

Analysis represent two such gold exploration strategies that utilize large sample sizes. In contrast, some geochemists (mostly in China) have advocated collecting and analyzing small samples in gold exploration (<5 g). Their rationale is that small samples are likely to contain no large nuggets, but will still contain a large number of small nuggets if anomalous. As a result, the samples are likely to be equally reproducible, and thus can be reliably used to explore for gold mineralization. Because the large nuggets are likely to be absent in these small samples, the anomalies derived from them typically have lower geochemical contrast and concentrations. Provided that a small sample strategy is used only in gold exploration, and not in grade estimation, the bias to lower concentrations is immaterial because the anomalous patterns, and not the absolute magnitudes of geochemical anomalies, are what are used to vector to gold mineralization. This research investigates the size distribution of gold in anomalous soils developed over the Fifteen Mile Stream saddle reef gold deposit on the eastern shore of Nova Scotia. These distributions will provide an understanding of the number and sizes of gold nuggets in the soils, and will illustrate to what extent each sample suffers from the 'nugget effect'. Comparisons of gold concentrations derived by both large and small sample methods will test these alternative gold exploration strategies. Preliminary results suggest that both techniques can be effective in gold exploration. Although the small sample strategy is clearly less expensive, it depends on the use of high sensitivity analytical equipment to quantitatively measure low gold concentrations.

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### Strategies to avoid the nugget effect in soil samples from the Fifteen Mile Stream Gold Deposit, Nova Scotia

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Samples containing gold are known to be influenced by the 'nugget effect', a source of variation in geochemical data that prevents the recognition of dispersion patterns used by explorationists in the search for gold mineralization. Strategies used to avoid the nugget effect typically involve analyzing large samples (>30 g). Large anomalous samples can be expected to contain a large number of gold nuggets, and thus provide reproducible gold grade estimates. Bulk Leachable Extractable Gold (BLEG) and Metallic Screen