

GEOLOGICAL EVALUATION
AND
MINERAL RESERVES

MATT BERRY MINES LIMITED

October 1st, 1969

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SUMMARY AND CONCLUSIONS

Surface diamond drilling in 25 holes has indicated mineral reserves of 415,000 tons within a stratiform deposit. The following assumptions have been made in calculating the reserves.

1. The dilution during mining will be less than 2.0 feet.
2. The individual zones, even though close together, can be mined separately.
3. The correlation of the zones between holes is correct.

Until these assumptions have been checked by underground development, such reserves can only be placed in the drill indicated category.

INTRODUCTION

A total of 6,427 feet of surface diamond drilling during the period July 1966 to April 1969 has traced the Matt Berry Zone 100 feet northwest and 1,200 feet southeast of the discovery trench and 450 feet down dip.

SURFACE GEOLOGY

A 100 foot trench on the south bank of Thompson Creek exposed a mineralized zone that strikes about N20°W and dips 51° to 85° NE and consists of bands of fine grained, massive galena and sphalerite which assayed 7.8 oz. per ton silver, 22.0% lead, 3.6% zinc for a strike length of 70 feet over an average width of 22 inches.

The wallrock for the zone is a black phyllitic shale which near the zone is fractured and contorted. The schistosity normally strikes N45°W and dips 20 degrees NE.

DRILLING GEOLOGY

Drilling exposed three separate mineralized layers within the Matt Berry Zone along a strike length of 1,300 feet. These have been named the Upper, Middle and Lower. The Matt Berry Zone varies in true thickness from 10 feet in Hole 11 to 67 feet in Hole 25. The average thickness is about 15 feet. Not all three mineralized layers were intersected in each drill hole and only the Upper and Lower appears to be continuous. The mineralized layers are composed of fractured and brecciated quartz and sometimes carbonates which have been replaced by sulfides. They vary in width from 1 to 15 feet but are generally 1 to 4 feet wide. The mineralization varies

from massive bands, up to 2 feet wide, of fine grained galena and sphalerite to disseminated stringers, lenses and partings. Stibnite and minor amounts of pyrrhotite, chalcopyrite and pyrite are also found.

Attitude of the Zone

The zone intersections in the drill holes do not correlate with the strike in the trench. Using the bottom contact of the Lower Matt zone in each drill hole and assuming that no faulting is present a strike of N65°W and dips of from 30° to 38° NE between the trench and Hole 9A is indicated. Southeast of Hole 9A, the zone steepens and swings westerly to a strike of N80°W and a dip of 50° NE at Hole 19. The work completed to date suggests that the mineralized layers are of a stratiform deposit and the area of mineral concentration is within and near the synclinal trough.

Wallrock

The wallrock of the Matt Berry Zone is a black phyllitic shale with narrow bands of quartz. The schistosity appears to closely follow the bedding. The phyllitic shale in the hanging wall of the Matt Berry Zone is highly fractured and contorted and chlorite is developed along prominent schist planes. Narrow laminations of light grey, fine grained quartzite or chert are sometimes present and are often highly contorted.

MINERAL RESERVES

Procedure

Mineral reserves were calculated in the following manner:

1) The drill holes and mineralized intersection were plotted on the 1 inch = 100 feet scale plans. (See Figure 1)

2) Areas of influence for the intersections on the Lower Matt Berry mineralization were based on half the approximate horizontal distance to the surrounding drill holes, or 100 feet when not bounded by another drill hole. The same areas of influence, called blocks, are used for both the Upper, Middle and Lower Matt Berry mineralized layers. If the drill holes were close together the values and area were treated as one drill-hole.

3) The area of each block was then corrected for slope by using the appropriate dip.

4) The width of each drill intersection has been corrected to true width normal to the plane of the mineralization.

5) The area for each block was multiplied by the mining width and divided by 10 which is the approximate tonnage factor.

Due to the heavy core losses in the mineralized sections it is not possible to obtain an accurate average grade for the Matt Berry Zones.

In order to arrive at as reliable figures as possible eight intersections have been chosen as probably being the most representative for grade analysis.

The first five intersection are in shallow holes with relatively good core recovery in the mineralized sections. The last three intersections were chosen because they had the best core recovery in the deeper holes. The resulting average grades are regarded as being probably indicative of the Matt Berry Zones. They may be low due to the inevitable core losses.

<u>Hole</u>	<u>Width</u>	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>	<u>Sb</u>	<u>Recovery</u>
1	*6.0'	7.10	15.27	4.84	.60	Assumed to be about 100%
2	*6.0'	6.50	13.50	10.80	.29	Assumed to be about 100%
4	*6.0	2.35	6.04	1.26	.09	60%
6	*6.0	1.95	6.77	3.54	.54	60%
7	*6.0	8.94	14.80	2.58	.25	95%
23	*6.0	2.60	5.00	11.20	.-	90-95%
25	6.0	1.47	5.20	4.32	.35	90-95%
	7.0	3.72	6.37	11.49	.91	90-95%
Average		4.33	9.12	6.25	.38	

* Calculated for 6.0'

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Mineral Reserves Upper, Middle and Lower Matt Berry Zones

(Minimum 4.0 ft. Width)

Upper Matt Berry Zone

<u>Diamond Drill Block</u>	<u>Ft Area</u>	<u>Ft Width</u>	<u>Ft Volume</u>	<u>Cubic ft. /ton</u>	<u>Tons</u>
1 - 5	52,700	4.8	252,960	10	25,290
7A	29,300	4.0	117,200	10	11,720
9A	37,900	4.0	151,600	10	15,160
10	28,200	9.4	265,080	10	26,508
22	27,800	4.0	111,200	10	11,120
25	37,200	<u>4.0</u>	148,800	10	<u>14,880</u>
Total and Average		4.9			104,700

Middle Matt Berry Zone

22	37,800	6.8	189,040	10	18,900
25	37,200	<u>4.0</u>	148,800	10	<u>14,900</u>
Total and Average		5.2			33,800

Lower Matt Berry ie

<u>Diamond Drill Block</u>	<u>Ft Area</u>	<u>Ft Width</u>	<u>Ft Volume</u>	<u>Cubic ft. /ton</u>	<u>Tons</u>
1 - 5	52,700	4.3	226,610	10	22,610
6 - 7A	29,300	4.0	117,200	10	11,720
9A	37,900	4.2	159,180	10	15,918
10	28,200	4.0	112,800	10	11,280
14	19,500	6.2	120,900	10	12,090
15	30,800	5.9	181,720	10	18,170
16 - 17	34,100	4.3	146,630	10	14,660
22	27,800	4.0	111,200	10	11,120
23	19,200	4.0	76,800	10	7,680
25	37,200	<u>4.0</u>	148,800	10	<u>14,800</u>
Total and Average		4.7			140,051
This is broken down into					
Block 9A					15,918
Remainder					124,133

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SUMMARY OF MATT BERRY MINERAL RESERVES

<u>Classification</u>	<u>Matt Berry Zone</u>	<u>Tons</u>
No dilution (minimum 4.0 ft. width)	Upper	104,700
	Middle	33,800
	Lower	140,000
	Total	278,500
Dilution (minimum 4.0 ft width plus 2.0 ft dilution)	Upper	147,000
	Middle	46,800
	Lower	221,700
	Total	415,500