Property 1-6 M.C.
092GNW031
Sechelt Carbonate

PENINSULA LIME AND MAGNESIA LTD.
8744 Joffre Ave, Burn.I.B.C.
Tel. 437-4322

008165

926/12W(29)

President : Rudy Riepe
Secretary: Guy Modonese

SECHELT LIMESTONE PROSPECT:

Phase 1:

Location: The property consists of 24 located mineral claims and one limestone lease over app. 40 acres, 4½ miles north of Half Moon Bay, 2 ½ east of Skaikos Point on Sechelt Inlet at an elevation of approximately 2200 Ft. a. s. l. and can be reached by existing logging road from Half Moon Bay. Road Distance from Vancouver app. 45 miles.

Geology: Surface exposures consists of volcanics, Brucitic Dolomite, high-calcium limestone and various showing of magnetite carrying values in copper and silver. A body of high-calcium limestone containing app. 20 million tons, extending over an area of 200 by 3300 feet, and Dolomite limestone containing approximately 100 million tons over an area covering 1000 by 4500 feet has been outlined. This remnant of a roof-pendant, mapped further north as the upper part of the Caren Range, has been preserved through block faulting and judging by the degree of contact metamorphosis these sediments may range deeper than the expected 200 feet possibly to 700 feet or more. The dip appears to be 15 to 20 degrees from the vertical, striking north to south magnetic.

PROPOSED DEVELOPMENT

1) Exploration:
   a) Prospect, cut line and survey add. claims
   b) Map and grade limestone
   c) Map and grade Iron-Copper
   d) Diamond Drilling
   N. B. Will defer project C and D until crushing operation has begun.

2) Production:
   a) Repair existing road
   b) Layout location of high calcium-limestone quarry
   c) Layout location of white rock quarry
   d) Prepare pits - (strip contaminated material and flush with high pressure water pumps.
   e) Set crusher and camp
   f) Begin production and stock-pile aggregates for market
   g) Build additional raod as required to access to quarry

3) Equipment & Plant requir.
   a) Rubber tire loader
   b) Tandem Dump
   c) Crusher screen and convayors
   d) Trailer, field office and quarter to sleep 4 people
   e) Bagging plant for chemical and agricultural products (as required)
   f) Fuel and supply.

4) Labour requirements:
   a) 3 mechanic operator b) 2 general quarry workmen
   c) 1 supervisor d) 1 salesman e) 1 book-keeper.

5) Sales & Promotion:
a) Establish Index of all customers and potentials
b) Define all specification of limestone and associated material mineral.
c) Establish product flow.

6) Products & Prices:

a) Ground Limestone and Dolomite for agricultural use
Prices vary from 15 to $ 20. ton. F. O. B. Lower Mainland.
Sales potential for 1970-1 7000 tons.
Approximates receivables ----------$ 110.000

b) Decorative chips and Dolomite chips
Prices vary from 12 to $ 30. ton, F.O.B. lower Mainland
Sales potential for 1970-1 35.000 t.
App. receivables----------$ 550.000

c) Quarry tailing and road mulch to sell locally F. O.B. quarry $ 3.00 ton
Sales potential 1970-1 10000 tons.
App. receivables----------$ 30.000

d) Limestone chips white to glass industry paint etc.
Prices vary from 22 to $ 35 ton F. O. B. Lower Mainland
Sales potential for 1970 - 1 70.000 tons.
Approximates receivables----------$ 1.600.000

Projected gross earning for 1970-1	$	2.290.000
Capital requirements and expenditures for 1970-1	$	850.000
Projected profit for 1970-1	$	1.440.000

SECHELT LIMESTONE DEVELOPMENT - PHASE 2

As exploration drilling prove out 2 more distinct bodies of high-calcium and high-magnesium Dolomitic limestone of sufficinet size, consideration should be given, apart from a crushed aggregate operation, to a fully integrated Lime and Magnesium product Plant.

1) Order of development:
a) Tramline or conveyer system to tidewater--either 6 miles to Half Moon Bay or 2½ miles to Sechelt Inlet.
b) Establish docking facilities at tidewater for barging.
c) Purchase and install large volume crushing plant (Approximate 2500 tons per day) mainly for construction aggregates.
d) Construct kilns and processing plant either at quarry site or tidewater, depending on availability of power. The chief products from high-calcium limestone will be quick-lime, hydrates, (magnesia.)

FACTS TO KEEP IN MIND:

1) Increasing use of stone products, as lumber becomes more expensive.
2) A growing concrete precast (artificial stone) industry in the Pacific North West.
3) Increasing gravel prices makes substitutes in aggregates with limestone and Dolomite more attractive.
4) No lime plant exist at present in B.C.
5) We have the only sizeable dolomite deposit within reach of tidewater along the coast from Mexico to Alaska.
6) High purity of our limestone - 98.7% $CaCO_3$
7) More than 10 million pounds of calcium carbide is imported from Portland Oregon annually at a cost of more than $ 12 / ton freight charges alone to the acetylene producer in B.C. freight (e.g. Liquid Carbonic).
8) Many examples on hand where imported products can be replaced by ours with a saving to the consumer.
9) A general growing market in B. C. benefiting all industrial raw material supplies.
10) Close to lower mainland by water and road.
11) Zones of white rock exist within deposits, excellent source for decorative chips in every increasing demand which is not being filled at present.
12) More than 10000 tons of hydrate are being imported for agricultural purpose alone.

==========

==========

EXTRACTS FROM MATERIALS HANDBOOK 9th EDITION

Dolomite:

A type of limestone employed in making cement and lime, asflux in melting iron, as a lining for basic steel furnaces, for the production of magnesium metal, for filtering and as a construction stone. Specific gravity is 2.8 to 2.9 and hardness 3.5 to 4. It is naturally white, but may be colored by impurities to cream, gray, pink, green, or black. For furnace linings it is calcined, but for fluxing it is simply crushed. The raw dolomite, marketed by Basic Refractories, Inc., fore open-hearth steel making is washed crushed stone in 5/8-in. size. When calcined at a temperature of about 3100 deg. f. dolomite breaks down to MgO and CaO, and is limited to about 3000 deg. f. as a refractory. CALCINED DOLOMITE used in Germany as a water-filter material under the name of Magno-Masse is in grain sizes 0.5 to 5.) mm. Dolomite for the production of magnesia, some of which is cut as building marble, contains 10 to 20% magnesia, 27 to 33 lime, 1 to 12 alumina, 40 to 46 CO_2 1 to 5 silica, and 0 to 3 iron oxide. For the production of magnesium metal, calcined dolomite and ferrosilicon are brought to a high temperature in a vacuum and the magnesium driven off as a vapor.

Lime:

Lime is employed in mortars, cements, as a flux in iron melting, in many chemical processes, as an absorbent, and for liming acid soils. It is obtained by heating limestone in a furnace or kiln to about 1000 deg. F to burn out the CO_2 gas. The residue is quicklime or caustic lime. Pure quicklime is white and amorphous or crystalline. The specific gravity is 3.2 and melting point 4660 deg. F. Chemical lime, used in the chemical industries and for water softening, is a high

calcium lime with minimum impurities. A typical analysis is 97.9 CaO, 0.43 silica, 0.43 iron and lumina, and 0.52 magnesium oxide. The Kemidol Quicklime marketed by the U. S. Gypsum Co. for glass manufacture is a free flowing fine pow'ered lime made from Ohio dolomite. When dolomite Quicklime is hydrated, no more than 2 or 3 % of the magnesium oxide is converted to the hydroxide, and the lime has a high neutralizing value, useful for neutralization of chemical solutions. Commercial limes for building purposes contain about 94% CaO, some calcium carbonates, and less than 0.50 % MgO. Water causes the lime to slake with much heat, leaving white powder, CaOH2O. High-calcium slake rapidly and expand greatly on slaking and are the strongest. Limes with much magnesia slake slowly, but magnesia produces the slip that makes easier working. The so-called lean limes contain considerable silica, alumina, and iron oxide, and are slow-slaking and difficult to work. Lime is marketed in lumps or ground to 20 mesh, and as mill run. Hydrated lime is made by grinding quicklime, slaking the powder with water, and sifting to a fine powder. It is easier to handle and is a more reliable product than ordinary lime. High grade hydrated lime will have a fineness so that 98% pass through a 100-mesh sieve and will not contain over 2% magnesia. Some grades contain less than 0.50% magnesia, and 98% will pass through a 200-mesh sieve. The pure hydrated lime for the chemical industry has 98.2% Ca (OH) 2 or 74.4 % CaO, and is a fine impalpable powder. This is Calcium Hydroxide, or lime hydrate, and is also used in paints, for dehairing hides, and in medicine. SODA LIME, used for freeing air of carbon monoxide, as a chemical purifying agent, and in a gas masks, is a mixture of hydrated lime with sodium hydroxide.

Fluxing Stone:

A common term for the limestone or dolomite used in the melting of iron. About 900 lb. of limestone are employed for every long ton of pig iron produced in the blast furnace. Lime is more effective as a flux than limestone, but is more expensive. Limestone for use as flux must be fairly pure, or additional undesirable compounds will be formed.

Limestone:

Immense quantities of limestone are used as flux in the melting of iron, for the manufacture of lime, and as a building stone. In a broad sense limestone includes dolomite, marble, chalk, or any other mineral consisting largely of CaCO3. Agricultural limestone, known as agstone, used for liming soils , is stone of high-calcium carbonate content ground to a fineness of 200 to 325 mesh. A grade for chemical use is specified with a minimum of 97.5% CaCO3, and maximums of 0.30 silica, 0.20 alumina, and 0.07 iron.

736-7736

INSPECTION
TESTING
EXPERIMENTAL
INVESTIGATIONS
RESEARCH
DEVELOPMENT

SPRATT RUSSELL LABORATORIES LTD.

2455 CYPRESS ST. - VANCOUVER 9, B.C.

To: Squamish Stone & Silica Co.,
8744 Joffre Avenue,
Burnaby 1, B. C.

June 22, 1970.

Attention: Mr. Rudy Riepe

Project: Research and Development

Report of: Chemical Analyses of Limestone Material

Report # 1/70

INTRODUCTION

Two samples of limestone were submitted by the Client for analysis, with results as follows.

TEST RESULTS

Determination	Grey Sample	White Sample
Acid Insoluble	0.72	1.56
Fe_2O_3	0.043	0.038
Al_2O_3	0.45	0.45
CaO	55.28	54.50
MgO	0.15	0.31
Loss on Ignition	43.35	43.6
Cl	0.02	0.01
By Calculation:		
$CaCl_2$	0.03	0.02
$CaCO_3$	98.95	97.56
$MgCO_3$	0.31	0.94

BFB/eac

SUPERVISING ENGINEER