

Regional Geology and Gold Mineralization at the Viking Property, Western White Bay, Newfoundland

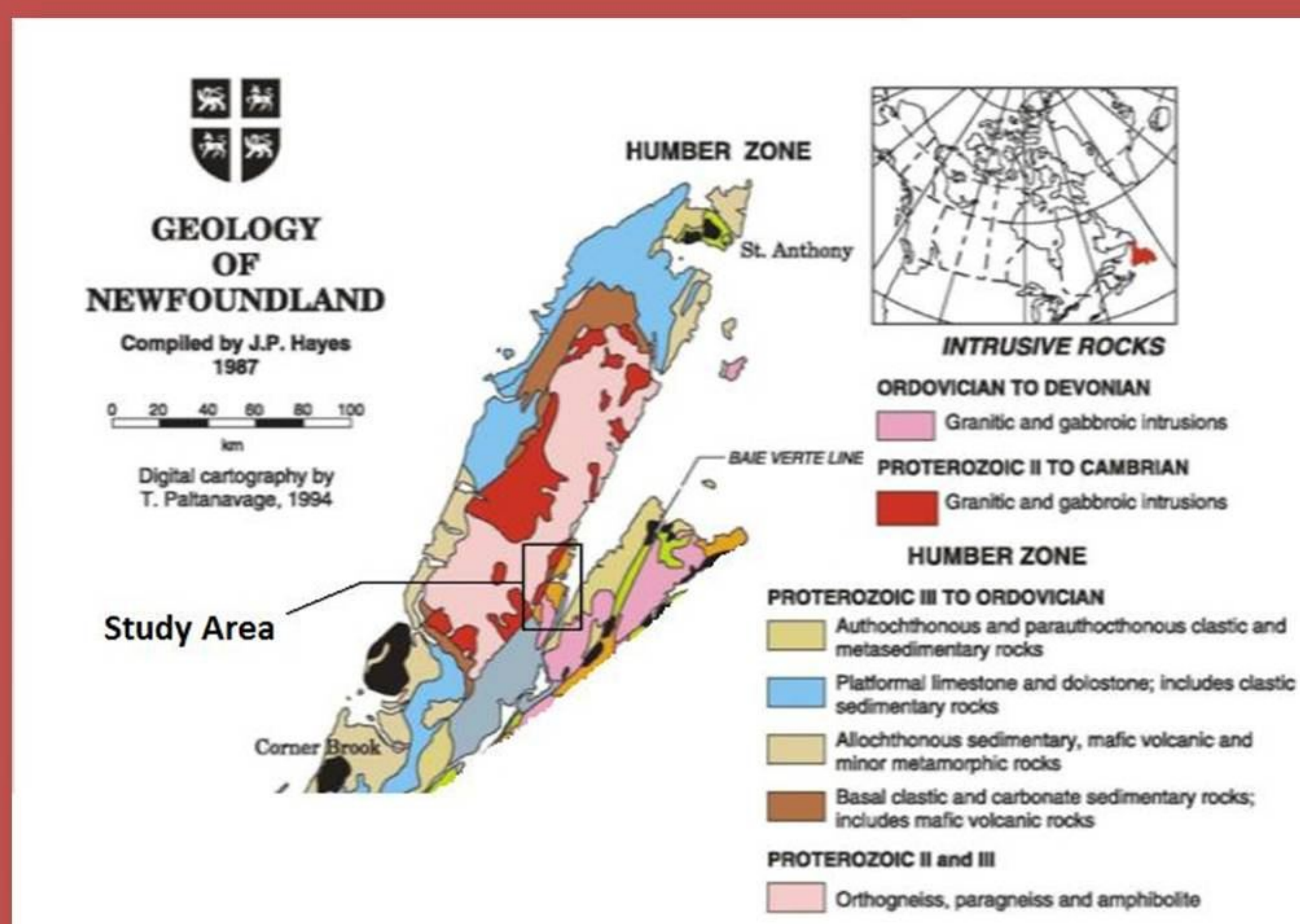
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Introduction

The Viking Property is located approximately 50 km north of Deer Lake, and roughly 12 km west of White Bay along the eastern margin of the Great Northern Peninsula in western Newfoundland. The property is the focus focus for an MSc. project in the Department of Earth Sciences, Memorial University. The study area consists of a series of E-W trending orogenic-style quartz+carbonate veins and stockworks with visible gold and associated sulphide minerals. The Thor vein, in particular, is one of numerous gold bearing targets on the property and it is broadly analogous to deposits such as Renabie, Ferderber and Silidor in the Val d'Or and Rouyn-Noranda camps.

Regional Geology



The Viking Property is situated in the Humber tectonostratigraphic zone of the Appalachian Orogen. The dominant lithology consists of the Main River Granite, a late Grenvillian granitoid pluton which intruded Precambrian gneisses of the Long Range Inlier.

Research Goals

The aims of this MSc. research project include:

- documentation of the gold mineralization and host lithologies,
- petrographical and geochemical evaluation of the alteration,
- determination of the nature of the ore forming fluids,
- establishment of the timing of the ore forming event.

Gold Mineralization and Geology



Outcrop photo of the Thor vein. A 1.5 to 8 meter wide quartz-sulphide vein which dips gently to the south and closely parallels a carbonate-altered mafic dyke.



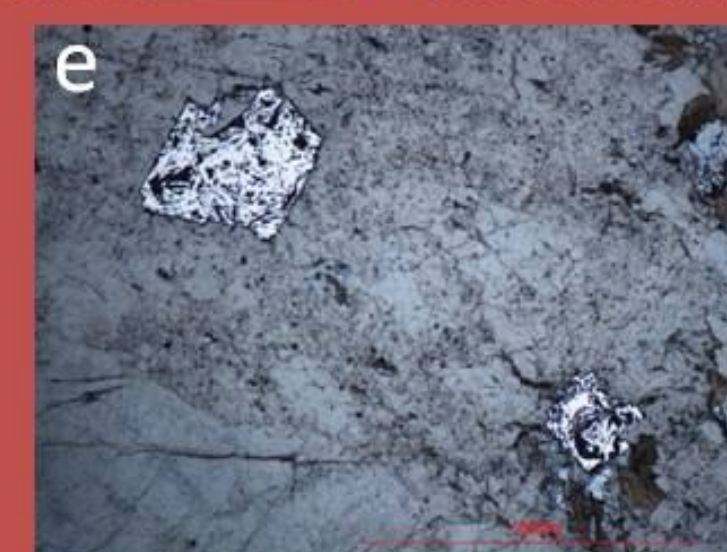
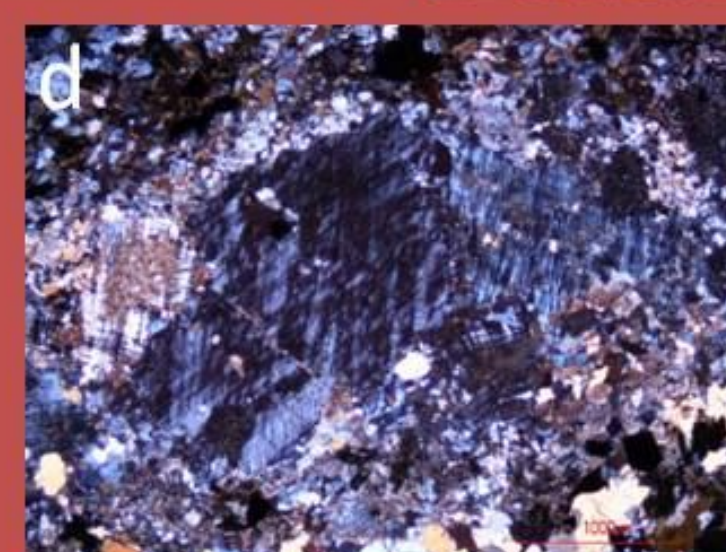
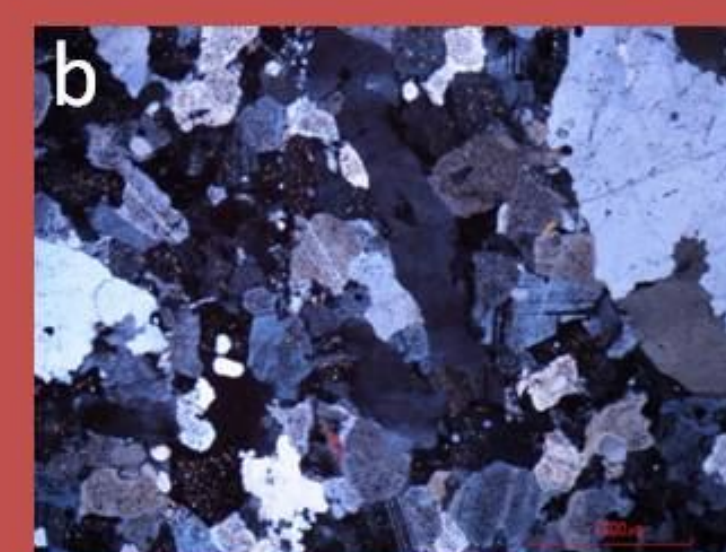
Pyrite and galena, with lesser amounts of chalcopyrite and sphalerite, make up the sulphide mineral assemblage.



Contact relationships between augen granodiorite and the two other main rocktypes (diorite and monzogranite) on the Viking Property.



Pen pointing to visible gold in a deformed quartz vein hosted in augen granodiorite, approx. 10 meters west of the Thor Vein.



Photomicrographs: a) Plagioclase laths in a carbonate and sericite-altered mafic dyke (ppl); b) un-mineralized granitoid intrusion with K-feldspar, plagioclase, and quartz (xpl); c) epidote and chlorite veinlet (left) cross-cutting a chloritized (green) diorite (ppl); d) K-feldspar porphyroblast in a fine-grained chlorite and sericite-altered matrix (xpl) and; e) fine-grained galena (silver) in quartz (grey) (ref. light).

Analytical Methods

These will include:

- Microthermometric fluid inclusion analysis via the Linkam THMSG600 at MUN to determine the composition of mineralizing fluids
- Ar/Ar and U/Pb geochronology on select lithologies to better constrain the timing of the mineralizing event
- Cathodoluminescence mapping of vein textures to compare barren and mineralized quartz-carbonate veins
- Scanning electron microscopy will verify the interrelationships of gold and other important sulphides, and to provide essential information on textural relationships between ore and gangue minerals
- Whole rock lithogeochemistry for regional-scale correlation of map units

Conclusions

The use of these analytical techniques will help achieve the goals of this research effort. The data acquired through these efforts will prove beneficial to Northern Abitibi's exploration program, and their goal of exploiting Viking's economic potential. Delineation of the gold mineralization at Viking, will have tremendous implications for gold exploration, and indeed development, in western Newfoundland.

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References

- Modified regional geology map : <http://www.gov.nl.ca/mines&en/geosurvey/maps/nf.pdf>
- Northern Abitibi Logo: <http://www.naminco.ca/viking.php>
- Natural Resources Geological Survey Logo: <http://www.nr.gov.nl.ca/mines&en/geosurvey/>