remarkably soft and pure and the flow perennial, derived from springs issuing from a gigantic tuffa ledge. This water is now conveyed upon the Mossback property by a pipe line of the following dimensions; 6 inch pipe for a distance of ¼ of a mile, thence reduced to 4 inch, 2 inch, 1½ inch and lastly 1 inch pipe; this line furnishes an abundance of water for camp and engine use; one pipe ending at the mouth of the shaft on top of the hill, and a branch line running down the little valley to the camp site. The Mine is said to make 13,500 gallons of water each 24 hours at its present depth, and this amount will probably be increased as depth is gained; the mine water is impregnated with some lime and gypsum and is unfitted for use in boilers or the cooling jackets of gasoline engines. There will be no question of an abundance of the water supply for all purposes connected with mining and milling upon this property, as depth is gained, while the water from the springs can always be relied upon.

THE MOSSBACK VEIN.

The vein is of quartz and lime spar, cross cutting the formation and is classed as a true fissure vein. It is known that in the majority of instances these fissure veins go to a great depth and, as a rule, get richer in values as depth is attained. This is proven true by the workings upon the Tom Reed and the Gold Road Mines hereinbefore mentioned.

The Mossback vein is one of the largest in this entire district and crops out the whole length of the Mossback group showing a surface width of from 40 feet to 250 feet between walls. The walls are of quartz and porphyry. The course of the vein like all others in this district, (with the exception of the Moss vein and a few cross veins hereinafter to be noticed) is northwesterly and southeasterly; the vein dips to the south at an angle of about 85 degrees, and, as depth is attained the vein seems to straighten up and at 270 feet is about perpendicular and from that depth down to the 320 it would seem to dip to the north the same as the Gold Road vein and others in this district. There is a dividing line between the hang wall and the foot wall sections of the vein which causes the vein to appear to have been formed at two different periods. Other veins of quartz and of spar run parallel with the Mossback vein as in the Gold Road property.

DEVELOPMENT

A considerable amount of open cuts, shallow shafts, and tunnels have been run upon the Mossback vein at different intervals, but I shall devote my attention in this report almost exclusively to the main shaft sunk as a prospect working shaft near the north end of the Mossback claim; as stated above, this shaft is well located for extensive development, and well

placed for receiving the water supply from the springs, and for mill site purposes. The shaft seems to have been sunk at the extreme north fringe of a pay ore chute which is touched in the south wall of the shaft at the 20 foot tunnel and reveals its greater values in the south drifts and ore in the east cross-cuts therefrom. The dip of this pay chute appears to be to the south and east on what is now hanging wall side but which below the 270 ft. in depth becomes the foot wall. The shaft is sunk in ore from the surface to the present depth, but the strike of the pay chute being toward the south the writer is of the opinion that the shaft with depth is getting a longer distance from the pay chute; this is stated merely to show that the high values occurring where the pay chute is touched by the south drifts and cross cuts should be also encountered as depth is reached in the shaft by longer drifts driven to the south.

The shaft is well constructed and approximately throughout, 5 x 7 ft. in dimensions; it is well braced by timbers where needed and provided with 4 x 6 skids, a man way and good ladders; the equipment now on the shaft is temporary only having been placed there for the purpose of unwatering the mine. Immediately prior to the time of my examination of the property the mine had been filled with water for 11 years during which time the owner had been handicapped financially and unable to obtain the resources with which to unwater and operate the property. A temporary plant was erected, however, and the mine unwatered, so that I was given an unobstructed view of the underground workings.

* At 20 feet below the top or collar of the shaft, the tunnel hereinbefore referred to as the first work attempted to be done upon this property cuts the shaft. (1). A station

(* The numbers in parenthesis in this report refer to accompanying diagram)

has been cut at this point and the ore shows on the south wall of the shaft ten feet wide (2) and on the north wall the station is 13 feet wide all in ore.(3) At this point the pay chute hereinbefore noticed seems to produce its apex, with a strike. To the south from this station at the 20 foot tunnel the shaft continues down in ore to the 50 foot level where a drift has been run to the north 15 feet,(4); the breast of this drift is at present in quartz and spar.(5) At this 50 foot level a drift has been run south on the ore 15 feet, (6) at which point the ore has been cross-cut both east and west. The west breast of this cross-cut shows a porphyry "horse" or dyke (7) and the ore body extends east from this porphyry in this cross cut a distance of 18 feet. (8) The east breast of this cross cut is in quartz, (9) showing that while 18 feet of ore has been cross-cut on the ledge at this point the ledge still continues further east and the exact width of the ore body at this point cannot be determined from the present development. An average sample taken from this 18 feet of ore body showing in the cross cut assayed $9.09 per ton; this cross cut is 7 ft. high with an average of 5 ft. in width and is all in ore.

The shaft continues to follow the ore at the same uniform depth to the 130 ft. level (10) at which point a drift has been run 115 ft. to the north, (11) at a distance of 48 ft. from the shaft in this north drift a cross cut (12) has been run on the ore 9 ft, to the east and 2 ft. to the west, making, with the width of the drift 15 ft. of ore, at this point both the east and west breasts of this cross-cut are in quartz; at 92 ft. from the shaft in this north drift on the 120 ft. level a cross-cut has been run 8 ft. (13) to the east, the breast of the cross-cut contains quartz with spar and porphyry instrusions. The

breast of the drift itself at 115 ft. north from the shaft (14) at this 120 ft. level is in quartz with porphyry intrusions. A noticeable feature of this 120 ft. level is the west wall (15) or west side of the drift which seems to have followed the division or slip in the ledge hereinbefore noticed; this hanging wall side is smooth as if prepared with a mason's trowel. This wall seems to be of calcite and together with the calcite character of the ores in the upper workings of the mine is replaced with gold bearing silica as depth is reached.

At the 120 ft. level hereinbefore mentioned a drift extends to the south upon the ore 121 feet, (16) 4 ft. from the shaft in this south drift (17) a four foot cross cut on the west wall has been cut showing a full quartz face; 31 ft. from the shaft on this south drift of the 120 ft. level (18) the ledge has been cross cut 13½ feet to the west and 12½ ft. to the east. The ore body here appears to be 25 ft. wide with the breast of the east cross cut still in quartz (19) showing that the extent of the ore body has not been fully developed at this point; the west cross cut at this point seems to be in porphyry.

32 feet from the south wall of the last above described cross-cut a cross cut (20) has been run at an angle almost parallel a distance of 24 feet; it is evident the parties who drove this cross cut followed a stringer to the west with the hope of developing a pay chute in that direction; a study of this mine however, develops the fact that the pay chute has a strike south and east of the shaft in place of west, near the breast of the 121 ft. drift south of the shaft on this 120 ft. level there has been an up-raise (21) and a stope which appears to be about 12 ft. above the top of the drift; the ground here is very loose and has sloughed considerably making it dangerous

to work in without timbering; by crawling through a narrow opening between the top of the drift and the mass of debris (22) a view of the rest of the drift was obtained which appears to be all in quartz; quartz of apparently good quality appears in the top and breast of the stope above mentioned, but owing to the dangerous character of the ground could not be closely examined.

The shaft continues down from the 120 ft. level to the 200 ft. level at a uniform angle; at the 200 ft. level (23) a drift to the north has been run upon the ore a distance of 70 ft. (24) the breast of this drift appears to be quartz with some porphyry intrusions which first show their appearance at 60 ft. from the shaft, but in the breast of this dirft the quartz appears to come in strong; on this same level a drift has been run to the south upon the ore 74 ft. (25), at 24 ft. from the shaft (26) on the south drift a cross cut has been run 50 ft. in length showing ore body at this level to be 45 ft. in width with the breast of the east cross cut (27) still in quartz which reveals that the ore body continues on to the east and the same upon this level as in the level at 120 ft. and the 50 ft. level above noticed; the breast of the drift at 74 ft. south of the shaft is in quartz (28).

From the 200 ft. level the shaft continues straightening gradually until at 272 ft. it is almost a true perpendicular and continues so to the 300 ft. level. (29).

Much difficulty was experienced by the writer in making an examination of the 30 foot level of the Mossback Mine. After two months of bailing and pumping this level was at last cleared of water sufficient to permit an examination; it will be remembered that this mine has not been operated in the lower levels, and has been under water below the 50 foot level for eleven years; a large quantity of mud and slimes has accumulated on the 300 foot level; this has been agravated by a slide of loose earth and rock

that has occurred in the cross cut run directly west of the station; This cross-cut according to the owner's statement. hereto attached, is 217 feet inlength, driven across the ledge, and in that distance the West wall of the ledge had not as yet been encountered, when the work upon this cross cut ceased. This slide which now closes this cross cut at about 50 feet from the entrance to the cross cut, completely cuts off ingress or egress to this cross cut,-many tons of loose rock and earth have fallen from above and the ground is too dangerous to permit excavation, without being protected by suitable timbers. The writer is unable to confirm the owner's statement as to the length of this cross cut, because of the above obstacle.

At the bottom of the shaft which the writer found to be 315 feet in depth, in place of 300 feet, a good station has been cut out of the ore, 10 ft. x 15 ft. x 8 ft. The bottom of the shaft and the station is all in ore; a sump extends down from this station, which is said to have been originally 30 feet deep, but it has filled up with muck and is not about 8 feet below the level of the station; the four inch suction pipe of the pump extends into this sump, and by diligent labor the 315 foot level can be kept reasonably free from water.

To the North of this station on the 300 foot level,a drift has been run upon the ledge and in ore, a distance of 31 feet to the north; a similar drift has been run to the South of the station upon the ore a distance of 45 feet; the breast of each of these drifts is apparantly in ore of good quality; the ores upon this level show an increase of silica over the calcite of the upper levels, and it is evident that the Mossback with depth is proving up the same as the Tom Reed Mine and others in this district, the silica is taking the place of calcite as depth is gained.

The cross cut above referred to shows 64 feet of ore from the East wall of the station west to the slide that has obstructed the cross cut; the east wall of the station is in quartz and the further extent of the ore in that direction cannot be ascertained from the present development, the same as heretofore shown in the east breast of the cross cuts at the 50 ft.,120 ft., and 200 ft., levels, all of which are in ore

OTHER DEVELOPMENTS

At a point about 200 ft. north of the south end line of the Mossback Mine a shaft 40 ft. deep has been sunk upon the ledge which has been cut by tunnel at twenty feet from the collar of the shaft; at the bottom of this shaft a ten ft. cross-cut has been run upon the ore and the ore body at this point appears to be 17 ft. wide; the development at this point while superficially seems to have touched the pay chute mentioned as appearing in the south workings in the main shaft at the north end of the claim as the ore or quartz from the surface down and along the sides of the tunnel seems to carry considerable free gold and assays well; in this connection we will mention the theory of the intersection of the Moss vein with the Mossback vein.

THE MOSS VEIN

Colonel John Moss located the Moss mine about 2 miles west of the Mossback Mine in 1863; he took $240,000. in gold out of a hole 10 ft. in diameter by 10 ft. in depth. (See U.S. geological report on Mossback and Moss Mine,- Bulletin No. 397- pages 168-172) from this same report we get the astonishing information "2 tons of ore taken from outcropping of the Moss Mine are said to have netted $114,000. in San Francisco." This Moss vein runs in an easterly and westerly direction at right angles to the Mossback vein and can be traced by its outcroppings into Mossback ground where the out-croppings seem to have been covered over by surface debris; directly to the east of the Mossback vein on the Ida Mine stands a promintory some 300 ft. high which appears to be the eastern termination of the Moss ledge. From the foregoing it is probable that the Moss leige intersects the Mossback ledge at a point from 500 ft. to 1000 ft. south of the present shaft on the Mossback Mine, and following a frequent occurrence of additional enrichment in

values where two strong well known ledges of ore carrying values intersect, it is reasonable to believe that the pay chute which develops its appearance in the south and east workings of the main shaft of the Mossback, and in the shallow workings at the south end of the Mossback mine will be more strongly emphasized as the point of intersection of the Moss vein and the Mossback vein is reached. It would appear probable that if the south drifts at the 120 ft. level the 200 ft. level and the 300 ft. level were extended a few hundred feet they would penetrate ores subjected to the additional or double enrichment caused by the contact and intersection of the Mossback vein and the Moss vein. It would be in the interest of good mining as carried on by the other mines in this district which have proven a success, to extend the present shaft to the depth of 500 ft. and then drift to the south and cross cut to the east, as it is as near a certainty as anything in mining can be, basing our assumptions upon the experience of all other mines in this district, that as depth is gained the calcite ores to be found in the higher levels give way to gold bearing silica ores. From the U. S. Bulletin above quoted in speaking of the Mossback Mine, the geological survey confirms what has likewise been demonstrated by experience in the other mines of this district, that, "the values rise with increase in the amount of silica in the spar, the best ore being in association with silica".

THE MOSSBACK DUMP

No ores taken from the Mossback mines development have as yet been milled; the ores which carry value seem to have been mined and kept separate from the waste and it is an approximation that the present ore dumps of the Mossback Mine contain tons of ore- all of which will pay to run through the mill;

The dumps are of irregular shape and the ore as taken out has been laid on in layers at different points and it is difficult to obtain anything like an accurate estimate of its value; the dump, however, was channelled and an average sample attempted with an assay result of $10.00 which would make the approximate value of the dump $13,500 dollars.

The amount of ore now in sight in the Mossback Mine measured by the development done to date would approximate 50,000 tons.

MINE SUPPLIES

Oatman as the center of a very considerable mining district with three very large producing gold mines and a number of lesser ones, contains general stores, lumber and material yards from which may be obtained almost every article necessary to be used in the prosecution of mining. Kingman the county seat of Mohave County and on the main line of the Santa Fe. R. R. is also amply provided with stores, material yards, shops, and everything complete for a mine's supply depot. Kingman is the center of a large mining activity having a radius of 30 to 40 miles in all directions and supplies may be purchased there for nearly the same prices which it is necessary to pay in Los Angeles, plus freight charges to Kingman; to this amount must be added the freight charges by team or auto truck from Kingman to the mine which is about $11. per ton in quantity. It would be advisable, however, to purchase lumber, fuel and supplies in carload lots in Los Angeles and ship them to Kingman and for the Company to own its own motor trucks to transport the supplies to the mines. An electric power line is one half mile distant from the Mossback shaft and reasonable rates may be made for power, which would be the cheapest fuel for operation of the mine.

LABOR

Labor conditions in this district are good, there having been no union difficulties so far. The following wages are current at this time in this district; Hoistman, and machinists $5. per day; miners (shooting) $4.50 per day; Muckers $4.00 per day; top men and bull gang $3.50 per day; Companies that run their own boarding houses deduct $1.25 per day for board of men.

TITLES

I have made a careful examination of the title to this property, and find that from the records of Mohave County, deeds properly executed and acknowledged in the hands of Charles H. Burlock, that the whole title to the Mossback Group of five patented mines as described in this report is now vested in Charles H. Burlock.

There is a mortgage upon this property, which with principal and accrued interest due, approximates $28,000. About $2,000 of other liens and indebtedness exist against the property, all of which is to be paid off and the title conveyed clear and free of all incumbrances by Mr. Burlock, upon the completion of any negotiations for the purchase and transfer of the property.

OTHER REPORTS

I beg to append herewith a copy of a report upon the Mossback group("Exhibit A")made by F. C. Schrader of the United States Geological Survey and which may be found in Bulletin No. 397 (United States Geological Survey, pages 168-172); Also a report made upon the property by W. B. McPherson, M. E., at the time the mine had reached 270 ft. in depth, ("Exhibit "B").

Also a short statement made by Reginald Fenton, M. E.

concerning his examination of the property and the assays of samples taken by him, (Exhibit "C").

In a letter written April 30th, 1912, by George Kislinbury, M. E. to his clients who advanced money to the owner to carry on his work after examination of the property, he stated: "I consider this (the Mossback group) one of the strongest and best defined ledges in the Gold Road District, and I would expect to find some very large ore bearing chutes if development was carried on".

Also I append copies of certificates of assays made upon samples taken from the various workings of the Mossback Mine by persons who from time to time in the past have visited and examined the mine with a view of advancing money to the owner to carry on his development work; the original of these reports and assay certificates are in the possession of the owner of the property, Charles H. Burlock, and were submitted to me by him for examination; these several matters submitted independent of my personal examination and sampling of the property I submit to show the opinion of others, competent to judge, as to the permanence and values of the Mossback Mein.

"EXHIBIT A"

UNITED STATES GEOLOGICAL SURVEY

By F. C. SCHRADER.

MOSS BACK MINE

LOCATION AND HISTORY. - The Moss Back Mine is situated 3 miles by trail northwest of Gold Road, in open country near the foot of the range, at about 2,400 feet elevation. It is near the upper edge of a bluff about 80 feet high overlooking a wash on the northeast. The property comprises three claims. It is reached by wagon from Gold Road in a distance of 7 or 8 miles by descending Silver Creek nearly to the Moss mine road forks.

The deposit was first located about 1863 by the Barry Mining Company as the Blanco ledge, so-called from the whiteness of its croppings and ore. It was relocated in 1864 and thereafter abandoned and finally it was again relocated in 1901 by Charles H. Burlock and wife, of San Diego, Cal., who still own a four-fifths interest in it, the remaining fifth being owned by the Moss Back Mining Company of Los Angeles.

There has been no production, but about 900 tons of what is said to be good milling ore lies on the dump.

DEVELOPMENT. - The mine is developed principally by a main shaft, drifts, and crosscuts to a depth of 330 feet. The workings also include a cross cut tunnel 150 feet in length on the southwest. The mine is said to produce a plentiful supply of water for ordinary milling purposes. The water rises within 170 feet of the surface. The mine is now dismantled of its hoist and surface equipments and the ladders have been drawn from the shaft. Besides the water produced by the mine a never-failing source of supply is a constant spring located at the foot of the range about a mile northwest of the mine and about 400 feet above it, with which there are pipeline connections.

GEOLOGY. - The Moss Back deposit is geologically and mineralogically very similar to that of the Pasadena mine. The country rock is the green chloritic andesite; it is locally pyritic and is intruded by rhyolite dikes and masses and by fresh black basalt or basaltic andesite. The structure or sheeting trends about N. 80 degrees E.

The rhyolite is also in part mineralized and is reported to assay from $2 to $3 a ton all over the surface; it contains veins or reefs of silicified rock, and is cut by

diabasic basalt dikes. In the small hill east of the mine it contains a 1 to 2 inch rich gold-bearing stringer with much hematite.

VEINS AND ORE. - The Moss Back vein or lode dips about 80 degrees SW. and has a known extent of nearly half a mile; the width at the surface is at least 23 feet, and it is said to widen to 40 feet in the bottom of the mine. The vein consists essentially of a mixture of gold-bearing, medium to coarsely crystalline calcite, with a small percentage of fine-grained silica or quartz and probably adularia, which has seemingly replaced calcite. It also contains a considerable amount of the greenish mineralized country-rock andesite, which occurs in streaks or small bodies and carries low-grade values.

The croppings are more or less silicified portions of the vein above described, for the most part stained by iron and manganese oxides, and contain in places masses or clusters of quartz blades representing the replacement of calcite by the quartz along its crystal faces and cleavage planes. There is but a small amount of gouge, but the wall rock next the vein is usually sheared, silicified, and veined by quartz or calcite.

The principal portion of the vein or main ore shoot, the part best defined at the surface, has a width of 12 feet to 15 feet and contains from 4 to 6 inches of gouge material consisting of sheared and crushed rock, calcite, and quartz on its foot-wall side.

The ore almost everywhere contains disseminated minute blackish specks of hematite, and these, particularly in the spar, are reported to carry the gold in very finely divided particles. The values rise with increase in the amount of silica in the spar, the best ore being in association with the silica. Some small pockets of yellowish-brown "sugar-quartz," which consists mf principally of colored spar, with an admixture of silica and limonite, are said to have contained up to $2,000 in gold to the ton.

A 17-foot crosscut from the main shaft to the southwest at a depth of 200 feet below the surface, which has not yet reached the hanging wall, is said to show good ore throughout its extent, running from $6 to $9 to the ton. In the shallow workings on the southeast a 10-foot width of the vein is reported to average $31 in gold to the ton.

"EXHIBIT B"

EXPERT REPORT of MOSSBACK GROUP.

The MOSSBACK CLAIMS are located in San Francisco Mining District, Mohave County, Arizona, about four miles from the famous GOLD ROADS mine, and about six miles from Vivian, the terminus of the M. & M. R. R., which connects with the Santa Fe R. R. at the Needles, Cal. and about nine miles from the Colorado river. The mines are located at an altitude of about 2500 feet, and are reached by an unusually good wagon road.

In this Group there are four full sized claims, 600 x 1500 feet each adjoining, as shown by the plat of survey.

The vein is a quartz and lime spar cross-cutting the formation and is classed as a true fissure vein. In ninety-nine cases out of one hundred, these fissure veins go to great depth and, as a rule, get richer in values as depth is obtained.

The vein crops out and is from forty to two hundred and fifty feet in width the whole length of the claims.

The walls are a quartz porphyry.

The vein dips to the south at an angle of about 85 degrees and runs northwest and southeast and, as depth is obtained, the vein seems to straighten up, and it is the writer's opinion that the true dip will be to the north when opened up in depth, the same as the Gold Roads vein, and others in the same district.

THE DEVELOPMENT consists of a shaft 270 feet deep (to date) on the main ledge. At fifty feet in depth, a level is run on both sides of shaft on ledge about 25 feet in length. At the one hundred and twenty foot level, the ledge has been drifted on east 125 feet, and 35 feet from the shaft, a cross-cut was run across the ledge, which was found to be about 30 feet wide, all in ore. The ore continues east about 100 feet, then the vein is filled with ore and porphyry, but at the breast the ore has just come in the whole size of the drift, and is of good values.

The west drift at this level is in 126 feet, all in ore from the shaft to end of drift. A cross-cut about 75 feet from the shaft shows about 12 feet of ore to the foot wall. The cross-cut south is only in about 4 feet, all in ore, but no hanging wall in sight.

At 200 feet, level drifts are run both east and west on the vein. The east drift is in now 76 feet, the west

drift 75 feet, all in ore and of better character and more uniform in values than on the upper levels.

Two cross-cuts have been started and are being driven with double shifts in the east drift about 30 feet from the shaft. The one south is about 19 feet, and the one north about 30 feet; both cuts and faces are now in ore which assays good.

The bottom of the shaft is in good pay ore and has never been out of ore from the surface down to the present level. As depth is attained the ore contains more silica, or quartz, and the more quartz the more uniform and better values.

It is the writer's opinion that when down another 100 feet, the most of the vein which carries the values will be quartz entirely.

The values in the vein lay in monstrous chutes, dipping to the east at an angle of about 80 degrees, but in going down the values are more uniformly distributed between the ore chutes.

FROM ONE HUNDRED SAMPLES taken by the writer, the ore shows an assay value which should mill from $6.00 to $10.00 per ton.

There are about 30,000 tons of ore blocked out in the mine.

Many samples show much higher values than the above samples and figures.

THE COMPANY OWNS a fine water right about two miles from the mines, which can be made to furnish ample water for all domestic and milling purposes. This water is now brought to the mines by pipe line and has a head of about 300 feet pressure. The mine also makes about one miner's inch of water in 24 hours, equal to 12,960 gallons.

With the size of the cropping and the great length of the same, also the width of the ledge which shows on the surface and the values which the ledge shows the whole length, indicate that the ore goes to a great depth and will become a great ore producer if properly developed; and it is the writer's opinion will be one of the largest producers in time.

Respectfully submitted,

(Signed) - W. B. McPherson, M. E.

ASSAY and ANALYSIS CERTIFICATE

R. H. PEREZ.

Los Angeles, Cal., May 29, 1912.

Assay made for F. J. Belcher. (Mossback Ores)

Sample No.	ozs. per Ton of 2000 lbs. Gold	Silver	Value per Ton Gold	Silver
1	.11		$ 2.27	
2	1.12		23.17	
3	.04		.82	
4	.11		2.27	
5	1.03		21.19	
6	.13		2.68	
7	.02		.41	

(Signed) - R. H. Perez.

Assayer and Chemist.

Los Angeles, Cal., Apr. 29, 1912.

Assay made for First Nat'l Bk. of San Diego.

Sample No.	ozs. per Ton of 2000 lbs. Gold	Silver	Value per Ton Gold	Silver
1	.69		$14.26	
2	.78		16.12	
3	.47		9.71	
4	.07		1.44	

(Signed) - R. H. Perez.

Assayer and Chemist.

CERTIFICATE.

MARK R. WALKER. B. S.

Los Angeles, Cal., Oct. 23, 1915.

Assay made for A. H. Woollacott.

Sample No.	Gold $20.67 per Troy oz. ozs. per T.	Gold val. per T.	Silver 50¢ per Troy oz. ozs. per T.	Silver val. per T.	Tot. Val. per T. G. &. S.
#1 #1	.04	$ .82	.12	$ 0.06	$ 0.88
#2	.44	9.09	.04	0.02	9.11
#3	1.40	28.93	.20	0.10	29.03
#4	.80	16.53	.08	0.04	16.57
Bottom N. #5	none	-----	.12	0.06	-----
side of #6	.16	3.30	none	-----	-----
slip 10'-#7	.44	9.09	none	-----	-----
6" #8	.50	10.34	none	-----	-----
9' - 6" #9	.48	9.92	.08	0.04	9.96
9 ft. 1 #10	none	-----	none	-----	-----
Station from 2 cuts Hard slip on bottom N. end 50 ft. cut. #11	none	-----	none	-----	-----

(Signed) - Mark Walker.

Consulting Chemical and Metallurgical Engineer.

Los Angeles, Cal., Oct. 30, 1915.

Assay made for A. H. Woollacott.

Sample No.	Gold. $20.67 per Troy oz. ozs. per T.	Gold. Val. per T.	Silver. 50¢ per Troy oz. ozs. per T.	Silver. Val. per T.	Tot. Val. per T. G. & S.
1	0.84	$17.36	0.24	$ 0.12	$17.48
2	0.46	9.50	0.34	0.17	9.67
3	1.00	20.67	0.20	0.10	20.77
4	0.30	6.20	0.22	0.11	6.31
5	0.56	11.57	0.12	0.06	11.63
6	0.44	9.09	0.24	0.12	9.21
7	0.72	14.83	0.08	0.04	14.87
8	0.96	19.84	0.04	0.02	19.86
12	0.76	15.71	0.16	0.08	15.79

(Signed) - Mark Walker.

Consulting Chemical and Metallurgical Engineer.

OTHER DEVELOPMENTS

At a point about 200 ft. north of the south end line of the Mossback Mine a shaft 40 ft. deep has been sunk upon the ledge which has been cut by tunnel at twenty feet from the collar of the shaft; at the bottom of this shaft a ten ft. cross-cut has been run upon the ore and the ore body at this point appears to be 17 ft. wide; the development at this point while superficially seems to have touched the pay chute mentioned as appearing in the south working in the main shaft at the north end of the claim as the ore or quartz from the surface down and along the sides of the tunnel seems to carry considerable free gold and assays well; in this connection we will mention the theory of the intersection of the Moss vein with the Mossback vein.

THE MOSS VEIN

Colonel John Moss located the Moss mine about 2 miles west of the Mossback Mine in 1863; he took $240,000. in gold out of a hole 10 ft. in diameter by 10 ft. in depth. (See U.S. Mineral report on Mossback and Moss Mine,- Bulletin No. 397- pages 168-172) from this same report we get the astonishing information "2 tons of ore taken from outcropping of the Moss Mine are said to have netted $114,000. in San Francisco." This Moss vein runs in an easterly and westerly direction at right angles to the Mossback vein and can be traced by its outcroppings into Mossback ground where the out-croppings seem to have been covered over by surface debris; directly to the east of the Mossback vein on the Ida Mine stands a promintory some 300 ft. high which appears to be the eastern termination of the Moss ledge. From the foregoing it is probable that the Moss ledge intersects the Mossback ledge at a point from 500 ft. to 1000 ft. south of the present shaft on the Mossback Mine, and following a frequent occurrence of additional enrichment in

CERTIFICATE

MARK WALKER, B. S.

Los Angeles, Cal. Nov. 1. 1915.

Assay made for A. H. Woollacott.

Description	Gold. $20.67 per Troy oz. ozs. per T.	Val. per T.	Silver 50¢ per Troy oz. ozs. per T.	val. per T.	Tot. Val. per T. G. & S.
#1	Small hole 25 ft. above shaft		Vein about three ft.		
	none	------	none	--------	
#2	Random pieces; what appears to be high grade from small pile at shaft.				
	1.36	$28.11	0.64	$ 0.32	$28.43
#3	Random pieces from open cut and little shaft N. side of hill				
	0.28	5.78	0.20	0.10	5.88
#5	High grade from small pile above shaft				
	3.00	62.01	1.04	0.52	62.53
#4	Random pieces from 300 ft. cropping				
	none	----	none	-------	------

(Signed) - Mark Walker.

Consulting Chemical and
Metallurgical Engineer.

ASSAY CERTIFICATE

HIND & JOHNSON.

Oatman, Ariz., Oct. 19, 1915.

Assay made for H. L. Burris.

Sample No.		Gold per Ton ozs.	value	silver per Ton ozs.	value	Total value.
1		0.17	$ 3.51			
2		0.05	1.03			
3		0.04	0.83			
4		0.74	15.30			
5		0.54	11.16			
6	4' 1	0.43	8.89			
7		0.02	0.41			
8		Trace	none			
9		0.02	0.41			

(Signed) - Hind & Johnson

Assayers.

ASSAY CERTIFICATE

HIND & JOHNSON.

Oatman, Ariz., Oct. 24, 1915.

Assay made for Mr. A. L. Burris.

Sample No.	Gold per Ton ozs.	Gold per Ton value	Silver per Ton ozs.	Silver per Ton value	Total value
1	.04	.83	.25	.12	
2	.42	8.68	.10	.05	
3	.33	6.82	.35	.17	
4	.29	5.99	.50	.25	
5	3.88	80.20	2.00	1.00	
6	.10	2.07	.10	.05	
7	Trace	None	.20	.10	

(Signed) - Hind & Johnson.

Assayers.

ASSAY CERTIFICATE

C. E. ANTHONY.

San Diego, Cal., Apr. 25, 1912.

Assay made for J. G. Merrill.

Sample No.	Gold ozs. per T.	Gold val. per T.	Silver ozs. per T.	Silver val. per T.	Tot. Val per T.
#1 - 16' in vein 50 ft. down shaft in cross cut.	.85	17.57			$17.57
#2 - 6' of hanging wall, same place as #1	1. 32	27.28			27.28
#3 - 3' hanging wall in #2 shaft.	.64	13.23			13.23
#4 - 8' contin. of #3 in shaft #2.	.16	3.31			3.31

(Signed) - C. E. Anthony.

Assayer.& Chemist.

ASSAYS OF SAMPLES.

In the examinatipn of the Mossback Mine the writer had taken some sixty- seven samples of the ores within the mine.

These samples were taken by two miners experienced in the taking os samples namely; S.S.Spell and Ben H. Wilson. The writer indicated the places for taking the samples and the samples taken consisted of channel cuttings in the ore clear accross the ~~mm~~ ore bodies at the points indicated; no special effort was taken to secure best grade ores, but the samples were taken at regular inter vals throught the mine, with the intention and purpose of having them fairly representative of the ores of the mine. The writer was personally present and saw all of these samples taken. The samples were kept separate in ore sacks tied and marked appropriately so as to identify them with the places from which they were taken; these samples were subsequently broken carefully mixed, and quartered, and one quarter of each sample was taken and submitted to the firm of Smith, Emery and Company of 245 -South Los Angeles, Street, Los Angeles, California. This firm is one of the leading mining engineering firms in the Southwest. The certificate of the assays made upon the samples furnished by the writer is hereinto attached. It will be noted that these assays were made for Gold only, and the Silver contents of the ores are not noted; the Moss-Back ores carry silver as will be observed by the assay cirtificates made upon samples taken by other parties and heretofore shown in ~~thi~~ this peport. The following samples were taken where indicated herein.-

Samples 28,29,30 in the 20ft. tunnel opening into the station 20 ft. below the collar of the shaft.

Samples 25,26,27 were taken on the 50 ft. level.

Samples 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20, 21,22,23,24,24-a were taken at intervals of about every ten feet in the shaft,drifts and crosscuts of the 120 ft. level.

Samples 31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47, 47-b, 48,49,50,51,52,53,54,55,55-a,56, were taken at intervals in

the shaft, drifts and crosscuts of the 200 ft. level.

Samples 3-a, 3-b, 3-c, 3-d, 3-e, 3-f, 3-g, 3-h, were taken at intervals from the shaft, drifts and crosscuts of the 300 ft. level.

Sample No. 1-a, is a general chip sample taken from many parts of the mine. The samples were gathered without refenence to their being best grade ores, but were almost entirely made up of quarts which undoubtedly causes the high general average of $16.54.

Sample 2-a, was made up of samples taken from various portions of the dump and maybe called fairly representative of the dump.

It will be observed the general average of the samples taken excluding No. 2-a, which coveres the dump gives a general average of $7.52 per ton for the entire mine as developed and opened up todate.

SM-4-16 FORM 42

LABORATORY CERTIFICATE

SMITH, EMERY & COMPANY

INSPECTING, TESTING AND CHEMICAL
ENGINEERS AND CHEMISTS
LOS ANGELES

DUPLICATE

LABORATORY No. 20275-20330 *Date* June 16,1917.

Sample Ore. Gold: $20.67 per oz.

Received 6-12-1917. *Marked*

Submitted by Will H. Holcomb,
OATMAN, ARIZ.

****

ASSAYS

Lab. No.	Mark	Gold Ozs.	Gold Value
20275	#1	.18	$3.72
20276	#2	.21	4.34
20277	#3	.27	5.58
20278	#4	.66	13.64
20279	#5	.30	6.20
20280	#6	.26	5.37
20281	#8	.31	6.41
20282	#10	.53	10.96
20283	#11	.43	8.89
20284	#12	.29	6.00
20285	#13	.24	4.96
20286	#14	.15	3.10
20287	#15	.28	5.79
20288	#16	.34	7.03
20289	#17	.42	8.68
20290	#18	.32	6.62
20291	#19	.41	8.48
20292	#20	.17	3.51
20293	#21	.31	6.41
20294	#22	.26	5.37
20295	#23	.11	2.27
20296	#24	.52	10.75
20297	#24 A	.76	15.71
20298	#25	.67	13.85
20299	#26	.36	7.44
20300	#27	.26	5.37
20301	#28	.43	8.89
20302	#29	.74	15.30
20303	#30	.15	3.10

Lab. No.	Mark	Gold Ozs.	Gold Value
20304	#31	.26	$5.37
20305	#32	.25	5.17
20306	#33	.30	6.20
20307	#34	.21	4.34
20308	#35	.25	5.17
20309	#36	.46	9.51
20310	#37	.26	5.37
20311	#39	.09	1.86
20312	#40	.24	4.96
20313	#41	.21	4.34
20314	#42	.24	4.96
20315	#43	.20	4.13
20316	#44	.16	3.31
20317	#45	.23	4.75
20318	#46	.10	2.07
20319	#47	.32	6.62
20320	#47 B	.21	4.34
20321	#48	.15	3.10
20322	#49	.26	5.37
20323	#50	.28	5.79
20324	#51	.24	4.96
20325	#52	.34	7.03
20326	#53	.24	4.96
20327	#54	.51	10.54
20328	#55	.52	10.75
20329	#55 A	.43	8.89
20330	#56	.78	16.12

Respectfully submitted,

Smith, Emery & Co.
ASSAYERS & METALLURGISTS.

3-16-3500 FORM 36

ASSAY CERTIFICATE

SMITH, EMERY & COMPANY

ASSAYERS AND METALLURGICAL ENGINEERS

LOS ANGELES

DUPLICATE

Gold, @ $ 20.67 *per oz.*
Silver, @ $ *per oz.*
Lead, @ $ *per lb.*
Copper, @ $ *per lb.*

Sample Ore.

Received 5-23-1917.

Deposited by M. E. Kempley,
201 Laughlin Bldg.,
LOS ANGELES, CAL.

Date May 24, 1917.

PER TON OF 2000 LBS.

NUMBER	MARK	GOLD		SILVER				TOTAL VALUE
		OUNCES	VALUE	OUNCES	VALUE	PER CENT	VALUE	
19997	#1	.80	$16.54					
19998	#2	.49	10.13					

All assays run in duplicate.

Respectfully submitted,

Smith Emery & Co

ASSAYERS AND METALLURGISTS.

3-16-3500

FORM 36

ASSAY CERTIFICATE

SMITH, EMERY & COMPANY

ASSAYERS AND METALLURGICAL ENGINEERS

LOS ANGELES

DUPLICATE

Sample Ore.

Received 6-22-1917.

Deposited by Will H. Holcomb,
Oatman, Ariz.

Gold, @ $ 20.67 *per oz.*
Silver, @ $ *per oz.*
Lead, @ $ *per lb.*
Copper, @ $ *per lb.*

Date June 23, 1917.

PER TON OF 2000 LBS.

NUMBER	MARK	GOLD		SILVER				TOTAL VALUE
		OUNCES	VALUE	OUNCES	VALUE	PER CENT	VALUE	
20447	#3 A	.80	$16.54					
20448	#3 B	.55	11.37					
20449	#3 C	.75	15.50					
20450	#3 D	.50	10.34					
20451	#3 E	.82	16.95					
20452	#3 F	.33	6.82					
20453	#3 G	.98	20.26					
20454	#3 H	.40	8.27					

All assays run in duplicate.

Respectfully submitted,

Smith Emery & Co

ASSAYERS AND METALLURGISTS.

Explanation of maps and pictures.

There is attached to this report a blue print of an original tracing showing the surface locations and relative positions of the MOSSBACK GROUP of Patented Claims, and the NATIONAL GROUP of located claims. The MOSSBACK group is shown by the shaded lines.

Also is appended a blue print of original diagram of the development work done to date upon the Mossback main workings, as they were examined by the writer of this report. The diagram is drawn to the scale of 1 inch to 20 feet. The drifts along the length of the ledge is shown, and the cross cuts across the ledge are shown upon the two smaller sheets. All of these carry numbers which correspond to numbers referred to in the text of the report.

Some pictures showing the surface outcrop of the Mossback vein upon the Mossback mine, which has been excavated into a large room for living quarters for some of the men, are also attached; they give something of an idea of the formation of this wonderful ledge.

SEE ATTACHED ENVELOPE FOR MAPS AND PICTURES

(4) MAPS OR SKETCHES, (3) PICTURES.

CONCLUSION

From several months' study of the district in which the Mossback mines lie, and of that property itself, I find the following facts:

The fissure veins of the district go down, and increase in the size of their ore bodies, and in the gold values of their contents as depth is reached: This is proven by the ore bodies of the Gold Road Mines, the Tom Reed Mine, the United Eastern Mine and others of this district.

The Mossback vein is without doubt one of this true fissure type, and if carried down to the depth of the others above mentioned will probably develop equally large and valuable ore bodies.

The values found in the present workings of the Mossback Mine, are probably greater in amount, than were found at similar depths in the other large producers of this district.

While it cannot be demonstrated to a certainty that the Mossback vein is identical with that of the Tom Reed, and the United Eastern, or identical with the Gold Road, a careful survey of the surface of the ground and the outcrops as they occur, and a comparison of the ores with those of the above properties, leads the writer to the conclusion that the Mossback vein isidentical with the Tom Reed vein, an opinion also shared in by a number of Mining Engineers who have mined the ground.

The apparent intersection of the Moss vein at right angles with the Mossback vein gives ground for the belief that a valuable pay chute will be uncovered upon further development, equal to, if not excelling the well known pay chutes found in

the other deep mines of this district. The development work thus far done upon the Mossback in the main shaft, the drifts and cross cuts demonstrates that the present shaft has been sunk at the extreme north edge, or fringe of a pay chute; that this pay chute has a strike to the South and East toward the point of apparent intersection of the Moss vein with the Mossback vein; the Moss vein is quite easily traceable upon the surface from the point where the phenominally rich ore was extracted by the original owner, Col. John Moss, to the West line of and into the ground of the Mossback, a distance of 2½ miles; that numerous finds of pay ore have been made at intervals along the course of this Moss vein, all of which is taken up and held by different Mining Companies. The present workings (although shallow), of the Mossback Mine, have developed a large body of ore of sufficient value to mine and mill at a profit.

The ore body in the vein matter so far uncovered of the Mossback mine increases in width consistently as depth is reached, having a known twelve foot width at the surface, 18 feet at the 50 ft. level, 25 ft. at the 120 ft. level, 45 ft. at the 200 ft. level, and 64 ft. at the 300 ft. level; it will be observed that in all these levels the true width has not been determined for the reason that the East crosscuts are in quartz ore in the breasts, with no wall reached on that side.

The Mossback vein is of extraordinary width varying from a few feet to 250 feet in the surface outcrops; where the working shaft is sunk it will measure 250 ft. on the surface outcrops; the shaft having been sunk just within the East wall, it is reasonable to be seen that no development has been as yet had that could begin to explore this vein; it is quite probable that further cross cuts to the west in the vein matter

of this enormous ledge will develop other ore bodies or pay chutes running parallel with the one the shaft has been sunk upon. Such has been the case with the Gold Road and the Tom Reed Mine in this same district.

The location of the Mossback mine for mining and milling purposes could not be better; nature seems to have moulded the topography to fit; for the development and working of a large property: practically no outlay of money will be necessary to prepare sites for shaft house, for mill, dumps and tailing compounds; the ore raised to the collar of the shaft will pass by gravity through breakers, grizzleys into a mill, thence by gravity into cyanide tanks, etc. and out into a naturally prepared tailing compound.

There is an abundance of good wholesome water, from an unfailing source for mine, mill and camp purposes.

There are good roads to and upon the property.

Electric power is close at hand.

Supplies are available at rates current with those of other accessibly located mining camps.

Labor is sufficient, efficient and at rates that prevail in other well located mining camps.

There are no climatic difficulties to interfere with all the year round mining.

SUGGESTIONS

The writer would suggest that a fund of not less than $20,000. be provided for immediate further development work on this property.

That with this sum a 25 H.P. gasoline hoist, a hot head air compressor, and a sinking pump be installed, and without any delay other than incidental to the procuring and setting

in place of this machinery, that sinking on the present shaft be continued for 200 ft. with drifts and cross cuts at each 100 ft. station.

A 300 ft. compressor should run three Jack Hammers, and sinking, drifting and cross cutting could be carried on at the same time.

Temporary sheet iron buildings to house the machinery, tools and shop, can be constructed cheaply, tent houses are sufficient for the men and camp purposes.

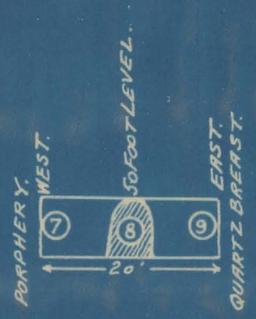
The idea would be to expend as little on the surface as possible, but make every dollar possible go below ground in the development of known ore supplies, and with the expectation of discovering new ores.

It would appear probable that with 500 ft. in depth, and with the present and new drifts run to the south a greater distance than at present, ore reserves will be blocked out commensurate with the ore reserves in the other notable producers of this district at similar depths. It would be a conservative estimate, founded upon the known conditions that already exist in this mine, and the known conditions that exist in this ledge, or other similar ledges in this same district, to say, that this outlined development work, which if economically handled, can be done for $20,000. will develop ore bodies carrying values aggregating one million dollars.

The machinery noted in these suggestions as necessary for immediate work can be purchased in this district, and in thirty days' time from the commencement actual mining could be under way.

Respectfully submitted,

Wm H. Holcomb



CROSS-CUT 20 FEET WIDE.

ACROSS ORE BODY 18 Ft WIDE.

(AT NUMBER 8.)

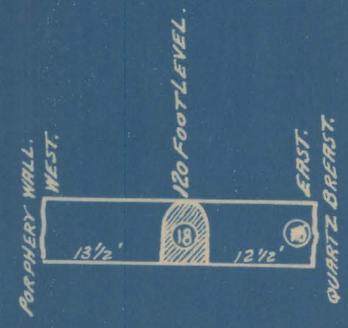
CROSS-CUT

FROM WALL TO WALL 15 FEET IN ORE.

(AT NUMBER 12.)

CROSS-CUT.

(AT NUMBER 13.)



CROSS-CUT.

ORE BODY 25 FEET WIDE.

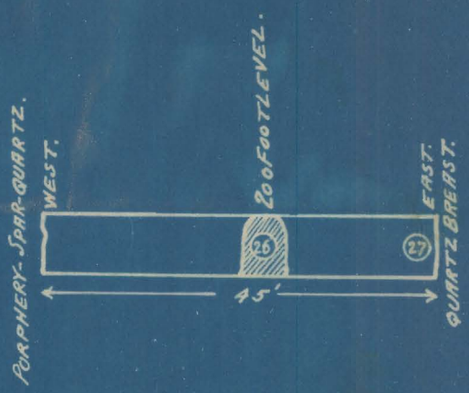
(AT NUMBER 18.)

CROSS-CUT.

(AT NUMBER 17.)

CROSS-CUT TO SOUTH-WEST.

(AT NUMBER 20.)



CROSS-CUT 9 FEET WIDE.

ORE BODY 45 FEET IN WIDTH.

(AT NUMBER 26.)

June, 1917.
S. B. REEVE, C.E.
LOS ANGELES, CAL.

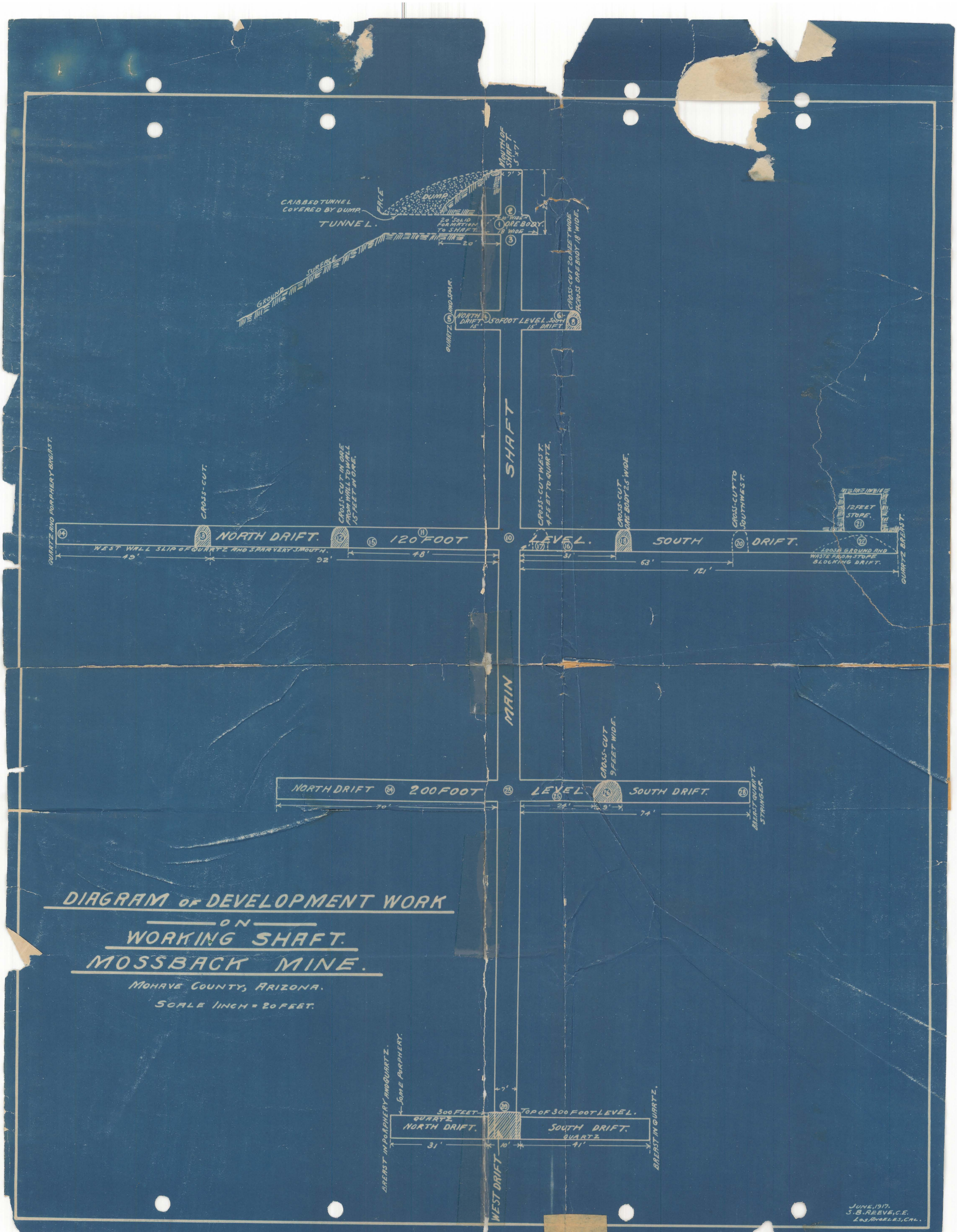
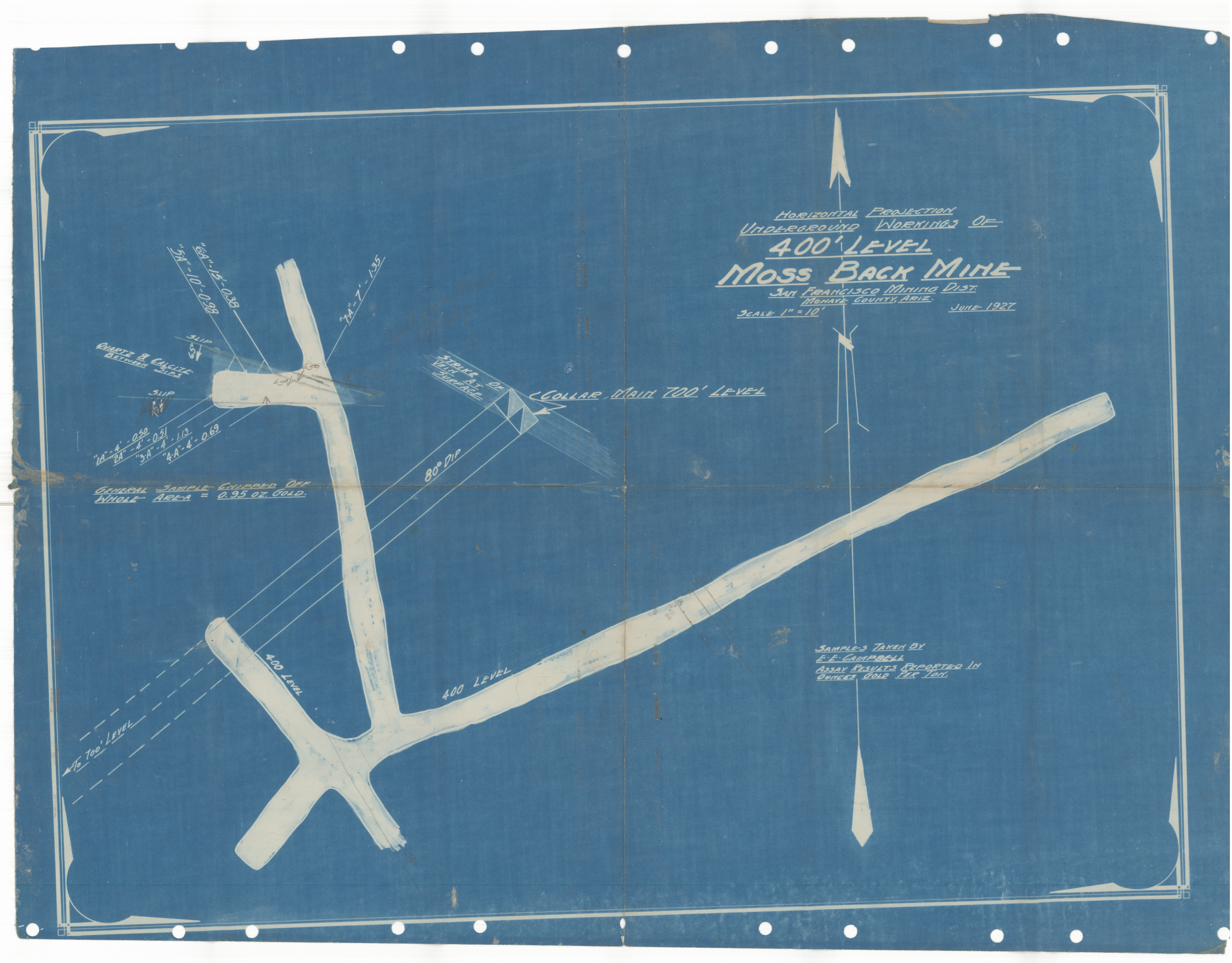
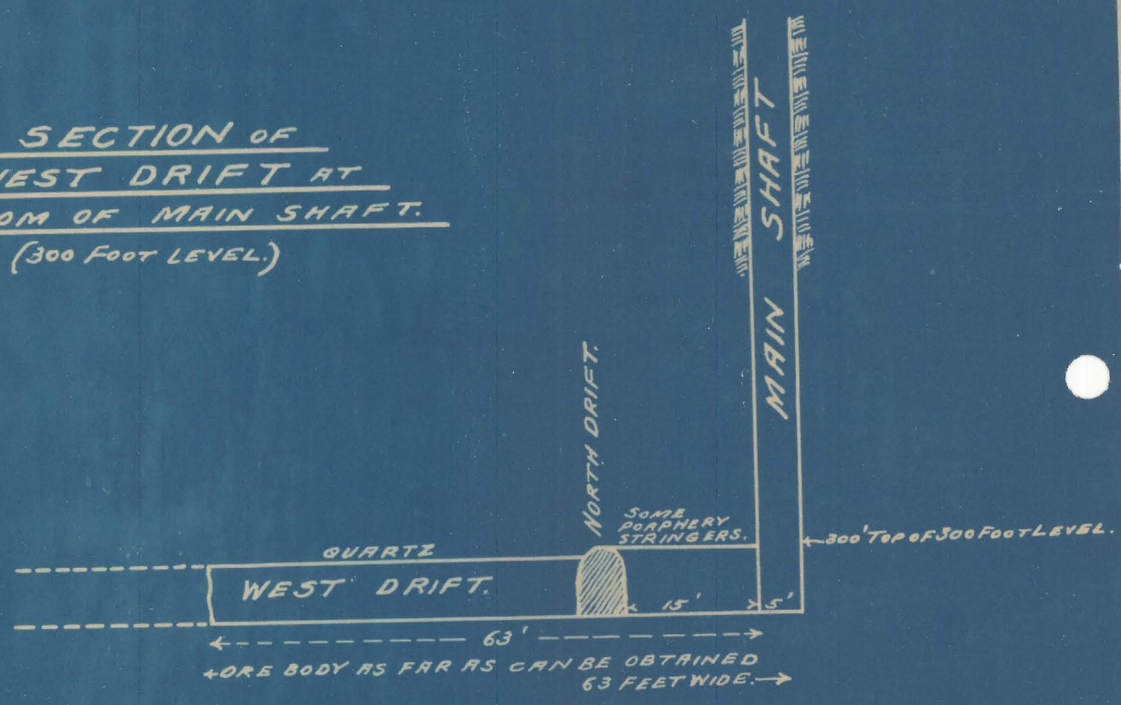


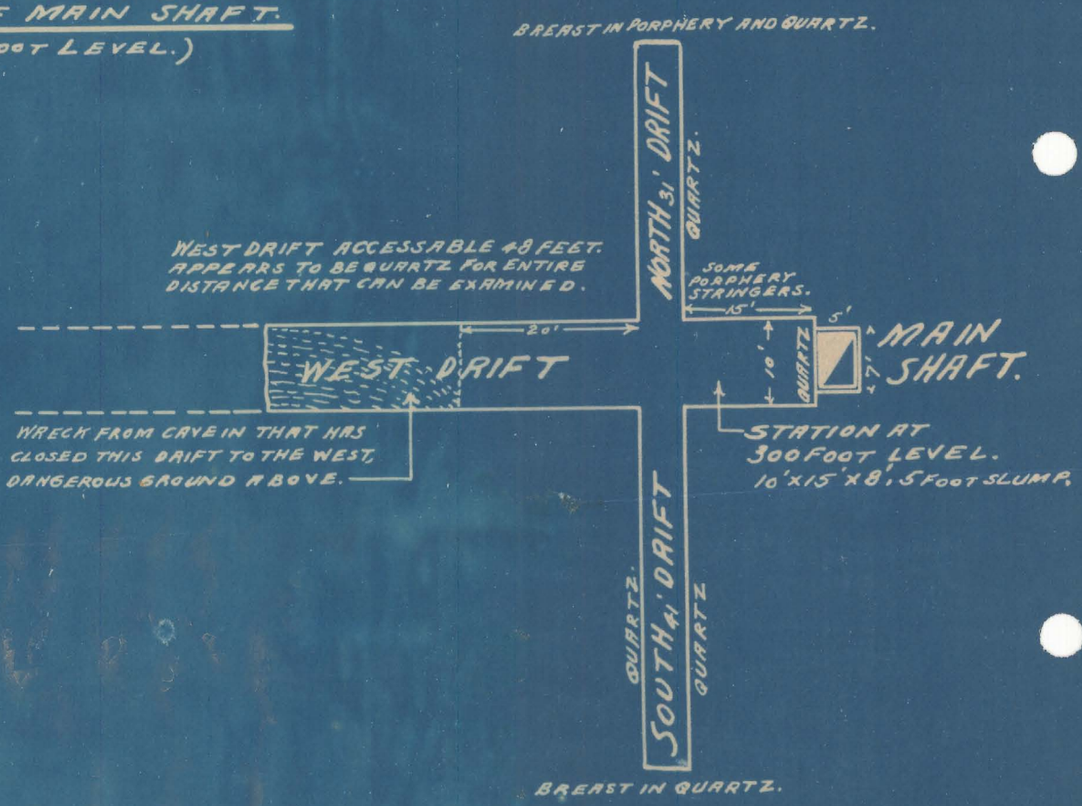
DIAGRAM OF DEVELOPMENT WORK
ON
WORKING SHAFT.
MOSSBACK MINE.
MOHAVE COUNTY, ARIZONA.
SCALE 1 INCH = 20 FEET.
MOUTH OF SHAFT 5'x7'
CRIBBED TUNNEL COVERED BY DUMP.
TUNNEL.
FACE
DUMP
GROUND SURFACE
20' SOLID FORMATION TO SHAFT
ORE BODY.
18' WIDE
CROSS-CUT 20 FEET WIDE ACROSS ORE BODY 18' WIDE.
QUARTZ AND SPAR.
NORTH DRIFT 15'
50 FOOT LEVEL
SOUTH DRIFT 15'
SHAFT
QUARTZ AND PORPHERY BREAST.
CROSS-CUT.
CROSS-CUT IN ORE FROM WALL TO WALL 15 FEET IN ORE.
NORTH DRIFT.
120 FOOT
WEST WALL SLIP OF QUARTZ AND SPAR VERY SMOOTH.
49'
92'
48'
CROSS-CUT WEST 4 FEET TO QUARTZ.
CROSS-CUT ORE BODY 25' WIDE.
CROSS-CUT TO SOUTHWEST.
LEVEL.
SOUTH DRIFT.
31'
63'
121'
12 FEET STOPE.
LOOSE GROUND AND WASTE FROM STOPE BLOCKING DRIFT.
QUARTZ BREAST.
MAIN
NORTH DRIFT
200 FOOT
LEVEL
SOUTH DRIFT.
70'
24'
9'
74'
CROSS-CUT 9 FEET WIDE.
BREAST QUARTZ STRINGER.
BREAST IN PORPHERY AND QUARTZ.
SOME PORPHERY.
300 FEET
QUARTZ
NORTH DRIFT.
TOP OF 300 FOOT LEVEL.
SOUTH DRIFT.
QUARTZ
31'
10'
41'
BREAST IN QUARTZ.
WEST DRIFT
JUNE, 1917.
S. B. REEVE, C.E.
LOS ANGELES, CAL.


HORIZONTAL PROJECTION
UNDERGROUND WORKINGS OF
400' LEVEL
MOSS BACK MINE
SAN FRANCISCO MINING DIST.
MOHAVE COUNTY, ARIZ.
SCALE 1" = 10'
JUNE 1927
"6A"-15'-0.38
"5A"-10'-0.92
"7A"-7'-1.35
SLIP
65°
QUARTZ & CALCITE BETWEEN SLIPS
SLIP
STRIKE OF VEIN AT SURFACE
COLLAR MAIN 700' LEVEL
"1A"-4'-0.50
"2A"-4'-0.51
"3A"-4'-1.13
"4A"-4'-0.69
80° DIP
GENERAL SAMPLE CHIPPED OFF WHOLE AREA = 0.95 OZ. GOLD.
400 LEVEL
400 LEVEL
TO 700' LEVEL
SAMPLES TAKEN BY
E. E. CAMPBELL
ASSAY RESULTS REPORTED IN
OUNCES GOLD PER TON.

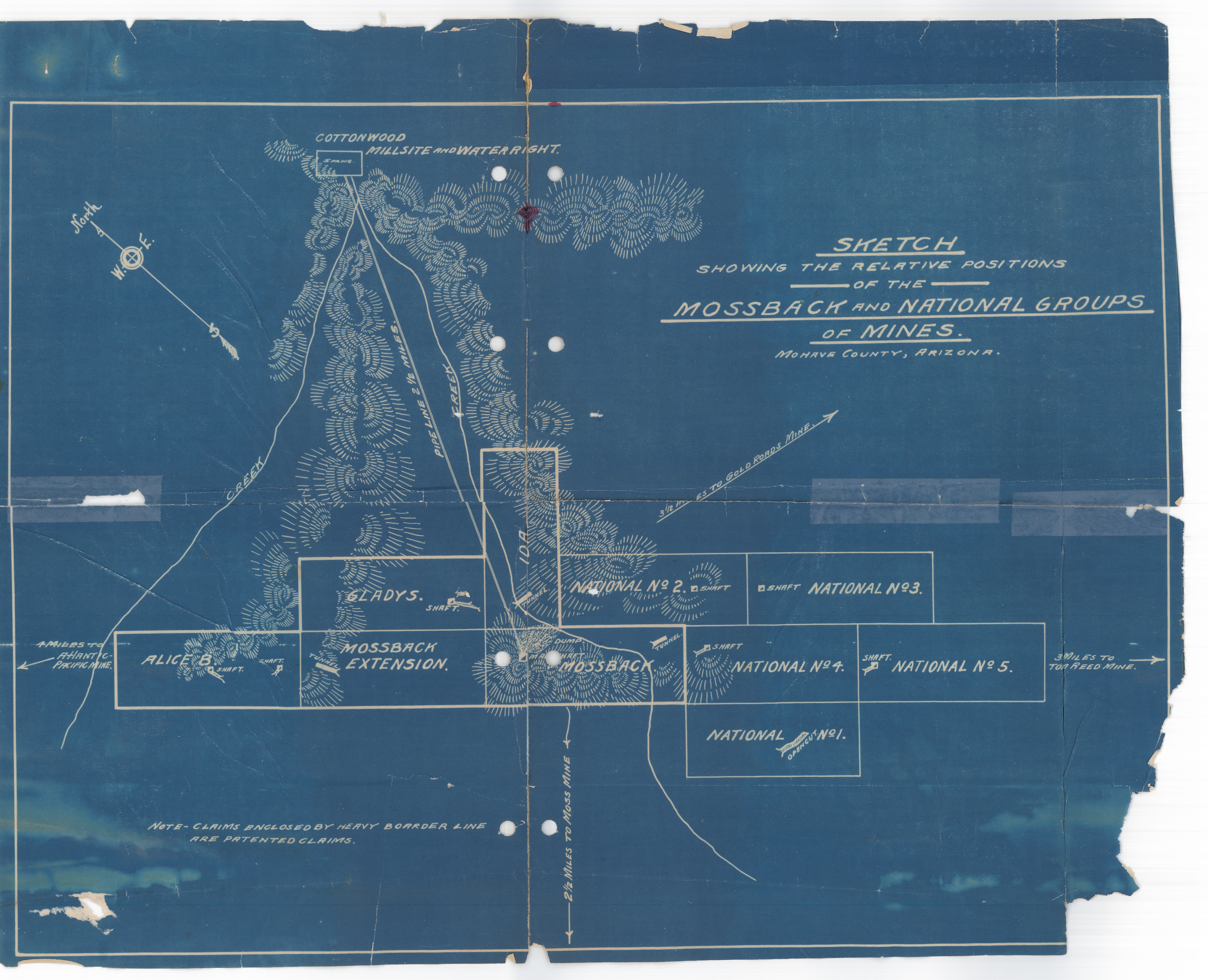
SECTION OF WEST DRIFT AT BOTTOM OF MAIN SHAFT.
(300 FOOT LEVEL.)



PLAN OF THE NORTH, SOUTH AND WEST DRIFTS.
BOTTOM OF MAIN SHAFT.
(300 FOOT LEVEL.)



JUNE, 1917.
S. B. REEVE. C.E.
LOS ANGELES, CAL.


SKETCH
SHOWING THE RELATIVE POSITIONS
OF THE
MOSSBACK AND NATIONAL GROUPS
OF MINES.
MOHAVE COUNTY, ARIZONA.
COTTONWOOD
MILLSITE AND WATER RIGHT.
SPRING.
North
W.
E.
S.
PIPE LINE 2 1/2 MILES.
CREEK
CREEK
IDA
3 1/2 MILES TO GOLD RODS MINE.
GLADYS.
SHAFT.
TUNNEL.
NATIONAL No 2.
SHAFT
SHAFT
NATIONAL No 3.
4 MILES TO
ATLANTIC-
PACIFIC MINE.
ALICE B.
SHAFT.
SHAFT.
TUNNEL
MOSSBACK
EXTENSION.
DUMP.
MAIN SHAFT.
MOSSBACK.
TUNNEL.
SHAFT
NATIONAL No 4.
SHAFT.
NATIONAL No 5.
3 MILES TO
TOM REED MINE.
NATIONAL
OPEN CUT
No 1.
2 1/2 MILES TO MOSS MINE
NOTE- CLAIMS ENCLOSED BY HEAVY BORDER LINE
ARE PATENTED CLAIMS.