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DEPARTMENT OF MINES AND TECHNICAL SURVEYS

OTTAWA

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MINES BRANCH INVESTIGATION REPORT IR 59-104

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DAVIS TUBE TESTS ON A SAMPLE OF IRON ORE FROM
DARLING TOWNSHIP, LANARK COUNTY, SUBMITTED BY
MR. W. L. BEATON, NORTH AUGUSTA, ONTARIO.

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by

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GEOLOGICAL FILES

W. S. JENKINS

MINERAL PROCESSING DIVISION

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By

W. S. JENKINS^{*}

SUMMARY OF RESULTS

The head sample assay was 13.36% soluble iron.

The magnetic concentrate assayed 67.58% soluble iron with a recovery of 24.6% and a ratio of concentration of 19.2:1.

The tailing assayed 11.37% soluble iron.

^{*} Scientific Officer, Mineral Processing Division,
Mines Branch, Department of Mines and Technical
Surveys, Ottawa, Canada.

INTRODUCTION

Shipment and Instructions

A sample of iron ore was brought to the Mines Branch laboratories on October 27, 1959, by Mr. W. L. Beaton, North Augusta, Ontario.

The sample weighed 12 lb. and Mr. Beaton asked for a Davis tube test to be made and a report sent to him as soon as possible.

Location of the Property

This sample was said to have originated at his property located in Lot 17, Darling township, Lanark County, Ontario, about 50 miles west of Ottawa.

This is the same property from which Mr. Beaton brought two samples to the Mines Branch laboratories on June 23, 1959. The results of the investigation on these samples was reported in Mines Branch Investigation Report IR 59-83, titled "Davis Tube Tests on Two Samples of Iron Ore from Darling Township, Ontario, submitted by Mr. W. L. Beaton, North Augusta, Ontario", by J. L. Giroux, and dated September 10, 1959.

Sampling and Analysis of the Shipment

The shipment was crushed and a head sample was obtained, which was analysed for soluble iron only. Soluble iron - 13.36%.

MINERALOGICAL EXAMINATION

No mineralogical examination was made on the ore of this shipment, but one was made on ore of the previous shipment and reported in the Mines Branch Investigation Report IR 59-83.

DETAILS OF THE TESTS

Test No. 1 - Magnetic Concentration by the Davis Tube

A sample of the ore, ground to -200 mesh, was concentrated by the Davis tube, which produced a concentrate and a tailing.

Results of Magnetic Concentration:

| Product | Weight, % | Analysis, % Soluble Fe | Distribution, % Soluble Fe | Ratio of Con- centration |
|-------------------|--------------|---------------------------|-------------------------------|-----------------------------|
| Feed [*] | 100.0 | 14.30 | 100.0 | |
| Mag.conc. | 5.2 | 67.58 | 24.6 | 19.2 : 1 |
| Tailing | 94.8 | 11.37 | 75.4 | |

^{*}calculated

The results of this test show that a concentrate assaying 67.58% soluble iron was obtained from the sample at a ratio of concentration of 19.2 : 1.

75.4% of the soluble iron in the feed was rejected in the tailing as non-magnetic iron.

These results are comparable to those obtained from the ore submitted for the investigation in Report IR 59-83, page 6, Test No. 1, Low Grade Sample, -200 mesh ore.