DIVISION OF
ORE DRESSING AND
METALLURGY

DEPARTMENT OF MINES
CANADA

MINES BRANCH

O T T A W A January 12th, 1931.

Ins. 374

REPORT

of the

ORE DRESSING AND METALLURGICAL LABORATORIES

Experimental Tests on Gold Ore from the Siscoe Gold Mines, Ltd., Amos, Quebec.

J.S. Godard.

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Ottawa, January 12, 1931.

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ORE DRESSING AND METALLURGICAL LABORATORIES

Report No...

Experimental Tests on Gold Ore from the Siscoe Gold Mines, Ltd., Amos, Quebec.

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Shipments: A shipment of 160 pounds of ore was received Oct. 24, 1930, from the Siscoe Gold Mines, Ltd., Amos, Que.

Characteristics and Analysis of the Ore: The ore is a medium grade gold ore. The gold is mainly free milling though a small amount is associated with crystals of iron pyrites which are scattered through the gangue. The gangue is chiefly quartz, though some crystals of tourmaline are also present.

Analyses of the ore showed it to contain, gold 0.53 oz. per ton, and sulphur 0.44 per cent.

Purpose of Experimental Tests: Mr. J.M. Forbes, consulting engineer for the Siscoe Gold Mines, Ltd., requested that a few experimental tests be made to determine the relationship of the free gold to that contained in the iron pyrites.

Experimental Tests.

Test No. 1

Concentration, Flotation and Tabling

This test was made for the purpose of becoming familiar with the ore and to act as an indicator.

Results

Product	Wt. %	Assay Au oz/ton	% Value Au
Flot. conc.	6.2	5.86	63.7
Table conc.	3.6	3.68	23.2
Tail +200	7.4	0.93	12.0
" -200	45.5	0.01	0.8
Slimes	37.3	0.005	0.3

Tests 2 and 3

In order to determine the relationship of the free gold to that associated with the iron pyrites the free gold was first amalgamated and the amalgamation tailings floated to collect the pyrite.

Tests 2 and 3 were made on ore ground to different sizes.

Results

Test No. 2

Product	Wt. %	Assays		% Values	
		Au oz/ton	S %	Au	S
Flot. conc.	3.0	1.20	11.96	69.4	78.5
Tail +200	20.5	0.04	0.07	15.8	3.1
" -200	76.5	0.01	0.11	14.8	18.4

Amalgamation tailing - gold 0.052 oz. per ton.

Recovery

Amalgamation	- 90.2%
Flotation	- 6.8
Total	97.0%

Test No. 3

Product	Wt. %	Assays		% Values	
		Au oz/ton	S %	Au	S
Flot. conc.	3.5	0.84	9.18	76.8	81.6
Tail +200	15.1	0.005	0.05	2.1	1.9
" -200	81.4	0.01	0.08	21.1	16.5

Amalgamation tailing - gold 0.038 oz. per ton.

Recovery

Amalgamation	- 92.8%
Flotation	- 5.5
Total	98.3%

Conclusions: From the tests, 90-93% of the gold is in the free state when ground to the sizes indicated in tests 2 and 3, the remainder is associated with the pyrite.

The results obtained from the amalgamation phase of the testing approaches the theoretical free gold when ground as indicated and will be somewhat higher than can be secured in general amalgamation practise.