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MEMORANDUM

August 30, 1989

TO: Rodney Cox

FROM: John Walker

SUBJECT: Freuchen Bay Project
Update following writers visit to field

The initial geological investigations confirm the occurrence of mafic-ultramafic lenses and bodies within the sequence,

There appears to be a major break between the magnetic-high unit and the sequence to the south in which the high geochemistry and gossans occur. The magnetic unit looks like a meta Archean volcanic sequence now highly granitized. Within these granitic gneisses a magnetite-bearing unit correlates directly with the magnetic high and at this location lenses of amphibolite occur along with brecciation in fracture/fault zones.

The sequence of rocks within the high geochemistry area comprises garnet biotite gneiss, biotite-quartz schist, some amphibolite and marble. Many of these rocks look to be volcanic and andesitic in composition. A number of small bodies of ultramafic rock occur within these rocks, and was particularly evident in the more resistant marble units close to the mineralized locations.

Outcrop is plentified in places but rather absent in the areas of most economic interest. Weathering plus overburden plus boulder fields occur in the topographic low areas which coincide with the surface gossans and sulfide occurrences. This restricts detailed geology within the target areas.

The sulfide mineralization seen was pyrite and pryrrhotite and these minerals occur within the more siliceous units of the sequence. In the areas of the gossans, the oxidation and weather is intense. These are discrete areas and uniquely associate with graphite zones but not necessarily hosted by these graphitic-rich concentrations. Apart from almost unweathered layers of pyrite, sulfides are essentially all oxidized to some depth (+1 meter permafrost).

The metamorphism is amphibolite to upper amphibolite grade (silimanite observed at one location). Feldspar pegmatite bodies and quartz-rich units are also evident suggesting typical local anatexis. A major synclinal fold extends east-west through the permits. Isoclinal and drag folding were also noted on the exposed limbs of this syncline. The four main mineralized areas are associated with fold closures and/or drag folds. The mineralized location G2 lies in the nose of a fold and appears to plunge at approximately 30° East.

An interesting quartz-rich rock (granoblastic?) was observed at two of these mineralized locations. This quartz rock has the appearance of "lode quartz" noted as potential host rocks to ore at areas such as Broken Hill, Australia and Black Mountain, South Africa.

The current more detailed investigations will concentrate on these four mineralized areas. Detailed geological mapping with particular emphasis on structure will be undertaken along with soil/rock chip sampling and a ground EM/Magnetic survey.

Drill holes will be sited on results from the combination of all three studies.

Now that the initial geology and rock chip/soil sampling is completed and four main targets defined, weather should not create a major problem to the completion of the scheduled program.

1) Initial geology of Permits Area and Reconnaissance of AMI has been completed. Initial samples are enroute to Toronto Lab.

2) Soil sampling of four mineralized grids within the Permits Area is underway - expected completion September 4. Samples will be dispatched to Toronto every three to four days.

3) Detailed geological mapping of four mineralized grids within Permits Area is underway, expected completion, September 6.

4) Additional geological mapping to set framework of mineralized areas and at least two localities in Area of Mutual Interest is underway - expected completion Sept. 10.

5) Geophysical surveys will be restricted to grid areas and extensions as appropriate. The geophysics planned comprises EM4/Gradient Magnetics instrumentation. Expected commencement is September 7/8 and completion September 15/18.

6) Shallow drilling is expected to start September 15 and completed October 4.