

Sampling Methodology for Investigation of Till-derived Placer Deposits in Former Gold Districts

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Approximately 18,000 years ago, during the last glacial maximum, continental ice sheets that were up to 1 km thick covered Nova Scotia. During these times, the tops of the anticlines of the Meguma terrane, along with gold-bearing quartz veins, were removed and deposited as till when the glacier receded. In the summer of 2003 an adit unearthered in glacial till in the Tangier gold district led to further inspection of tills as placer sources. Further work and analysis carried out on this property, and preliminary work done on other properties, have revealed ore-grade gold levels. Three other sites were subsequently selected for evaluation, namely: Moose River, Lake Catcha and Kemptville.

The discoveries have led to the development of a sampling methodology to evaluate other glacial deposits in Nova Scotia for possible gold and other base metal concentrations. The methodology involves field concentration with a Long-Tom sluice, further concentrated by a Wifley shaking table at the Dalhousie University's Mineral Processing Centre. To accompany the first assessments of this procedure, grains are probed with a scanning electron probe at Dalhousie University. This allows for investigation of placer commodities other than gold, such as tin or tungsten. A separate raw sample will be split and analyzed for head grade, and a tailing analysis is done for all sample sites. The raw split will have a size fraction analysis performed as well at the Dalhousie University's Mineral Processing Centre, to investigate resident gold fractions in the tills. Final analysis will be carried out using bottle roll cyanidation with an atomic absorption spectroscopy (AAS) finish. To establish a relative source of the material from each site a pebble count was carried out from the head grade of all samples.

Final grade calculations will be performed and stated in grade per cubic metre as well as in cubic yards. Preliminary results have been very encouraging for the sites selected thus far.

