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June 7, 1978

Mr. M.L. Brown,
Regional Mining Engineer
& Mining Inspector,
Indian and Northern Affairs,
P.O. Box 1500,
YELLOWKNIFE, Northwest Territories.

Dear Mr. Brown:

Re: Arsenic Survey - March 16 - 21, 1978
Giant Processing Plants

In Mr. Moore's absence, he has instructed me to reply to
this report.

Our action plan to reduce airborne arsenic concentrations
is as follows:

Steps are being taken to completely enclose the hot
cottrell dust quench system to reduce airborne arsenic dust levels observed
in the cottrell working environment. It is believed that gaseous arsenic
is escaping into the environment while the hot dust stream is being water
quenched. By enclosing the quench tank and venting the exhaust back to
the flue, the quench tank will be under a negative pressure reducing gaseous
emissions to a minimum. Equipment manufacturers have been contacted in a
search for an enclosed quench installation, however, in the interim a vented
quench box will be constructed housing a screen to remove oversize dust
lumps. The interim installation was complete by June 3, 1978.

Measurements by Giant personnel indicate that the
installation of a clean air supply to the cottrell lunchroom has lowered air
borne arsenic concentrations by 80% in the lunchroom itself. A noise
attenuator was constructed and installed in the cottrell lunchroom filter
system in early February and has been in continuous use since. During the
summer months air is being drawn from outside the cottrell building to feed
the lunchroom filter system.

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The high airborne arsenic dust levels in the roaster building reported by Mr. Ireland do not agree with levels recorded during the period March 4 - 11, 1978 by Giant personnel. The incongruity between measured levels suggests the possibility that these high levels may not be representative of the roaster building working environment. To avoid future occurrences of spurious high airborne arsenic levels, a removable metal cover will be built to enclose the calcine quench tank. Leaks in the upper roaster off-gas handling system were located and repaired following the roaster shut-down of May 21 to 27th.

Measurements of total airborne arsenic dust levels in the roaster control room are consistently below the recommended T.L.V. for respirable airborne arsenic and hence we see no justification for the claim that the roaster control room is an unsafe area for workers to consume food or fluids. Personal hygiene and the proper cleaning of utensils is a practice that must be strictly adhered to no matter where the working environment is located. Equipment to provide a filtered source of positive air pressure inside the control room has recently arrived and should be installed by mid-June. A positive pressure inside the control room should reduce concentrations of airborne dust contaminants entering the environment.

The practice of short term (4 hours) low volume airborne dust sampling will introduce larger sources of error in the monitoring of airborne dust levels. An example of the type of incongruities that will arise is demonstrated in the total airborne arsenic dust levels measured in the roaster building on March 16, 1978. The consistently higher AM readings are inconsistent with the continuous operation of the roaster. Roaster feed rate and operating parameters were constant throughout March 16. The use of high air volume sampling techniques is recommended as the only method with sufficient accuracy to allow comparison of airborne arsenic dust levels as measured over a time period less than an 8 hour working period to the recommended 8 hour/day - 40 hour/week time weighted exposure limit.

Yours very truly,

GIANT YELLOWKNIFE MINES LIMITED

Kent S. Morton
Acting General Manager

KSM:jc