Cyprus Anvil Mining Corporation

Interoffice Correspondence

019407

To Rik Visagie

Copy to

From Gregg Jilson

Date May 9, 1984

Subject DENSITY SEPARATION OF GRUM ORE TYPES

The accompanying figures show the distribution of ore type and grade in the GRUM deposit with respect to specific gravity of samples in the assay file.

This information was extracted from the GRUM data base using a Quiz program designed by Lee Pigage. My rationale behind asking for this data display was to address several points. Of particular interest was what, if any, SG value could divide the major ore lithofacies:

The results (figure 1) show that at a SG of about 3.7 most massive (4EG) ore types (solid black portion of histogram) would be heavier and most quartzose ore types (4ABCD) would be lighter. Nearly all ribbon banded graphitic quartzite (4A) would be lighter (stippled portion of histogram).

If it were feasible to make this density separation on a production scale, then time and labour intensive selective mining might be avoided or minimized.

The average grade of material with SG greater than 3.70 will be well in excess of 10% Pb+Zn (figure 2) thus a density separation also accomplishes a major grade separation.

It seems possible that simple mechanical sizing and gravity separating schemes could be implemented between an in-pit crusher and the mill.

Any comments?

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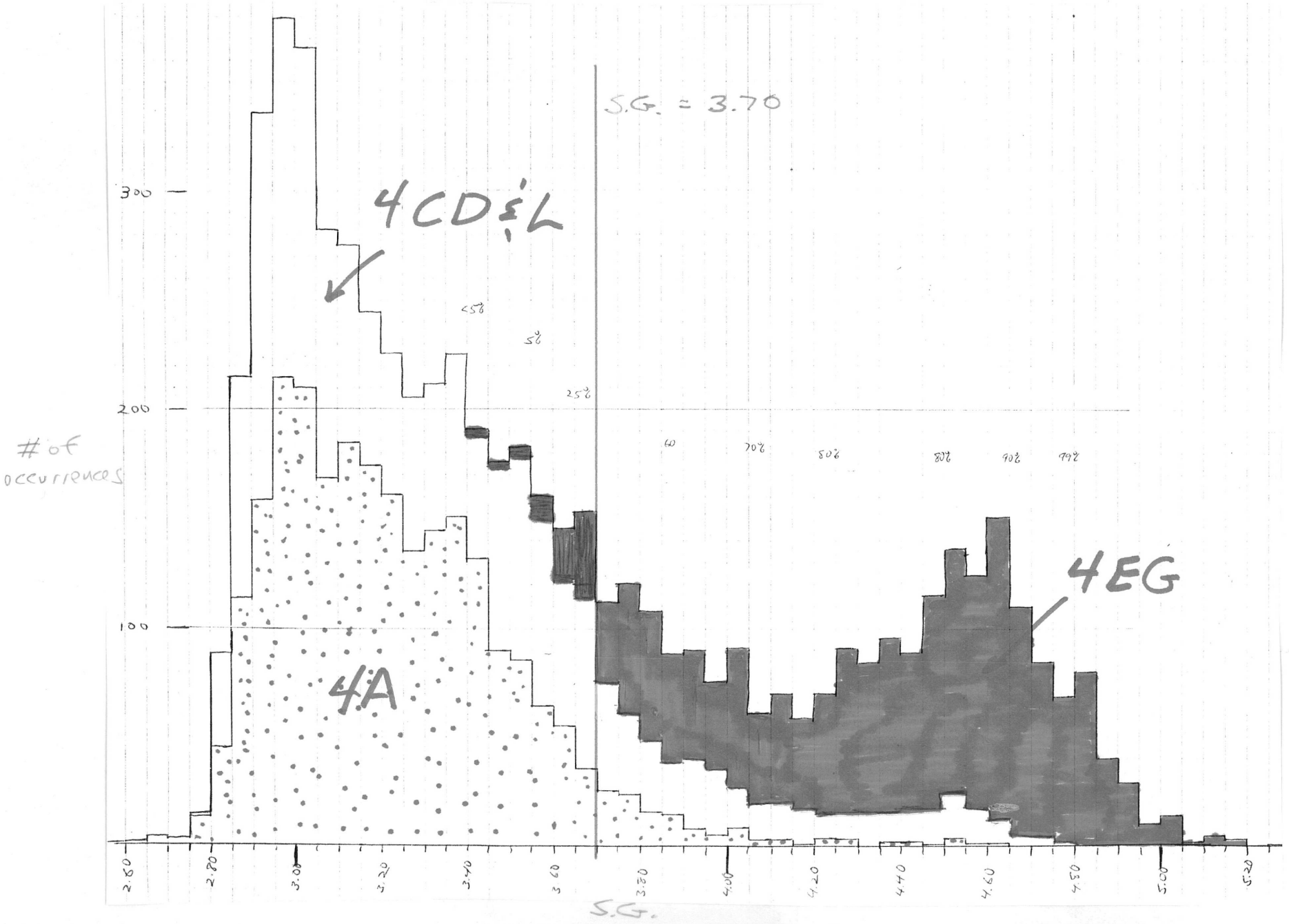
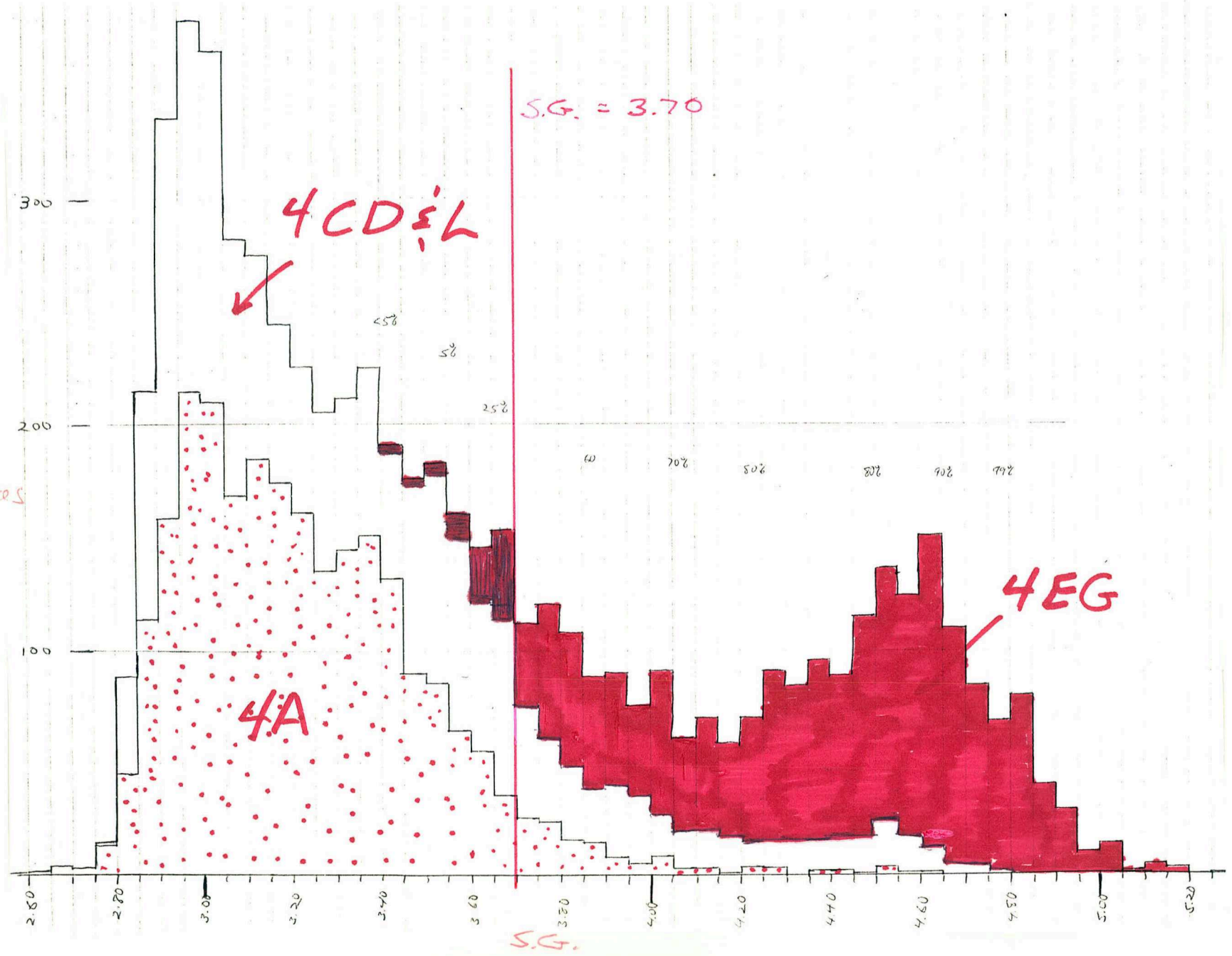


figure 1 – Histogram of specific gravities of Grum ore samples – unadjusted pulps. no real cut-off other than visible Pb Zn mineralization. Massive lithofacies estimated only, others measured.



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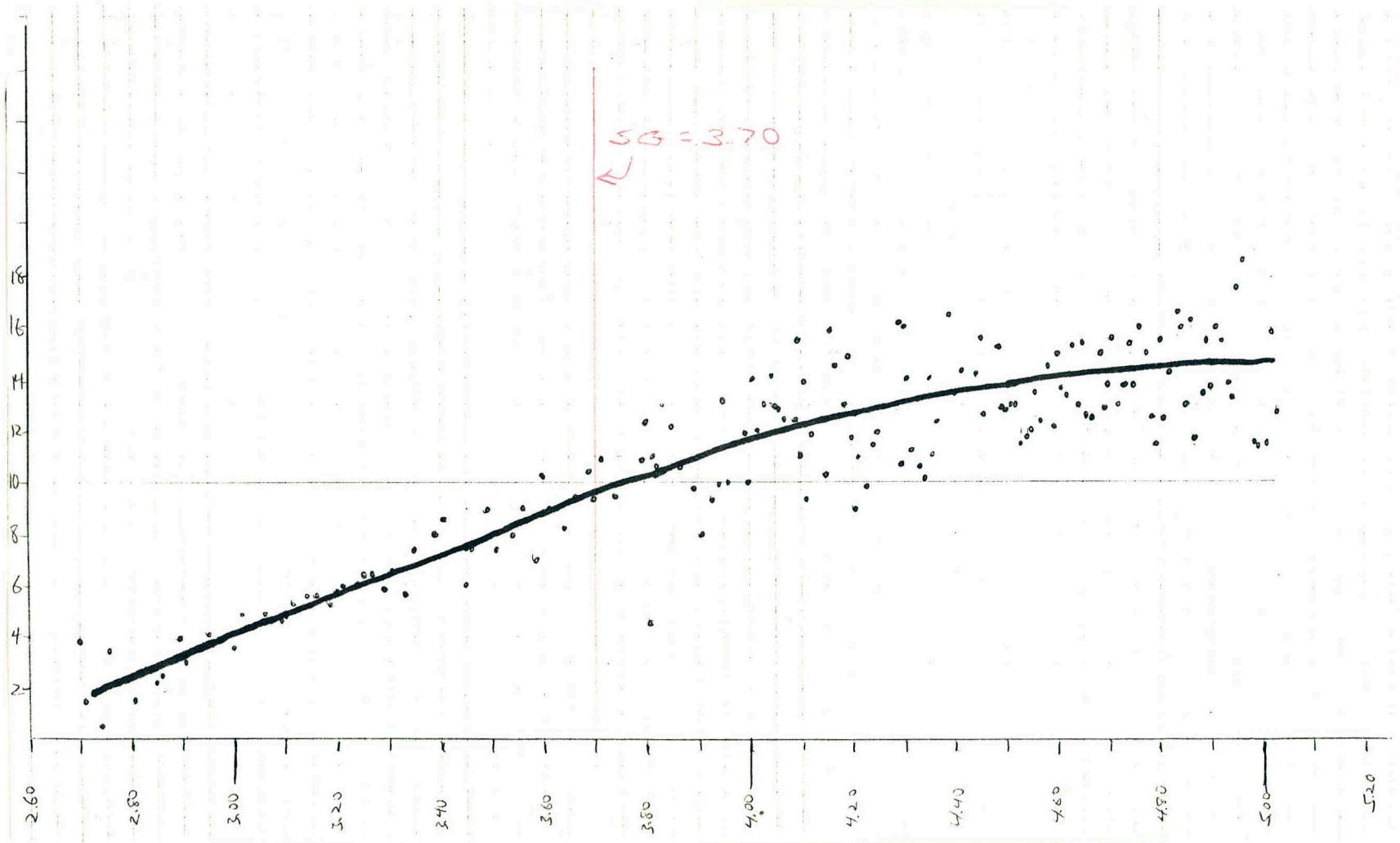

figure 2 — average grade of samples in various classes of specific gravity used in constructing figure 1. No cutoff other than visible Pb+Zn mineralization, using a cutoff would reduce scatter and increase grades. Averages not weighted for sample length.