

MEDICAL SERVICES BRANCH

L.M. Black
Director General
Program Management

Date: 07.04.72

A:
TO: Mr Black

REMARKS
REMARQUES:

*Copy sent to
R.H. N.G.L.*

07.04.72

J

Directeur général
Gestion des programmes

DIRECTION DES SERVICES MÉDICAUX

MEMORANDUM

NOTE DE SERVICE

TO
À M14

FROM
DE M67

SECURITY - CLASSIFICATION - DE SÉCURITÉ
OUR FILE - N/RÉFÉRENCE 851-5-2 (M67)
YOUR FILE - V/RÉFÉRENCE
DATE 7 April 1975

SUBJECT
OBJET Arsenic in Yellowknife

We have discussed briefly the preliminary results of hair samples now underway from a cross-section of Yellowknife citizens. I just want to reiterate a few salient points:

1. No valid assumptions can be made from the results. This is because hair samples are not an indicator of intoxication. Arsenic levels in hair are affected by the wearing of hats and shampooing. There is no way to separate "fall-out" contamination (surface residue), from internal absorption. Arsenic binds to the keratin in hair and can't be washed out.
2. We are unable to give a "safe" level for hair. "Normal" arsenic levels are reported as being 0.5 to 2.2 ppm in populations with no known exposure. All the Yellowknife townspeople are within this range with a few exceptions. The exceptions are in pre-schoolers. About 5 of them are in the range of 5 to 8 ppm. This may indicate a difference in hair washing frequency or the non-wearing of hats. In any event we cannot attach any significance to these few casual samples, but should certainly be alert.
3. There is no relationship between arsenic levels and the water supply source.
4. Some authorities give 100 ppm. as a level where symptoms may occur. The mill and mine-workers in the early results are showing high levels - up to 400 ppm. Again I would emphasize this is only an indicator of an exposure to arsenic.

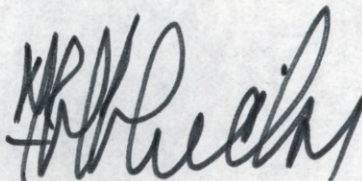
7 Apr 75
M14
Please send copy
to R.D. NWT & return
original to me.
Thank to

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From the above, it is obvious that these samples are indicating a high level of exposure in only one group - the mine and mill workers. As soon as all samples are in, we should concentrate on this risk group regardless of the reported arsenic level. We recommend:

- (a) Urine arsenic levels on all mill and mine personnel.
- (b) Clinical examinations on any who have a high urine level. We are working on the establishing of a realistic threshold.
- (c) A carefully planned industrial hygiene survey to be carried out by September. We are prepared to do this.

In the meantime we are in the midst of a literature review which will aid us in establishing a threshold. This is complicated by a lot of recent work linking arsenic and carcinogenicity. The allowable threshold exposure levels are being questioned everywhere, and right now any figure we take would be an arbitrary one.

A handwritten signature in dark ink, appearing to read 'F.H. Hicks', with a stylized, cursive script.

F.H. Hicks