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To J. C. Devitt
 Date March 2, 1976

From D. J. Hanson

Subject COMPARISON OF PREDICTED VS MINED ORE
 JANUARY - DECEMBER 1975

1) Predicted Ore:

An estimate was made of the tonnage and grade expected from the rock volume mined during 1975 (Table I). This was derived from the April 1975 Tonnage and Grade Model and surveyed banks. Tonnages were calculated at 3.50 SDT/BCY.

2) Mined Ore:

An estimate of the tonnage and grade actually mined was made from surveyed banks and blasthole assays. Tonnages were calculated at 3.50 SDT/BCY.

3) Milled Ore:

The milled tonnage and grade from the December 31, 1975 Metallurgical Balance (corrected for crusher stockpile movements) is given for comparative purposes.

4) Summary:

	<u>Tons</u>	<u>% Pb</u>	<u>% Zn</u>	<u>% Pb + Zn</u>
a) Predicted	3,265,909	4.1	5.7	9.8
b) Mined	3,413,063	3.9	5.0	8.9
c) Milled	3,225,223	4.03	5.41	
From S.P.	<u>-40,000</u>	<u>4.4</u>	<u>5.7</u>	
From Pit	3,185,223	4.02	5.41	9.43

5) Discussion:

- a) During 1975 we experienced a net loss of 2.5% in tonnage milled from pit vs tonnage predicted. This increase in accuracy over previous comparisons is due to a more realistic tonnage factor and the lack of large stockpile movements.

- b) As observed in previous comparisons, the zinc grade was overestimated in 1975 by the current tonnage and grade model. However, unlike previous comparisons, the lead grade was not underestimated for the rock volume mined in 1975.
 - c) As expected, the blasthole method of approximating ore mined tends to overestimate available tons and underestimate available grade. This is especially true in areas with flat lying ore/waste contacts where some black/white shovel and/or dozer sorting takes place.
 - d) The significant variance between milled reported zinc grade and blast hole estimated zinc grade may be due to the fine grain size and relatively low density of sphalerite. The light, fine powder of sphalerite may be selectively blown away during rotary drilling.
- 6) Correction to Predicted Zinc Grade:

Using a cut-off grade of 7.5% zinc per tonnage block, the corrected predicted zinc grade for 1975 is as follows:

	<u>Tons</u>	<u>% Pb</u>	<u>% Zn</u>
Milled from Pit	3,185,223	4.02	5.41
Predicted	3,265,909	4.1	5.5
Variance	-80,686	-0.08	-0.09
% Variance	-2.5	-2.0	-1.7



D. Hanson
Mine Geologist

DH/mm

Attach.

TABLE I

COMPARISON OF MINED VS PREDICTED ORE

1975

<u>Bench</u>	<u>Cut</u>	<u>Predicted</u>			<u>Mined</u>		
		<u>Tons</u>	<u>% Pb</u>	<u>% Zn</u>	<u>Tons</u>	<u>% Pb</u>	<u>% Zn</u>
3910	28'	69,430	3.3	7.3	99,452	2.5	4.5
3870	40'	230,843	2.6	4.4	275,074	3.0	4.4
3830	40'	447,234	3.4	4.5	410,407	3.5	4.5
3790	40'	679,117	3.8	5.5	837,037	4.2	5.1
3750	40'	1,083,331	4.6	6.4	1,000,741	4.2	5.1
3710	35'	755,954	4.6	6.0	790,352	3.9	5.1
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Total		3,265,909	4.1	5.7	3,413,063	3.9	5.0