CANADIAN CONTRACT RECORD

day's operation. This clinker was drawn and weighed the first thing Friday morning.

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The boiler was fed through the Knowles pump and Williams regulator, and the level of the water in the drums was maintained practically constant through the test. The water for the test was pumped from a barrel submerged in the hot well and fed from two barrels arranged so as to be filled and emptied alternately. The quantity was very carefully watched, and the barrels gaged very closely Readings of pressures and temperatures were taken every twenty minutes, gas analyses were taken several times during the run, and combustion chamber temperatures were read about six or seven times under different conditions. At the end of the trial the conditions were as nearly as possible the same as at the beginning, the water level in the boiler being the same, as well as in the hotwell, and all other conditions were carefully watched and attended to.

RESULTS OBTAINED:-The following table shows in condensed form the averages of the results obtained :

Duration of test	nut
Number of cells	
Total grate area 75 square feet	
B. & W. Boiler, heating surface 2,197 " "	
Refuse consumed, (composition of waste material)	
Garbage manure and leaves	15
Ashes and unburnt (anthracite) coal, cinders, etc	65
Iron, wood, bottles, tins, leather, etc	5
Refuse, including paper, branches, old furniture, etc	15
Total	100

WEIGHTS.

Unscreened refuse, rubbish, garbage, manure, etc. . 38,090 pounds Tins, etc., not burned 540

WATER EVAPORATION.

Water evaporated per lb. of refuse, actual. 212" F 1.36

PRESSURES AND TEMPERATURES.

Temperature of outside air, average ·55 F.

GAS ANALYSIS.

Percentage of CO2 average of six readings	10.9%
Percentage of CO2 highest reading	13.6%
Percentage of CO2 lowest reading (clinkering fires)	4.5%

TIMES.

Time taken to clinker one grate..... Time between clinkerings..... Time each fire was clinkered 101/2 min. . 48 min. 2 hree Three

REMARKS :- A delay of about three-quarters of an hour was caused by non-delivery of garbage in the early part of the afternoon, during which time no fresh charge was added to the fire. Had this not been the case the total quantity of refuse could easily have been destroyed within eight hours, as the fires had to be held back somewhat on this account, and a somewhat better showing could have been made in the burning powers of the destructor had sufficient garbage been delivered to force it to its utmost capacity.

An interesting feature of the trial was the good feed water regulation ; neither pumps nor valves being touched during the whole test.

Some idea of the great heat generated when the fires are in full blast may be obtained from the fact that at one time a piece of copper tubing 11/2 ins. long by 1 in. in diameter by 3/32 in. thick was completely volatilized in 1¼ min., upon being placed

in the combustion chamber, and a wrought iron horseshoe was picked out from the clinker heap which was fused in severa places (wrought iron fuses at 2,912 F.) The same thing happened to an earthenware pot made of refractory material.

The clinker produced was hard and vitreous, and was fused into large masses of great density. Almost no smoke was visible from the chimney top, and all noxious gases were conspicuous by their absence. The analysis of the flue gases shows how complete the combustion was, except during the process of clinkering, when the large doors of the furnaces being open let in a large amount of air.

In consideration of the foregoing we are very pleas d to state that in our opinion the destructor has fulfilled all the requirements of our specifications, and has also demonstrated the maker's guarantee satisfactorily, and we have much pleasure in recommending its acceptance.

Trusting that the above will meet with your approval, we are, Yours faithfully,

Ross & Holgate,

Consulting and Supervising Engineers. 80 St. Francois Xavier St., Montreal, May 4th, 1906.

In response to a request for a statement of capital cost and conditions and cost of operation of the destructor Messrs. Ross & Holgate have sent to us the following information :

CAPITAL COST OF DESTRUCTOR .- It is almost impossible to say at this date what the cost of the buildings, land, bin, etc., fairly chargeable to the destructor itself, will be, as the whole equipment of the boilers and destructors together with coal and garbage storage and the necessary accessories, is contained in one building which is at yet unfinished and whose cost has not yet been separated, but the following items are approximately correct :

Meldrum three-grate destructor, about \$14,000.00 B. & W. water-tube boiler connected to

destructor, about 4,500.00 Custodis chimney, total cost, about 6,000.00 (Only partly chargeable to the destructor, as it is common to all three boilers.)

OPERATING EXPENSES :- There are four men employed in the operation of the destructor for feeding, leveling and clinkering, as well as looking after the boiler. The wages paid are :- One man at 25 cts. an hour and three men at 20 cts. an hour. The 20 long tons of garbage per day are disposed of in about ten hours, so that at present only one shift is required and the labor change for destruction amounts to about 421/2 cts. per long ton. Of course, there will be quite a considerable amount of steam sold to the electric plant which must be credited to the destructor and some clinker and other by-products will also be sold.

NET UNIT COST:-To obtain the net cost of destruction the capital charges and labor costs must be added, and the sum of the amounts obtained from the sale of steam and by-products subtracted from the total. The net costs so found, divided by the tons consumed per year, will give the average cost per ton.

Sova & Barbour, plumbers, Winnipeg, have dissolved partnership.

The partnership of M. P. and J. T. Davis, contractors, Quebec, Que., has been registered.

Joseph Avard and Cesire Souriol, contractors, Montreal, have registered their business under the firm name of Avard & Souriol & Company.

Joseph W. Guimond and Mrs. Ernest Lemieux, Montreal, have registered their contracting business under the name of Lemieux & Company.

October 3, 1906

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