ALL OFFICIAL CORRESPONDENCE
SHOULD BE ADDRESSED TO THE DIRECTOR.

DIVISION OF ORE DRESSING AND METALLURGY

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MINES BRANCH

EUGENE HAANEL, PH. D.
Director.

OTTAWA, 31st. December 1919 1991

REPORT OF ORE DRESSING AND METALLURGICAL LABORATORIES.

TEST NO. 124

A shipment of one bag of scheelite concentrates was received on July 7th. 1919, at the testing plant of the Ore Dressing and Metallurgical Division from Wm. Sternberger Esq., Dawson City, Yukon Territory.

The concentrates were shipped from Skagway and had been produced by placer mining. They contained, besides the scheelite, a certain amount of gold, this being in the form of metallic flakes of fair size.

A mill test was desired to ascertain if the gold could be recovered from the scheelite concentrates by an economical process.

Gross weight of concentrates .....150 lbs

Net weight of concentrates .....146.25 lbs

The concentrates were crushed and screened on 35 mesh until only metallics were left as oversize. The metallics were treated to recover the bullion in them, and the undersize was weighed and sampled for analysis.

Weight after screening .....144.5 lbs

Weight of sample ..... 0.5 lbs

Net weight after sampling .....144 lbs

Analysis: WO3 ..... 64.30 %
Au ..... 3.87 ozs / ton

Content: WO3 ..... 92.59 lbs
Au ..... .2786 ozs

Bullion recovered by screening ..... .2166 ozs

The material which had been crushed to pass 35 mesh

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was put through an amalgamator and then over amalgamation plates, the flow from the plates being led to a long series of settling boxes so that the scheelite would settle out from the water used in amalgamation. After the run, all the amalgam was collected from the plates and amalgamator, and was treated to recover the bullion in it. The scheelite in the settling boxes was also collected, dried, weighed and sampled.

Weight after amalgamation .....139.25 lbs

Analysis: WO_3 ..... 64.50 %

Au ..... 0.06 ozs /ton

Content: WO_3 ..... 89.82 lbs

Au ..... .0042 ozs

Bullion recovered by amalgamation ..... .2890 ozs

Figuring on the contents of the different products, we have the following percentages :-

CRUSHING & SCREENING

Recovery of gold values in metallics ..... 42.4 %

Loss of scheelite values would be about .... 0.06 %

AMALGAMATION

Recovery of gold values in amalgam ..... 56.7 %

Loss of scheelite values ..... 2.99 %

SUMMARY

Total recovery of gold values ..... 99.1 %

Total loss of scheelite values ..... 3.05 %

Bullion recovered in metallics by screening . .2166 ozs

Bullion recovered in amalgam ..... .2890 ozs

Total bullion recovered ..... .5056 ozs

Conclusions :-

1. The value of the gold recovered from a ton of concentrates would be $136.00, and the value of the scheelite (figured at $8.00 a unit of tungsten trioxide) lost in treating a ton of concentrate would be $14.00, so that there is a balance of $122.00.

2. The scheelite loss would be cut down by the use of better methods to dewater and collect the scheelite after amalgamation.

3. The 99.1% recovery of the gold values is very good. This shows that the gold is very adaptable to amalgamation.