C455-10-13

Laboratory Services,
Occupational Health Division,
200 Kent Street, Ottawa, Ontario.

October 11th, 1955.

Mr. S. Homulous,
District Mining Inspector,
Yellowknife.

Dear Steve,

Attached are copies of letters which I have sent to Kurt Raht, Mr. J. C. Colethorpe and Pete Pitcher plus copies of the 2 memos to Dr. Kay reporting stack collection efficiencies at Con and Giant.

In the list of Giant arsenic fall-pan samples which you sent on August 17th, the number of days exposure for each sample are given but the actual dates of exposure are not. Will you please obtain these dates from Giant and ask them to include them for each sample in future reports.

I expect to see you as usual this December.

Sincerely,

J.

J. P. Windish.

JPW/ds

Laboratory Services,
Occupational Health Division,
200 Kent Street, Ottawa, Ontario.

C455-10-13

October 11th, 1955.

Mr. P. N. Pitcher,
Giant Yellowknife Gold Mines Limited,
Yellowknife.

Dear Pete,

Dr. Kay and I thought you would like to see the results of the stack sampling tests which we made at Giant last July. They are contained in the attached memo addressed to Dr. Kay.

Yours sincerely,

JPW.

J. P. Windish.

JPW/ds

DEPARTMENT OF NATIONAL HEALTH AND WELFARE

INTRADEPARTMENTAL CORRESPONDENCE

TO: Dr. K. Kay

OUR FILE NO. C455-10-13

REF. YOUR FILE NO.
DATED

FROM: J. P. Windish

DATE: October 11th, 1955.

SUBJECT: Stack collection efficiencies at Giant Yellowknife Mine.

Following are the results of stack sampling tests made at Giant Yellowknife this July by Mr. Dowd and myself.

Test No.	Date	Sampling Period (24 hour clock)	Type of Sample	Arsenic lost to atmosphere		% Arsenic collected
				%	Tons/day	
2	12/7/55	1024-1154	Anisokinetic fixed point	41.6	4.75	58.4
3	"	1610-1810	Isokinetic traverse	24.5	2.80	75.5
4	13"	1536-1736	Isokinetic traverse	30.9	3.61	69.1
5	"	1536-1736	Anisokinetic fixed point	28.4	3.31	71.6
6	"	2151-2351	Isokinetic traverse	33.6	3.92	66.4
7	"	2151-2351	Isokinetic traverse	36.2	4.23	63.8
8	14"	1209-1409	Isokinetic traverse	61.7	6.24	38.3
9	"	1209-1409	Isokinetic fixed point	46.3	4.69	53.7
10	15"	1041-1241	Isokinetic traverse	31.0	4.14	69.0
11	"	1041-1241	Isokinetic fixed point	29.1	3.88	70.9
12	"	1653-1853	Anisokinetic fixed point	27.0	3.60	73.0
13	"	1653-1853	Isokinetic traverse	16.5	2.20	83.5
14	16"	1050-1250	Anisokinetic fixed point	25.5	2.45	74.5
15	"	1050-1250	Isokinetic traverse	35.4	3.40	64.6
16	"	1800-2000	Isokinetic fixed point	30.1	2.89	69.9
17	"	1800-2000	Isokinetic traverse	31.5	3.02	68.5
		Averages:	Iso. trav. samples	33.5	3.70	66.5
			Iso. f. pt. samples	34.8	3.67	66.7
			Aniso. f. pt. samples	30.6	3.53	69.4

In 1954, from 9 isokinetic traverse samples, we found an average collection efficiency of 41.8% with a daily loss to the atmosphere of 5.99 tons of elemental arsenic.

Fixed point samples were taken with the apparatus used by Giant, at the point in the stack at which Giant takes its samples. With the exception of the samples taken on July 12, two samples were always taken simultaneously; one member of the pair was always an isokinetic traverse, while the other was either an anisokinetic or isokinetic fixed point sample. The only type of sample about which there can be no argument on theoretical grounds is the isokinetic traverse; consequently, we should use only data obtained from such samples in assessing the collection efficiency of the Cottrell. The other two types of samples were taken to determine whether they gave comparable results, but, judging from the data, many more samples would have to be taken before we could reach a sound conclusion. It is interesting to note that in the four pairs of isokinetic traverse - isokinetic fixed point samples taken (Nos. 6 & 7, 8 & 9, 10 & 11, 16 & 17) the traverse sample always collected more dust, resulting in a higher "% arsenic lost to atmosphere" figure.

Thus:

Nos.	Isokinetic Traverse		Isokinetic Fixed Point	
	Arsenic lost to atmosphere		Arsenic lost to atmosphere	
	%	Tons/day	%	Tons/day
6&7	36.2	4.23	33.6	3.92
8&9	61.7	6.24	46.3	4.69
10&11	31.0	4.14	29.1	3.88
16&17	31.5	3.02	30.1	2.89
Average	40.1	4.41	34.8	3.85

J. P. Windish

J. P. Windish.

JPW/ds

C455-10-13

Laboratory Services,
Occupational Health Division,
200 Kent Street, Ottawa, Ontario.

October 11th, 1955.

Mr. Kurt Raht,
Consolidated Mining and Smelting Company
of Canada Limited,
Kimberley, B. C.

Dear Kurt,

Dr. Kay and I thought you would like to see the figures on stack collection efficiencies which we determined at Con this July. These are included in the attached memo.

Last summer while in Yellowknife, I discussed with John McMyn and Mr. Colethorpe the rather prolonged period during which arsenic concentrations in Con tap water remained high during spring run-off. John asked how long such water could be drunk. I mentioned a reference which I had seen on this point and promised to send it to him. Had you seen it? It was an article entitled, "Detection and analysis of arsenic in water contaminated with chemical warfare agents" by C. C. Ruchhoft, O. R. Placak and S. Schott which appeared in Public Health Reports Volume 58 No. 49, Pages 1761-1771 dated December 3rd, 1943. On page 1763 they suggest that in emergencies where other drinking supplies are not available use of water containing up to 1 to 2 p.p.m. As might be permitted for several days and up to 5 p.p.m. for 1 day.

I have sent a copy of the attached memo to Mr. Colethorpe.

Yours very truly,

J. W.

J. P. Windish.

JPW/ds

C455-10-13

Laboratory Services,
Occupational Health Division,
200 Kent Street, Ottawa, Ontario.

October 11th, 1955.

Mr. E. J. Colethorpe,
Mine Manager,
Con Mine,
Yellowknife.

Dear Mr. Colethorpe,

Dr. Kay and I thought you would like to see the results of the stack sampling tests which we made at Con last summer. They are included in the attached memo.

When you and John McMyn and myself were discussing the high concentrations of arsenic in your drinking water at spring run-off, I promised to send you a reference on that subject. It was an article entitled, "Detection and analysis of arsenic in drinking water contaminated with chemical warfare agents", by C. C. Ruchhoft, O. R. Placak and S. Schott in Public Health Report, Volume 58, page 1761-1771, dated December 3rd, 1943. On page 1763 they suggest that in emergencies where other drinking supplies are not available use of water containing up to 1 to 2 p.p.m. As might be permitted for several days and up to 5 p.p.m. for 1 day.

I have sent a copy of the attached memo to Mr. Raht.

Yours very truly,

J. P. W.

J. P. Windish.

JPW/ds

DEPARTMENT OF NATIONAL HEALTH AND WELFARE

INTRADEPARTMENTAL CORRESPONDENCE

TO: Dr. Kay

OUR FILE NO. C455-10-13

REF. YOUR FILE NO. DATED

FROM: J. P. Windish

DATE: October 5th, 1955.

SUBJECT: Stack collection efficiencies at Con Mine, Yellowknife.

Following are the results of stack sampling tests made at Con Mine this July, by Mr. Dowd and myself.

Test No.	Date	Time of day	Type of sample	Arsenic lost to Atmosphere			% Arsenic collected
				%	Tons/day	Lbs./week	
18	18 Jul 55	1432	Isokinetic Traverse	1.51	0.0505	707.	98.5
19	18 Jul 55	2045	Isokinetic Traverse	1.33	0.0445	622.	98.7
20	19 Jul 55	1117	Isokinetic Traverse	1.39	0.0465	651	98.6
21	19 Jul 55	1720	Isokinetic Traverse	1.59	0.0532	742	98.4
22	20 Jul 55	1328	Anisokinetic fixed point	1.26	0.0421	589	98.7
23	20 Jul 55	1455	Anisokinetic fixed point	1.56	0.0521	728	98.4
24	20 Jul 55	2100	Isokinetic Traverse	2.12	0.0709	994	97.9
25	21 Jul 55	1147	Isokinetic Traverse	2.22	0.0742	1040	97.8
			Average	1.62	0.0543	759	98.4

Isokinetic traverse samples were taken over a period of 160 minutes, Anisokinetic fixed point samples over 60 minutes.

According to an Anisokinetic fixed point sample taken by Con during this period, their impinger collected 96.7% of the arsenic,

and their stack discharged 1540 lbs. per week to the atmosphere.

J. P. Windish

J. P. Windish.

JPW/ds