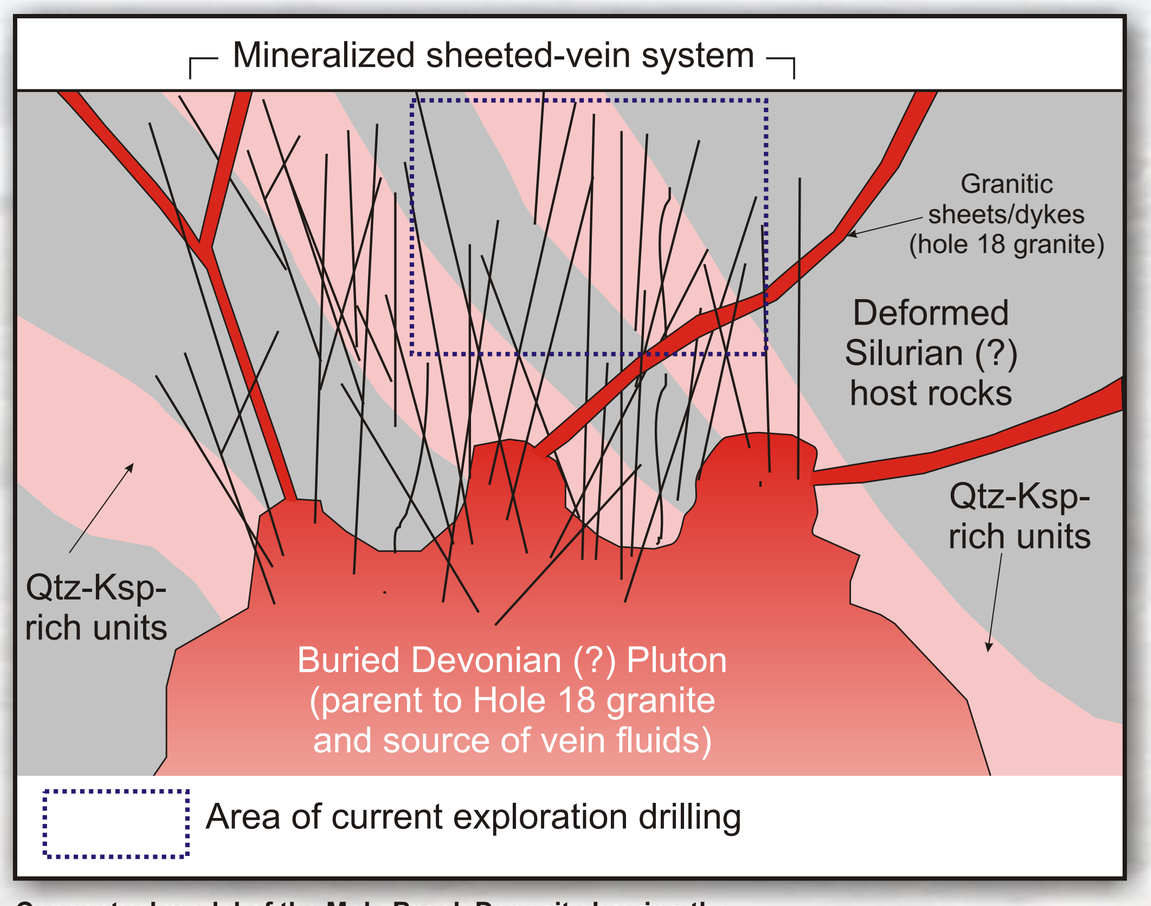
# PROJECTS RELATED TO OTHER COMMODITIES

Smaller-scale projects of a thematic nature are designed to address specific questions or provide an initial basis for expanded projects in future years. In 2008, projects of this nature included work on Mo mineralization in southern Newfoundland, and an initial appraisal of the potential for potash in western Newfoundland. Both projects are responsive to industry interest and sustained high commodity prices.

## Molybdenum Mineralization in Southwestern Newfoundland

Molybdenite has long been known on the south coast of Newfoundland, notably in and around the Ackley Granite, which contains small but high-grade deposits. In the Grey River area, work in the 1980s defined low-grade Mo-Cu mineralization associated with quartz vein stockworks in granites and Precambrian metamorphic rocks. More recent exploration by Tenajon Resources suggests that this deposit, known as Moly Brook, may have potential as a low-grade, bulk-tonnage molybdenum resource. The deposit also lies close to the quartz-wolframite vein system known since the 1950s at Grey River, suggesting that the two may be genetically related as part of a much larger zoned mineralizing system. There have also been interesting new discoveries of Mo and W in the Granite Lake area of south-central Newfoundland. Work in the Moly Brook area during 2008 consisted of field mapping along drill access roads, and examination of diamond drill core. Mo and Cu mineralization is essentially confined to quartz vein swarms and stockworks, although disseminated pyrite is widespread in the host rocks. The truncation of cataclastic fabrics in host rocks by Mo-bearing veins indicates that mineralization is significantly younger than its immediate hosts. A fine-grained, undeformed, leucocratic granite intersected at depth contains disseminated molybdenite and may represent the hydrothermal fluid source. Alteration patterns are complex, and veining and mineralization were likely episodic. Current research activity is aimed at using geochemistry and optical spectroscopy to understand alteration, and dating both immediate host rocks and the mineralized granite by U-Pb geochronology. The area also forms part of a thesis study at the National University of Ireland (Galway), assisted by the Geological Survey and Memorial University.




**Conceptual model of the Moly Brook Deposit showing the largely unseen, evolved granite cupola that provided the source for the fluids that developed the Mo-Cu-bearing sheeted vein system**


**Fluorite-bearing quartz vein with molybdenite near its margins cutting altered granite at the Moly Brook deposit.**

## Potash Potential in Western Newfoundland

Appraisal of the potash potential of the Carboniferous Bay St. George Subbasin is a collaborative project involving regional geology and geophysics. Work in the 1960s and 1970s intersected thick salt sequences, with some associated potash-rich zones, but no subsequent detailed exploration was conducted. The Visean host strata (the Codroy Group) are direct equivalents of the potash-rich sequences in New Brunswick. Potassium-rich minerals encountered include both sylvite (amenable to conventional mining) and carnallite (generally processed through solution mining). Recently, two petroleum exploration wells intersected significant evaporite deposits, including some locally high-grade (>20% $K_2O$) sylvinitic potash intervals. These evaporites are not associated with gravity lows, suggesting that their geophysical signatures may be masked by unresolved complexities in basin structure. The next step in assessment is to complete a more detailed compilation of previous work, and assemble relevant geophysical data to identify gaps in existing coverage. The evidence for significant evaporite sequences in the subsurface, and the lack of systematic exploration, suggest that the Bay St. George Subbasin is underexplored compared to other North American potash targets.

**Potash-bearing evaporites from the Bay St. George area (top) and from a mine in Saskatchewan (bottom)**