May 18th,   8.

Report of Ore Testing & Metallurgical Laboratories

Test No. 84

Zinc-Lead Ore.

A sample of a few pounds of Zinc-Lead Ore was received for analysis and report as to its adaptability to concentration.

This ore was submitted by Dr. Wilson and was from Carmacks, Yukon Territory.

On examination it was found that a portion of the Iron Sulphides was fairly coarsely crystalline, but that the Zinc and Lead were intimately associated.

A small test was run on the Laboratory Callow Pneumatic Machine for concentration by Oil Flotation. The results obtained were not satisfactory, but would lead one to assume that with careful research work a separation might be affected in this manner. Another test was made on a small Wilfley table, to ascertain the results by water concentration. From this test it was found that a large percentage of the iron could be removed in the Tailing and that the Concentrates, Middling and Slimes might be further concentrated by Oil Flotation.

The results of these tests were as follows:-

Original

Original Sample   -   Zinc   -   1.19 %

                      Lead   -   0.94 %

                      Ag   -   2.15 ozs.

Oil Flotation Test - (1000 grams used)

    Concentrates- 47.4 grams

    Analysis   -   Zinc   -   13.52 %

                    Lead   -   11.15 %

    Middlings   -   44.2 grams

                    Zinc   -   2.65 %

                    Lead   -   2.68 %

    Tailings   -   862 grams

                    Zinc   -   0.94 %

                    Lead   -   0.37 %

Table Test   -   1720 grams used

    Concentrates- 44 grams

                    Zinc   -   13.69 %

                    Lead   -   6.90 %

    Middlings   -   247 grams

                    Zinc   -   2.03 %

                    Lead   -   1.26 %

    Tailing   -   1150 grams

                    Zinc   -   0.73 %

                    Lead   -   0.30 %

    Slime Loss   -   279 grams

Conclusions:- The ore for the above tests was crushed to pass 50 mesh. The tests prove that this not fine enough to obtain a good separation. A separation to a certain extent has been made both by Oil Flotation and Table Concentration. The Flotation Test is the better of the two methods and would have to be resorted to in the concentration of an ore of this class where very fine crushing is necessary. A combination of both table concentration followed by Oil Flotation would probably be the better method of concentration.