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Yellowknife Division

December 24, 1987

Kilborn Engineering Ltd.  
Suite 400, 1380 Burrard Street  
Vancouver, B.C.  
V6C 2B7

Attention: Mr. Doug Beaumont,  
Vice President, Metallurgy

*Steve*  
*Also J. Martin*  
*Fenco Engineers Inc.*  
*P. Taggart*  
*Proton Systems*

Dear Mr. Beaumont:

Re: Arsenic Trioxide Reclaim and Upgrading Systems

We are currently involved in pilot scale testing of a process designed to upgrade crude arsenic trioxide into a saleable product while recovering gold from the resulting residue. Though it is still too early to consider final flowsheet design and detailed engineering, you may be interested in looking at our conceptual ideas for both surface and underground facilities. Though not shown on the sketches, the project will also include a truck-to-rail transfer facility, probably built at Enterprise, NWT.

As you can see from the sketches, we intend to collect the arsenic trioxide dust from underground using a remotely controlled vacuum line combined with a pneumatic conveying system to transfer the dust to surface storage. Since some of the stored dust is too damp to recover with the vacuum system, a second recovery and handling system will be necessary. This will probably consist of an underground slurring agitator combined with a submersible pump to deliver the slurry to surface. The surface plant will be equipped with a surge tank and pressure filter or centrifuge to dewater the slurry prior to feeding into the fuming reactor.

The surface plant will produce 20 to 40 stpd of >99% arsenic trioxide and will utilize some existing equipment. Pilot testing is being done by The Research and Productivity Council of Fredericton, N.B. and work will be done in three distinct stages on a variety of feedstocks.

As this process has been tested only in lab scale we want to be certain that pilot testing is comprehensive and fully representative of full scale conditions. We feel that careful groundwork here will result in a plant that performs as expected without a lot of startup problems and without the need for major revisions. At the same time we are anxious to complete the preproduction phase without delay.

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The following is a tentative program schedule.

Nov 1987 - Apr 1988	RPC fuming testwork, underground recovery testing.
Mar 1988 - Jul 1988	Detailed engineering of fuming plant and underground recovery system.
Jul 1988 - Mar 1989	Surface plant and transfer facility construction, installation of underground equipment .

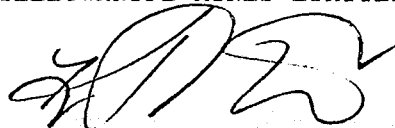
As far as we are aware this plant will be unique and it is unlikely that your process design engineers will be familiar with this particular process in its entirety. The various unit operations are however, quite conventional, the single exception being the hot baghouse, which must operate at a temperature of 400°C. The fuming reactor is simply a small fluosolids roaster operated in such a way that arsenic trioxide dust is sublimed and the fume carried off to a multistage condenser for crystallization. Non-volatile particulates are entrained in the gas stream and removed in the hot baghouse. Dust captured at this stage is slurried and sent to the existing CIP circuit for gold recovery.

It is our intention to have a small project team that will include an experienced engineer whose background includes significant experience in processes of this nature. We are interested in knowing if you have meaningful in-house experience in this type of process or whether you are aware of a small consulting group specialising in this type of operation that you could join forces with for the duration of this project.

As the pilot testing proceeds, it is our plan to discuss with various engineering firms the extent to which they feel they are qualified to participate in the steps necessary to bring the full-scale plant into production.

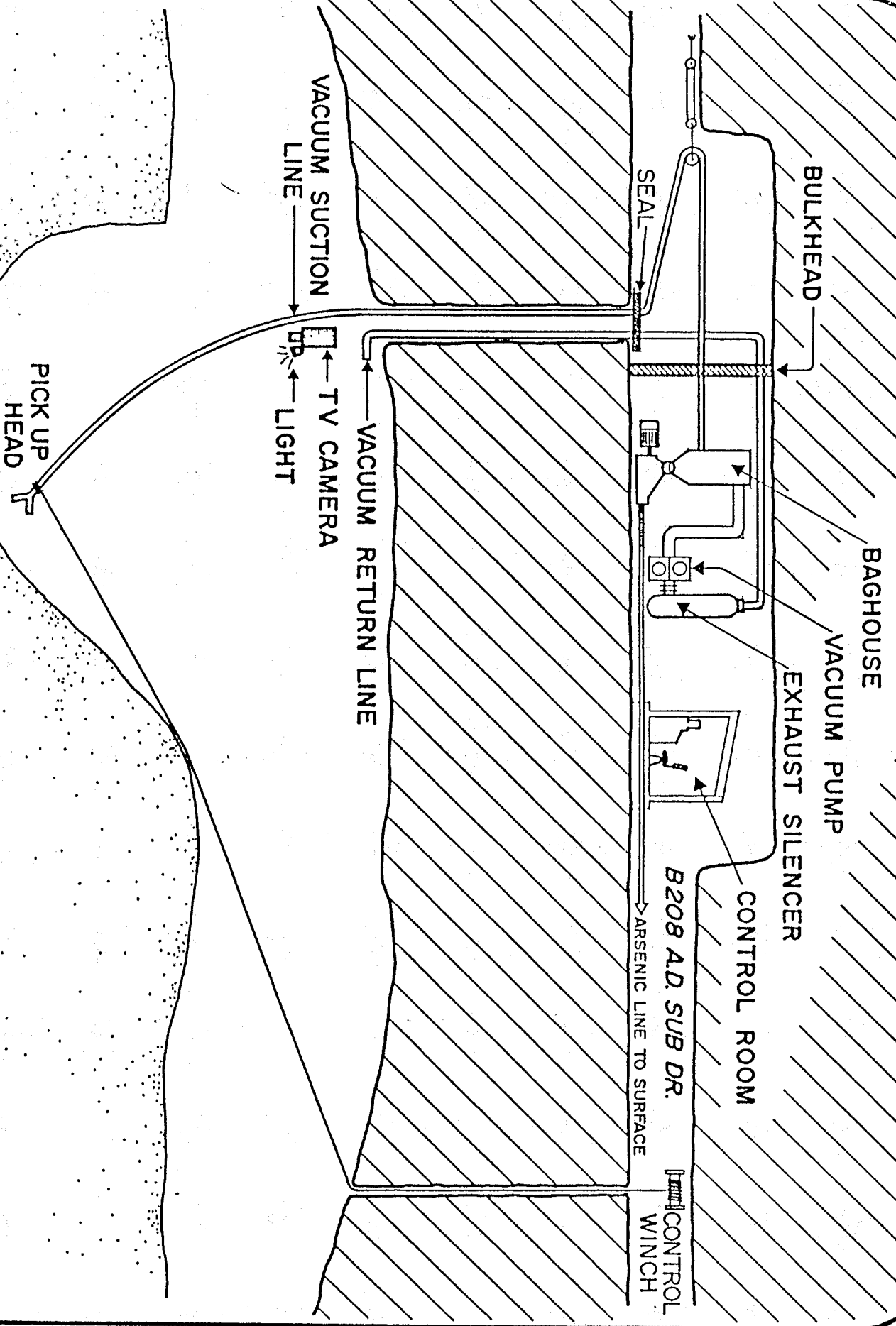
Yours truly,

GIANT YELLOWKNIFE MINES LIMITED



K.Morton,  
Technical Project  
Supervisor.

cc: K. Blower  
S. El-Alfy  
S. McAlpine

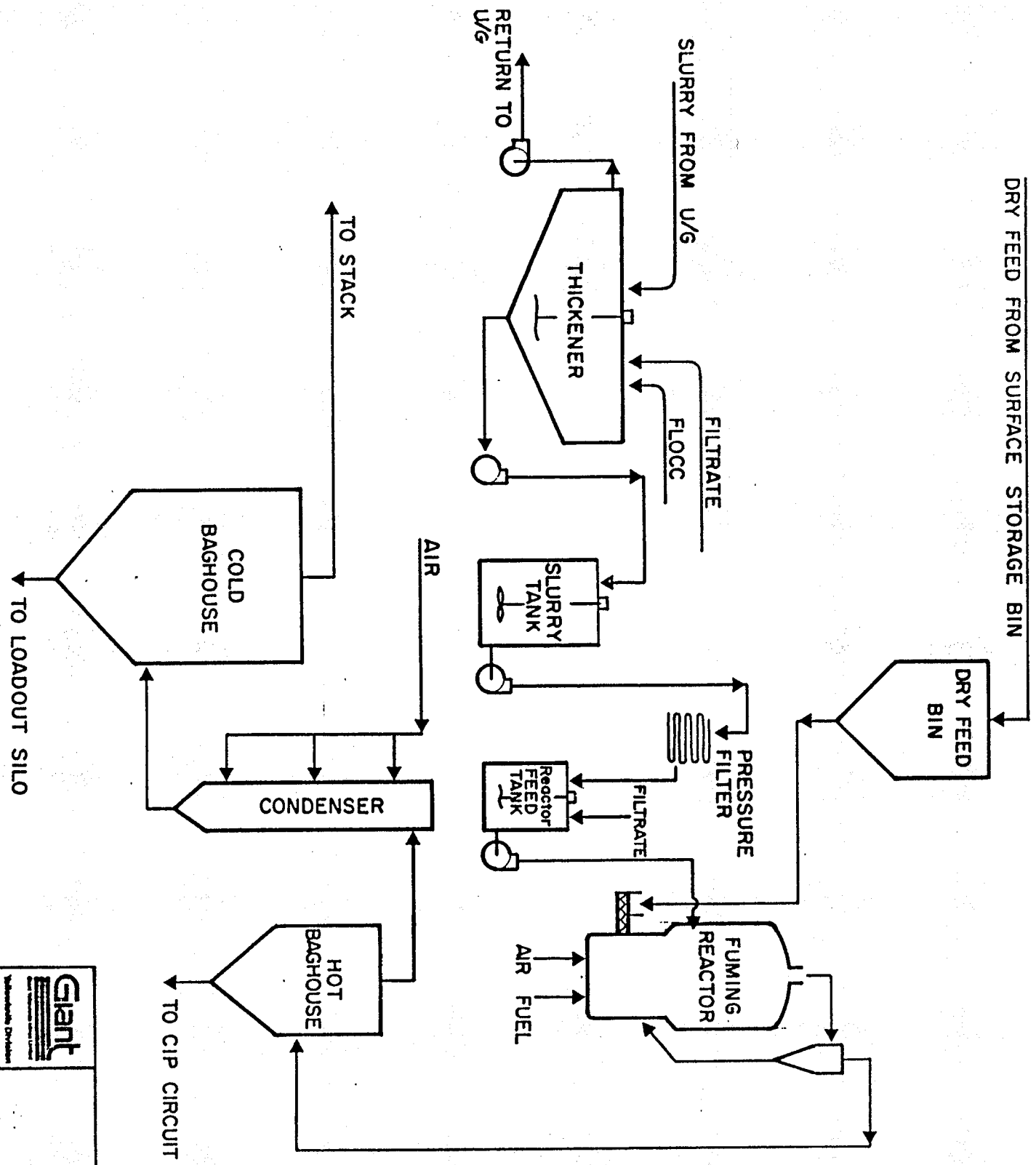


# Arsenic Reclaim System

## STOPE B208

OCT '87

KM / msl



DRY FEED FROM SURFACE STORAGE BIN

DRY FEED BIN

SLURRY FROM U/G

FILTRATE

THICKENER

RETURN TO U/G

SLURRY TANK

PRESSURE FILTER

FILTRATE

REACTOR FEED TANK

FUMING REACTOR

AIR FUEL

HOT BAGHOUSE

CONDENSER

COLD BAGHOUSE

TO STACK

TO LOADOUT SILO

TO CIP CIRCUIT