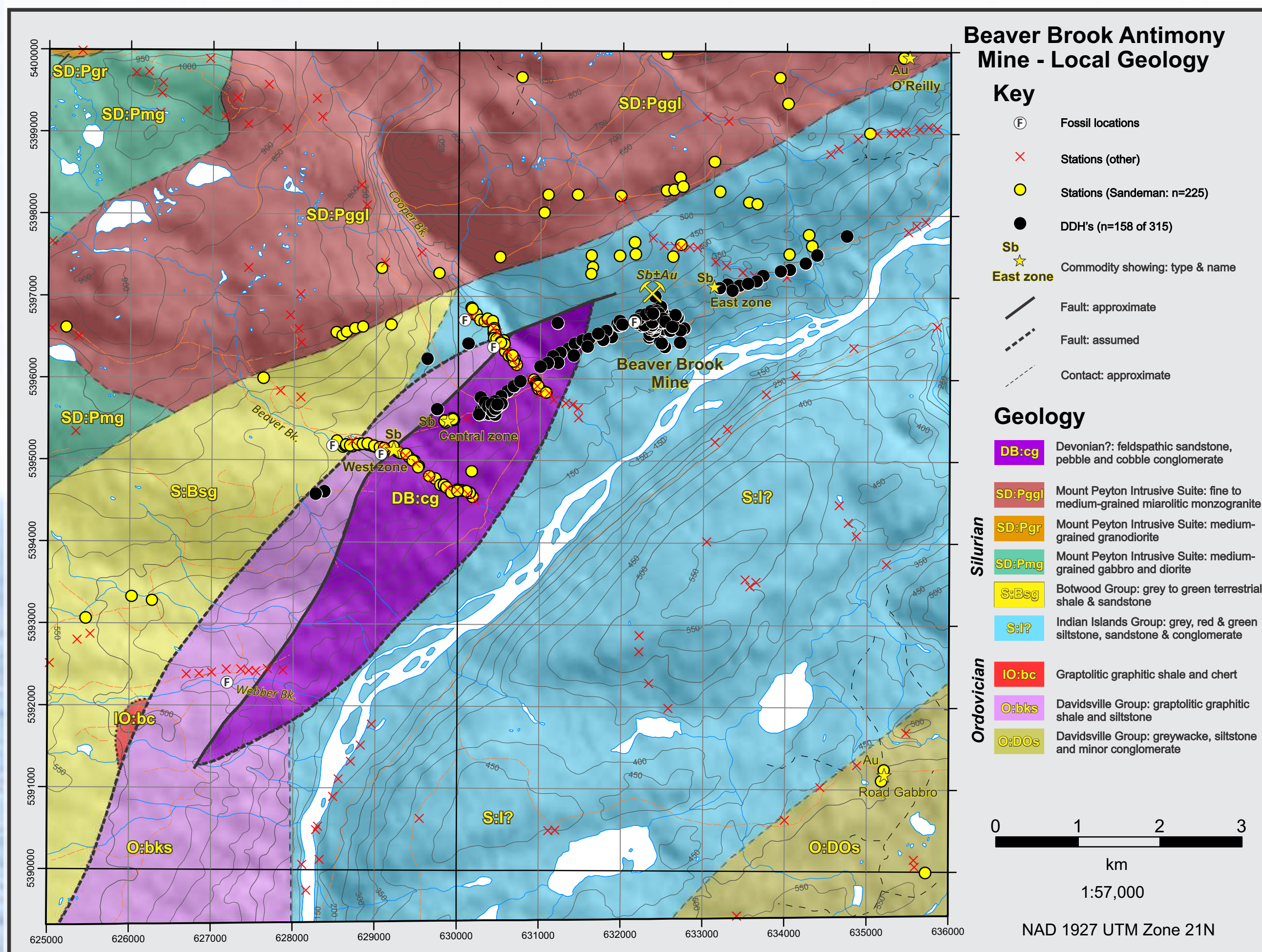


BEAVER BROOK MINE AND Au-Ag-Sb MINERALIZATION ALONG THE TRACE OF THE DOG BAY LINE

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Over the past few years, much of the focus of my field work has been the diverse (Au-Ag-Sb-As-Ba) mineralization exposed along the trace of a major, crustal-scale structure termed the Dog Bay Line (Williams and Currie, 1993). Since the discovery of the antimony (Sb) mineralization at Beaver Brook during regional gold exploration in 1989, numerous zones of epithermal, structurally controlled Au+As ± anomalous Ag, Sb, Mo, Pb, Zn, Ba mineralization have been identified. The most significant of these, the Beaver Brook Antimony Mine (BBAM), located 42 km southwest of the community of Glenwood, has received only limited scientific investigation. This is remarkable as BBAM represents one of North America's few economic antimony deposits and is globally significant in terms of antimony resources (~2.1 mt ore) and grade (4.3 % Sb). Since the last publicly available report produced over a decade ago (Lake and Wilton, 2006), the mine has operated episodically and the company has continued to explore their lease through trenching and exploratory diamond drilling and limited ground IP geophysical surveys. In order to provide a better geological framework for understanding the geological and structural setting of the mineralization, mapping of regional outcrops in the mine area and examination of up to 158 of 315 DDH's along the mineralized trend has been completed. These data sets, along with litho geochemistry, petrography, U-Pb and ⁴⁰Ar/³⁹Ar geochronology and MLA - microimagery and mineral identification will be compiled and synthesized in order to provide a better understanding of the mineralization at Beaver Brook and to compare and contrast this with other comparably mineralized systems exposed along the trace of the Dog Bay Line.

Research in 2018 will involve: continued work on examining the nature of the Au-Sb-Ag-As mineralization exposed along the Dog Bay Line and the possible inter-relationships between the structural setting, timing and compositions of the hydrothermal solutions generating the mineralization. Moreover, the litho geochemistry, ages and suitability of the contemporaneous granitoid rocks of the Mount Peyton Intrusive Suite as metal sources will be investigated. Study of a number of other precious-metal-mineralized zones in the province are ongoing. Laboratory studies will continue on the Beaver Brook Antimony Mine, as well as on other more recent discoveries in the region such as the Yellow Fox and Clarks Brook East and West showings. These will continue to include appropriate data types such as: visible/near-infrared spectrometry, petrography, litho geochemistry, isotopic geochemistry, mineral chemistry and, U-Pb and ⁴⁰Ar-³⁹Ar geochronology.

Representative lithostratigraphic units in the mine area



Mount Peyton monzogranite: Representative, massive, but locally fractured, orange miarolitic biotite monzogranite which occurs just to the northwest of the mine site.



Monzogranite/ country rock contact: Orange, biotite monzogranite veins cut tilted, hornfelsed, black to dark-grey, fine-grained sandstone and siltstone. Outcrop occurs 3 km southwest of the mine site.



Ten Mile Lake Formation?: Locally cross-bedded, fine- to medium-grained, thick bedded muscovitic sandstone exposed in the upper parts of Cooper Bk. Note the irregularly weathered, fossiliferous (Wenlock) carbonate debris flow under hammer.



Indian Islands Group (Charles Cove Formation?): Typical 2-10 cm-scale interbedded, grey siltstone and fine-grained muscovitic sandstone (Cooper Bk). Note the orange stratiform carbonate layer that terminates towards the bottom of the photo.



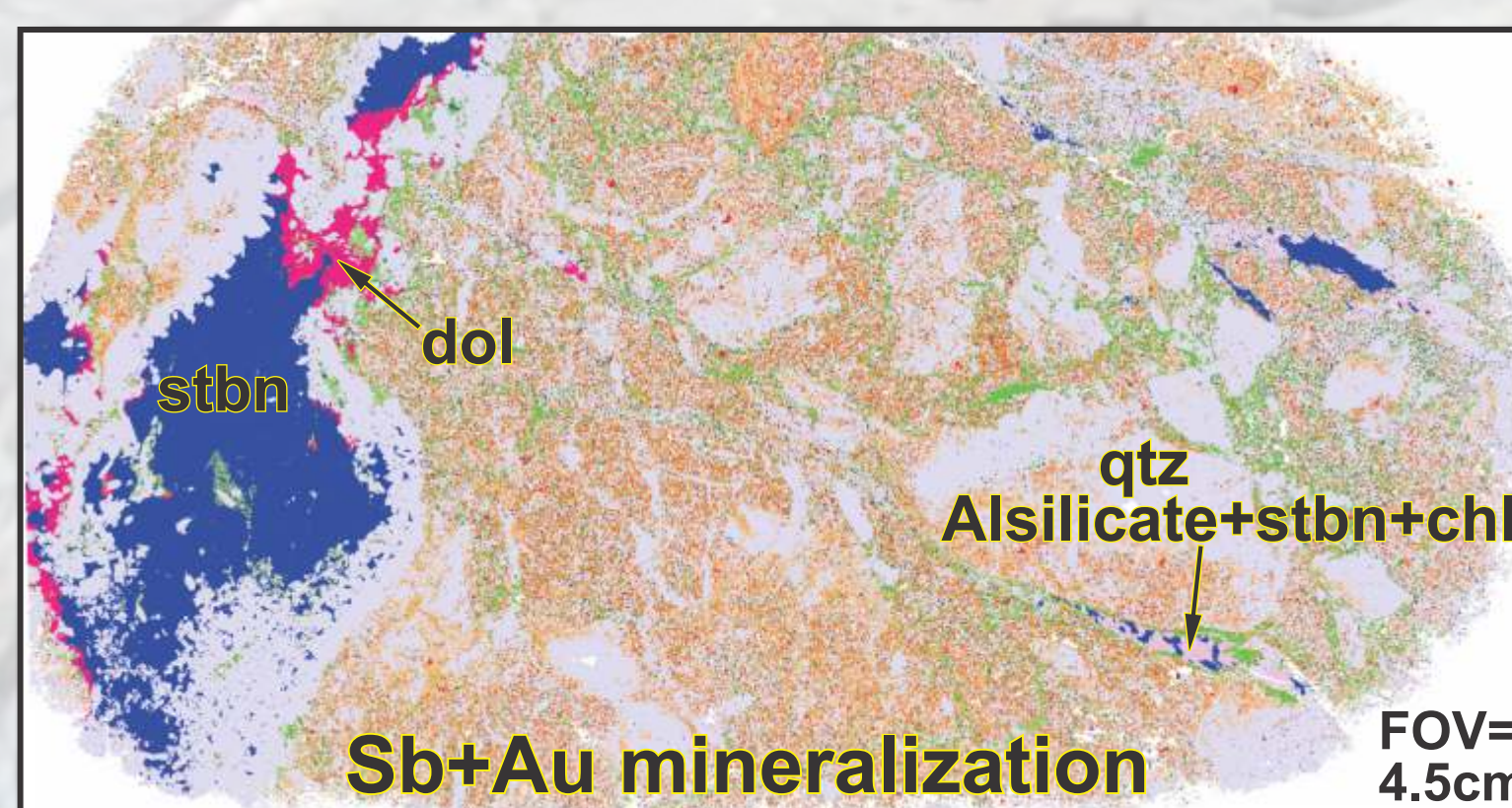
Davidsville Group?: Representative, strongly cleaved and chaotically folded and brecciated graphitic black shale (Cooper Bk.). This is a readily identifiable lithostratigraphic unit in drill core.



Davidsville Group?: Typical, weakly cleaved, brown-black pebble greywacke (Hunan wacke) of the inferred Davidsville Group cut by a quartz-stibnite vein (Central zone).



Davidsville Group?: Representative, strongly cleaved and folded, grey-black siltstone and shale of the inferred Davidsville Group from Cooper Brook. This yielded Floian (Early Ordovician) graptolites.



MLA - mineral map of drill core sample BB14-305_224.74m from the central zone, with a stibnite-rich qtz-dol-chl vein at left cutting and brecciating earlier ser-asp-py-chl-rt alteration yielding anomalous gold assays. Key: stibnite (dark blue), quartz (mauve), dolomite (hot pink), sericite (orange), arsenopyrite (pale orange), chlorite (green), pyrite (red) and minor unidentified aluminosilicate (pink) and rutile (brown-red).

Milestones:

U-Pb geochronological results and litho geochemical data for the granitoid rocks of the Mount Peyton Intrusive Suite and the inter-relationship of ore metals in Au-Ag-Sb mineralization in the granitoids was published in Current Research 2017. Investigations have continued on the metallogeny and evolution of the Sops Arm Group of the White Bay area and a B.Sc study was initiated on the Yellow fox showing by field assistant Cody Spurrell at Memorial University.