

Metallurgical Research  
on  
The Grum Deposit  
of  
Kerr Addison Mines Ltd.

Noranda Mines Limited commenced research on the Van Gorda ore bodies in 1964. The present research on the nearby Grum ore bodies commenced in 1974 and five research reports had been written up to mid-1976.

Although reasonable results were obtained, the variations in test data strongly indicated that a pilot plant run was essential. Prior to the run, the Lakefield Research Company had also done bench scale testing and had outlined a slightly different metallurgical process. Both flowsheets were tested in the pilot plant test at Lakefield in 1975. Concentrate grades were unacceptably low, recoveries were low, contaminants in concentrates were high, stability was not attained and results were not repeatable. It was decided to go back to the laboratories.

Additional tests were also done by outside companies and their success was deemed to be no better than ours. Continuing with our research at Noranda, Quebec and Mattagami Lake Mines Ltd., the results continued to be less than satisfactory and difficult to repeat. Nevertheless, a metallurgical balance was predicted as follows:

	<u>Analyses % or OPT</u>			<u>Recoveries %</u>		
	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>
Feed *	3.8	8.7	16.1			
Lead Concentrates	20	50+	10-15	65	75	
Zinc Concentrates	3	3	54+			65

\* This high grade feed is not representative of a large portion of the orebody.

About this time, the difficulties were discussed with Dave Carson of Noranda Exploration. His on-site, Toronto office and mineralogical studies of the drill core of the ores and the products we had been testing and the materials available showed a wide discrepancy between the two. It would appear that, due to an unfortunate series of circumstances, the majority of our research had been conducted on samples which represented less than 10% of the orebody but were representative of the most difficult ore to be treated.

A new suite of samples representative of a number of types of ores were obtained, research recommenced and favourable results started to show up. The laboratory research program is continuing but adequate data to design a pilot plant flowsheet and predict performance in the pilot plant will not be available until July.

However, a preliminary prediction based on laboratory tests at Mattagami, Quebec looks appreciably better than the previously mentioned one.

	<u>Analyses % or OPT</u>			<u>Recoveries %</u>		
	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>
Feed	2	4-5	8-10			
Lead Concentrates	20	60	8	67	80	
Zinc Concentrates		2	55			85

Somewhat similar results are being received from Lakefield Research and there is now an indication that a flow-sheet similar to that at Cyprus Anvil could produce similar metallurgy to the above also.

The research continues and results could be better and may not be any worse.

It is planned to conduct a second pilot plant run at Lakefield in September-October of this year. The reports from this research will be available before the end of the year. If the laboratory bench scale tests currently underway are reasonably acceptable, preliminary design engineering for feasibility and detailed design purposes could be initiated in the fall so that some progress could be made during the pilot plant test. Then, if the pilot plant results are also acceptable, more intensive design engineering could proceed in order to permit some construction in 1978.

RLC/dhg

*RLC*