Property File
092GNW052

000557

TRI-SIL MINERALS INC.

MEMORANDUM

FROM: Mr. R.B. Anderson
Industrial Minerals Consultant

DATE: August 28, 1987

SUBJECT: Wollastonite (CaSiO3) - Snake Bay Project

REF: Progress Report

PART I

SUNMMARY AND BUSINESS BACKGROUND

At the present time the world market for wollastonite of some 200,000 tonnes is supplied from only four (4) countries, the U.S.A., India, Finland and possibly China. With between 130,000 and 140,000 tonnes of production, the two U.S. producers, NYCO and R.T. Vanderbilt control the market and set consumer prices. NYCO alone produces some 90,000 tonnes from its deposits in upper New York state.

Expanding markets for asbestos substitution and reinforcing fillers for plastics have resulted in dramatic production and price increases for high aspect (15:1 to 21:1) ratio wollastonite produt from NYCO and from India's Wolken operations where production has expanded from 3,500 tonnes in 1980 to 35,000 tonnes in 1986. U.S. consumption in these end uses amounted to 27,000 tonnes and 10,000 tonnes respectively and which was supplied by NYCO alone. Total U.S. consumption for plastics filler wollastonite alone in 1986 was approximately 16,000 tonnes with demand growing at between 10% and 12% per year.

Until recently only the U.S. and Finland were exporters of significant quantities of wollastonite. India now exports up to 10,000 tonnes per year and China may enter the export markets in the 1990's with low grade crude ore.

The Sechelt B.C. wollastonite property located on Snake Bay has the potential based on the following criteria to control the local domestic Canadian and U.S. market and to enter the Pacific Rim markets as a source of highly prized asbestos replacement and performance filler wollastonite:

1. Preliminary drill testing has indicated a zone 150 metres wide, up to an average 100 metres in depth, traced over 450 metres along strike (and open to the north) estimated to contain in excess of 3,7 million tonnes of Wollastonite at a conservative 20% wollastonite grade.

Box 69, Sechelt, B.C. V0N 3A0 Telephone (604) 885-9824

2. The deposit can be mined by open pit methods.

3. The deposit is located less than eight kilometres from tide water.

4. Preliminary tests have confirmed:

   (a) high quality wollastonite - (whole rock analysis)

	CaO	SiO2
Sechelt sample	47.2%	49.8%
Typical Commercial material	47%	50%

   (b) ease of garnet and diopside liberation and magnetic benefication

   (c) high aspect acicularity of all size fractions down to a tested minus 100 mesh material. Optical aspect ratios of 20:1 an average with very high aspect ratios up to 35:1 noted.

Testing programs recently commissioned (B.C. Research Foundation) will supply valuable bench scale benefication results sufficient to determine the economic potential for production of high scale value acicular wollastonite.

Ultimately, the Company, will continue test work aimed at developing a surface modified wollastonite for the expanding organic polymer industry (i.e. reinforced plastics). In 1985, the average price paid by consumers in the U.S. for chemically (surface) modified wollastonite was $0.55/Kilogram, or about $600 U.S./short ton. A growing shortage of surface modified wollastonite in the Pacific Rim (i.e. Japan, Korea, Taiwan and Hong Kong) will add greatly to the long term economic viability of developing the Sechelt (Snake Bay) deposits.

The wollastonite content of dposits varies considerably from one to another and there is no recognized minimum content in order for mining to be economic. In some cases wollastonite production is viable only as a result of local demand for associated by-products such as garnet or limestone; both of which could figure into the overall economics of the Sechelt deposit in light of growing demand for industrial garnet as a slag replacement for sand-blasting. There are many occurrences of Wollastonite but deposits of sufficient size and purity to be economically viable are rare. The Sechelt deposit appears to be both large as well as of quality and therefore ranks among only a very few deposits of its type in the world.

PART II

SECHELT WOLLASTONITE - SNAKE BAY PROJECT

Introduction

Tri-Sil Minerals Inc., a privately owned B.C. company, holds title to claims, known as the Mineral Hill claim group, located in the Vancouver Mining Division, 55 Kilometres northwest of Vancouver, B.C.. Beginning at sea-level on Sechelt Inlet the property rises west to an elevation of 460 metres. The claims include co-ordinates N 49°31' latitude, W 123°49' longitude on NTS map sheet 92G/12 W and cover approximately 900 hectares. Access to the property is gained via 4 km 4-wheel-drive road located 11 km west of Sechelt, B.C. on Highway 101. Ongoing road work will better connect the property to Sechelt via Snake Bay and shorten the distance to 8 km.

Work programs to date have included surface outcrop mapping to assess the a real distribution of the wollastonite bearing assemblages, and an 8 hole drill program aggregating 742.3 m of drilling.

A review of the engineering report describing the above-mentioned work indicates wollastonite in varying grades is located on surface in a zone approximately 150 metres wide, by 450 metres long (and open in a northerly direction) to an average depth of 100 metres which may contain upwards of 3.7 million tonnes of wollastonite at a conservative 20% wollastonite grade.

Regional Geology

The property is underlain by a north-south trending limestone skarn pendant supported by and surrounded by an underlying mass of Coast Crystalline Complex diorite and granodiorite.

Property Geology

Wollastonite bearing limestone skarn occurrences have been surface mapped and are found to cover an area of some 7,000 m2 in the centre of the claim group. Calc-silicate assemblages of marble, garnet, diopside and wollastonite in varying proportions are common but randomly distributed.

Wollastonite grade commonly attains its maximum where it is proximal to near-vertical, east-west trending 1.0 to 2.0 metre mafic dykes that randomly cross-cut the pendant.

Road exposures across the wollastonite zone indicate the possibility of selectively mining high grade material found in drilling to attain thicknesses in excess of 10.0 metes. Drill

hole 87-7, for example reportedly contains two such zones, 12.5 m and 16.3 m thick, separated by a thin (6.5 metre) garnet coated andesite dyke.

Colour banding representing primary bedding (?)/compositional banding is typical of the limestone-rich, wollastonite poor skarns and results in a ready visual differentation of the two.

Additional diamond drilling is required to define the wollastonite deposit reserve that presently is conservatively estimated at 3.7 million tonnes.

Test Programs

The Company initiated bench scale benefication tests, being conducted by the B.C. Research Foundation, have shown that both the ease of particle (i.e. garnet and diopside) liberation especially at minus 48 mesh and the high degree of acicularity (aspect ratios of up to 20:1) should be anticipated. Ongoing high intensity magnetic separation tests as well as neutral-PH froth floatation tests will determine the overall viability of benefication. The potential to produce by-product or co-product garnet appears favourable considering the high degree of particle liberation. Any finer grinding will only improve quality slightly but price significantly so long as a high aspect ratio is maintained.