

MEMO TO: (K. Blower

CC: S. El-Alfy; K. Morton; W. Richardson; R. Raponi

FROM: K. G. Thomas

DATE: August 29, 1986

SUBJECT: WILLIAM BLYTHE & CO. LTD., U.K. - ARSENIC TRIOXIDE

1. Venue - Blythe, Church, Accrington, Lancashire, U.K.
2. Date - August 14, 1986 at 09:00 hrs.
3. Present - Blythe: Jeffrey Wilkinson, Research & Development Director;
Keith Hargreaves, Development Manager;
John Thorpe, Senior Research Director.
Giant: K. G. Thomas.
4. Summary of Objectives -
 - 4.1 Establish acceptability of return residue for gold recovery (testwork in progress at Giant).
 - 4.2 Is all gold in residue.
 - 4.3 Analysis of underground samples required.
 - 4.4 Blythe requested analysis technique for Au in arsenic trioxide to check Au deportment.
5. Iron Content

Blythe prefer iron below 500 p.p.m. and for good C.C.A. product at 200 p.p.m. for low dust on wood surfaces.

Giant with flue modifications is running at present between 6,000 to 12,000 p.p.m. There appears to be no economical reason for further improvement. That is Blythe will require a pre-treatment step.

Blythe objective is to take the cheapest inputs for their process that are available. Hence the interest in our underground and current arisings.

6. Underground Material

Blythe require analysis of our underground product shipped recently. Messrs. Morton and El-Alfy please organize duplicate samples for W. Richardson to analyse for Au, Fe, As and Sb.

7. Soluble Arsenic (Refer Attached Testwork Results)

Fixing arsenic at Blythe could be costly. Fixing with Fe is estimated to increase product weight by 10%, hence increasing freight return charges.

Blythe presently fix with lime. This is not acceptable to Giant as calcium arsenate re-solubilizes. A more permanent fix with iron is required which would probably be more economical at Giant. Blythe can fix with lime as they recycle all their water.

They appear to be confident that they can supply arsenic in the less soluble form (As_2O_3). This has a solubility of 7.6% (76 kg per t). Recent sample from Blythe suggests this.

8. Plant Visit - not allowed.

9. Residue

With one stage wash arsenic levels are 20% As_2O_3 , and 2% As_2O_5 . With two stage wash levels are significantly reduced to 11.4% As_2O_3 and 1.7% As_2O_5 . They appear confident of a recovery in excess of 99% of arsenic to their process.

10. Annual Report

1985 and 1984 reports obtained. Looks a fairly healthy company on paper. Wrote down £ 2m (\$4m) in 1985 for South African political situation and still made \$6m profit on a reasonable turnover.

11. Conclusion

12.1 Looks a viable opportunity for Giant.

12.2 Treatment of low grade gold residue at Giant may not be economical owing to effluent treatment plant charges to remove soluble arsenic.

Situation could be profitable with treatment of underground residue (higher gold).

Karen
for K. G. Thomas