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Yellowknife Division

September 13, 1990

Mr. Ed Collins
Environmental Protection Services
N.W.T. District Office
P.O. Box 370
9th Floor Bellanca Building
Yellowknife, N.W.T.
X1A 2N3

Dear Mr. Collins:

Re: Stack Sampling 1990

Please find attached the latest results from stack sampling of our operation. This testing was conducted on August 17, 1990.

Arsenic concentration was 34 mg/cu m. during the test.

The sampling indicates that the concentration is higher than in 1989, however the particulate arsenic is virtually the same as in 1989. This reflects the overhauling of the cottrell and 50% of the baghouse compartments since the last sampling run. The arsenic in vapour accounts for 92.8 % of current emissions.

If you have any questions on this testing, please do not hesitate to contact myself or Paul O'Hara, Plant Metallurgist.

Yours Truly,

GIANT YELLOWKNIFE MINES LIMITED

A handwritten signature in dark ink, appearing to read "G.B. Halverson".

G.B. Halverson
Mill Superintendent

GBH/sj
Encl.

c.c. J. Moore
K. Morton
P. O'Hara

P.O. Bag 3000 • Yellowknife • Northwest Territories • Canada • X1A 2M2

(A member of the Pamour Group of Companies)

GIANT YELLOWKNIFE MINES LIMITED
STACK SAMPLING

DATE : August 17, 1990
RUN : 90-1

PARTICULATE LOADING

Weight of filter	Final	0.6343 mg
	Initial	0.5887 mg

Total particulate weight		0.0456 mg

ARSENIC LOADING

PARTICULATE

Total particulate weight	0.0456 mg
Diluted volume	100.0 mL
Arsenic concentration	26.6 ppm
Total As in particulate	2.7 mg

VAPOUR

Total wash water volume	2,000 mL
Arsenic concentration	17.52 ppm
Total As in vapour	35.0 mg

TOTAL ARSENIC LOADING 37.7 mg

ARSENIC CONCENTRATION 34.29 mg/m

VOLUMETRIC FLOWRATE 45,041.4 m³/hr

ARSENIC MASS EMISSION RATE 1.5 kg/hr or 37.1 kg/day

BAGHOUSE EFFICIENCY 99.73 %

ARSENIC PARTICULATE TO VAPOUR RATIO 0.08 : 1.0

GIANT YELLOWKNIFE MINES LIMITED
STACK SAMPLING
CONDITIONS DURING RUN

DATE : August 17, 1990
RUN : 90-1

STACK CONDITIONS

Fair.

ROASTER CONDITIONS

Stack fan setting : C+
Feed rate : 6.20 tph

COTTRELL CONDITIONS

Inlet temperature : 680 degrees F
Outlet temperature : 580 degrees F

BAGHOUSE CONDITIONS

Inlet temperature : 230 degrees F
Pressure drops : -1 in H2O
Shaking cycle : 5 %

COMMENTS

The day was partly cloudy, cool and windy.

GIANT YELLOWKNIFE MINES LIMITED
STACK SAMPLING

August 17, 1990

RUN # 90 - 1

Excess water in impingers and gel	79.0000 mL	(Timp)ave -	8.5 K
Barometric pressure	99.0200 kPa	Pv(table 1)	1.1070 kPa
Diameter of sampling nozzle	12.7000 mm		
Volume of water vapour - (Vw)ref	0.1074 m		
Dry gas volume	1.1045 m	(Vm)ref	1.0996 m3
Moisture content - Bwo	0.1002		
Absolute stack pressure	99.965 kPa	Qs -	45041.5 m3/h

NORTH/SOUTH TRAVERSE DATA

SAMPLE POINT	SAMPLE TIME	STACK GAS TEMPERATURE (min.)	STACK GAS TEMPERATURE F	STACK GAS TEMPERATURE K	VELOCITY PRESSURE (in H2O)	VELOCITY PRESSURE (kPa)	ORIFICE PRESSURE (in H2O)	ORIFICE PRESSURE (kPa)	GAS METER VOLUME (ft)	GAS METER VOLUME (m)	DRY GAS TEMPERATURE F	DRY GAS TEMPERATURE K	IMPINGER TEMP F	STACK GAS VELOCITY (m/s)	PER CENT ISOKINETIC %
00	5.0	60	289	0.010	0.0025	0.25	0.0623	1.4	0.0396	48.0	282	30.0	1.734	67.86%	
01	5.0	42	279	0.000	0.0000	0.00	0.0000	0.1	0.0028	48.0	282	30.0	0.000	100.00%	
02	5.0	126	325	0.010	0.0025	0.55	0.1370	3.6	0.1020	50.0	283	33.0	1.841	184.67%	
03	5.0	135	330	0.000	0.0000	0.00	0.0000	0.30	0.0085	55.0	286	40.0	0.000	100.00%	
04	5.0	140	333	0.020	0.0050	1.07	0.2665	2.20	0.0623	55.0	286	42.0	2.635	80.07%	
05	5.0	160	344	0.030	0.0075	1.56	0.3886	2.70	0.0765	58.0	287	45.0	3.280	81.19%	
06	5.0	180	355	0.040	0.0100	2.05	0.5106	2.90	0.0821	63.0	290	45.0	3.849	76.09%	
07	5.0	195	364	0.035	0.0087	1.75	0.4359	3.20	0.0906	65.0	291	50.0	3.642	90.39%	
08	5.0	210	372	0.040	0.0100	1.95	0.4857	4.10	0.1161	70.0	294	50.0	3.938	108.59%	
09	5.0	215	375	0.035	0.0087	1.75	0.4359	3.00	0.0850	72.0	295	50.0	3.697	84.89%	
10	5.0	185	358	0.035	0.0087	1.80	0.4483	3.80	0.1076	75.0	297	50.0	3.614	104.53%	
11	5.0	165	347	0.035	0.0087	1.85	0.4608	3.50	0.0991	75.0	297	50.0	3.558	94.79%	
12	5.0	160	344	0.040	0.0100	2.15	0.5355	3.30	0.0935	80.0	300	55.0	3.788	82.55%	
13	5.0	175	352	0.015	0.0037	0.81	0.2018	3.50	0.0991	80.0	300	55.0	2.348	144.22%	
14	5.0	185	358	0.000	0.0000	0.00	0.0000	1.10	0.0312	80.0	300	60.0	0.000	100.00%	
15	5.0	205	369	0.020	0.0050	1.00	0.2491	2.40	0.0680	80.0	300	60.0	2.774	87.69%	
16	5.0	205	369	0.030	0.0075	1.50	0.3736	3.00	0.0850	80.0	300	60.0	3.397	89.61%	

Average per cent isokinetic variation =

98.66%

1.10448

47.4

2.894