

KAPITAX: GIANT



FALCONBRIDGE

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Memorandum

Date: February 12, 1986

To: D. J. Emery

Copies to: L. C. Bonar, K. Blower, K. G. Thomas, B. C. Cross, P. J. Raleigh, S. O. Fekete, File

From: T. J. Desanti

Subject: GIANT YELLOWKNIFE As_2O_3

A meeting was held in our offices on February 11, 1986 with the following to discuss (i) the results of the pilot plant work done to date by William Blythe & Co. in the U.K. on Giant's crude As_2O_3 , (ii) the next step in Blythe's product evaluation process, and (iii) Blythe's long term plans.

William Blythe & Co.
T. Robson - Managing Director

Giant
DJE

FL
PJR
SOF
TJD

Applied Research
W. Drinkard - President

1. Blythe have processed the nine tons of Giant crude received in November 1985 along with other crude As_2O_3 feed materials normally used as feed to their present operation to produce copper arsenate (CA). No problems were experienced with the Giant crude As_2O_3 , i.e. recoveries of 99% were achieved. The CA produced was used by Hickson's to make CCA which was up to product specifications. The 99% recovery figure means the residue runs about 10% contained As_2O_3 which probably qualifies it as a hazardous material. This residue from a future commercial plant would have to come back to Giant in any event to recover the gold content.
2. It was originally expected the CA would contain 75% of the As_2O_3 required to produce CCA but the test product contained only 40% of the required As_2O_3 . This means the difference must be added as refined As_2O_3 in producing CCA thus reducing the benefit of using a lower cost As_2O_3 feed source; i.e. the target was to reduce the present cost of manufacturing CCA by 20% compared to the costs using conventional processes but the 40% As_2O_3 figure above reduces the benefit to approximately 15%. Future test work will determine whether the 40% figure can be increased.

3. Blythe and Applied Research are both evaluating the next step which will be a second pilot plant with the throughput scaled up by a factor of 10 (equivalent to 33% of the potential full scale plant). Drinkard is recommending that the pilot plant be established in Charlotte, N.C. while Robson feels it would cheaper to continue doing the work in the U.K. A decision will be made on the location in March with scheduled pilot plant startup in midyear and completion of the test work planned by yearend. the cost of this work is projected at Stlg 250,000 (CDN \$500,000). Giant did not contribute anything to funding the initial test work just completed (the cost was apparently minimal and paid for 100% by Blythe).
4. During the course of this test work, a preliminary joint venture proposal was submitted to Giant by Blythe Hickson's and a counter submitted by Giant. The main components of these proposals are summarized below:

	<u>Blythe/Hickson's</u>	<u>Giant</u>
Shareholding:	60% Hickson's 40% Giant	51% Hickson's 49% Giant
Initial Equity:	Hickson's US\$300,000 Giant US\$200,000	Hickson's US\$255,000 Giant US\$245,000
As ₂ O ₃ Supply:	Giant to supply 100% of plant requirement at zero cost FOB Giant and Giant not to supply any other consumer	Giant agree to supply 100% of plant requirement but not agreeable to restricting supply or to supplying at zero cost
CA Selling Price:	Hickson's want the joint venture to sell CA to associated companies at computed prices lower than market prices	Giant want to sell CA from the joint venture to all consumers at market prices

5. Robson took the position it could take a significant amount of time to conclude a mutually acceptable deal and since (i) they want to complete the test work as soon as possible, and (ii) the test work indicates 40% of the As₂O₃ required to produce CA will come from Giant crude (reducing Giant's input from 3,800 STPY (current full production) to 2,000 STPY), Blythe will fund 100% of the second stage pilot plant.

6. The second stage pilot plant will require about 70 tons of giant crude to be shipped in drums (regardless of the delivery point) for delivery in June. ~~Giant will be advised of the final destination in March. It is recommended Giant promptly order the drums necessary, so the material arrives at the destination by midyear. Blythe want to receive crude As₂O₃ which giant considers fully representative of future production (shipments over the 1983-1985 period average about 88% As₂O₃ with some shipments below 80% As₂O₃). Blythe particularly want samples of underground material which could be shipped to the commercial plant in order to compare processing characteristics with current production.~~
7. Blythe will keep in contact with Giant during the course of the second stage pilot plant work to determine whether both parties can conclude a mutually acceptable joint venture agreement. Blythe have taken the position that Giant may not be seriously interested in a joint venture if Giant supplies considerably less than current production of As₂O₃ and has a significantly reduced equity position.
8. Blythe/Hickson plan to commence engineering design work for the new plant during the second half of 1986. If positive test work results are obtained by yearend, a commercial plant producing up to 30% of the U.S.A. CCA requirement (in the form of CA) could be operational by the end of 1987. Consequently, Giant will not be in a position to ship crude As₂O₃ to the potential joint venture for about two years.

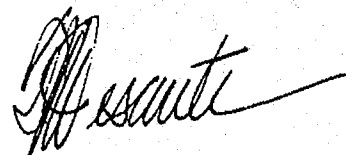
Summary

Test work completed to date by Blythe suggests they may not achieve the 20% cost savings originally projected by Applied Research. A 20% saving results in a ballpark figure of US 13 cents/lb (20% of US 65 cents/lb for CA). A 15% saving of US 10 cents/lb on the projected plant output of 15,000 STPY of CCA (7,200 STPY of CA) results in a saving of about US \$1.4 million/year. This would provide a plant payback figure of about four years assuming a \$6 million plant cost.

However, a plant operating rate of 15,000 STPY of CCA equivalent to 30% of the market can only be achieved under current and projected competitive market conditions by convincing (i) a major CCA producer such as Osmose to buy CA from the joint venture to make CCA at an incentive price or (ii) a major CCA buyer to switch suppliers at an incentive price. This means a minimum discount of US 2-3 cents/lb and an effective cost advantage well under US 10 cents/lb.

There is no strong incentive for Giant to get into a joint venture with Blythe unless a minimum 20% cost saving can be achieved and Giant's total crude As₂O₃ production can be shipped annually commencing in late 1987/early 1988.

Blythe continue to have an interest in Giant because of Giant's huge raw material supply and ability to treat arsenic bearing residue (containing gold) which will be produced by the joint venture. Consequently, Giant should maintain close contact with Blythe (as recommended by Blythe) during the second half of 1986 so Giant is in a position to move ahead on a joint venture if positive test results and projected cost savings materialize. ✓



T. J. Desanti

TJD:dmg