O T T A W A October 27th, 1941.

R E P O R T

of the

ORE DRESSING AND METALLURGICAL LABORATORIES.

Investigation No. 1111.

Manganese Ore from near Lake Charlotte,
Nova Scotia.

O T T A W A October 27th, 1941.

R E P O R T

of the

ORE DRESSING AND METALLURGICAL LABORATORIES.

Investigation No. 1111.

Manganese Ore from near Lake Charlotte,
Nova Scotia.

==========

Shipment:

Two samples of manganese ore, weighing 50 pounds each, were received on August 26th, 1941. These samples were submitted by Mr. R. Charlick, of the Guysborough Mines Limited, Goldenville, Nova Scotia.

Purpose of Investigation:

To determine if it would be possible to make a

(Purpose of Investigation, cont'd) -

marketable grade of manganese concentrate from one or both of these ores, which were taken from near Lake Charlotte, in Guysborough county, Nova Scotia.

Sampling and Analysis:

The samples when received had been crushed to approximately ¼ inch. These were further cut down, by riffling, to give head samples for analysis. The chemical analysis gave the following results:

(Per cent)

	Sample No. 1	Sample No. 2
Manganese -	5.93	3.68
Iron -	10.03	11.84
Sulphur -	Trace.	None.
Phosphorus -	Trace.	None.
Insoluble -	51.86	50.11
H_2O (@ 110° C.) -	0.92	0.39
Loss on ignition -	6.70	6.21

Character of the Ore:

Six polished sections, three from each sample, were prepared and examined under the reflecting microscope for the purpose of determining the character of the ore. Since the characteristics of both samples are essentially the same they will not be described separately in this report.

General Description -

The samples were received already crushed to about ¼-inch size and the polished sections were prepared from these small fragments. They consist of soft, dark-grey rock which locally carries small amounts of finely disseminated

(Character of the Ore, cont'd) -

carbonate. Scattered here and there in the rock material are small patches and narrow stringers of metallic minerals. Under the microscope, these appear to be very fine-textured masses of pyrolusite, probably with some admixed manganite and "limonite". These small masses of metallic oxides enclose numerous tiny inclusions of gangue which, in places, are so abundant as to preponderate. A small percentage of the manganese oxide also occurs as tiny disseminated grains, too fine to be seen with the unaided eye.

Pyrite is visible in the sections as occasional, small, irregular grains in gangue. Some of the pyrite grains show alteration to "limonite" and, as already mentioned, "limonite" may be associated with the manganese.

Conclusions:

1. From the microscopic examination of the polished sections it is indicated that:

(a) The samples are essentially the same in character.

(b) It is extremely doubtful whether manganese minerals occur in sufficient abundance in either sample to constitute an ore.

2. From the chemical analysis of the samples it is indicated that:

(a) The grade of manganese in both samples is too low to warrant any attempt at concentration, owing to the nature of the occurrence of the minerals.

(b) If the manganese were to be concentrated

(Conclusions, cont'd) -

it is very doubtful if it would be possible to obtain even the minimum manganese:iron ratio, of 7:1.

3. Any concentration of these manganese ores would of necessity be by flotation, with extremely fine grinding, and it does not appear that the grade of ore would justify any such treatment.

oooooooooo
ooooooo
ooo

OS:PES.