



CANADA

NORTHERN ADMINISTRATION
AND LANDS BRANCH

DEPARTMENT
OF

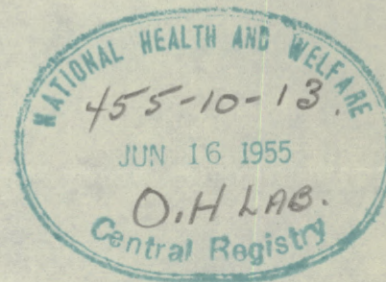
LANDS DIVISION

NORTHERN AFFAIRS AND NATIONAL RESOURCES

to June 17/55

Ottawa, 14 June, 1955.

Dr. Kingsley Kay,
Occupational Health Laboratory,
200 Kent Street,
Ottawa, Ontario.



Dear Dr. Kay:

- I enclose a copy of a letter from Mr.
A. C. Callow, Giant Yellowknife Gold Mines Limited,
- together with a copy of a memorandum from Mr.
R. J. C. Tait, Metallurgist at the Giant Mine,
reporting stack efficiency tests from April 27th
to May 21st, 1955.

Yours very truly,

C. K. LeCapelain
For C. K. LeCapelain,
Chief, Lands Division.

2810
25 King Street West
Toronto

June 9, 1955.

Mr. C. K. LeCapelain,
Chief, Lands Division,
Department of Northern Affairs and
National Resources,
Ottawa, Ontario.

Dear Mr. LeCapelain:

As stated on the telephone today, Mr. A. J. Anderson and the writer had planned to be in Ottawa this week and intended to call upon you to bring you up to date on our arsenic collection problem. However, unfortunately our trip to Ottawa had to be cancelled.

The new hot cottrell unit went into operation during the latter part of February this year. This unit was designed not only to recover the gold bearing calcine in the gas but to improve the arsenic collection. During March efficiency tests were run on the two units; the efficiency of the hot cottrell being in the neighbourhood of 98%, but that of the cold unit was much lower than normal recovery. This condition was considered very unsatisfactory so it was decided to use both cottrells as a cold unit and the results of the tests then made were very encouraging, indicating a recovery approaching 80%. We have made a series of stack tests which indicated the recovery varies between 65 and approximately 80%.

As a result of recent discussions with technical representatives of the Precipitation Company a scheme for conditioning gases before entering the cottrell units has been proposed. This will require an humidifying tower which will involve quite a lot of design work and it will not be possible to get it into operation before September or October.

We are enclosing herewith two copies of a memorandum prepared by Mr. R. J. C. Tait, our metallurgist at the Mine, for Mr. P. N. Pitcher our General Manager and dated May 24th wherein he reports on the stack efficiency tests from April 27th - May 21st inclusive. We will be pleased to keep you advised on further tests as they are completed.

Yours very truly,

GIANT YELLOWKNIFE GOLD MINES LIMITED

(sgd.) A. C. Callow

Secretary.

May 24th, 1955

MEMORANDUM TO: MR. P. N. PITCHER

FROM: R. J. C. TAIT

SUBJECT: STACK TESTING, APRIL 22 TO DATE

The following are the results of tests performed during tandem operation of Cottrells:

<u>Date</u>	<u>Tonnage Dorrco</u>	<u>Tonnage A-C</u>	<u>Total</u>	<u>Tons Arsenic to Cottrells</u>	<u>Stack Loss</u>	<u>Efficiency</u>	<u>Remarks</u>
April 27	68.2	44.0	112.2	9.88	2.09	78.9%	Abnormal condition in Dorrco Reactor Calcine high in Arsenic
April 29	68.2	43.4	111.6	10.22	3.96	61.2%	Attempt to duplicate Ap. 27
May 3	70.8	46.2	117.0	10.17	3.92	61.5%	Same
May 5	65.7	46.9	112.6	10.88	4.05	63.0%	115# Feed rate Dorrco
May 12	63.9	46.1	110.0	11.00	3.44	68.7%	115# plus 2.5 g.p.m. H ₂ O to flue
May 17	66.6	46.0	112.6	11.88	3.58	69.9%	Check 120# Feed Rate
May 19	61.6	57.4	119.0	11.83	2.395	79.5%	110# Feed Rate
May 20	61.3	52.5	113.8	12.29	4.35	64.6%	Check May 19 110#
May 21	60.7	47.9	108.6	11.81	3.81	67.8%	Check 110# Feed Rate

Input and efficiency values here are based on daily tonnages roasted, and roaster feed and calcine assays. While not strictly accurate in all cases, it appears that efficiencies of 60 to 75 percent can be maintained with Dorrco feed rates reduced to 110 to 115 lbs. of slurry per minute. Addition of 2.5 imperial gallons of water per minute to the Dorrco flue at the 115# feed rate gave a slight improvement, but water was running out of the flue after approximately one hour in spite of good atomization and high gas temperature.

RJC Tait