

MEMORANDUM

CLASSIFICATION

TO
A

Director General, Medical Services

YOUR FILE No.
Votre dossierFROM
De

Northern Region

SUBJECT
Sujet

Arsenic Surveys of Yellowknife Bay and Turbidity
Survey of Yellowknife River - July 19, 1968

TO	FOR INFO	FOR ACTIC	REMARKS	DISPOSAL AND DATE
<i>MIG</i>				

OUR FILE No. 150-5-M-9 (N1)
Notre dossier

DATE Aug. 1 1968

Further to my letter of July 24, 1968, Mr. Grainge informs me that he had not checked his report after typing and he has now changed Page 5 (copy attached).

He is not recommending any particular point of intake but is pointing out that the water on the west side of the narrows has been below the allowable concentration of arsenic during the period of study.

Enc.

Please retain when the copy of the original survey is disinterred from the files m/b
J. C. B. Lh.
 Regional Director

The arsenic concentrations in the water at sample point 02-3 were not greater than 0.008 mg/l As.

YELLOWKNIFE RIVER SURVEY

Analysis of the river water samples showed that the turbidity reached a maximum value of 21.0 J.T.U. on May 26 (see Fig. 4). This figure also shows that during the sampling period, May 17 to July 5 inclusive, the turbidity in the water exceeded the recommended maximum limit of 5 J.T.U.³ approximately 3 days. This represents the maximum recorded effect of break-up, in the Yellowknife River system, on the turbidity of the river water.

CONCLUSIONS

The average arsenic concentration in Yellowknife Bay continued to decrease as a result of the program carried out by Giant Yellowknife Mines Ltd.

The minor surveys have shown that the arsenic concentration in Yellowknife Bay at and near the mouth of the Yellowknife River varies depending on where the sample is taken. Water samples taken near the west shore and below the Tailings Pond outfall will contain large concentrations of arsenic. Water samples taken from the east side of the channel have consistently produced results that are well below the suggested limit of 0.01 mg/l As.

The turbidity in the Yellowknife River water is practically always below the recommended maximum limit of 5 J.T.U. As a result of this, turbidity removal is not justified.

RECOMMENDATIONS

1. After the tailings pond effluent structure that will direct the effluent towards Baker Creek is completed, all the effluent structures that direct the effluent towards Yellowknife Bay should be sealed. This should be done to prevent inadvertent disposal of tailings and/or effluent directly into Yellowknife Bay.
2. A ditch should be dug so that inadvertent spills of wastes from the tailings pond will be directed to the bay and not to the channel.
3. It should be noted that all water samples taken at point 02-3 contained less than 0.01 mg/l As (the desirable limit, N.W.T. Public Water Supplies Regulations 13(2)).