

**NON-FERROUS DRYER AND ROASTER
ATMOSPHERIC EMISSION
QUESTIONNAIRE**

OCTOBER, 1974

**AIR POLLUTION CONTROL DIRECTORATE
ENVIRONMENT CANADA
OTTAWA**

GENERAL INSTRUCTIONS

1. All answers are confidential to Environment Canada and to the Ministry responsible for the environment of the province in which the plant is located. Information will be used by the Department of the Environment in the preparation of an industry review and subsequent development of emission guidelines. Information from the questionnaire, which will be used for published reports, will be grouped to avoid identification of the specific source, unless the information has been published elsewhere or the permission of the company has been obtained.
2. Questionnaires should be signed by an authorized executive of the company.
3. One questionnaire is to be completed for each plant.
4. Where information is not available from actual measurements please give estimated values. Indicate estimated data by placing (E) beside answers and explain the method of estimation. If question does not apply, mark N/A.
5. When inadequate space has been provided on the questionnaire for your answer, please complete the answer on a separate sheet.
6. Please retain a copy of the questionnaire for your information.
7. Please return to:

W.A. Lemmon, P.Eng.,
Chief, Mining, Mineral & Metallurgy Division,
Air Pollution Control Directorate,
Department of the Environment,
Ottawa, Ontario.
K1A 0H3 (819) 997-1346
8. If there are any questions or if further information is required, contact W.A. Lemmon at the above address or the Regional Office in your area. Addresses of Regional Offices are shown on the attached sheet.
9. Please complete and return the questionnaire within ninety days of receipt.
10. Please note requested information is for base year 1973.

REGIONAL OFFICES

NORTHWEST REGION

(Manitoba; Alberta; Saskatchewan, Northwest Territories)

Mr. J.J. Eatock,
Director, Northwest Region,
Environmental Protection Service,
Department of the Environment,
10th Floor, Room 1023,
10025 Jasper Avenue,
Edmonton, Alberta.
T5J 2X9

Phone: (403) 425-4580

ATLANTIC REGION

(Nova Scotia, New Brunswick, Prince Edward Island & Newfoundland)

Dr. C.J. Edmonds,
Director, Atlantic Region,
Environmental Protection Service,
Department of the Environment,
P.O. Box 2406,
Halifax, N.S.

Phone: (902) 426-3593

QUEBEC REGION

Mr. Ghislain Gauthier,
Director, Quebec Region,
Environmental Protection Service,
Department of the Environment,
P.O. Box 1330, Station "B",
Montreal, Quebec.
H3B 3K9

Phone: (514) 283-7377

PACIFIC REGION

(British Columbia, Yukon)

Mr. R.E. McLaren,
Regional Director, Pacific Region,
Environmental Protection Service,
Department of the Environment,
1090 West Pender Street,
Vancouver, B.C.
V6E 2N7

Phone: (604) 666-1064

ONTARIO REGION

Dr. R.W. Slater,
Regional Director, Ontario Region,
Environmental Protection Service,
Department of the Environment,
Second Floor, 135 St. Clair Avenue West,
Toronto, Ontario.
M4V 1P5

Phone: (416) 966-5840

ENVIRONMENT CANADA

ENVIRONMENTAL PROTECTION SERVICE
AIR POLLUTION CONTROL DIRECTORATE

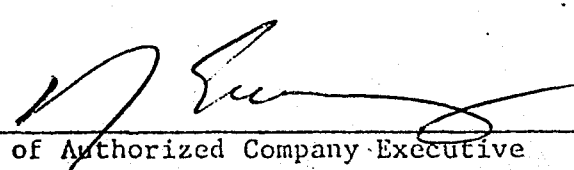
NON-FERROUS DRYER AND ROASTER
ATMOSPHERIC EMISSIONS
QUESTIONNAIRE ON EMISSION DATA

CONFIDENTIAL

Please refer to attached sheet for instructions:

COMPANY NAME Giant Yellowknife Mines Limited
ADDRESS YELLOWKNIFE, N.W.T.
PLANT LOCATION YELLOWKNIFE, N.W.T.
LIAISON OFFICER H. E. Pawson PHONE 403 873-2577

Dated at _____ on the _____ day of _____ 19____



Signature of Authorized Company Executive

1. Raw Materials

Type of concentrates NA
(Cu, Pb, Zn, Ni, Mo, etc.)

Average daily production (T.P.D.) NA

Percentage moisture in concentrates (%) NA

Average analysis of concentrate NA
(Cu, Ni, Pb, Zn, S, Mo, Fe, SiO₂, As,
Sb, Hg, Cd, F, Cl, Se, Te, etc.)

Do you stockpile concentrates NA

Yes ☐

No ☐

If yes, size of pile (tons) NA

Is the pile covered or open NA

Fugitive emission from stockpile due to
wind (lbs/day) NA

2. Dryer

Type of dryer used NA

Number of dryers in plant NA

Capacity of each dryer (tons/day) NA

Tons of concentrate dried per day NA

Start-up date (year) NA

Is it a batch or continuous process NA

Drying cycle time (hours) NA

Moisture of input concentrate (%) NA

Moisture of output concentrate (%) NA

What type of fuel do you use for
drying NA

Quantity of fuel used per day NA

Amount of air used for combustion
(SCFM) NA

Sulphur content of fuel (%) NA

Fuel to concentrate ratio for drying NA

No. of hours, the dryer operating
per day NA

Do you have a dust collection system for dryer gases

NA

Yes

☐

No

☐

If No, uncontrolled emission rate (tons/day)

NA

If Yes, Type of system

NA

Design capacity (SCFM)

Collection efficiency (%)

Type of hooding

Actual gas flow-rate (SCFM)

NA

Inlet temperature of the gas (°F)

NA

Outlet temperature of the gas (°F)

NA

Material collected (lbs/day)

NA

How is dust handled and disposed

NA

Dust loading of exit collector gas (Grains/SCF)

NA

SO₂ content of the exit gas (%)

NA

Analysis of dust collected

NA

(Cu, Ni, Pb, Zn, Fe, SiO₂, As, Sb, Hg, Cd, etc.)

Estimated emission during dryer charging (lbs/day)

NA

Estimated emission during dryer discharging (lbs/day)

NA

3. Roasting

Types of Roaster

DORRCO FLUOSOLIDS 2 STAGE

No. of Roasters

ONE

Startup dates (year)

1958

Capacity of each roaster (tons/day)

200

Tons of concentrate roaster per day

149

Average analysis of roaster product

(Cu, Pb, Zn, S, As, Sb, Hg, Cd, Mo, etc.)

S - 3.32%

Fe - 28.11%

As - 1.34%

Sb - 0.36%

Do you use fuel in the roasters _____

Yes ☐

No ☒

If Yes, what type of fuel do you use _____

NA

Quantity used per day _____

NA

Sulphur content of the fuel (%) _____

NA

Do you have any dust collection system for roaster gases _____

Yes ☒

No ☐

If Yes,

Type of system _____

ELECTROSTATIC PRECIPITATORS & BAGHOUSE
45,000 CFM FOR EACH OF THE TWO COTTRELLS
AND 60,000 CFM FOR BAGHOUSE

Design capacity (SCFM) _____

Collection efficiency (%) _____

95 TO 98%

Type of hooding _____

NA

Actual gas flow-rate (SCFM) _____

25,000 TO 35,000

Inlet temperature of the gas (°F) _____

700°

Outlet temperature of the gas (°F) _____

225°

Material collected (lbs/day) _____

61,523

How is dust handled and disposed _____

COTTRELL DUST IS CYANIDE LEACHED
BAGHOUSE " " STORED U.G.

Dust loading of exit collector gas (Grains/SCF) _____

0.24

SO₂ content of the exit gas (%) _____

1.30

Analysis of dust collected
(Cu, Pb, Zn, Mo, S, As, Sb, Cd,
Hg, etc.) _____

BAGHOUSE DUST
50 - 72% As; 0.60 - 3.00% Sb

COTTRELL DUST
2.30 - 4.00% As; 0.60 - 2.60% Sb

If No, uncontrolled emission rate (lbs/day) _____

4. Plot Plan

Please provide a site plan which includes the following:-

- The location of all points of emissions referred to in the questionnaire.
- The elevation of these points of emissions above ground level and heights of adjacent buildings.
- The orientation of the emission (e.g. vertical or horizontal).
- The diameter or area of cross section of each stack or vent.

e) The plant property or fence line.

f) The location of the plant in relation to other property in the neighbourhood and the zoning classification of the adjacent property. (To be shown on either a commercial or municipal map of the area). RESTRICTED DEVELOPMENT ZONE

5. Do you monitor any air pollution emission from the plant

Yes

☒

No

☐

If Yes, please state which emissions.

STACK EMISSIONS

6. List changes in operating practice or technology which are planned for 1975-79 which will substantially change emissions, on separate sheets if necessary.

7. Estimated cost of pollution control of the plant.

Equivalent Capital (Cost \$000)	Annual Operating Costs (\$000)
1973	230
1974	425
1975	510
1976	
1977	
1978	
1979	