



[ARIS11A]

ARIS Summary Report

Regional Geologist, Vancouver

Date Approved: 1999.05.06

Off Confidential: 1999.10.20

ASSESSMENT REPORT: 25768

Mining Division(s): Kamloops, New Westminster

Property Name: Talc Ridge

Location: NAD 27 Latitude: 50 04 00 Longitude: 121 38 00 UTM: 10 5546719 597811
NAD 83 Latitude: 50 04 00 Longitude: 121 38 05 UTM: 10 5546936 597708
NTS: 092104E

Camp:

Claim(s): Talc Ridge 1

Operator(s): Cardinal, Daniel G.

Author(s): Cardinal, Daniel G.

Report Year: 1998

No. of Pages: 17 Pages

Commodities

Searched For: Magnesite, Talc

General Work Categories: GEOL

Work Done:

Geological
GEOL Geological (375.0 ha)

Keywords: Chlorite schists, Lenses, Phyllites, Serpentine, Serpentinites

Statement Nos.: 3128132

MINFILE Nos.: 092ISW063, 092ISW064, 092ISW065

Related Reports: 22685, 22688, 23691, 25396

**GEOLOGICAL ASSESSMENT REPORT
(Amended)**

On The

**TALC RIDGE GROUP
(Talc Ridge 1 - 4)**

Located In The

**NEW WESTMINSTER & KAMLOOPS
MINING DIVISIONS**
Latitude: 50° 04'N; Longitude: 121° 38'W
NTS 92I/4E

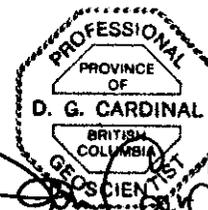
Prepared For

HIGHLAND TALC MINERALS LTD.
P.O. Box 855
Hope, British Columbia VOX 1L0

Prepared By

D. G. Cardinal, BSc., P.Geo., F.G.A.C.
CARDINAL GEOCONSULTING LTD.
Hope, BC

April 14, 1999
**GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT**



D. G. Cardinal

25,768

TABLE OF CONTENTS

	PAGE
A. INTRODUCTION	1
B. LOCATION AND ACCESS	2
C. CLAIMS INFORMATION	2
D. BRIEF BACKGROUND	3
E. REGIONAL GEOLOGY	4
F. FIELD PROCEDURES	5
G. GEOLOGICAL SURVEYS	5
H. CONCLUSION	7
I. COST STATEMENT	8
J. PROFESSIONAL CERTIFICATE	9
K. REFERENCES	10

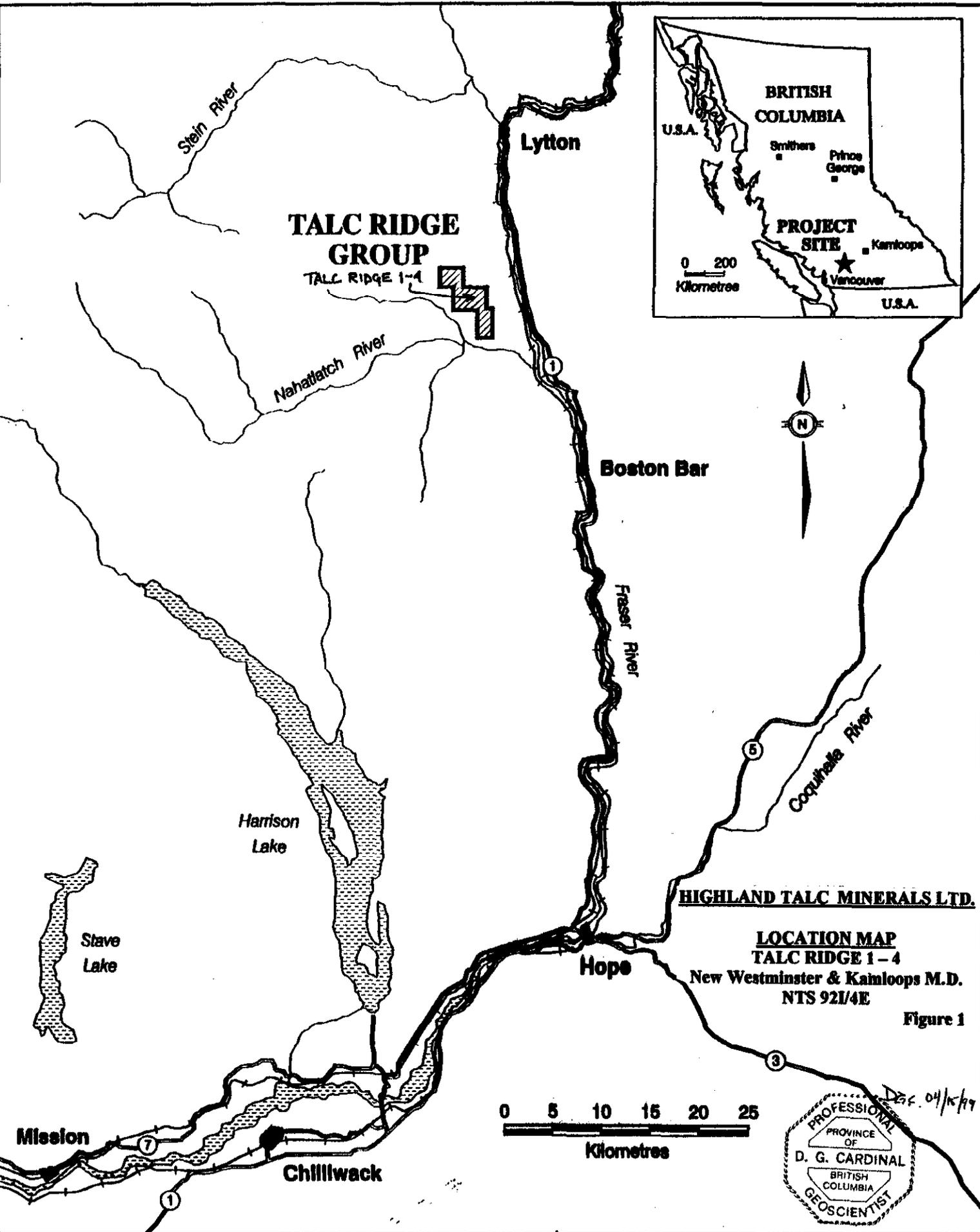
FIGURES:

- 1. Location Map**
- 2. Claims Map**
- 3. Regional Geology Map**
- 4. General Property Geology Map**
- 5. Bedrock Outcrop and Geology Map**

A. INTRODUCTION

Highland Talc Minerals Ltd. has a group of contiguous mineral claims (Talc Ridge 1-9) located several kilometres northwest of Boston Bar, BC. The Talc Ridge 1-4 claims cover a part of geological belt favourable for hosting talc mineralization. For example, previous drilling on Talc Ridge 1 defined a significant deposit of talc and associated magnesite. (South talc deposit). Although some sporadic mapping has been conducted in the past, no serious attempt was ever made to map and tie-in all known major outcrops on the claims as well as key fault structures. As a result, between August 1st-30th, 1998, 12 field days were spent mapping the bedrock geology and structures and producing a geology map of the Talc Ridge 1-4. This work is herein 're-submitted' in report form for assessment credits.

The author would like to note that the above-noted mapping project was not initially filed toward assessment work credits and instead a technical report, which was also produced by the author and submitted to the Canadian Institute of Mining & Metallurgy for the Special Volume on Industrial Minerals in Canada – entitled "Southwestern British Columbia Talc – A Value-Added Resource for the Pacific Northwest Markets" – was submitted toward assessment credits for the Talc Ridge 1-4 claims. However, the author was recently informed by letter, dated March 23, 1999, that the technical report was rejected by Geological Survey Branch, Victoria, as it did not comply with Section 33(1) of the Mineral Tenure Act. The report had initially been submitted to the Gold Commissioner's Office, Vancouver in December 18, 1998 and accepted as assessment report No. 25768. Consequently, the assessment report as now been amended to comply with the act and describes the geological surveys conducted during the 1998 field season.



HIGHLAND TALC MINERALS LTD.

LOCATION MAP
TALC RIDGE 1 - 4
New Westminster & Kamloops M.D.
NTS 92I/4E

Figure 1

DEC. 04/1977
PROFESSIONAL
PROVINCE OF
D. G. CARDINAL
BRITISH COLUMBIA
GEOSCIENTIST

B. LOCATION AND ACCESS

The Talc Ridge 1-4 mineral claims are situated in southwestern BC some 250 kilometres by road from the city of Vancouver, and some 100 road kilometres north-northwest of the town of Hope.

Access to the talc project site can be gained from the logging communities of Boston Bar and North Bend, located 65 kilometres north of Hope on the Trans Canada Highway. From North Bend, which is on the west side of the Fraser River, a public and forestry service road heads northerly to the Nahatlatch River. Near 15 kilometres and at a junction for the Reo Rafting tour company, the Nahatlatch River road turns westerly and a branch road, Nahatlatch Forestry Fire Tower- Four Barrel Mainline logging road, leads north toward the claims. From the junction and mainline logging road, it is an additional 20 kilometres to project site.

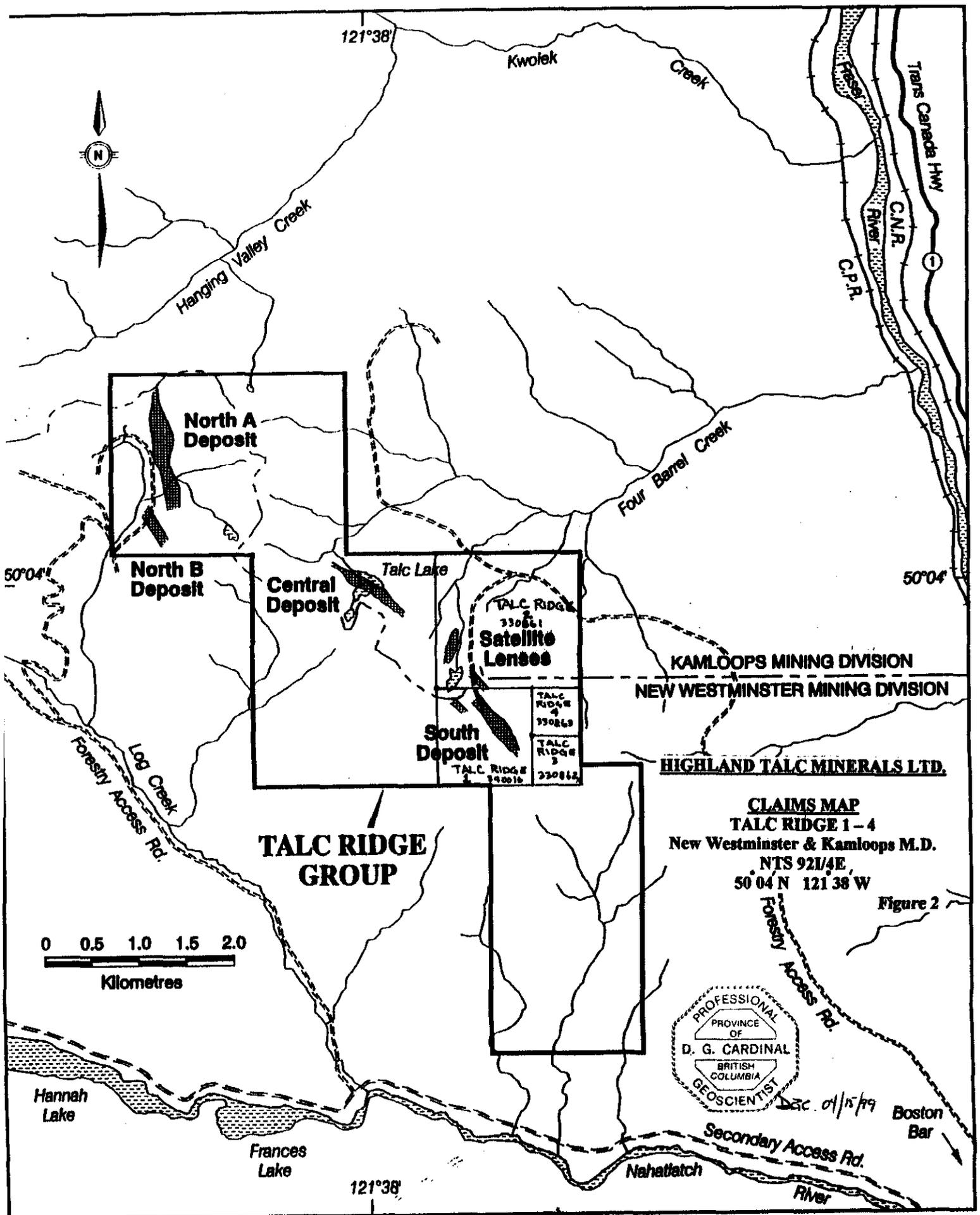
C. CLAIMS INFORMATION

The Talc Ridge Group (Notice To Group number 3113263, recorded November 13, 1997) consists of 4 contiguous claims (Talc Ridge 1-4) totalling 15 units. The legal corner post for Talc Ridge 1 and 2 is located within the Kamloops M.D. and LCP for Talc Ridge 3 and 4 can be found in the New Westminster M.D.

The claims can be located on NTS map sheet 92I/4E at coordinates: Latitude 50° 04'N and Longitude 121° 38'W. The pertinent claims information is summarized in the following table.

Table 1.

Claim Name	Tenure Number	No. of Units	Current Expiry Date
Talc Ridge 1	340016	4	September 23, 2003
Talc Ridge 2	330861	9	September 19, 2001
Talc Ridge 3	330862	1	September 21, 2002
Talc Ridge 4	330863	1	September 21, 2002



KAMLOOPS MINING DIVISION
 NEW WESTMINSTER MINING DIVISION
HIGHLAND TALC MINERALS LTD.

CLAIMS MAP
TALC RIDGE 1 - 4
 New Westminster & Kamloops M.D.
 NTS 921/4E,
 50°04' N 121°38' W

Figure 2

PROFESSIONAL
 PROVINCE OF
 D. G. CARDINAL
 BRITISH COLUMBIA
 GEOSCIENTIST

DEC. 01/15/79

Boston Bar

Secondary Access Rd.

River

0 0.5 1.0 1.5 2.0
 Kilometres

Hannah Lake

Frances Lake

121°38'

D. BRIEF BACKGROUND

Talc mineralization was initially reported on ground now covered by the Talc Ridge 1-4 claim group in 1952 by the Geological Survey of Canada. Prior to this time, between 1920-30, the area was prospected for gold and number of the quartz veins occurring on the claims were tested by trenching.

The area was then explored for nickel in the early 1970s. During the exploration surveys talc mineralization was noted along the shores of a small lake and samples were sent to a U.S. based company, then Cyprus Industrial Minerals Ltd. Results, from the tests showed 62% talc and 34% magnesite.

Between 1983-85, Hudson Bay Exploration & Development Ltd. conducted a series of gold exploration programs. A gold-bearing structure was identified on the Talc Ridge 5 and 6 claims located south and contiguous to Talc Ridge 1-4. Hudson Bay carried out limited exploratory diamond drilling, which returned mixed gold results. The company during the construction of an exploration access road across the present Talc Ridge 1 claim intersected a wide section of talc mineralization, which to day forms the South talc deposit.

The Hudson Bay claims subsequently expired and in 1989 Highland Talc Minerals Ltd. acquired the ground and staked a number of contiguous mineral claims, covering all known talc mineralization. Since 1990, the company has conducted a series of ongoing programs, which has included detail geological surveys, trenching, sampling and diamond drilling. Four main talc deposits have been discovered to date: the South, Central (Talc Lake), and North A & B deposits. Between 1992-94, a total of 19 holes were drilled on the South deposit defining a crude talc (talc-magnesite) in-situ resource of 20 million tonnes. In 1994-95, a 90 tonne bulk sample was collected and shipped to Finland, to a Finnish company with technical expertise in talc processing and beneficiation. A series of bench scale and pilot scale tests were conducted.

During 1995, pilot scale paper trial runs were conducted in Finland and subsequently in BC with a major paper manufacturer. The trials were carried out to evaluate the potential application of talc in papermaking. The results proved encouraging where specialty light weight coated paper was developed.

In recent months Highland Talc Minerals Ltd. has conducted additional technical test work evaluating different types of micronizing mills for producing ultra fine talc product. The company has also been in recent discussions with the Pulp and Paper Centre at U of BC to collaborate in a value-added research project where talc can be tested for its potential applications as filler and fibre replacement in high value, specialty groundwood papers.

E. REGIONAL GEOLOGY

The geological setting is comprised of a major northwest-southeast trending structural break, which is represented by a semi-continuous belt of serpentine, hosted in a band of meta-sedimentary and meta-volcanic rocks. This regional break is referred to as the Kwoiek Creek Fault (J.W.H. Monger and W.J. McMillan, 1989, GSC).

The serpentine belt can be traced for some 30 km along strike. It first can be observed just south of the Nahatlatch River, along the west side of the Fraser River canyon, trending northwest and terminating east of Skihist Mountain at the head waters of the North Kwoiek Creek. The serpentine and its associated rocks are believed to be part of, and latterly equivalent to, the Bridge River Series found to the northwest in the Lillooet and Bridge River districts.

The Kwoiek Creek Fault divides 2 lithological units (J.W.H. Monger and W.J. McMillan, 1989, GSC). The latterly equivalent Bridge River complex, of Permian age, is found to the east of the fault, and to west, is the Relay Mountain Group of early Jurassic to late Cretaceous age. The complex is metamorphosed to upper and lower greenschist facies rocks, which consists mainly of chlorite-biotite-actinolite schist, phyllite, talcose schist and serpentine. The Relay Mountain Group is predominately composed of phyllite, argillite, shale, limy shale and minor sandstone.

The Kwoiek Creek Fault-Serpentine Belt and its associated sedimentary-volcanic assemblage is in turn, intruded by Cretaceous age coast range granites such as the Scuzzy Pluton. Small, localized quartz monzonitic to quartz dioritic plugs intrude the southern section of the belt. The northern section of the belt is truncated by coast range granite.

The overall structural fabric is reflected and influence by regional movement of the Kwoiek Creek Fault. Northwest-southeast trending schistosity, foliation and lineation features dominate the bedrock and are associated with steeply dipping sub parallel shear zones. The northern portion of the fault is structurally complicated. It is splayed into at least 2 or more systems suggesting a complex series of sub paralleling, imbricated over thrusts. This in part is reflected by repetitive sequences of talcose schist and serpentine.

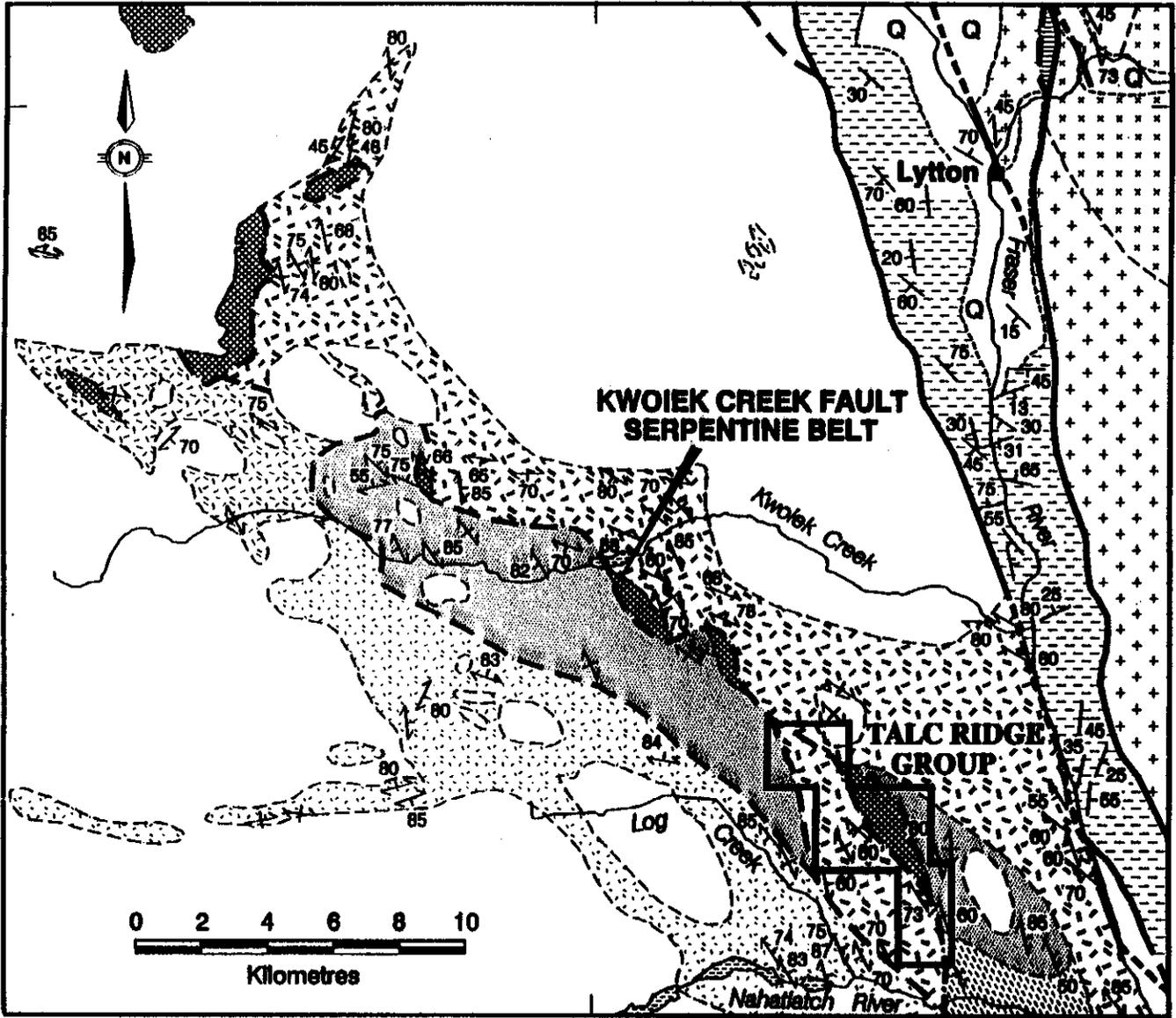
A number of potentially important economic minerals are spatially related to the belt. This includes a number of old gold showings and industrial minerals such as talc and magnesite. Significant deposits of talc and associated magnesite can be found along the northern and southern sections of the belt. Highland Talc Minerals Ltd. holds large deposits of talc mineralization northwest of the Nahatlatch River, within the Talc Ridge Group of mineral claims, that the company is presently evaluating for future development.

122°00'

121°45'

50°15'

50°00'



LEGEND

Q Quaternary alluvium

CRETACEOUS AND/OR TERTIARY

Garnet-biotite, kyanite and sillimanite schist, local amphibolite

LATE CRETACEOUS

Granodiorite, quartz monzonite

MIDDLE AND LATE CRETACEOUS

Chert-grain sandstone and conglomerate

EARLY AND MIDDLE CRETACEOUS

Jackass Mtn Group: sandstone, argillite, conglomerate

JURASSIC AND CRETACEOUS

Peley Mtn Group: phyllite, semischist, local conglomerate

EARLY AND MIDDLE JURASSIC

Ledner Group: argillite, slate, sandstone, tuff

TRIASSIC AND/OR JURASSIC

Mount Lytton Complex: chlorite

Mount Lytton Complex: granodiorite

PERMIAN TO JURASSIC

Bridge River Complex: lower greenschist facies phyllite, quartzose phyllite, siliceous and chlorite schist

Bridge River Complex: upper greenschist - lower amphibolite facies siliceous schist, actinolite schist, local biotite-garnet schist, commonly containing concordant and cross-cutting Eocene felsic dykes and sills

Ultramafic rock, local gabbro

Geological boundary (defined, approximate or assumed)

Bedding, tops known (inclined, vertical)

Schistosity, gneissosity, cleavage foliation (inclined, vertical, unknown)

Fault (defined and approximate) (assumed) (extension beneath drift)



HIGHLAND TALC MINERALS LTD.
REGIONAL GEOLOGY MAP
TALC RIDGE 1 - 4
NTS 921/4E

Figure 3

DGC 04/15/99

F. FIELD PROCEDURES

The geological field surveys were conducted for 12 days during the month of August (1998). The field crew consisted of a geologist and an assistant. A 2-person base camp was established on the north shore of a small lake, locally known as Dragon Fly lake, located on the southern portion of Talc Ridge 2. A 4x4 truck was utilized as transportation support.

Prior to carrying out any geological mapping surveys an existing baseline had to be rehabilitated so it could be used to tie-in all known rock outcrops and structural features. Initially, the baseline had been established in 1991 during a diamond drilling program, it now required some clearing and brushing of willow and low lying underbrush. Pickets were setup every 200 metre intervals for stations using hip chain and brunton compass. The baseline has azimuth of 315 degrees and was rehabbed the entire length from 0+00 to 21+00S (2.1km).

A digitized contour map at a scale of 1:8000 with 10 metre contour intervals was obtained from a local logging company in Boston Bar. A base map was reproduced with the same scale and the baseline along with the exploration access road leading to the project site was plotted, this then greatly assisted in accurately plotting the bedrock geology. As well, 1:20,000 scale airphotos were used to locate outcrops and structural features, which were not readily visible from ground level. The area mapped within the Talc Ridge 1-4 claims covers approximately 2km north-south x 1km east-west.

G. GEOLOGICAL SURVEYS

The Talc Ridge 1-4 covers height-of-land a semi-plateau like topography, which divides two watersheds, one flows easterly directly into the Fraser River, the other flows westerly into Log Creek and into Nahatlatch River. Locally, the ridges have been scoured by glaciation lending themselves to good exposed bedrock, the low-lying areas usually have poor drainage with small swamps or lakes. Elevation ranges from about 1675m along ridge tops to 1590m at Dragon Fly lake and base camp.

The claims are underlain by 3 main rock types, which comprise of phyllite-schist, serpentine and volcanic greenstone. The overall structural fabric trends northwest-southeast and steeply dipping, concordant with the major fault movements. The most significant bedrock feature in the area is a belt of massive, dark green, homogenous serpentine, which cuts diagonally across the claims, striking northwesterly. The serpentine is well exposed along a prominent ridge just west of the lake and several large outcrops can also be observed at the base camp site. Mapping shows the belt to be at least 800 metres wide along the western boundary of the Talc Ridge 2 claim and narrowing

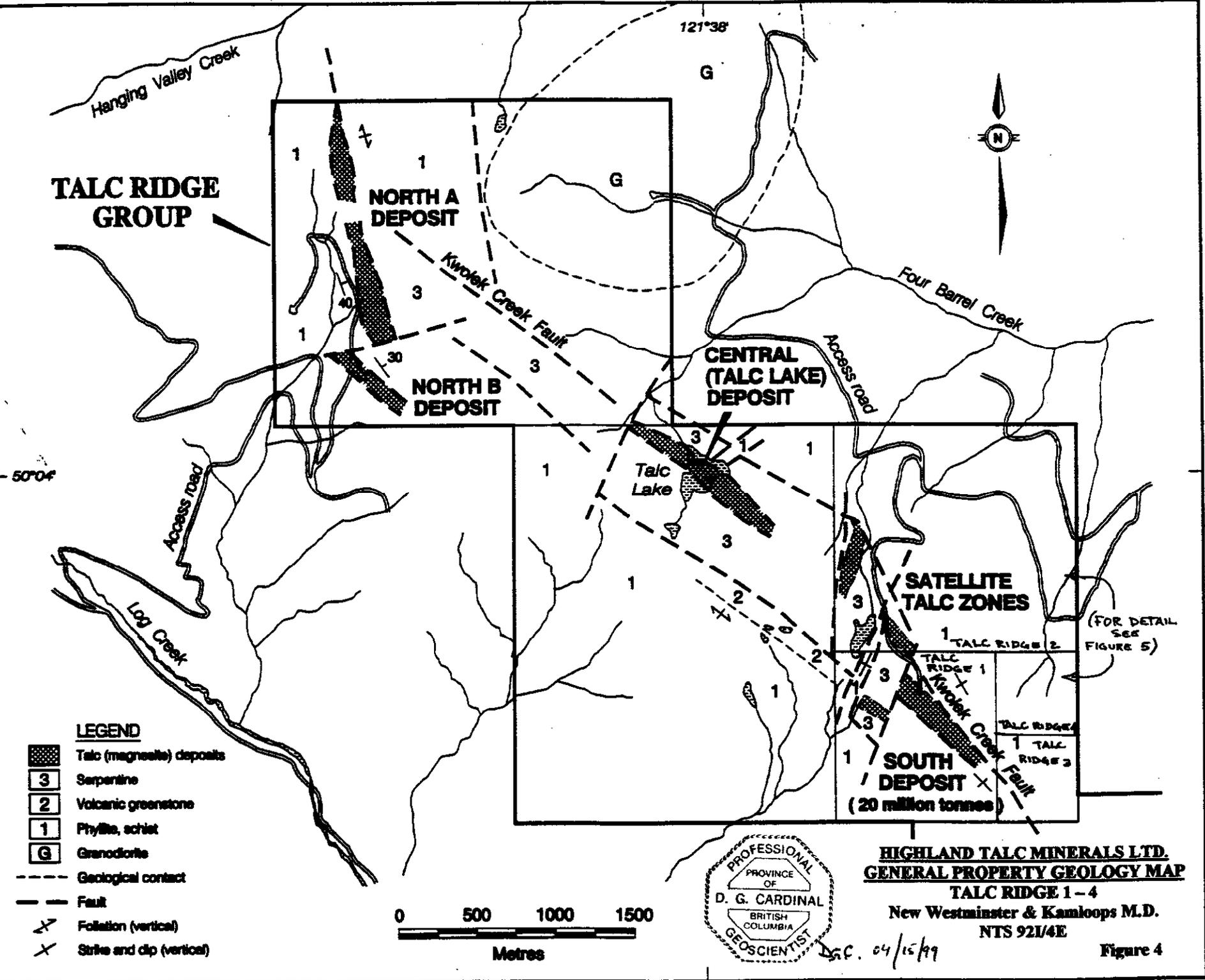
down to only a few metres to the southeast along Talc Ridge 1 where it hosts the South talc deposit. It is traceable for at least 1400 metres along strike within the mapping area before it enters the other adjacent Talc Ridge claims.

Mapping surveys have shown the serpentine to be fault-bounded by a thick sequence of northwest-southeast trending, steeply dipping, foliated phyllite and biotite-micaceous schist. Phyllite and schist rocks can be observed outcropping along ridges and exposed along forestry-logging roads, they form the main bedrock unit on the claims. Along the southwestern side, the serpentine is partly in fault-contact with a band of volcanic greenstone. This contact can be observed west of the lake along the prominent ridge previously noted. The greenstone is considered to be part of the phyllite-schist unit. Fault shearing has also been mapped partly exposed along a section of the exploration access road, this marks the northeastern contact boundary between the serpentine and phyllite.

The fault-bounded serpentine belt is interpreted as been part of a major fault system referred to as the Kwoiek Creek Fault (J.W.H. Monger, 1989, GSC). The author has further subdivided the fault system into 2 separate but related faults, mapped as the east and west Kwoiek Creek faults. A second generation of cross-cutting faults trending northeast-southwest offset the serpent belt and related Kwoiek Creek faults as well as the phyllite, schist and greenstone rocks. One of these faults runs along the south shore of Dragon Fly lake where a slice of faulted phyllite can be observed at B/L-14+00S, structurally implaced in the serpentine. An other cross-cutting fault is believed to have truncated the northern section of the South talc deposit, offsetting its northern extension some 100 metres to the west. At B/L-6+00S, a small northeasterly flowing stream contains abundant talc schist in place suggesting a probable cross-cutting structure. The author believes that other such faults occur within the mapping area but are masked by overburden.

Several talc mineralized zones were also mapped. The South talc deposit has previously been documented in detail based on diamond drill results. It should be noted that the deposit has currently both proven-probable-inferred resource of 20 million tonnes of talc grading 50-60% and magnesite 30-40% insitu. Four other smaller or satellite talc zones occur to the northwest, this includes the zone which is believed to be a faulted section of the South deposit. A new talc zone was discovered during the mapping at B/L-6+00S, which as noted above, is believed to be related to faulting. Talc mineralization can be traced along the stream bed for approximately 400 metres, occurring between the baseline and east Kwoiek Creek fault. Based on the amount of mineralization observed along the stream bed, this could be a significant new find.

TALC RIDGE GROUP



HIGHLAND TALC MINERALS LTD.
GENERAL PROPERTY GEOLOGY MAP
TALC RIDGE 1-4
 New Westminster & Kamloops M.D.
 NTS 921/4E

Figure 4

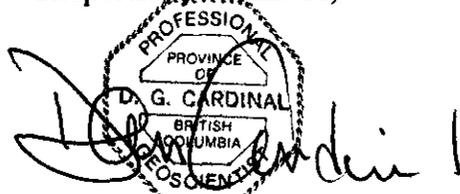
H. CONCLUSION

- **Geological mapping surveys were conducted over the Talc Ridge 1-4 mineral claims during the month of August, 1998.**
- **The claims are underlain by an important northwesterly striking geological structure referred to as the Kwoiek Creek Fault – serpentine belt.**
- **The serpentine belt is fault-bounded (East and West Kwoiek Creek faults) by a thick sequence of phyllite, biotite schist and minor volcanic greenstone.**
- **The serpentine belt is favourable for hosting talc and associated magnesite mineralization. The South talc deposit, which contains a significant resource of talc and magnesite occurs within the serpentine. Five other talc zones were identified during the mapping project this includes a new discovery, which has the potential of carrying a sizeable deposit of talc-magnesite.**
- **Several cross-cutting, northeast-southwest striking faults which offset the belt as well as the talc mineralization, were identified during the mapping surveys.**
- **Based on the positive geological results, a better understanding of the serpentine and its relation to the structures and talc mineralization has been gained. As well the discovery of a new talc zone holds potential promise, additional detail ground work in the future in order to properly delineate the zone is proposed.**

I. COST STATEMENT

Field Related Expenses:	Cost
Field Crew:	
Geologist, 12 days (August 1-31, 1998) @ \$350 per day.	\$ 4,200
Assistant, 12 days (August 1-31, 1998) @ \$150 per day.	1,800
Accommodations: 2-person field camp, 12 days @ \$60 per day.	720
Transportation: 4x4 truck, 12 days @ \$65 per day.	780
 Assessment Report:	
Report writing and compilation of data and drafting	2,050
 Total costs incurred	<u>\$ 9,550</u>

Respectfully submitted,



D.G. Cardinal, BSc., P. Geo.

J. PROFESSIONAL CERTIFICATE

I, Daniel G. Cardinal of the municipality of Hope, British Columbia, do hereby certify that:

I am a Professional Geoscientist residing in Hope, B.C. at 65661 Birch Trees Dr., P.O. Box 594, Hope, BC, VOX 1L0.

I am a graduate from the University of Alberta, Edmonton, Alta. and hold a BSc. (1978) in Geology and hold a diploma (1972) in Exploration-Geology from the Northern Alberta Institute of Technology, Edmonton, Alta.

I am a member in good standing with The Association of Professional Engineers and Geoscientists of British Columbia (P.Geo.#18455); the Association of Professional Engineers, Geologists and Geophysicists of Alberta (P.Geol.#M29405) and a Fellow of the Geological Association of Canada (#F4891).

I have been practicing my profession continuously for the past 20 years.

I supervised and conducted the geological surveys and also the author of this geological assessment report herein submitted for assessment work credits.

I a director and principal of Highland Talc Minerals Ltd.

Signed in Hope, British Columbia this 15th day of April, 1999.

A circular professional seal for the Association of Professional Engineers and Geoscientists of British Columbia. The seal contains the text "PROFESSIONAL PROVINCE D. G. CARDINAL BRITISH COLUMBIA GEOSCIEN". A handwritten signature in black ink is written over the seal.

Daniel G. Cardinal, BSc., P.Geo.

K. REFERENCES

Cardinal, D.G., December 1992, Geological Assessment Report on the Gold Ridge Claim Group (Gold Ridge 1, 2, 3 & 5) – Talc Mineral Claims. Assessment Report No. 22688.

----- November 1992, Geological Assessment Report on the Gold Ridge 2 and Latch 1 and 2 – Talc Mineral Claims. Assessment Report No. 22665.

----- November 1994, Assessment Report on Talc Project – Pilot Scale Tests and Diamond Drill Programme, Talc Group. Assessment Report No. 23691.

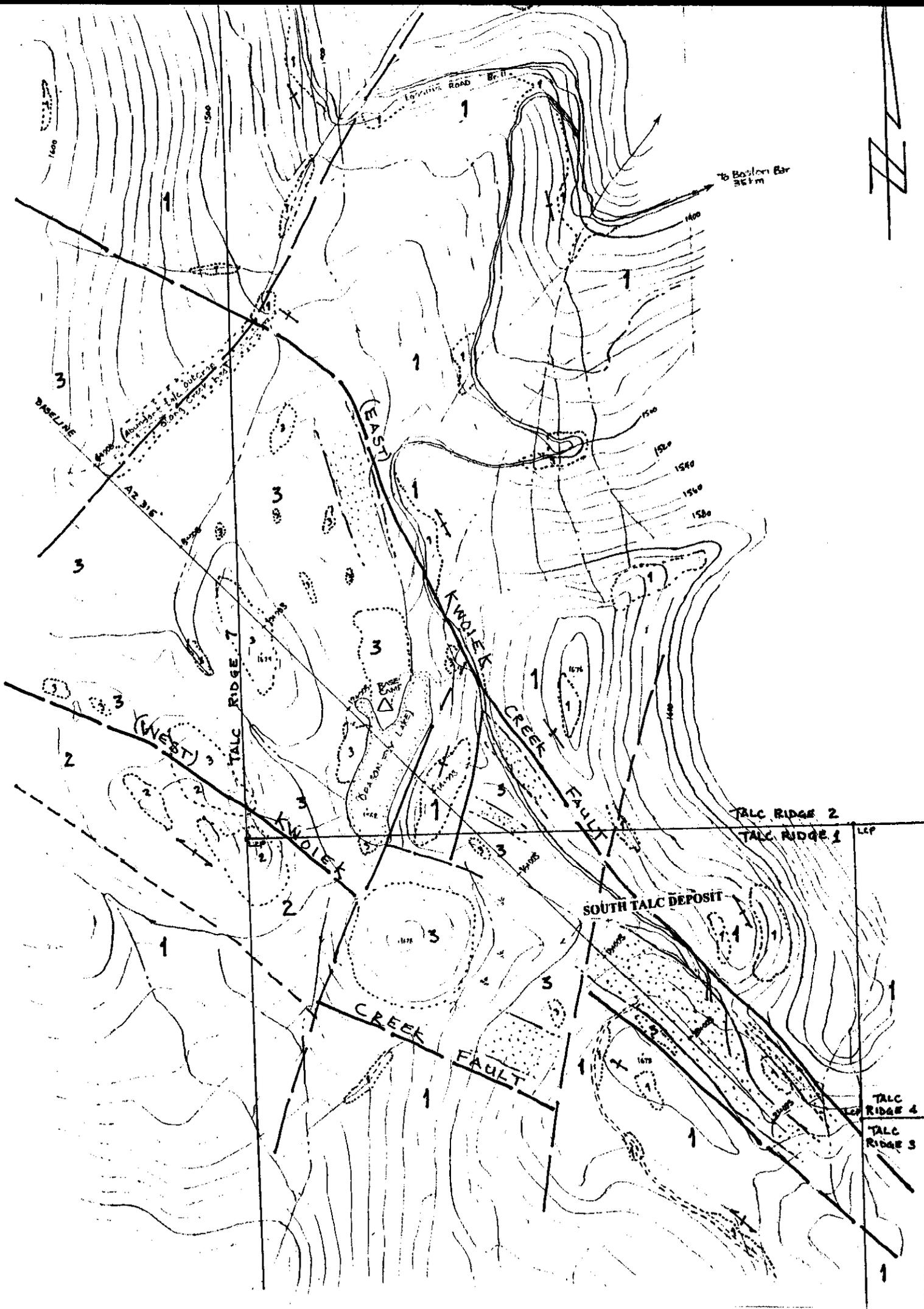
----- February 1998, Geological and Bulk Sampling Assessment on the Talc Ridge Group (Gold Ridge 1 & 3 and Talc Ridge 1-4) Assessment Report No. 25396.

Chamberlain, J.A., 1973, Geological Report, "H" Claims, Nahatlatch Area, B.C., Department of Mines and Petroleum Assessment Report No. 4985.

Duffel, S. and McTaggart, K.C., 1952, Ashcroft Map Area, Geological Survey of Canada, Memoir 262.

Maclean, M., 1988, Talc and Prophyllite in British Columbia, B.C. Ministry of Energy, Mines and Petroleum, Mineral Resources Division, Geological Survey Branch.

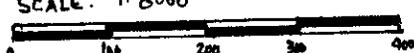
Monger, J.W.H., 1989, Geology of Hope and Ashcroft Map Areas, British Columbia, G.S.C., Maps 41-1989 and 42-1989.



LEGEND:

-  TALC (MAGNESITE) MINERALIZATION
-  TALC ZONES
-  SERPENTINE
-  VOLCANIC GREENSTONE
-  PHYLLITE, BIOTITE SCHIST
-  BEDROCK OUTCROP

-  FAULT (INFERRED)
-  GEOLOGICAL CONTACT
-  BEDDING Strike & Dip (Vertical)
-  FOLIATION Strike & Dip (Vertical)

SCALE: 1:8000

 METERS

HIGHLAND TALC MINERALS LTD.

BEDROCK AND GEOLOGY MAP
 New Westminster & Kamloops M.D.
 NTS 91/4E
 50 04' N 121 38' W

Figure 5



DGC 04/15/99