

**noranda** *General*

January 31, 1977.

Mr. Jim Paxton,  
Kerr Addison Mines Ltd.,  
703 - 112 West Pender Street,  
Vancouver, B.C.

Dear Jim:

I have completed the lab work for the first phase of my study of the Grum ores and will send you a copy of the report when I complete it in late February.

The most important conclusions are that there are 2 main problems with only some of the Grum ores: (a) oxidation - this would appear to be developed only locally in pockets, and mainly in the upper east end of the orebody. It probably affects only about 5% of the orebody. (b) middlings - this consists of 1000 - 3000 mesh grains of galena sprinkled throughout sphalerite and results in high Zn in the Pb concentrates because these small galena grains always leave larger sphalerite portions attached. This type of ore also has to be very finely ground and one detrimental result is sliming of much of the galena and therefore its loss to the tailings. However, out of 88 sample points (polished sections of the core we collected) from throughout the orebody, only "B" site has this problem to an extreme degree.

Regarding (b), I think the middlings problem can only develop seriously at certain places in the top 1-2 meters of the orebody, and can only be extreme where compressional (granulation) faulting has affected this 1-2 meters, as at site "B". To completely tie down the extent of this galena-in-sphalerite middlings problem I need a large number of carefully-chosen core samples. I will have polished surfaces made of the core specimens, and will rate each on a scale of 1-6 for its middlings problem. I understand that you will be collecting these samples at the same time that you obtain the additional bulk metallurgical samples. I have made up a list of 772 samples I'd like to obtain. I realize that it will not be possible to get all the samples at the exact meterages listed but would appreciate it if the samples were obtained as follows:

- 1 - size of core - about 2 inches long
- 2 - PbZn sulphides visible --- for this it may be necessary to take the sample some distance from the spot listed. The G samples of course are an exception.
- 3 - sample should be as typical as possible of surrounding ore interval
- 4 - type of sample should be recorded (MV, Mb, M<sub>O</sub>, P<sub>G</sub>, etc.) --- the types recorded on my list, (M) etc, are only rough
- 5 - Samples numbered as U-175-7.5 etc.
- 6 - noting any special features of the core at that interval (oxidation, high pyrite, high barite, high pyrrhotite, faulting, etc.) would be appreciated.

I realize that collecting the specimens will take many days but the information they will yield will allow for exact determination of the extent and localization of the middlings problem for the entire orebody, so that your help will be much appreciated.

Regarding item (a), oxidation, could you record all intervals of notable oxidation (similar to sites "F" and "B") for all the holes as you collect the core specimens, and send me a copy of these intervals? I don't believe that they are very common but we should confirm their extent and localities of occurrence --- mainly upper east end of the orebody.

Please send specimens via C.P. air express to

D.J.T. Carson,  
Noranda Exploration Company, Limited,  
Room 4401, Commerce Court West,  
Toronto, Ontario. M5L 1B6

I will be in Vancouver on my way back from Korea about February 16 and will call you then (Vancouver or Grum).

Thanks very much for your help in collecting these samples and for all the assistance you gave me last November. Hope its not too cold up there!

Best regards.

Yours very truly,



D.J.T. Carson

P.S. I am enclosing a print of one of your old companions at Grum.