



Four Corners Project

Mining Infrastructure



Existing highway and powerline through project area and situated immediately adjacent to inferred resource provides ready access to Stephenville ice free deep sea port and commercial airport, 50 road kms from deposit.



View looking north at the Harmon Complex, deep sea port facility along right side of photo and the town of Stephenville and site of a 10,000 feet runway at Stephenville along the far side of the Bay St. George Basin which is less than one day shipping from the St. Lawrence Seaway. Stephenville is a major service centre and site for skilled labor pool, mine town site and fully integrated service centre.



Low lying topography and network of roads including the highway to Stephenville provides ample area and easy access for construction of the primary and secondary crushing facilities, together with magnetic separator for concentrating the ore for shipment to Stephenville and secondary processing if required or shipping to offshore processing and / or markets via the Harmon Complex Port. Note pre-existing open cast mine development and industrial centre at Stephenville has a brownfield designation for the secondary processing and environmentally acceptable storage of waste in the open pit from earlier mining.



Vast tonnage of ore grade mineralization in massive concentrations is readily available for mine development at Keating Hill and surrounding area immediately to the right of the road in previous photograph. ISO accredited assay results just received and polished sections of massive mineralization displayed in this photograph confirm the intensity of the metals occurring at the FCP.

Geological Setting

The Four Corners Project (FCP) is favorably sited along the Cabot Fault, a segment of the Baie Verte (Baie Verte – Brompton) Line, a globally significant, wide structural zone of protracted movement that can be geologically, and geophysically traced from the southeastern USA to the British Isles. Tectonically active from the Ordovician to at least the Carboniferous it has juxtaposed lapetan oceanic sequences to the east with metamorphosed sedimentary and crystalline basement rocks of the Laurentian margin to the west. The structural juxtapositioning has concentrated many environments favorable to mineralization and along its extent in Newfoundland the line is the site of numerous gold and volcanogenic massive sulphide deposits, in mafic rocks, together with deposits of the ultramafic / ophiolite affinity such as orthomagmatic sulphides and asbestos.

The vanadium – titanium enriched magnetite mineralization is in a relatively unique setting, being confined to a Silurian aged intrusion mapped by the Geological Survey of Canada (GSC) as “a mainly layered cumulate sequence of anorthosite, troctolite, olivine norite, norite, gabbro, olivine gabbro and gabbro, with minor pyroxenite exhibiting minor alteration to epidote, hornblende and / or actinolite and chlorite”. The GSC, under their Targeted Geoscience Initiative Program recently implemented for southwestern Newfoundland in 2005, outlined this intrusion, which extends over several kilometres length with a width up to 1 km and covered by the FCP. This layered intrusion denoted as unit SPc by the GSC workers is assigned to the Puddle Pond Complex, circa 431 Ma, which is an intrusive complex subdivided into 3 units of predominantly mafic composition with SPc being the lower member of the complex. The dominant rock types in the region are Neoproterozoic to Ordovician in age, and the Puddle Pond Complex intrusive cycle is distinctly the youngest and only Silurian magmatism in the area.

The unique setting and economic potential of this mineralized layered intrusion is further enhanced by its site along the Cabot Fault Zone, which was a major conduit for the transport of mineralizing fluids, and because of its correspondence with a major global suture had the ability to tap into lower mantle fluids. The concentration of the mineralization now confirmed by the recently completed ground magnetic survey and the assays from the surface samples which have just identified new titanium mineralization and noteworthy increases in iron contents provides strong evidence for discovering a major, economic resource. The correspondence of the highly positive results from the surface prospecting, geological and geophysical surveying to the tightly constrained area of the intrusion presents a very well defined exploration target.

Deposit (Mineralization) Architecture

The highly mineralized iron – titanium – vanadium layered intrusion fits the model for principal deposits of these metals. The recognition by the GSC of anorthosite in the intrusion also fits the model for the

deposits. Many of the North American examples are in southern Quebec (Allard Lake) and the Adirondack area of northeastern U.S.A., a region through which the Baie Verte Line (Cabot Fault Zone) trends.

The primary, igneous layering in the intrusion and the distribution of exposed sections of the magnetite mineralization indicate mineralized layers are concordant with the intrusion. Also, the ground magnetic surveying just completed indicate at least 2 main zones, or belts of magnetite concentrations extending NW – SE through the 3 km (2 mile) section of the layered intrusion which is another feature of these deposits. These dyke – like bodies may be discordant to the layering and may represent subsidiary mineralization, which does commonly occur, for example, in the Bushveld Complex.

At this preliminary stage of understanding the mineralizing controls it is possible that the mineralization is a result of two processes – accumulations through gravitational settling of the mineralized phases concordant with the primary, igneous layering readily observed in the intrusion, with a later dyke related intrusion of titanium – vanadium – iron enriched, silica rich fluids emanating off the Cabot Fault Zone. The higher mineralized zones display semi-massive to massive concentrations of the Ti – V enriched magnetite in a silica gangue confirmed by the whole rock geochemistry analysis and polished thin sections. These higher concentrations yield the highest assay results for all metals with vanadium pentoxide almost consistently within the 0.15 to 0.35% range. The latest suite of samples, which included assaying TiO_2 for the first time also confirm increases in titanium and iron contents in the higher V_2O_5 mineralized zones.

The sections of mineralization inferred to be controlled by primary layering in the intrusion, and occurring throughout the intrusion, also yield enriched mineralization. Sampling since 2007 appears to have established a range of 300 to 600 ppm vanadium and suggesting a lower vanadium pentoxide value of 0.054%. Using this lower threshold value as an indicated cut off grade, the potential is emerging for a large tonnage resource grading $> 0.10\% V_2O_5$. Based on these preliminary observations, a bulk tonnage resource in the order of 400 – 500 M tonnes can be visualized for the current dimensions suggested from the prospecting and geophysical surveys to date.

These predictions are mainly based on the volume represented in the hills rising above the base topography along the valley floor, and do not take into account any potential below the base of the hills, and therefore suggesting a real potential to increase the resource (commonly the highest concentrations in these deposits occur in the keel or bottom of these deposits). Additionally, through the process of gravitational settling it can also be predicted that concentrations should increase with depth (no work has been carried out to date to confirm this relationship). Also adding to the potential, the mineralization continues beyond the current 3 km long survey grid for at least another 1,000 metres (0.6 miles).

The first time detection of highly enriched titanium mineralization in concert with the vanadium and iron mineralization adds considerable ore grade value and suggests a metal resource of considerable value, i.e. in the \$30 – 40 Billion range? If so, this metal discovery could be the most significant in North America since the Voisey's Bay discovery in 1993.