

HUM SCIENTIFIC

RISK ANALYSIS - ENVIRONMENTAL MODELING - ENGINEERING

TO:	Royal Oak Mines	FAX NO.:	(206) 822 - 3552
ATTN:	Larry Connell	DATE:	25 February 1997
FROM:	Ron Hilburn, P.Eng.	TIME:	1150
PROJECT:	Air Dispersion Modeling	PAGES TO FOLLOW:	0

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MESSAGE: This FAX is sent in response to your request, by telephone on 19 February 1997, for a price quote for air dispersion modeling of SO₂ emissions from the Giant Yellowknife Mine roaster stack under conditions where approximately 10% to 30% of the mass emission rate of SO₂ is removed by scrubbing with CaCO₃.

A suite of 8 model runs, using the Industrial Source Complex Model (ISCST3), is proposed. The SO₂ mass emission rate will be varied between runs (0 - 50% reduction) and the effects of the reduced emission rate on ambient SO₂ concentrations shown. Results will be tabulated and compared with base case results. Deliverable will be a table with descriptive model output.

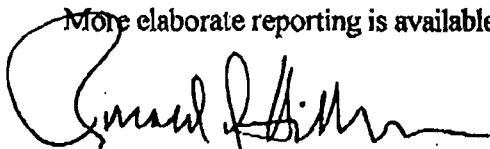
As scrubbing may change the exit gas temperature of the stack discharge, some estimate of the new discharge temperature will be needed for modeling.

Costs:

Professional Fees (8 hrs. @ \$ 85.00):	680.00
Dispersements:	50.00

	\$ 730.00 + GST

More elaborate reporting is available if desired. Please call with questions and /or comments.



Ronald D. Hilburn