

GIANT YELLOWKNIFE MINES LIMITED
YELLOWKNIFE, N.W.T.
XOE 1HO
CANADA


November 9, 1978

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

Dear Mr. Brown:

Please find enclosed Summary of 1978 Stack Emission Tests.
This Summary does not include the August Survey conducted by E.P.S. personnel,
the results of which have not yet been published.

Yours truly,
GIANT YELLOWKNIFE MINES LIMITED



K. S. Morton
Mill Superintendent

KSM:jc
Enclosure

c.c. W.A. Moore ✓

To K. Morton; W.A. Moore

Date November 7, 1978

Copies To Mel Brown- Mine Inspector

Ref.

From Bryan Cross

Subject Summary of 1978 Stack Emission Tests.

<u>Date</u>	<u>Baghouse Conditions</u>	<u>Total As mg/scm</u>	<u>Total As lbs/day</u>	<u>Baghouse As Removal Efficiency</u>
April 19/78	48% Shaking	12.36	28.53	99.78
April 26/78	No Shaking	5.02	11.57	99.94
April 28/78	46% Shaking	5.76	14.88	99.92
May 3/78	No Shaking	16.52	46.38	99.79
May 5/78	No Shaking	5.95	13.96	99.93
June 15/78	50% Shaking	44.66	131.24	99.37
June 19/78	No Shaking	16.59	52.89	99.77
June 22/78	40% Shaking	19.99	63.80	99.73
June 26/78	70% Shaking	23.86	78.26	99.66
July 4/78	50% Shaking	24.53	74.60	99.64
July 6/78	25% Shaking	16.0	67.59	99.68
Oct. 16/78	30% Shaking	17.52	53.39	99.76
Oct. 18/78	5% Shaking	26.77	98.40	99.40
Oct. 19/78	No Shaking	24.54	74.31	99.67
Oct. 25.78	50% Shaking	21.24	77.07	99.67
Averages	27.6% Shaking	18.90	59.12	99.72

1977

247

1976

436

To K. Morton

Date July 14, 1978

Copies To A. Hall; W.A. Moore

Ref.

From K. Hall

Subject Isokinetic Roaster Stack Gas Sampling.

Roaster stack gas emissions were sampled five times between June 15th and July 6th, 1978. The arsenic concentrations and emission rates are as follows;

<u>Date</u>	<u>Total As Concentration</u>	<u>Total As Emission Rate</u>
June 15/78	44.66 mg/scm	59.53 kg/day
June 19/78	16.59 mg/scm	23.99 kg/day
June 22/78	19.99 mg/scm	28.94 kg/day
July 4/78	24.53 mg/scm	33.84 kg/day
July 6/78	16.0 mg/scm	kg/day

The inconsistent arsenic concentrations and emission rates are attributable to baghouse maintenance. On June 21, 15 holed bags were tied off in #1 compartment, and 3 in #4 compartment. Presently there is a conversion being made from Universal to Porritt-Spencer bags. Compartments 1 and 2 are completed. Numbers 3 and 7 were changed in the fall of 1977. Arsenic concentrations and emission rates are not expected to return to normal until the completion of compartments 4, 5, and 6.

The use of Environment Canada's standard method for arsenic determination began on July 4th. This method does not allow particulate determinations.

DATE:	June 15/78	June 19/78	June 22/78	July 4/78	July 6/78
TEST #	78-9	78-10	78-11	79-12	78-14
Baghouse Inlet Temp.	225° F	225° F	225° F	225° F	225° F
Status of Shaking Cycle during test	50% shaking cycle	No shaking cycle	40% shaking cycle	50% shaking cycle	25% shaking cycle
Ambient Temp.	63° F	56° F	59° F	54° F	52° F
Dry Gas Volume Sampled	1.394 scm	1.100 scm	2.364 scm	1.926 scm	2.471 scm
Moisture Content	6.4%	6.5%	6.5%	14.2%	7.7%
Stack Gas Temp.	179° F	184° F	183° F	185° F	182° F
Stack Gas Velocity	3.515 m/sec	3.82 m/sec	3.79 m/sec	3.938 m/sec	3.920 m/sec
Stack Gas Volume	925.6 scm/min	1004 scm/min	1012 scm/min	958.2 scm/min	1063 scm/min
Total Particulate Weight	229.8 mg/scm	100.27 mg/scm	25.76 mg/scm	mg/scm	-
Total Arsenic Weight	44.66 "	16.59 "	19.99 "	24.53 "	20.03 mg/scm
As to Filter and Probe	38.24 "	12.45 "	3.07 "	19.86 "	16.79 "
As to Impingers	6.42 "	4.14 "	16.92 "	4.67 "	3.24 "
As Particulate Emission Rate	50.97 kg/day	18.00 kg/day	4.48 kg/day	27.40 kg/day	25.70 kg/day
As Vapour Emission Rate	8.56 "	5.99 "	24.46 "	6.44 "	4.96 "
Total As Emission Rate	59.53 kg/day (131.21 lb/day)	23.99 kg/day (52.87 lb/day)	28.94 kg/day (63.79 lb/day)	33.84 kg/day (74.63 lb/day)	30.66 kg/day (67.59 lb/day)
Particulate Emission Rate	306.29 kg/day (675.25 lb/day)	144.97 kg/day (319.60 lb/day)	37.54 kg/day (82.76 lb/day)	-	-
% Isokinetic	86.13%	91.05%	89.05%	96.10%	88.82%
Baghouse Total As Removal Efficiency	99.37%	99.77%	99.73%	99.64%	99.68%
Baghouse Particulate As Removal	97.92%	99.02%	99.75%	-	-
Baghouse Pressure during test(In of H ₂ O)	1.6-1.4-1.8-1.6	2.5-2.8	1.6-1.9-1.2-1.3	1.4-2.6-1.4	1.8-1.1-1.8
Comments	STD conditions with full shaking cycle.	STD conditions with no shaking cycle. 1 & 4 baghouse down-bagcheck.	STD conitions with full shaking cycle. Tied off 18 bags on 21st.	Hopper cleaning ended at approx. time of start up. 50% through test continous shaking commenced as work was started in the baghouse. 12 bags tied off, likely some during test.	STD conditions with full shaking cycle.