

MEMORANDUM

TO: J. Moore
CC: K. Blower
FROM: K. Morton
DATE: Sept 4, 1990
SUBJECT: WAROX ECONOMIC ANALYSIS - PHASE I ONLY

Sintered metal filter pilot testing conducted during July and August has confirmed earlier test results and provided information necessary for design of an As_2O_3 purification plant using sintered metal filters in place of the Cottrells. The testwork indicated that selection of filter media is not critical and that product quality objectives can be achieved.

From recent mill production data and discussions with potential clients, it appears that at least 4,500 tons per year of high purity As_2O_3 product can be produced and sold. At a net value of \$0.12/lb, this represents an annual profit of \$1,080,000.

Pilot plant operations also confirmed that gold extraction of hi-temp filter dust is approximately 3% better than extraction of cottrell dust. This is approximately 330 ounces of additional gold recovery from this source each year. In addition, approximately 660 additional ounces of gold can be recovered from the 700 ounces/yr now being lost to baghouse dust. Total additional gold recovered, 990 oz/yr, worth \$437,580/yr.

From the equipment cost estimates provided by each supplier of sintered metal filter assemblies, the cost of a suitable assembly using three filter vessels online, one on standby, would be approximately \$250,000 FOB Yellowknife. The cost includes all controls, valves, eleven hundred sq ft of filter elements, four housings, etc..

A booster fan and motor of approximately 350 hp would cost \$65,000, FOB Yellowknife, and would enable the filters to be operated at pressure drops up to 40" wg if necessary.

A 1000 sq ft building extension, designed for future expansion to Phase II, would cost approximately \$200,000.

Much of the instrumentation required for the plant would be provided by the filter supplier and remaining instrumentation would not exceed \$40,000.

Factoring the total equipment cost, \$555,000 by an installation factor of 2.25, total capital cost, including EPCM, would be approximately \$1,250,000.

Additional operating cost would be zero, and in fact some cost savings would be realized, ie. baghouse dust storage costs of \$200,000/yr would no longer apply.

The attached economic analysis illustrates the returns that are available if the company proceeds with the sintered metal filter installation, as proposed.

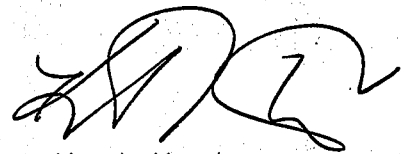
Other benefits, which have not been included in the analysis, include the following:

Eventual expansion to Phase II can be paid for from project cash flow.

Cost of wastewater treatment chemicals may be reduced. No estimate applied.

Cost of final disposal of stored baghouse dust, if necessary, would be reduced.

Access to gold bearing crown pillars would be made available as arsenic is depleted from underground storage.

A handwritten signature in black ink, appearing to read 'KM', with a stylized flourish at the end.

Kent Morton