

## **Neoproterozoic epithermal environments of the southern Burin Peninsula region, Newfoundland, Canada**

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The southern Burin Peninsula region of the western Avalon Zone in Newfoundland is dominated by volcanic rocks of the ca. 590–570 Ma Marystown Group and is host to numerous examples of epithermal-related hydrothermal alteration. This epithermal alteration is hosted in both mafic and felsic volcanic rocks and is locally accompanied by appreciable gold mineralization. Visible/ Infrared Reflectance Spectroscopy (VIRS) has identified characteristic minerals associated with both high- and low-sulphidation style epithermal systems. High-sulphidation related occurrences are characterized by zones of intense silicification accompanied by the development of alunite, pyrophyllite, and dickite alteration and locally developed zones of vuggy silica. Low-sulphidation related occurrences are characterized by the development of chalcedonic silica veins displaying crustiform-colloform banding along with discrete zones of hydrothermal brecciation. This style of mineralization is accompanied by white mica alteration that is indicative of a low temperature environment.

Despite the extensive Quaternary cover developed throughout the southern Burin region, till and lake sediment geochemical anomalies have aided in the discovery of several of the identified epithermal occurrences, while other anomalies in the region have yet to be explained. In spite of the challenges created by the poor exposure and the often cryptic nature of the associated alteration minerals, recent discoveries in the area demonstrate the potential of these rocks to host epithermal-related mineralization within a relatively underexplored portion of the province.