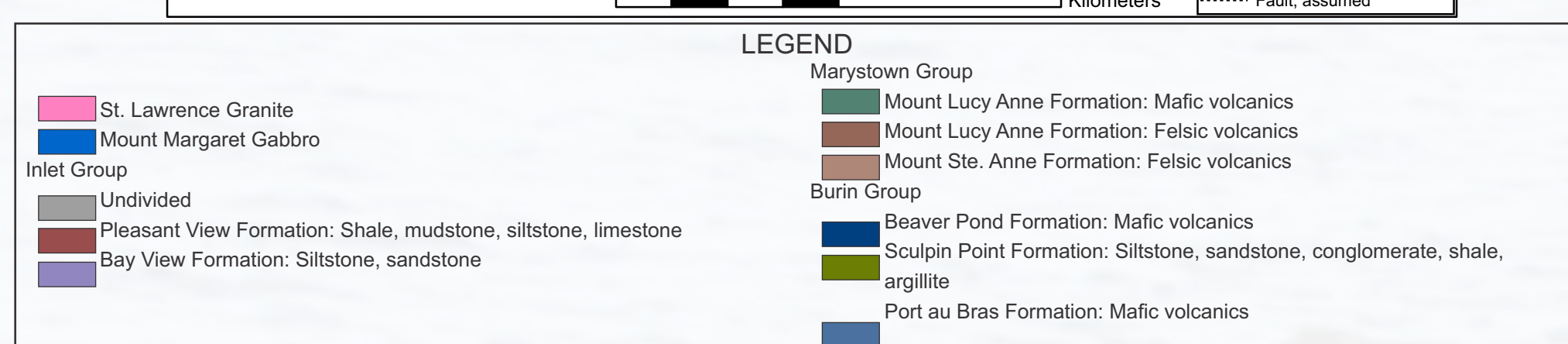
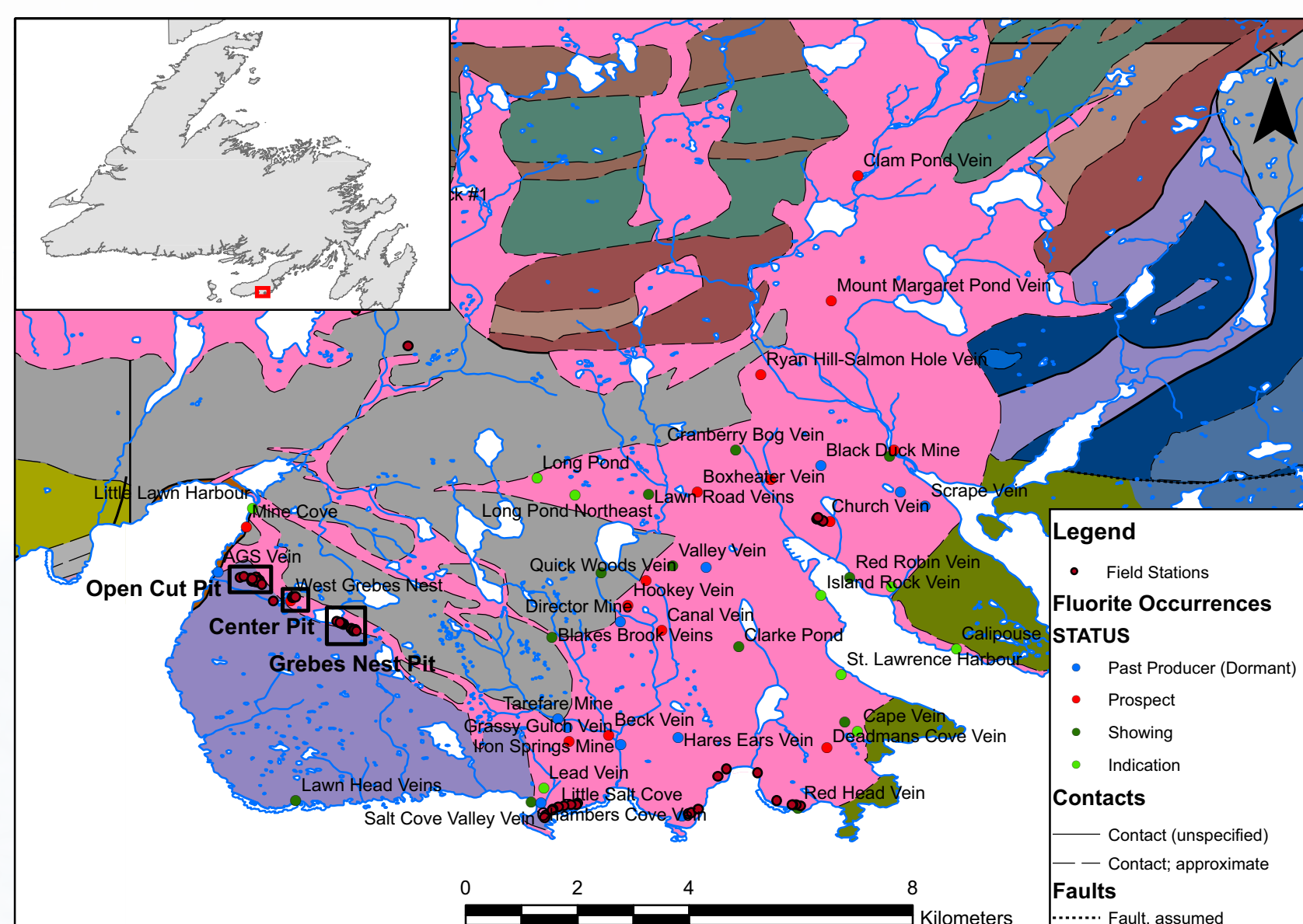


Zsuzsanna Magyarosi

Field work in the second half of the summer concentrated on fluorite in the St. Lawrence area. Recently, Canada Fluorspar Inc. (CFI) completed significant exploration for new fluorite resources in the area, which resulted in the discovery of the AGS deposit, scheduled to start operation in the fall.



Grebes Nest Pit

The focus of the field work was the AGS vein system, which is hosted by sediments in contact with rhyolite sills, rather than the St. Lawrence granite that hosts most of the previously mined fluorite veins. The objective was to examine the numerous fluorite forming events in the AGS vein system and field relationships of the AGS vein with the sediments and rhyolite sills. Another objective was to compare the AGS vein with fluorite veins hosted in granite. Samples were collected for geochemistry, geochronology, petrography, electron microscope analysis and fluid inclusion studies. Initial findings from this project will be published in 2018 as a Current Research article.

Field observations suggest significant variations in the different ore forming events along the AGS vein system. The major differences include the abundance of calcite at the Grebes Nest Pit and the abundance of galena, sphalerite and chert at the Open Cut Pit. The ore forming events observed in field and drill cores and by other workers (Reeves et al., 2016; Sparkes presentation, 2016) include:



Alternating bands of calcite and fluorite from the Grebes Nest Pit



Stockwork purple fluorite at the contact of rhyolite sill and sediments, cut by blue fluorite and white calcite veins (Grebes Nest Pit)



Hydrothermal breccia composed of purple fluorite and calcite with clasts of altered sill (Grebes Nest Pit)



Hydrothermal breccia composed of sill clasts in purple fluorite matrix, surrounded by chert (fibrous chalcedony with Fe-oxide) with white fluorite, followed by the formation of green and white fluorite from the Open Cut Pit

1. Brecciation of country rocks (barren or weakly mineralized).

2. Purple fluorite as stockwork or hydrothermal breccia with sphalerite and galena in minor amounts at Grebes Nest Pit, but locally abundant amounts at Open Cut Pit.

3. Banded, fine grained fluorite ± calcite with minor amounts of sphalerite and galena at the Grebes Nest Pit, but locally abundant amounts at the Open Cut Pit. This ore type is more common at the Grebes Nest Pit.

4a. Yellow coarse grained fluorite mostly at Grebes Nest Pit.

4b. Chert (chalcedony and Fe-oxide) with transparent fluorite only at the Open Cut Pit.

5. Green fluorite with minor amounts of sphalerite and galena. Green fluorite is mostly cubic at Grebes Nest Pit and octahedral at Open Cut Pit.

6. Blue fluorite more common at Grebes Nest Pit and cubic transparent fluorite only at Open Cut Pit.

7. "Blastonite" composed of purple, green, yellow, blue and white fluorite in fine grained quartz-rich matrix. This was found only at Grebes Nest Pit.

8. Quartz with minor amounts of pyrite and/or chalcopyrite in vugs mostly at Open Cut Pit.



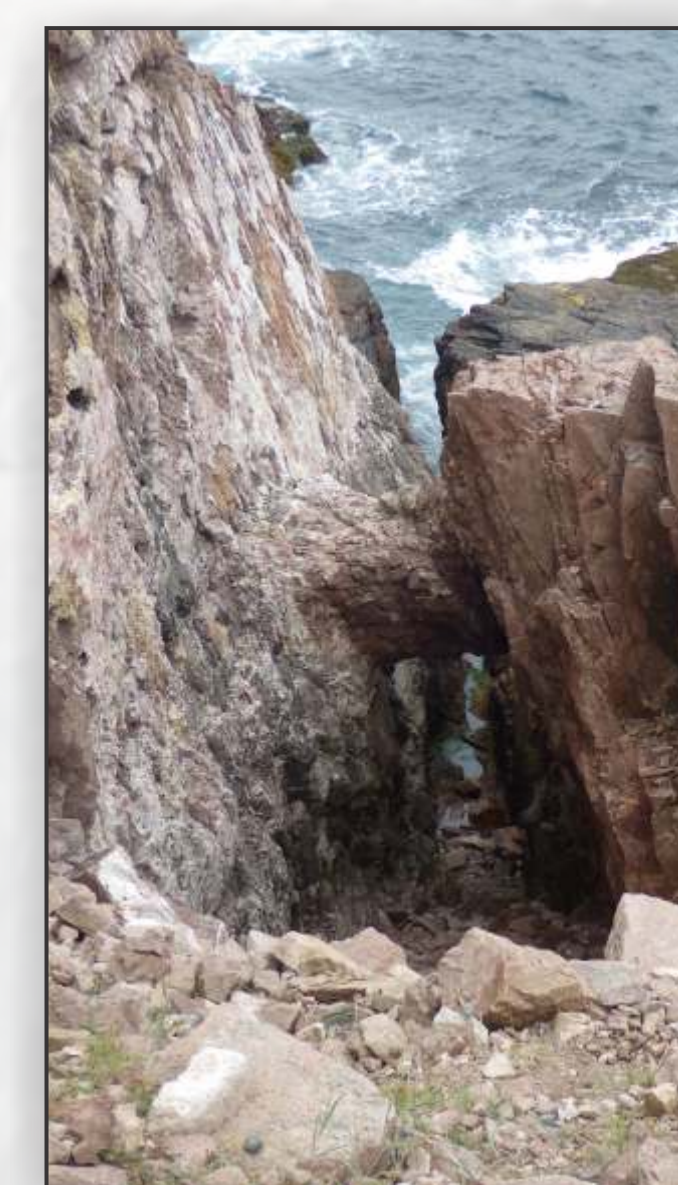
Purple fluorite in rhyolite sill followed by colloform banding of purple fluorite, galena and sphalerite, cut by green fluorite vein, which is cut by blue fluorite vein (Grebes Nest Pit)



"Blastonite" composed of purple, green, blue and white fluorite in quartz rich matrix, representing the last phase of ore formation (Grebes Nest Pit)



Purple fluorite with calcite (white), followed by the formation of colloform bands of yellow-green and red fluorite (hematite) in granite from Little Salt Cove vein



Trench at the Lord and Lady Gulch Vein. The width of the trench is approximately 3m

The author would like to thank the staff at CFI for their help and support with providing safety orientation, access to their property, escort in active quarries and exploration data.