

Ont., June 12th, 8.

Report of Ore Dressing and Metallurgical Laboratories.

Test No. 9-1

Molybdenite Tailings from Hull Mill.

A carload shipment of Molybdenite Tailings from the Hull Plant of the Canadian Wood Molybdenite Co., was received on May 31st, 1918, from the Wood Molybdenite Co., Ottawa, Ont.

Gross Weight-----	59,026 pounds.
Moisture-----	5.66%
Net Dry Weight-----	55,685 pounds.
Analysis----- MoS_2 -----	0.55%
MoO_3 -----	0.04%
Content----- MoS_2 -----	306.27 pounds.

This carload was run through the regular Molybdenite circuit as follows:-

It was first weighed, a moisture sample taken and sent to the ball mill through a Vezin sampler where the regular head sample was cut out. From the ball mill the pulp passed into a callow screen fitted with a 45 mesh screen, the undersize going to the Flotation Cell, the oversize being returned to the ball mill. The oil mixture was added to the mill.

Oil mixture used-----	25% = #5 Pine oil.
	25% = F.P.L. #25 Light Hardwood
	Creosote.
	50% = Coal Oil;

1½ pounds of this mixture was used per ton.

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<u>Concentrates obtained</u> -----	129 pounds.
Analysis-----MoS ₂ -----	41.27%
Content-----MoS ₂ -----	53.24 pounds.
Recovery of --MoS ₂ -----	17.4%
<u>Tailings to Waste</u> -----	55556 pounds.
Analysis of Tailing Samples-----	0.45% MoS ₂
Calculated Analysis of Tailings-----	0.455% MoS ₂
Content-----MoS ₂ -----	253.93 pounds
Loss of MoS ₂ Values-----	82.6%

Conclusion :-

The tailings were very badly oxidized and flotation was hindered by salts in solution. The flotation properties of the flake was destroyed partially through oxidization and partially by the previous drying of the ore. These are the main causes of the poor extraction and the low grade of concentrate.

To prepare the tailings for concentration they should be washed thoroughly to remove the salts which go into solution, thickened and reground in a tube mill to brighten up the flake, so that the oil will adhere to it and then it should be in shape for Flotation.