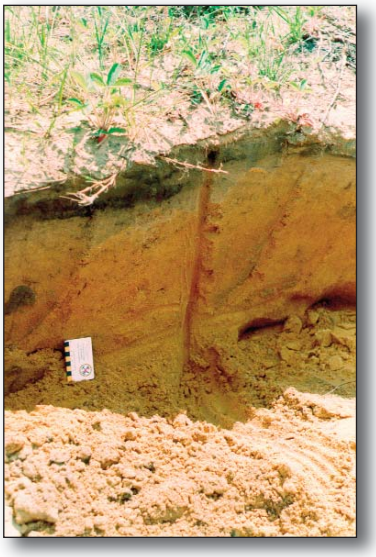
Diamond Exploration

Our Spatiotemporal Geochemical Hydrocarbon (SGH) analysis has been shown to successfully show the presence of deeply buried mineral deposits. In a Canadian Mineral Research Organization (CAMIRO) project initiated in 1997, nine of ten mineral deposits were successfully detected at study sites that were specifically chosen where other geochemical methods were previously unsuccessful. The study sites included magmatic Nickel-Copper Sulphides, VMS, Gold, Uranium and in more recent research Kimberlite deposits.

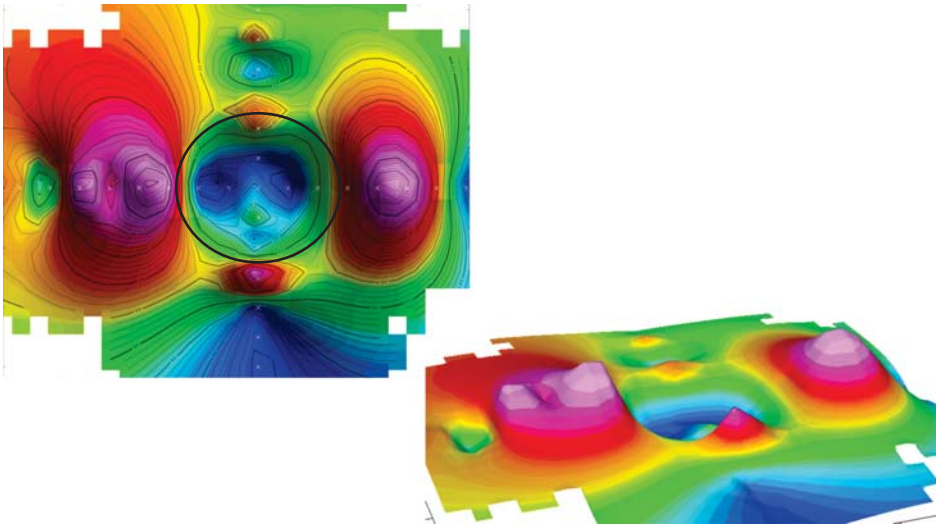
SGH Analysis



SGH is a method of geochemical exploration, which detects 162 specific hydrocarbon compounds that have migrated from a mineralized body in the subsurface through cover rock and overburden and have been adsorbed on the surficial soils. SGH analyses detects these hydrocarbons which are of significant use to the explorationist as a method of detecting blind mineralized bodies. Recent research has shown that there are relationships between specific commodities and SGH compound classes.

Identifying these relationships provides a 'hydrocarbon fingerprint' that is unique to a specific commodity. The suite of compounds detected within soils over kimberlite pipes has also been found to be unique, bearing little resemblance to the suite of compounds detected in soils over other deposits, such as base metals. This basis of classifying compounds to a particular commodity type provides a diagnostic method of interpreting the results of an SGH survey. Initial SGH research conducted on several Canadian kimberlite pipes has provided some of the most startling and successful results to date.

During SGH analysis, B-horizon soil samples are dried a <40°C and sieved at minus 80 mesh. The hydrocarbons are subsequently extracted and analyzed by gas chromatography/mass spectrometry (GC/MS). Compound separation is done within the GC and detection is accomplished with the MS. This highly developed method of analysis allows for monitoring of specific compounds and provides detection limits of 1 part-per-trillion (ppt).



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