

÷ .1164 = 2.58 c. f. of CO₂ per lb of powder used. We have now got possession of all the data to estimate the total amount of chemical vitiation.

Fire damp allowed for as under

1 c. f. of coal requires 100 c. f. of air.
Farnace, 1 lb. of coal " 2½ bulk of oxygen per sec
1 horse discharges requires 13.23 c. f. of CO₂ per hr.
1 man " " 2.1 c. f. of CO₂ " "
1 lamp " " 2.51 c. f. of CO₂ " "
1 lb. powder " " 3.58 c. f. of CO₂ " "

added to this we must allow for effluvia 2 c. f. of air per minute per person. For 2.1 c. f. of CO₂ discharged per hour per man must be diluted to allow the air in the pit to contain not more than .35% of CO₂ or the men would be gradually choked off. This will require 600 c. f. of air, then each man requires 600 c. f. of air per hour, this = 10 c. f. per minute. Then each lamp will require by proportion 720 c. f. per hour, or 12 ft. per minute. If each man has a lamp then 10 + 12 + 2 = 24 c. f. of air per man and lamp employed. Horses, each horse produces 6.3 times the amount of CO₂ than a man, then on a general rule 3 men : 1 horse ∴ 3 × 24 = 72 c. f. of air per minute per horse employed. Mr. Andre quotes that 8 men : 1 lb of powder consumed, assuming this to be correct ∴ 8 × 24 = 192 c. f. of air per lb of powder fired in estimating the amount of air required for a dilution as a factor of safety twice the amount required is just within the limit. Now this gives us the formula to estimate the quantity of air required in c. f. per minute.

Q = Quantity of air per minute in c. f.

M = Number of men employed.

H = " horses

P = Lbs of gunpowder fired per hour.

O = Output or quantity raised per minute.

A = Area of surface of coal exposed to the ventilating current in yards.

∴ $Q = M + H + P + O + A$

24 72 192 100

Where 1 ton of coal wrought = 1 cubic yard of coal. Then if the output is 100 tons the expression 0 = 100 c. yards. The average quantity of coal raised per minute or output is thus calculated. If the total output raised is 300 tons in 12 hours by let us say 60 men then each man raises 5 tons in 12 hours

5 1

then 720 : 1 :: 5 : $\frac{1}{4}$ or $\frac{720}{4}$ or 144 of a ton per man per minute. Then in a mine where there are 400 men, 30 horses, and the coal surface is 1,000 yards, output 600 tons per day or 12 hrs. and the powder used 8 lbs. per hour, then

$1Q = (24 \times 400) + (72 \times 30) + (192 \times 8) + (100 \times 22.5) + 1000$

$Q = 9900 + 2160 + 1536 + 2250 + 1000$

16546×2 Cubic feet per minute = 33,092 cubic ft. per minute.

In conclusion, the Mining Committee is in possession of the information referred to by your correspondent, and it is just enough to make them desirous of more.

The Brickworks of the Intercolonial Coal Company, Westville, are now practically completed and the company should be in a position to fill orders for that class of goods at any time from this date.

THE WAGES PAID MINERS AT SPRINGHILL.

The following table will show the average miners' wage per day paid by the Cumberland Railway and Coal Company since it began business, at Springhill. It will be noticed that from 1883 till 1899 inclusive, 17 years, the average was \$1.95 per day and then it began to climb.

1883	—	\$1 98	1899	—	\$1 90
1884	—	2 03	1900	—	2 27
1885	—	1 90	1901	—	2 51
1886	—	1 87	1902	—	2 63
1887	—	2 02	1903	—	2 88
1888	—	1 96	1904	Jan'y	2 90
1889	—	2 02		February	2 81
1890	—	2 01		March	2 89
1891	—	2 08		April	3 06
1892	—	1 96		May	3 03
1893	—	2 00		June	3 01
1894	—	1 91		July	3 13
1895	—	1 83		August	3 04
1896	—	1 94		September	3 06
1897	—	1 83		October	2 93
1898	—	1 92		November	2 89

or an average for 11 mos. of \$2.98.

HALIFAX BOARD OF TRADE'S MINING COMMITTEE.

The following communication has been received from Mr. Alex. McNeil chairman of mining committee Halifax Board of Trade:—

DEAR EDITOR:—First allow me to congratulate you upon your issue of December 28th. Then, as Chairman of the Mining Committee of the Halifax Board of Trade, let me deal with the communication in that number, headed, "Nova Scotia's Iron Ores." The extract from the "Halifax Herald" was incorrect and misleading. The Committee did not in a general way ask the Dominion Government to investigate the iron ores of Nova Scotia. What it did was to ask the Honourable Minister of the Interior to give us a man on the Geological Survey Department, whose special work would be the iron ore section. No one familiar with the work of Messrs Fletcher and Faribault will doubt the practical value of the services of such a man.

Then the quoted paragraph implies that the Committee aims at giving the public rather than the operating companies the benefit of such knowledge. As a matter of fact it was with the express purpose of showing, if possible, that we have native ores in such quantity and quality as to make the new iron companies permanent in so far as supply of raw material is concerned, that the subject of iron ores was first dealt with.

That such information is necessary will readily be admitted by you, Mr. Editor, though you are quoted as if you were opposed to this effort to get reliable information upon our iron ore deposits.

In answer to the attempt of your correspondent to belittle Halifax, let me say here that there would be little to tell of the Iron and Steel Industry at Sydney Mines, Sydney, or New Glasgow if it were not for the efforts of men living in the City of Halifax.