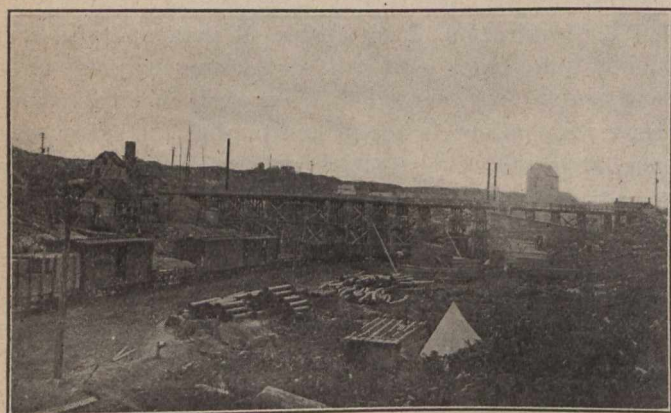


THE PROJECTED CUSTOM SAMPLING PLANT—TO BE ERECTED THIS YEAR IN COBALT, ONT.

Written for the Canadian Mining Journal.

The question of a sampling plant in the Cobalt camp has long been mooted, and it is only within the last few days that final arrangements were concluded enabling Messrs. Campbell and Deyell to proceed with their plans and erect the works, the general scheme of which was laid before the mines, smelters, and government some months ago. Negotiations are in progress with the La Rose Company whereby the Sampling Company proposes to lease a site from the former. Should this arrange-



SITE SELECTED FOR C. & D. SAMPLER—LOOKING SOUTH.

ment be carried through satisfactorily, the first sod will be turned in the next week. The site as shown in the accompanying plate is the strategic position for such a works.

The province of the Sampling Company will be to sample and assay all the products from the mines, thereby establishing the percentages of the constituent values, such certified estimation to be the basis of settlement between mines and smelters. The company proposes to take ore from the mines in large or small quantities, weigh, sample, assay, giving their certificate to both mine and buyer. Storage capacity will be provided for ore that is not immediately sold and for purposes of holding ore until the proper material has been added to bring it up to smelter requirements. When shipped, the ore will be placed in non-leakable bags and consigned under seal. The bullion resulting from the melted metallics in the ore will be shipped to smelter or refinery according to understanding between buyer and seller of ore. Certificates will be given in respect to silver, stating weights and amount of silver in friable ore; also weight and number of ounces in bullion, with allowances for slag, dust, loss, moisture, etc. The analyses for cobalt, nickel, arsenic, silica, lime, iron, etc., will be given in percentages.

A few of the functions of such a concern are:—

1. To have a neutral party value the product between buyer and seller.
2. To permit the producer to realize quickly on his raw product, and thus place him in a stronger financial position even should he not find an immediate market.
3. The grading of the various ores to enable the producer to meet the variations of the different markets.

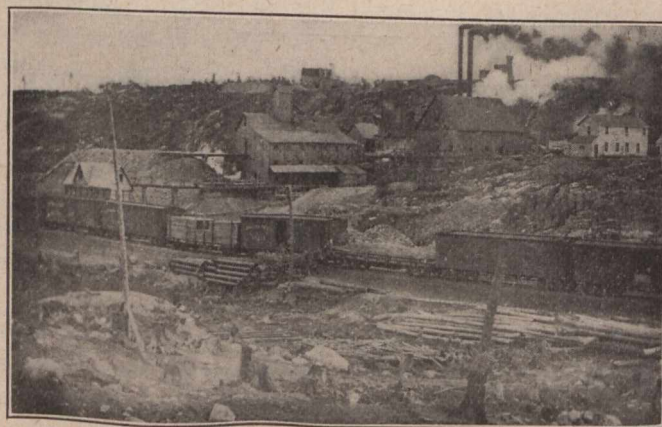
4. To enable the buyer to procure a product most suited to his metallurgical requirements, thus eliminating the chance of getting undesirable products on his hands. The great complexity of the Cobalt ores renders it difficult to more than guess at the percentage of constituents before sampling. The works will thus place the mine and smelter on a sane business footing.

5. Being the only plant in Eastern Canada of its kind, its sphere of influence will be large, and it will tend to centralize the mining industry, which at present has no recognized centre.

6. The direct benefit to the town of Cobalt and to the T. & N. O. Railway derived from the establishing of a valuing point at Cobalt need only be suggested to be appreciated.

In answer to the objection that such a works should have been erected at the inception of the mining in Cobalt, and that the camp is now at its zenith and in consequence is too late to erect a plant, it may be said that such objection is not valid. The camp is not yet at its zenith, as later we will prove, and also, conditions of market and knowledge of the ore would not have permitted the successful operation of a sampling works, if erected previous to the present year.

In the early history of the camp the heads of the most prominent sampling concerns across the line came and pronounced a sampling works not feasible. Since then the smelters have evolved mechanical methods, and the ore sampling concerns across the border have instituted a system of quadruple checking by hand sampling. The great difficulty met with is in the presence of the metallics and the non-uniformity in composition of the ore. The method evolved by Messrs. Campbell and Deyell and to be used by the company is that of fine



SITE SELECTED FOR C. & D. SAMPLER—LOOKING EAST.
La Rose and O'Brien Mines in background.

grinding in a Ball mill of all the ore, the pulverized portions being screened off and thoroughly mixed, split into four equal parts by automatic riffle samplers, each of the resultant quarters being separately sampled down to the requisite laboratory sample. All this process is automatic, and permits of four separate samples of each shipment of ore. The metallics are extracted from the