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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: PHILADELPHIA TUNNEL

ALTERNATE NAMES:  
NELSON GROUPS

YAVAPAI COUNTY MILS NUMBER: 808A

LOCATION: TOWNSHIP 10 N RANGE 1 W SECTION 11 QUARTER SW  
LATITUDE: N 34DEG 12MIN 58SEC LONGITUDE: W 112DEG 20MIN 20SEC  
TOPO MAP NAME: CROWN KING - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:  
GOLD  
SILVER  
COPPER  
LEAD  
ZINC

BIBLIOGRAPHY:  
ADMMR PHILADELPHIA TUNNEL FILE  
BLM MINGING DISTRICT SHEET 210  
WEED, W.H. "MINES HANDBK" VOL XIV, P 362; 1920  
YAVAPAI MAGAZINE JUNE 1918 P 11 SEE NELSON  
SHARLOT HALL MUSEUM PRESCOTT, AZ  
LINDGREN, W. ORE DEPTS JEROME & BRADSHAW MTN  
QUADS USGS BULL 782 1926 P 169-170  
BLM MINERAL SURVEY MS 2823, MS 3129A&B

PHILADELPHIA MINE

YAVAPAI COUNTY

ABM Bull. 137

ABM Bull. 140 p. 101

USGS Bull. 782 p. 169

SEE: IC 6905 p. 41

Arizona Mining Journal Issue Jan 1918 p. 26 ;  
July, 1918, p. 26

PHILADELPHIA TUNNEL

Au, Ag

Yavapai

13 - 7

T 10 N, R 1 W

Philadelphia Mining Co., 861 Drexel Bldg., Philadelphia, Pa. '20

Report returned "not known."

8-6-46

PHILADELPHIA MINE

YAVAPAI COUNTY

NJN WR 1/7/83: Bill Alexander and Don McClure, of Crown King, reported having bought Tony Nelson's Iona Claim and are in the process of buying the Dividend Claim in the Philadelphia Group, both in Yavapai County. They plan to do bulk sampling at the Dividend with a cat and clean out and sample the underground workings on the Iona.

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STATE OF ARIZONA  
DEPARTMENT OF MINERAL RESOURCES  
MINERAL BUILDING, FAIRGROUNDS  
PHOENIX, ARIZONA 85007

November 12, 1975

C  
O  
P  
Y

Mr. Donald R. Head  
Attorney-at-Law  
Head, Toci, Musgrove & Murphy, p.c.  
Post Office Box 591  
Prescott, Arizona 86301

Dear Mr. Head:

We are enclosing some data on the Philadelphia Mine, but feel it is not of much value to you.

We do have an 8-page mining engineer report, written about 1920, on a proposal to start operations. Our file is listed under the Philadelphia Tunnel. The report does mention some patented claims owned by Nelson Mining Company and transfer of titles to the Philadelphia Mining Company. We have nothing on the operation or water rights.

Very truly yours,

John H. Jett  
Director

Enclosure  
a/s

JHJ:pp

HEAD, TOCI, MUSGROVE & MURPHY, P. C.

SAM J. HEAD (1907-1968)  
DONALD R. HEAD  
PHILIP E. TOCI  
JAMES B. MUSGROVE  
MICHAEL R. MURPHY

ATTORNEYS AT LAW  
117 EAST GURLEY STREET  
PRESCOTT, ARIZONA 86301

MAILING ADDRESS  
POST OFFICE Box 591  
TELEPHONE [602] 445-6860

November 5, 1975

Arizona State Mineral  
Resources Dept.  
Fairgrounds  
Phoenix, Arizona 85007

Re: Philadelphia Mine

Gentlemen:

This firm represents the owners of the Philadelphia Mine which was operated from approximately 1895 to 1912 in Crown King, Arizona.

We were wondering whether you have any old reports dealing with the Philadelphia Mining Company's operations, perhaps anything relative to their water rights.

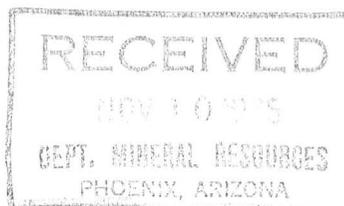
Your kind cooperation would be greatly appreciated.

Sincerely yours,

HEAD, TOCI, MUSGROVE & MURPHY, p.c.

*Donald R. Head*  
Donald R. Head

DRH:jmw



Battle Mountain, Nevada,  
July 5th., 1920.

Philadelphia Mining Company,  
361 Drexel Bldg.  
Philadelphia, Pennsylvania.

Gentlemen:

I submit herewith my report on your mining property, situate in the Peck Mining District, at Crown King, in Yavapai County, Arizona, examination of which was made April 10th. to the 20th. inclusive.

Respectfully submitted,

*Roy J. King*  
MINING ENGINEER.

May 27, 1957

PHILADELPHIA TUNNEL

YAVAPAI COUNTY

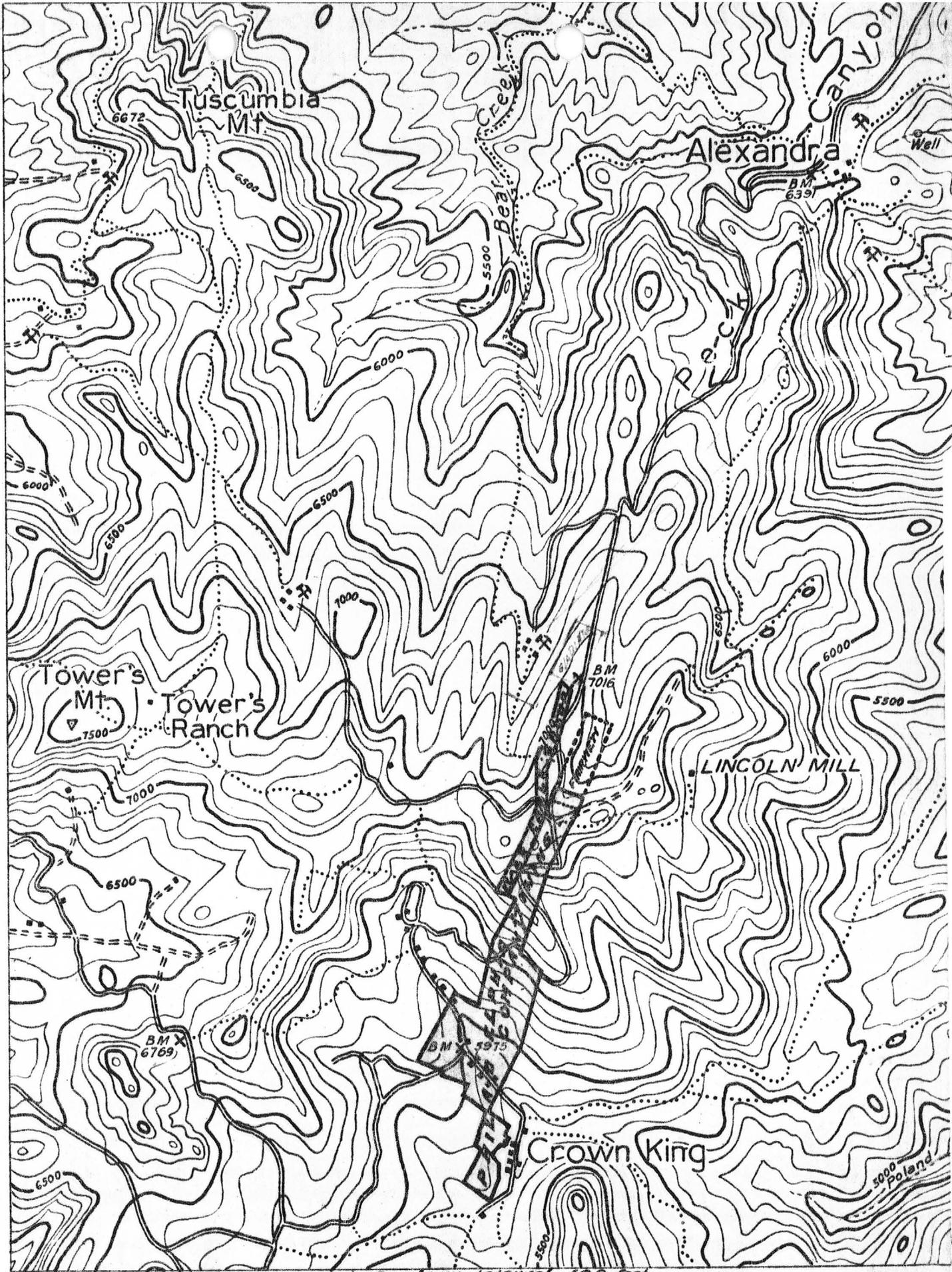
This property inactive.

MAHE GEMILL

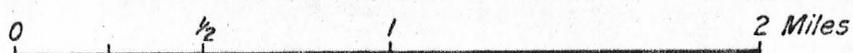
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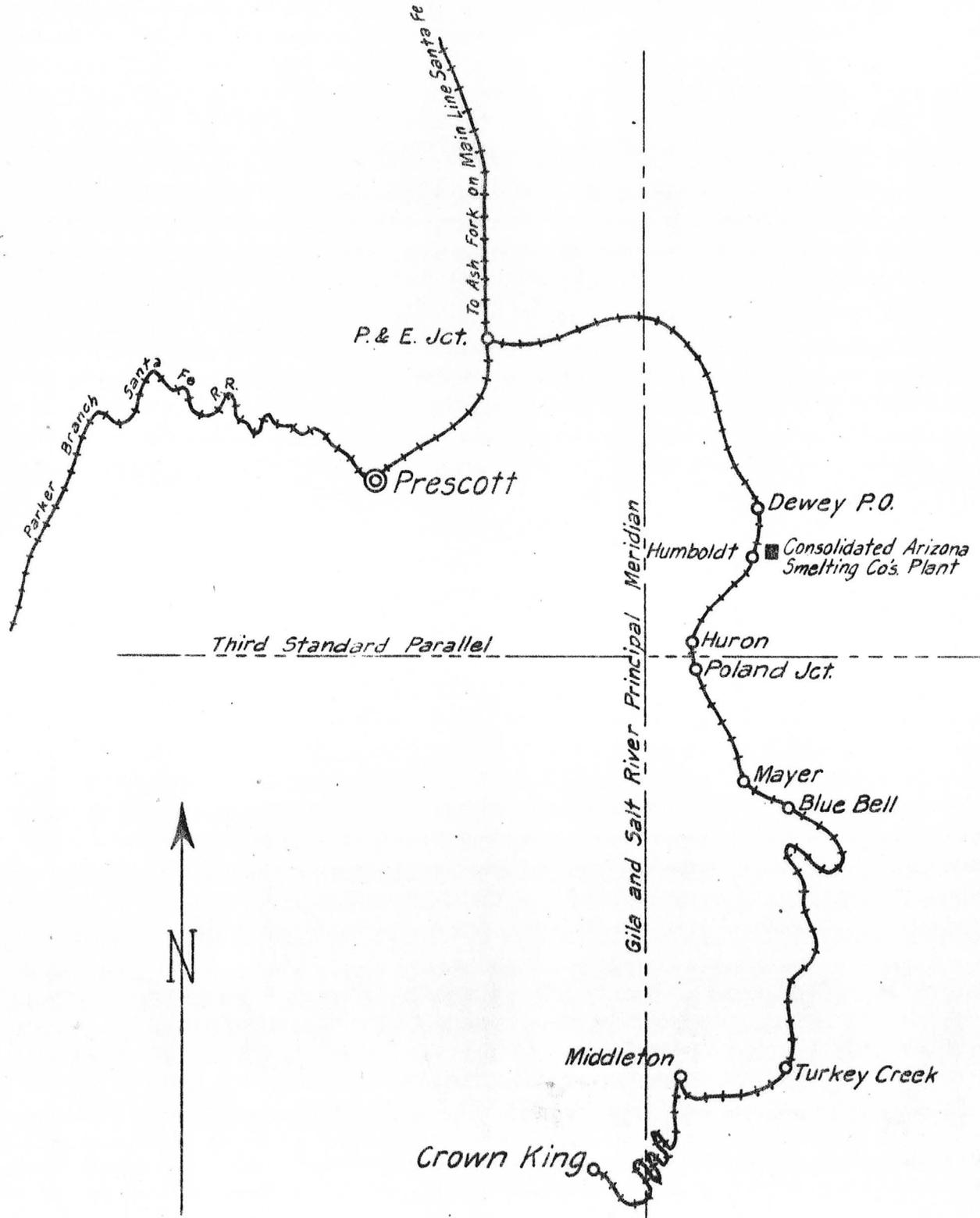
Contour Interval, 100 feet.



**OUTLINE OF PROPERTY OF THE PHILADELPHIA MINING CO.**  
**THE YEAR EAGLE GROUP** ON SECTION OF THE U.S.G.S. TOPOGRAPHIC SHEET.

# SKETCH MAP

SHOWING LOCATION OF  
CROWN KING, YAVAPAI CO., ARIZONA  
SCALE 1" = 5 MILES



Battle Mountain, Nevada,  
July 5th., 1920.

Philadelphia Mining Company,  
361 Drexel Bldg.  
Philadelphia, Pennsylvania.

Gentlemen:

I submit herewith my report on your mining property, situate in the Peck Mining District, at Crown King, in Yavapai County, Arizona, examination of which was made April 10th. to the 20th., inclusive.

Respectfully submitted,

MINING ENGINEER.

- 1 -

LOCATION:

Your property is situated in T.10 N., R.1 W. of the Gila and Salt River Principal Meridian, in the south-central part of Yavapai County, Arizona, being some 24 miles, in air-line, south-southeasterly from Prescott, the county-seat, at altitudes ranging between 5975 and 7050 feet.

Crown King, the mountain terminus of the Prescott & Eastern branch of the Santa Fe, Prescott & Phoenix railroad, is a village at the southern end of your property. The postoffice is here; also, a long distance telephone station and a Western Union telegraph office are maintained at this place.

TRANSPORTATION:

The Prescott & Eastern railroad serves the mining district in which your property is located. The track is standard gauge, and its mileage from Prescott is 60.1. The train service is on Tuesday, Thursday, and Saturday of each week, and the running time from Prescott is 5 hours.

The freight rate on general mine supplies in less than car load lot, from Prescott to Crown King, is 30¢ per one hundred pounds. Before the railroad reached Crown King, in 1904, all supplies were packed in on animals, from Prescott, at a cost of \$1.25 per one hundred pounds.

At Humboldt, an intermediate station on the railroad, 37.4 miles from Crown King, is located the Consolidated Arizona Smelting Company's smelter. The freight rate on ore from Crown King to this smelter is, of course, based upon value of the ore and is on a sliding scale. The freight rate on \$12.00 ore is \$1.50 per ton.

PROPERTY:

Your property consists of the "Jack Pot", "Dividend Fraction", "Dividend", and the "Lone Jack" mineral claims, patented under Survey #2823; the "Nelson", "Philadelphia", "Pennsylvania", and "Monte Christo" mineral claims, patented under Survey #3139a; and, the "Nelson", the "Jack Pot", the "Dividend", and the "Lone Jack" millsites, patented under Survey #3139b.

These patents were issued to the Nelson Mining Company which transferred title to the Philadelphia Mining Company.

The "High Jack" location is in conflict with the "Fairview" location which is held by outside parties. The locator of the "Fairview", a prospector who has been in the district for fifty years, claims priority of location, so the status of ownership of this ground is still in doubt. It is my opinion that this man has been falsifying his proofs of labor for assessment work on this claim during the life of this location in the period assessment work was required annually by law. Being an "old timer" he seems able to get other old timers who will do his bidding and swear under oath as he directs.

NOTES ON THE CROWN KING MINERAL AREA:

This mineral area is 6 miles long and 3 miles wide, and comprises some 10,578 acres. The area has, at least, three distinct "watersheds", and for convenience of location they are designated

mining districts, namely; the Tiger, the Pine Grove, and the Peck. The mineralized area begins about 3600 feet north-northeast from Crown King, and extends westward, northward, eastward with southerly deflections to conform with ridge of mountains forming an open basin west of the town. On leaving the town of Crown King, a gradual rise, aggregating 1200 feet, occurs until the mountain ridge is reached. The territory forming the basin consists of a detritus of granodiorite, fresh granodiorite, patches and belts of monzonite-porphry and quartz-diorite and minor dikes of other basic and acid rocks. The ground itself, where not disintegrated shows fractures and fault planes and a highly disturbed condition. In the U.S. Geological Survey Folio #126, appears the following historical account of the district:

Precious metals were discovered in the Bradshaw Mountains quadrangle in 1863, when the placer gold deposits of Hassayampa and Lynx creeks were first worked by a party of pioneers under the leadership of Joseph Walker. In the "rush" following this discovery productive placers were found along most of the larger streams of the area, and numerous gold and silver bearing veins were located, especially in the northern part, on Bigbug, Lynx, and Hassayampa creeks. The remoteness of the district from lines of transportation and the fact that it was a stronghold of the hostile Apache Indians caused mining developments to proceed slowly until a new impetus was given to the industry by the discovery of rich silver deposits.

The Tiger mine, located in 1871, and the Tiptop and Peck mines, opened in 1875, each produced a million dollars or more during the first five years of their working. A period of active prospecting, mill building, and development followed, during which some old and many new productive veins were exploited. The rapid exhaustion of the silver mines and the fall in the price of silver brought this period to a close by 1885, but the gold deposits were by no means exhausted and with the completion of the transcontinental railroads to the south and north, and of the connecting branch to Prescott in 1888, came a new era of moderate productiveness, which continues to the present time (1901).

Up to 1901, an estimate based on scattered contemporary statistics and on Mint reports gives an approximate value of \$9,500,000, about equally divided between gold and silver.

#### EQUIPMENT:

Your property is scantily equipped, mechanically, for general mining work. The compressor, installed in the lower tunnel some 1800 feet from the portal, is a small upright single stage machine capable of producing 350 cu. ft. of air, at 100# pressure, per minute. This installation was 2150 feet from the face of tunnel on April 20th., 1920. A small blower is installed, near the compressor, at the mouth of the raise leading to the upper tunnel, within the course of a fresh air current made possible by the raise-winze opening connecting the two tunnels. The air delivered by this blower to the face of tunnel at the time of my visit to the property was barely adequate for good ventilation.

Should your company decide to exploit its property further, together with additional ground to be acquired through a merger

or a long term lease with option to purchase, with the War Eagle people, by crosscutting northwesterly it would be necessary, for good ventilation, to install a powerful combination blower-exhauster, electrically driven, in the main tunnel, near the mouth of proposed crosscut, with the air intake pipe leading back to the fresh air source.

The blacksmith shop is partially equipped for general mine blacksmithing. The equipment includes the necessary tools for hand sharpening power drill steel.

The property is not equipped with an assay office, yet one has been badly needed.

Transformers for "stepping down" high voltage electric current to such voltages as are used for lighting and in motors, are installed near the portal of the upper tunnel.

ORE MARKETING FACILITIES:

The bins near the portal of the lower tunnel, and to which the Harrington Short Line railroad extends, have a capacity of 150 tons of broken rock. This railroad is approximately 3600 feet long. It is broad gauge, and extends from the Prescott & Eastern track to the bins where loading chutes are provided for drawing rock and ore into railroad cars. The present construction is too light for the steam locomotive and the standard railroad car. The rolling stock of the Harrington Short Line railroad consists of 2 four wheel "push" or "tie" cars fitted with a gasoline motor drive, and a 5-ton side dumping ore car.

At present, a facility for marketing ore is provided to the Bradshaw Reduction plant, located at the Prescott & Eastern track (see map #4). It consists of a receiving ore bin at the end of a spur track from the Harrington Short Line, and an aerial tram, some 300 feet long, to the reduction plant.

In case your company should ever have ore of such grade and quantity that it could be shipped to the Arizona Consolidated smelter, at Humboldt on the Prescott & Eastern railroad, some 37.4 miles below Crown King, or to any other smelter, I would suggest that an ore bin for purposes of storage and economical loading of ore be built alongside the Prescott & Eastern track at a point (A) on the Harrington Short Line for direct loading of ore into railroad cars, and a spur track extended from this point (A) to it. The bin at the north end of the Harrington Short Line railroad, near portal of lower tunnel, should be fitted with sorting tables for culling out coarse and medium sized waste that breaks with the ore.

GEOLOGY, VEINS, & ORE POSSIBILITIES:

The rock formation which occupies the greater part of the north one-half of the surficial area of your property is hornblende-schist that has an average strike of N.6° E.-S.6° W. and a general dip westerly of 70 degrees. It is a schistose rock derived, probably, from diorite, an igneous rock. Shear zones, up to 150 feet in width, have developed along lines of weakness in this formation. The croppings are heavily stained with limonite, and considerable pyrite shows below the weathered zone. Veins formed by magmatic segregation appear along both hanging and foot-walls and in the middle of the shear zones. Such veins embraced by your property are composed of calcium, magnesium, and iron carbonates which are, in themselves, not ore bearing. Intrusive dikes of quartz-diorite and monzonite-porphry, younger than the veins, often form one or both walls. These intrusive rocks and the ore occur, with few exceptions, inseparably in quartz veins outside of your property, as the strongly jointed monzonite-porphry dikes

occurring in dike form, bears, undoubtedly, genetic relationship with the ores. The quartz and ore minerals, constituents of these rocks, replaced the carbonate minerals of the magmatic veins to form ore bodies. The grano-diorite is not ore bearing except when in contact with monzonite-porphry and quartz-diorite which intrude it. The enrichments which have made the best mines in the district are, apparently, confined to the intrusive monzonite-porphry, quartz-diorite and to the formation immediately adjacent and in contact with them. All openings on the Old Tiger and the Crown King veins below a thin weathered zone show sulphides of <sup>silver</sup> zinc, lead, and iron, carrying gold in a quartz gangue.

Your foot-wall carbonate vein which appears to be the strongest of the three veins in the shear zone, and on which nearly all your development has been done, discloses very weak replacements of the carbonates by quartz and ore minerals. One ore shoot showing first in the upper tunnel proved small (75 feet long and from top to bottom along pitch 150 feet) upon further development. It is credited with a production of 180 tons of smelter ore that averaged \$33 per ton, or a total gross value of \$5940. An additional 200 tons from this ore body was treated by the Bradshaw Reduction Company in its local plant, a few years ago. It was treated under a contract wherein the Reduction Company was to receive actual cost of treatment plus 10 per cent. The total recovery, however, did not meet the expense of treatment and your company reimbursed the Reduction Company for its loss. Your Mr. Harrington, manager of the mine, who did not know the assay value of this lot, put the recovered value at \$25 per ton.

A small stop, started from the lower tunnel, a short distance south of the compressor station, is credited with 50 tons of ore, part of which, Mr. Harrington states, would assay \$45 per ton. This work is included in the search for extension of the ore body opened by the upper tunnel. This ore was very lumpy and its recovery expensive. Crosscutting on this level did not locate the enrichment.

The possibility of your carbonate veins giving up commercial ore bodies in size and tenor sufficient to pay for their search, development, mining, and marketing, plus a little profit, is slight. The section of your property, which in my opinion, has sufficient merit to warrant development, even though it is wholly virgin ground, lies west of your known shear zone and extends to the 1st. South Extension War Eagle, War Eagle, and the 1st. North Extension War Eagle claims.

The Crown King ore bodies have been developed to a vertical depth of 150 feet below a level corresponding with your lower tunnel level. The production accredited to this property is between 1,000,000 and \$2,500,000. Its ore deposits are quartz-ore mineral replacements of the magnesium, iron, and calcium carbonates, a condition which your company can reasonably expect to exist within the area mentioned in foregoing paragraph. A striking difference in the surface exposures of your carbonate veins and the War Eagle vein embraced by the War Eagle claim is the absence of quartz-an ore mineral associate-in the former and its presence in the latter. The recognition of this condition in future exploration and development of your property will enhance your prospects for finding ore deposits. I can cite numerous instances in other mining districts where the proper observance of similar conditions caused a rehabilitation of mines considered "worked out", or a transition of prospects into producing mines.

A sample of your vein matter, sent to the Consolidated Arizona Smelting Company, at Humboldt, Arizona, by Mr. Harrington, was assayed and analyzed, and the results reported to your company in their letter of January 5th., 1920, are:

Gold-----	.08	per ton
Silver-----	.62	per ton
Copper-----	.04	%
Insoluble-----	19.0	%
Iron-----	22.0	%
Lime-----	9.8	%
Sulfur-----	26.3	%
Zinc-----	nil	

"You will note that the sample is entirely unrep-  
 "resentative of the average value of your ore in "  
 "gold, silver and copper, but the general composi- "  
 "tion indicates an ore that would be very desir- "  
 "able for direct smelting and if the general aver-  
 "age of your mine ore is of similar character as "  
 "regards the low insoluble and heavy iron and lime  
 "content, it is probable that we could quote terms"  
 "of purchase for direct smelting that would permit  
 "you to move it with profit.

DEVELOPMENT & SAMPLING:

The surface prospecting of your carbonate veins by shafts  
 trenches and pits has exposed little or no ore for the reasons  
 just explained. The Dividend shaft was sunk on your strongest  
 surface showing to a depth of 250 feet on a 65° dip, without ex-  
 posing the right ore making conditions.

Your upper tunnel, which is 235 feet vertically above the  
 lower tunnel, follows the foot-wall carbonate vein for a distance  
 of 700 feet. It exposed a small ore deposit, the only one found  
 thus far in your property, and is described elsewhere in this re-  
 port.

Your lower tunnel was started primarily to develop the so-  
 called foot-wall vein of the mineral zone embraced by the Jack-  
 Pot, Dividend Fraction, Dividend, and the Lone Jack patented miner-  
 al claims. The numerous divergent overlapping fault slips that  
 constitute both hanging and foot-walls of this carbonate vein  
 have made it difficult to keep the vein constantly in sight with  
 the pilot drift or tunnel, and as a result the course of tunnel  
 is zigzag and in many places for varying lengths the tunnel is  
 off of vein entirely, especially is this true for the first 500  
 feet of its length. The tunnel has, however, reached a point in  
 the mineral zone some 3200 feet from the point where the carbon-  
 ate vein was first encountered and the present face 900 feet  
 south of the crest of mountain ridge that forms a natural bound-  
 ary between the Pine Grove and the Peck mining districts. The  
 maximum vertical depth attained is 335 feet, and this is at a  
 point under the Dividend shaft.

The actual length of tunnel, from portal to the face on  
 April 20th., 1920, was 4,950 feet. There is a connection with  
 the outer world - other than by way of the portal - through a raise  
 some 2150 feet back from the face of tunnel, that was started in  
 search of the ore body which was sunk on from the upper tunnel.  
 The raise and winze are connected, giving an open passageway to  
 the surface by way of the of the upper tunnel.

Owing to the nature of the structural conditions within  
 and immediately adjacent to the carbonate vein the tunnel is  
 wavy and has a ragged outline for a good part of its length, with  
 cross sectional areas varying between 3 1/2 x 5 1/2 to 5 x 7  
 feet. All tramping is done by man pushing a single car. This  
 method of moving the broken rock is slow, uncertain, and expensive.  
 The most feasible method of tramping for your company is a "train"

of mine cars pulled by a mule. In order to make the tunnel available for mule haulage and an installation of 6, 8, or 10 inch galvanized pipe carried along the tunnel for ventilating purposes it is necessary to trim up to required size and to cut off sharp rock projections for easy curves.

Even though this tunnel does not expose marketable vein matter, or commercial ore, its position with respect to the relief of the mineral area it already taps and can be made to tap with crosscuts, with the War Eagle lode, an undeveloped quartz vein with merit, as your ultimate objective, it is a good asset to your company.

It serves as a drainage medium to the ground penetrated and adjacent thereto, from the tunnel horizon to the surface. Without such a tunnel in developing this mineral area and your only means of handling the water flowing into the workings would be with pumps, I dare say the cost of lifting water to surface would be one of your principal items of expense.

My sampling of the most promising vein exposures in the last 700 feet of your lower tunnel gave the following results:

<u>MARK</u>	<u>GOLD</u> OZ.	<u>SILVER</u> OZ.	<u>COPPER</u> %
1P-----	nil-----	0.10-----	none
2P-----	tr-----	0.20-----	"
3P-----	nil-----	0.10-----	"
4P-----	tr-----	0.80-----	"
5P-----	nil-----	tr-----	"
6P-----	"-----	0.10-----	"
7P-----	tr-----	0.10-----	"
8P-----	nil-----	tr-----	"
9P-----	tr-----	0.20-----	"
10P-----	tr-----	0.10-----	"
11P-----	0.01-----	0.50-----	"
12P-----	tr-----	0.20-----	"

For location and further description of these samples see map #5.

CONCLUSIONS:

- (a). Your company acquired title to this property in 1917 from the Nelson Mining Company.
- (b). Work on your property started with the sinking of the Dividend shaft, in July, 1911, and has continued uninterruptedly to the present time. Exploration and development work, aggregating approximately 7280 feet-equivalent to 1.37 miles-has been accomplished. It is classified, as follows:

Surface shafts, trenches, etc.....	500.0 feet
Tunnel (upper and lower).....	4,750.0 "
Raises.....	260.0 "
Winze (from upper tunnel).....	150.0 "
Crosscuts.....	720.0 "
Drifts.....	650.0 "
Dividend shaft.....	250.0 "
	<hr/>
	7,280.0 "

- (c). Your property has not responded well with ore to this work. A liberal estimate on the gross value of ore marketed is \$15,000-.

(d). It is unfortunate for your company that it does not own or control the War Eagle, the 1st. South Extension War Eagle, and the 1st. North Extension War Eagle claims. These claims should have been made a part of your holdings before this examination started, if for no reason than to prevent any possible litigation over ore ownership within the ground lying west of your shear zone such as might happen should an ore body prevail in the cross vein going northwesterly. Delays of this sort by the officials of a mining company oft times prove costly to the shareholders through the loss of ore ownership that could have been acquired on the latent ore ~~for a small sum~~.

(e). The strength of outcroppings embraced by the War Eagle claim was recognized by the first prospectors in the district. The War Eagle location was among the first in the ore bearing area

(f). I recommend the acquisition of the War Eagle, the 1st. South Extension War Eagle, and the 1st. North Extension War Eagle claims by your company. If this cannot be done now under conditions and terms favorable to your company, I suggest you "watchful wait" the opportune time.

(g). With your company owner or in control of these War Eagle claims, I recommend the vein's development by crosscutting northwesterly from present face of the lower tunnel, or drifting northwesterly along your cross vein-maps 5 and 6-, to it, and then development by drifts and raises. Of the two starting places I would favor the former for the reason vein would be intercepted some 360 feet further north towards crest of mountain ridge.

The distance to crosscut would be 350 feet, more or less, depending upon regularity of dip of the War Eagle vein and whether the dip at surface, upon which projection to your lower level is made, represents the actual mean dip.

The cost per foot should not exceed \$18.23, which price is based upon a footage of 3 1/2 per shift. This price is arrived at in the following manner:

2 machinemen @ \$6.00 per day.....	= \$12.00
1 mucker @ \$5.50 per day.....	= 5.50
1 mucker & mule skinner @ \$5.50 per day=	5.50
1 compressorman & drill sharpener.....	= 6.50
Explosives.....	= 8.00
2 1/2 inch wrought iron pipe (com. air)...	= 1.80
Track & ties.....	= 3.00
Electric power.....	= 7.00
Mule feed & care.....	= 2.00
Superintendence.....	= 7.00
Ventilating pipe.....	= 0.75
Lubricants & repairs.....	= 0.75
Surveying.....	= 2.00
Assaying.....	= 2.00

\$63.80

or, per foot.. = \$18.23

The Catman, Arizona, Wage Scale is used.

Respectfully submitted,  
*Roy J. King*  
MINING ENGINEER.



# SURFACE GEOLOGY MAP

OF THE  
PHILADELPHIA MINING COMPANY'S PROPERTY

GIVING, ALSO, POSITION OF THE WAR EAGLE,  
GLADIATOR AND CROWN KING GROUPS OF CLAIMS

IN THE  
PECK MINING DISTRICT

AT  
CROWN KING, YAVAPAI CO, ARIZONA

SCALE: 1" = 800'

### LEGEND

Granodiorite	Hornblende Schist	Monzonite Porphyry	Mineral Zone

