

EVALUATION OF CLAY COUNTY MINE

OCTOBER 1, 1981

BY

A handwritten signature in cursive script, appearing to read "R. B. Green". The signature is written in dark ink and is positioned below the word "BY".

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INTRODUCTION

Houston Mining and Resources, together with one of our mining contractors, Gold Ridge Mining Company, has during the last two years been working the Clay County Mine.

To obtain the necessary data to evaluate the actual situation, give an opinion on the ore reserves and re-estimate the potential of the project, I was invited to visit the property again.

Interpretation of my observations was done with the help of the map which I received in 1979 from Mr. Hodgson, together with reports from the geologists of the company,

Although some initial remarks will be made on the milling, the complete report of that aspect will follow as soon as the results from the laboratory tests will be known.

I'm very grateful for the assistance I received from Mr. Bennett, who took his time to show me the mine workings, indicating in detail the mineralized areas, thus saving me considerable time in obtaining the necessary data.

SUMMARY

Investigation work done during the last two years has substantially increased the ore reserves, specially of the positive ore. The discovery of three more or less parallel veins instead of one, within a width of 100 feet has increased the potential of the property considerably. The total of positive ore at this moment can be estimated in 75,000 tons. The medium ore value per ton is \$250 which evaluates these reserves, calculating a recovery of 90%, in \$17,000,000. The total of positive, probable, and possible ore is estimated in 253,600 tons. With a medium ore value of \$250 and a recovery of 80% this amounts to \$50,700,000.

The Diamin process has proven to work on the free gold, but not necessarily better than conventional and controlable processes.

The results of the Colorado Assaying Company prove that concentration of the valuable components, other than free gold, was not achieved (high Au and Ag value in tailings, very little concentration of Cu, Pb and Zn-ore. See appendix I. Processes inaccessible to the user, are unacceptable in milling practice.

The ore and its components can satisfactorily be concentrated by conventional beneficiation methods.

RECOMMENDATIONS

As far as the mining is concerned little needs to be said. I would like to emphasize the continuation of the investigation in northeasterly direction.

The beneficiation and concentration of the ore can be done in three possible ways:

- A. Gravitational bulk concentrate followed by fine grinding of this product. Separation by flotation.
- B. Grinding fine to free all products followed by separation by flotation.
- C. Separation by gravitation alone.

Which of the three should be chosen is a pure economic problem, which can be solved in a very short period of time.

ESTIMATION OF ORE RESERVES

For the estimation of the ore reserves I used the map handed to me in 1979 by Mr. K. Hodgson. (appendix III)

Basically the division in the blocks figuring on that map can be respected. (See appendix II) Differences to introduce due to the findings in the last two years are:

1. Reduction of the vein width from 4 to 3 feet in the blocks A and B.
2. Multiply the values of blocks A, B, and C by 3 due to the discovery of the 2 additional veins.
3. Change the specific gravity of the ore from 13 cu. ft. to 12 cu. ft. due to the high sulfide content.
4. The medium values of the ore are (data given to me by Mr. Bennett) 2nd stope West Vein medium 1.5 oz. Au and 15 oz. Ag. Middle Vein medium 0.25 Au and 3 oz. Ag. This results in the acceptable values per ton as follows:

West Vein	\$300 per ton
Middle Vein	\$250 per ton
East Vein	\$200 per ton

As a result of the findings under 1 and 2 and taking in account the actual measured lengths of,

West Vein	400 feet
Middle Vein	700 feet
East Vein	400 feet

The possible ore reserves are:

West Vein	$400 \times 3 \times 200/12 = 20,000$	tons
Middle Vein	$700 \times 3 \times 200/12 = 35,000$	tons
East Vein	$400 \times 3 \times 200/12 = 20,000$	tons
Total		<u>75,000 tons</u>

With a recovery of 90% this represents -

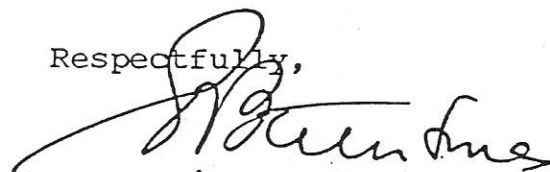
$75,000 \times 90 \times \$250 = \$17,000,000$

The potential ore reserves represent the following values:

Block A:	$460 \times 240 \times 3 \times 3/12 = 82,800$
B:	$245 \times 240 \times 3 \times 3/12 = 44,100$
C:	$710 \times 160 \times 4 \times 3/12 = 37,800$
D:	$220 \times 80 \times 4/12 = 5,900$
E:	$530 \times 470 \times 4/12 = 83,000$
Total	<u>253,600</u>

If we estimate the recovery in 80% and the value of the ore in \$250 per ton this represents $253,600 \times 80 \times 250 = \$50,700,000$.

Respectfully,



Ir. René S. Steensma

APPENDICES

THE COLORADO ASSAYING COMPANY

(INCORPORATED)

ASSAYERS AND CHEMISTS

2244 BROADWAY

DENVER, COLORADO 80201 September 19, 1981

REPORT ON DETERMINATIONS MADE FOR —

Mr. Morey Biggs,
Gold Ridge Mining
Golden, Colorado 80401

SAMPLE MARKS	METALS	Amount per Ton		PER CENT	Value per Ton	
		Ozs.	Hds.		Dollars	Cents
Head - Rock Ore Bin <i>DIAMIN. HAND PICKED FROM BIN</i>	Gold	0.25				
	Silver	4.30				
	Copper			1.15%		
	Lead			0.70		
	Zinc			0.95		
HEADS <i>GOODRIDGE FROM CONVEYER BELT</i>	Gold	0.44				
	Silver	5.40				
	Copper			1.25		
	Lead			0.75		
	Zinc			0.65		
Head - Tank <i>After Pails - DIAMIN</i>	Gold	0.39				
	Silver	5.20				
	Copper			1.30		
	Lead			0.48		
	Zinc			1.00		
Cyclone <i>Tails COARSE DISCHARGE</i>	Gold	0.185				
	Silver	3.40				
	Copper			0.95		
	Lead			0.45		
	Zinc			0.55		
CONS <i>"A" After DIAMIN</i>	Gold	0.81				
	Silver	5.70				
	Copper			1.30		
	Lead			1.00		
	Zinc			0.70		
Hg 3 lb, Hi-Grade Con -Diamond	Gold	437.88				
	Silver	56.50				
	Copper			1.15		
	Lead			1.70		
	Zinc			0.45		
Sept. G - 100 lb, Hi-Grade Con Diamond	Gold	10.48				
	Silver	5.50				
	Copper			1.19		
	Lead			1.70		
	Zinc			0.55		

GOLD AT _____ PER OUNCE
LEAD AT _____ PER UNIT

SILVER AT _____ PER OUNCE
COPPER AT _____ PER UNIT

THE COLORADO ASSAYING COMPANY

By *E. E. Phillips*

THE COLORADO ASSAYING COMPANY

(INCORPORATED)

ASSAYERS AND CHEMISTS

303-623-2842

2244 BROADWAY

DENVER, COLORADO 80201

September 19, 1981

REPORT ON DETERMINATIONS MADE FOR —

Mr. Morey Biggs
 Gold Ridge Mining
 5609 North Pike
 Golden, Colorado 80401

SAMPLE MARKS	METALS	Amount per		PER CENT	Value per Ton	
		Oz.	Ton Hds.		Dollars	Cents
TAILS <i>MAIN DISCHARGE WATER FROM CYCLONE</i>	Gold	0.15				
	Silver	7.70				
	Copper			1.50%		
	Lead			1.10		
	Zinc			0.55		

THE COLORADO ASSAYING COMPANY

GOLD AT _____ PER OUNCE

SILVER AT _____ PER OUNCE

LEAD AT _____ PER UNIT

COPPER AT _____ PER UNIT

By Ed Phillips