BRITISH COLUMBIA

PROSPECTORS ASSISTANCE PROGRAM

MINISTRY OF ENERGY AND MINES

GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:	1994/95
REPORT #:	PAP 94-2
NAME:	PAUL SCHILLER

D.D.H. GEOMANAGEMENT LTD.

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REPORT

ON THE

EXPLORATION POTENTIAL

OF THE

BLACK CRYSTAL PROPERTY

(FOR ASSESSMENT PURPOSES)
(Molly 1 -4 and PB 1 - 4)

LOCATED NORTHWEST OF NELSON, B.C.

(Lat. 49 46′ North , Long. 117 46.5′ West)
(N.T.S. Map Sheet 82 F/13W)

For

MR. PAUL SCHILLER

2303 - 1415 West Georgia Street
Vancouver, B.C.
V6G 3C8

By

D.A. Howard, M.Sc., P.Eng.

JANUARY 16, 1995

422 - 470 Granville Street, Vancouver, B.C. Canada V6C 1V5 • Telephone (604) 681-4413

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SUMMARY

The easily accessible Black Crystal Property is a large graphite deposit held by Mr. Paul Schiller which consists of 4 - 20 unit claims plus 4 internal claims located near the headwaters of Hoder Creek approximately 74 kilometres north of Trail, B.C.

The property is located totally within the central portion of the Valhalla Gneiss Dome which is a domal structure comprised of high metamorphic grade paragneiss structurally overlain and interlayered with thick granitoid sheets. Graphite mineralization in the form of disseminated fine to coarse grained flakes is associated with a locally very coarse grained friable graphitic marble and/or siliceous metasedimentary rock. Graphite mineralization on the Black Crystal property consists of disseminated fine to coarse grained (<100 mesh to +10 mesh - Tyler) crystalline graphite concentrated in the diopside-quartz - (graphite) marble and the biotite-quartz-feldspar-(graphite) gneiss units. The graphite occurs as individual crystal grains along foliation planes and as local disseminations within the rock. The graphite occurs along and parallel to the foliation planes and/or metamorphic compositional bands. The friable character of the host rock and the graphite-carbonate association is critical to the economics of the graphite deposit because it allows for the easy release of the coarse grained graphite flakes without abrasion from it host.

The 1994 six hole reverse circulation drill program and further geological mapping during 1994 has confirmed that graphite mineralization is present throughout the area defined by the drilling (300 metres by 600 metres) and is still open on three sides and down dip. The assay results from the drilling presented a problem in evaluation because of loses of graphite due to the floatable nature of graphite and the fact that assaying for graphite with the "leco" method is very inaccurate. This point is illustrated by comparing the leco assays and actual product assays in the following partial table which is presented in its entirety in the text of the report:

LOCATION GRAPHITE	SAMPLE NO./ TYPE	DEPTH	LECO ASSAY % Graphite	SAMPLE WEIGHT	FLOTATION GRADE	UPGRADE PERCENT
RC-1-94	09964/Rcd	0 - 10'	2.63	1.859Kg	5.40	+105%
RC-1-94	09965/Rcd	10 - 20'	1.92	1.825Kg	4.42	+130%
RC-1-94	09966/Rcd	20 - 30'	2.58	1.791Kg	4.88	+92%
RC-1-94	09967/Rcd	30 - 40	1.43	1.901Kg	1.52	+6%
RC-1-94	09968/Rcd	40 - 50	1.87	1.949Kg	3.71	+98%
RC-2-94	09975/Rcd	0 - 10'	2.04	1.911Kg	4.38	+115%
RC-2-94	09976/Rcd	10 - 20'	1.26	1.831Kg	4.38	+248%
RC-2-94	09977/Rcd	20 - 30'	0.79	1.907Kg	2.91	+268%

The important feature to note in the above table is the large difference between the Leco assay of the sample and the actual recovered graphite represented by the flotation grade. Graphite losses due to the drilling method are also addressed in the report. The above assays are all lower than the true graphite in the undisturbed rock because of losses in drilling. This loss was confirmed by the collection of a 440 kilogram bulk sample from near the collar of RC-1-94. The bulk sample from which there was no loss yielded 6.23 percent graphite on flotation but only assayed 4.0 percent by the Leco method.

Metallurgical tests conducted by Process Research Associates Ltd. of Vancouver on the high grade material (6.95 percent graphite) produced rougher concentrates grading 52.7 at a 98.9 percent recovery and 63.85 percent graphite at a 98.2 percent recovery respectively. Microscopic examination of the concentrates showed excellent liberation of the particles which indicated that the concentrates could be easily up graded to saleable grades by simple gravity means. The rougher concentrates were screened at 48 and 100 mesh to determine a rough size distribution. The test indicated that 10-12 percent of the graphite is coarser than 48 mesh with 37-42 percent between 48 and 100 mesh and 46-53 percent less than 100 mesh. Crucible grade graphite (Highest price product) must have 85 percent carbon and be between 20 and 80 mesh, therefor at least a large percentage of the Black Crystal meet this criterion.

The Black Crystal property is in the writer's opinion defined to a sufficient degree that the next exploration phase should be one of deposit definition and bulk testing. To accomplish this task it is recommended that a further 2000 metres of large core diamond drilling be done and a 10,000 tonne bulk sample collected for actual product production and trial marketing.

The proposed evaluation program is unique to industrial minerals. In dealing with industrial minerals it is necessary to tie the potential future sales of the industrial mineral product to the capability of the deposit to produce the product in various quantities and differing specifications. In order to do this it is necessary to produce the product and distribute large samples to potential end users very early in the program, preferably during late stage exploration. This preliminary production stage requires the use of a pilot plant or small mill facility. At the present time the only pilot mill facility with personnel familiar with graphite recovery that is close enough to do this testing is the Quinto Mining Corporation mill at Lumby, B.C. Unfortunately this mill at the present time is totally committed to work for The Quinto Mining Corporation and is unable to do the bulk milling required. It is therefore recommended that a new small scale milling facility be constructed at an acceptable location near power and transportation. One potential mill site that is presently under consideration by Mr. Schiller is located on the Slocan Lakes road near the Koch Creek bridge.

A two phase property evaluation program costing $2,700,000.00 is proposed to evaluate the economic potential of the Black Crystal graphite property.

INTRODUCTION

The firm of D.D.H. Geomanagement Ltd., 422-470 Granville Street, Vancouver, B.C., V6C 1V5 has been requested by Mr. Paul Schiller, 2303 - 1415 West Georgia Street, Vancouver, B.C., V6G 3C8 to supervise and report on the exploration and graphite potential of the Black Crystal property.

This assignment was accomplished by reviewing all published and private data. Actual direct historical reference to the subject property is very limited since the property essentially represents a new discovery. Results of previous property examinations by other mining companies are not available to the writer. During early October 1994 the writer supervised a early stage 250 metre reverse circulation drill program (6 holes) and conducted further geologic mapping of rock exposures along the access roads. This report is based on this program, preliminary metallurgical testing and previous property examinations.

LOCATION, ACCESS AND INFRASTRUCTURE

The Black Crystal graphite deposit (Figures 1 and 2) is located near the headwaters of Hoder Creek in southeastern British Columbia approximately 74 kilometres due north of Trail, B.C.

Access to the property is via a network of logging roads accessed from just north of the village of Passmore on B.C. Highway No.6. The access road follows the Little Slocan River for a distance of 24 kilometres, thence follows Hoder Creek for a distance of 18 kilometres. The road is a well maintained gravel road capable of handling heavy trucks.

The towns of Nelson and Castlegar which are service and railroad centre for the area are approximately 80 kilometres by road from the property.

PROPERTY AND TITLE

The Black Crystal property comprises 84 units contained in 4 modified grid claims and 4 two post claims (See Figure 3). Actual area of claims is equivalent to 80 units because the 4-2 post claims are within the area covered by the modified grid claims. The Molly 1-4 claims are held by an option from Mr. Steve Paszty, 2644 10th Avenue, Castlegar, B.C. to Mr. Paul Schiller. The PB 1-4 claims are registered in Mr. Schiller's name. The claims all lie within the Slocan Mining Division on N.T.S. map sheets 82F/13W and 82F/13E. The claims are listed below:

CLAIM NAME	MIN. TEN. NO.	UNITS	EXPIRY DATE	REG. OWNER
MOLLY - 1	305145	1	9/20/95	P. SCHILLER
MOLLY - 2	305146	1	9/20/95	P. SCHILLER
MOLLY - 3	305147	1	9/20/95	P. SCHILLER
MOLLY - 4	305148	1	9/20/95	P. SCHILLER

CLAIM NAME	MIN. TEN. NO.	UNITS	EXPIRY DATE	REG. OWNER
PB - 1	318625	20	6/28/96	P. SCHILLER
PB - 2	318626	20	6/28/95	P. SCHILLER
PB - 3	318627	20	6/28/95	P. SCHILLER
PB - 4	318628	20	6/28/95	P. SCHILLER

HISTORY

The Black Crystal property was originally discovered and staked (Molly 1-4) by Mr. Steve Paszty of Castlegar, B.C. in the 1960's. The graphite mineralization was exposed in logging road cuts on a steep hillside and along the main haul road that follows Hoder Creek. Mr. Paszty attempted to interest several other mining companies in the property but to no avail. In late 1992, Mr. Paszty contacted Mr. Schiller, who after examining samples of the graphitic material sent to him in Vancouver, decided to conduct a property examination when weather permitted. Prior to the property examination the samples were analyzed and metallurgically tested. On May 27,1993 Mr. Schiller and the writer in the company of Mr. Paszty examined the property and noted its large potential. The property was optioned by Mr. Schiller in July, 1993.

The presence of graphite had been noted by several workers (Little, H.S., 1960, p. 71; Reesor, J.E., 1965, p.20) during regional mapping programs on the Valhalla and Passmore Domes. In these studies, it appears that the graphite occurred as an accessory mineral because no mentioned was made of its abundance. To the writer's knowledge no one except Mr. Paszty did any follow up work. The Black Crystal property thus can be considered a new discovery.

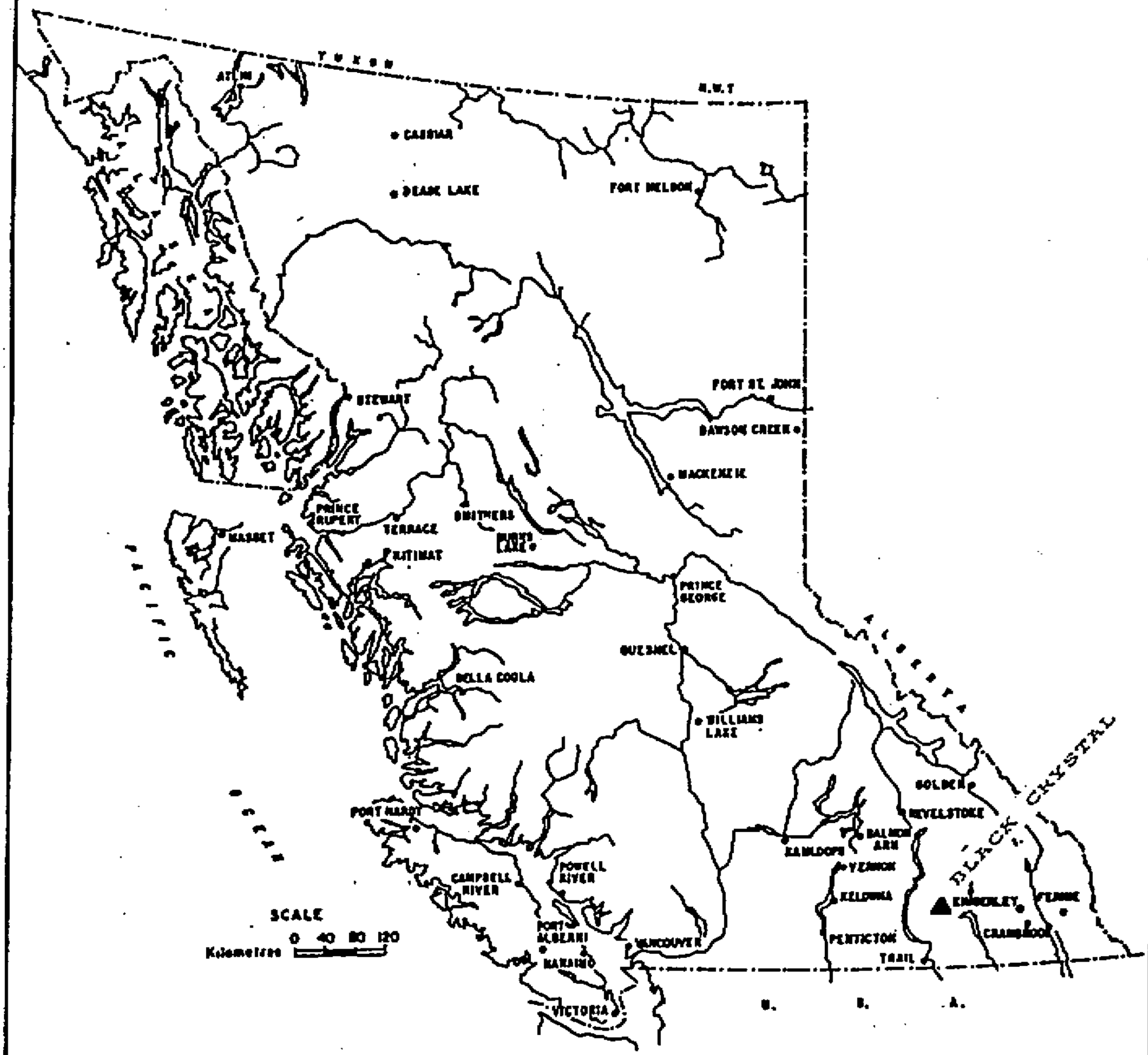

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FIGURE 1

PAUL SCHILLER'S CLAIMS

LOCATION MAP

BLACK CRYSTAL PROJECT

SCALE; as shown

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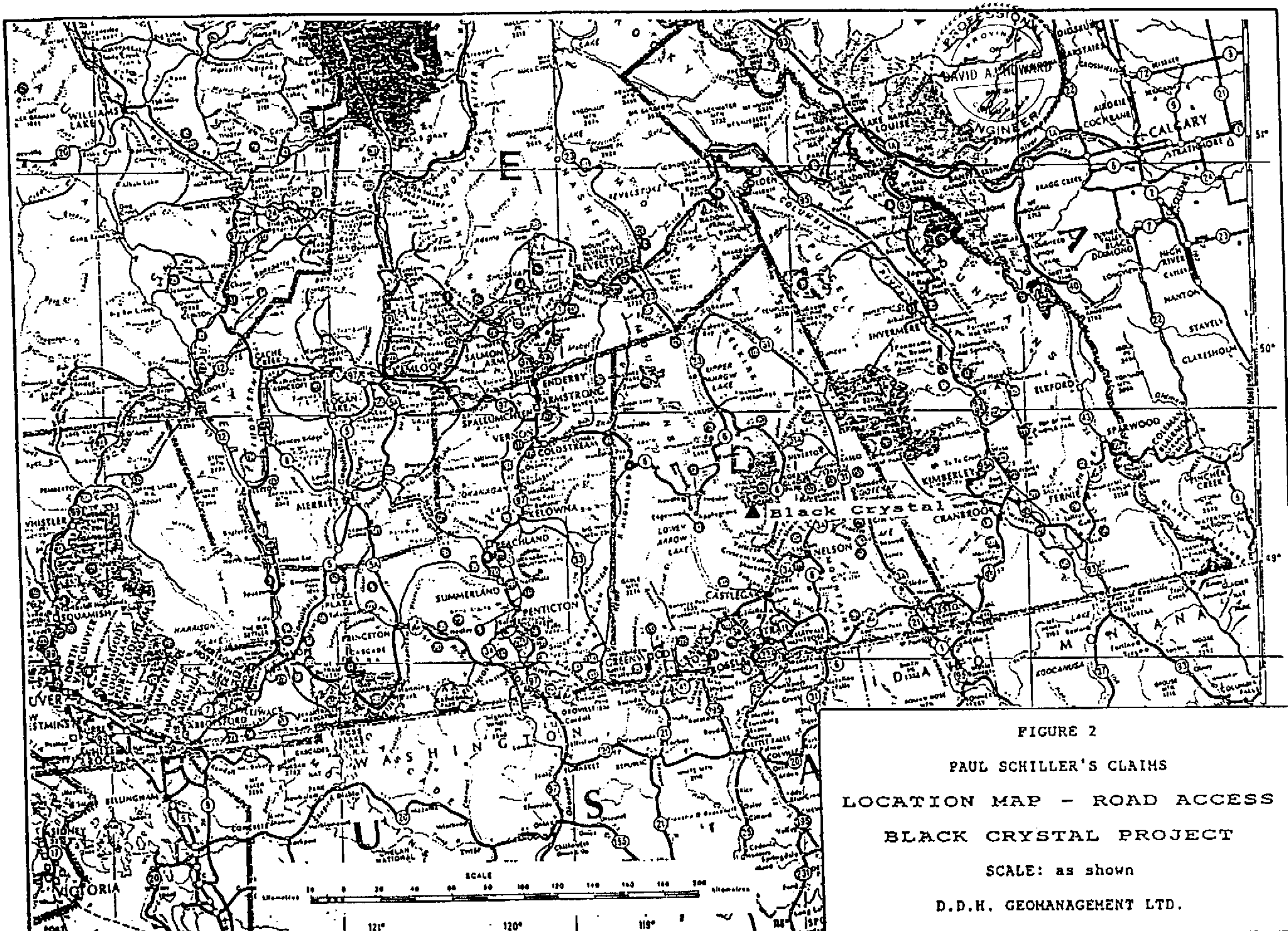

FIGURE 2

PAUL SCHILLER'S CLAIMS

LOCATION MAP - ROAD ACCESS

BLACK CRYSTAL PROJECT

SCALE: as shown

D.D.H. GEOMANAGEMENT LTD.

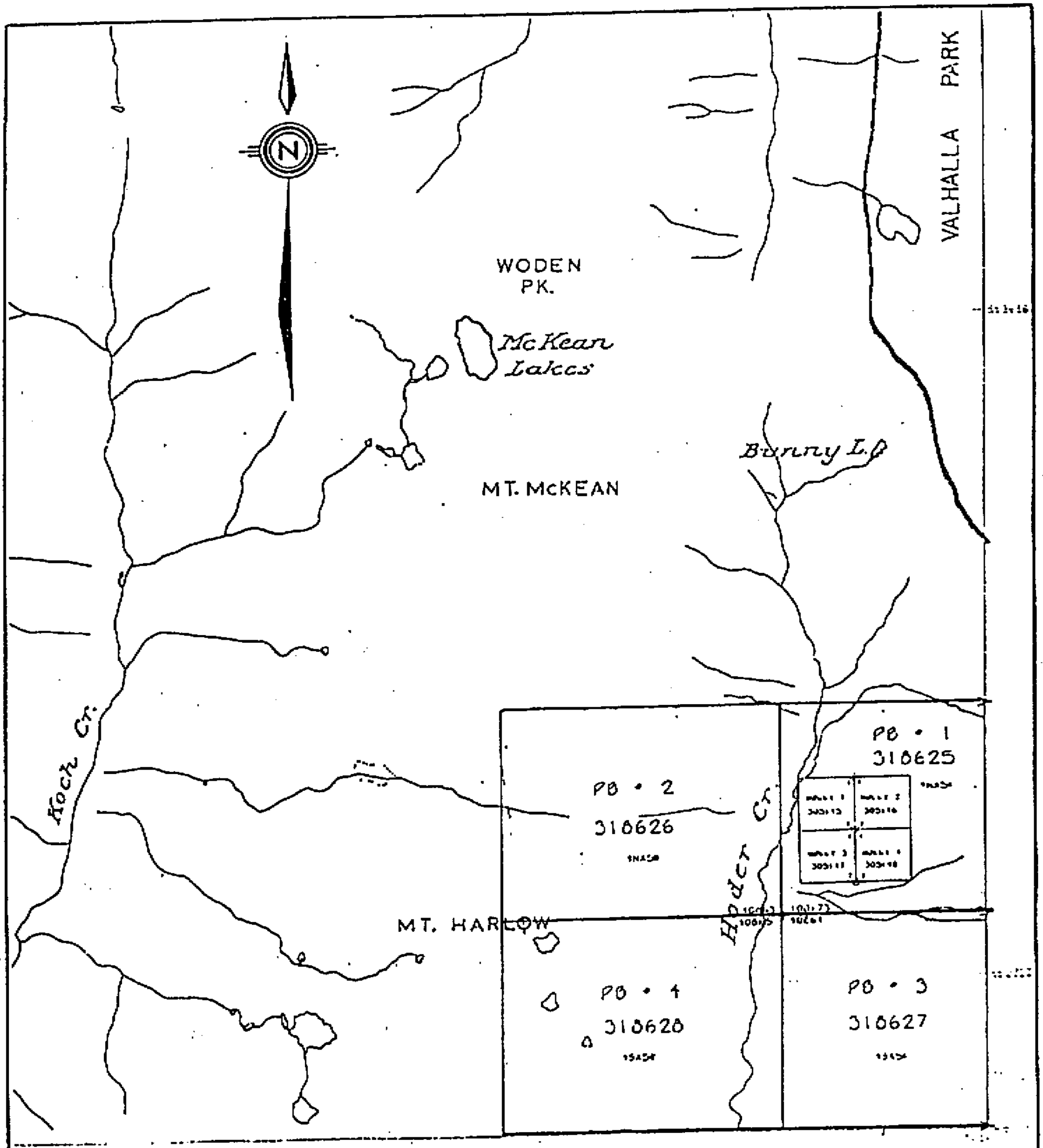

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FIGURE 3

PAUL SCHILLER'S CLAIMS

CLAIM MAP

BLACK CRYSTAL PROJECT

SCALE: 1 : 50,000 DATE: DECEMBER 1994

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Modified from claim sheet 82F/13W and 82F/13E

REGIONAL GEOLOGY

The Black Crystal property is located in the south central part of the Valhalla Gneiss Complex. Numerous geologists (Little, H.W., 1960; Reesor,J.E., 1965; Parrish, R.R., 1985; Carr, S.D., 1985) have studied and mapped in the area. Carr, (1985) has expertly summarized the regional geology which is quoted below:

"Valhalla Gneiss complex

Valhalla gneiss complex is a domal structure comprised of high grade paragneiss structurally overlain and interlayered with thick granitoid sheets. Four map units (Figure 4, this report) have been defined in the complex (after Reesor, 1965). Unit ms, consists of polydeformed sillimanite grade metasedimentary rocks, and generally discordant leucogneiss and pegmatite of uncertain age, disposed in three sheets or slices. In Gwillim Creek, the lower two sheets have ductilely sheared contacts with overlying unit uKgn (Parrish et. al., 1985). Unit uKgn is a melanocratic granodiorite gneiss which has been dated by Parrish (1984) as late Cretaceous. This package of repeated ms and uKgn is overlain by a third sheet of unit ms up to 3 km thick which outcrops around the core of the entire complex. These units are overlain by unit Pgm, a megacrystic quartz monzonite of Palaeocene age (Parrish, 1985), and unit PEg, a homogeneous layer of biotite quartz monzonite of Eocene-Palaeocene age (Parrish et al., 1985). To the north, unit PEg appears to intrude up-TRms of the Nemo Lakes metasedimentary belt.

General Structure

The rock units which form Valhalla gneiss complex have under gone one of more ductile deformation events. Unit ms is multiply deformed; in the Gwillim Creek area large scale northwest trending folds have been overprinted by a penetrative east-west stretching lineation (See Parrish et al.,1985). The granitoid units vary from massive to foliated to mylonitic in fabric; where deformed, the also commonly exhibit an east-west stretching lineation. The granitoid bodies have a sheetlike configuration, although their original intrusive geometry is unknown. The sheets comprising Valhalla gneiss complex have been arched into two domal culminations in which compositional layering, metamorphic layering and mylonitic foliation dip gently outward from the centres of the culminations, west of Slocan and near Passmore (Figure 5, this report)."

Earlier work

Reesor (1965) defined Carr's (above) unit ms as "Hybrid Gneiss". The "Hybrid Gneiss" is described as a mixture of older metasedmentary gneiss and light coloured leucogranite-gneiss and pegmatite with a few isolated layers and/or elongate boudins up to 100 feet derived from limestone and quartzitic limestone. These limey layers have been metamorphosed to marble and/or calc-silicate rocks which range in composition from coarse grained marble to diopsidic, forsteritic, or graphitic marbles to diopside-plagioclase or diopside-scapolite granulites. It is in one of these calc-silicate units that the Black Crystal deposit is in part located. Preliminary indications are that the graphitic unit found on the property is much thicker, probably higher grade and covers a greater area than anything described by Ressor or the other workers in the area.

FIGURE 4

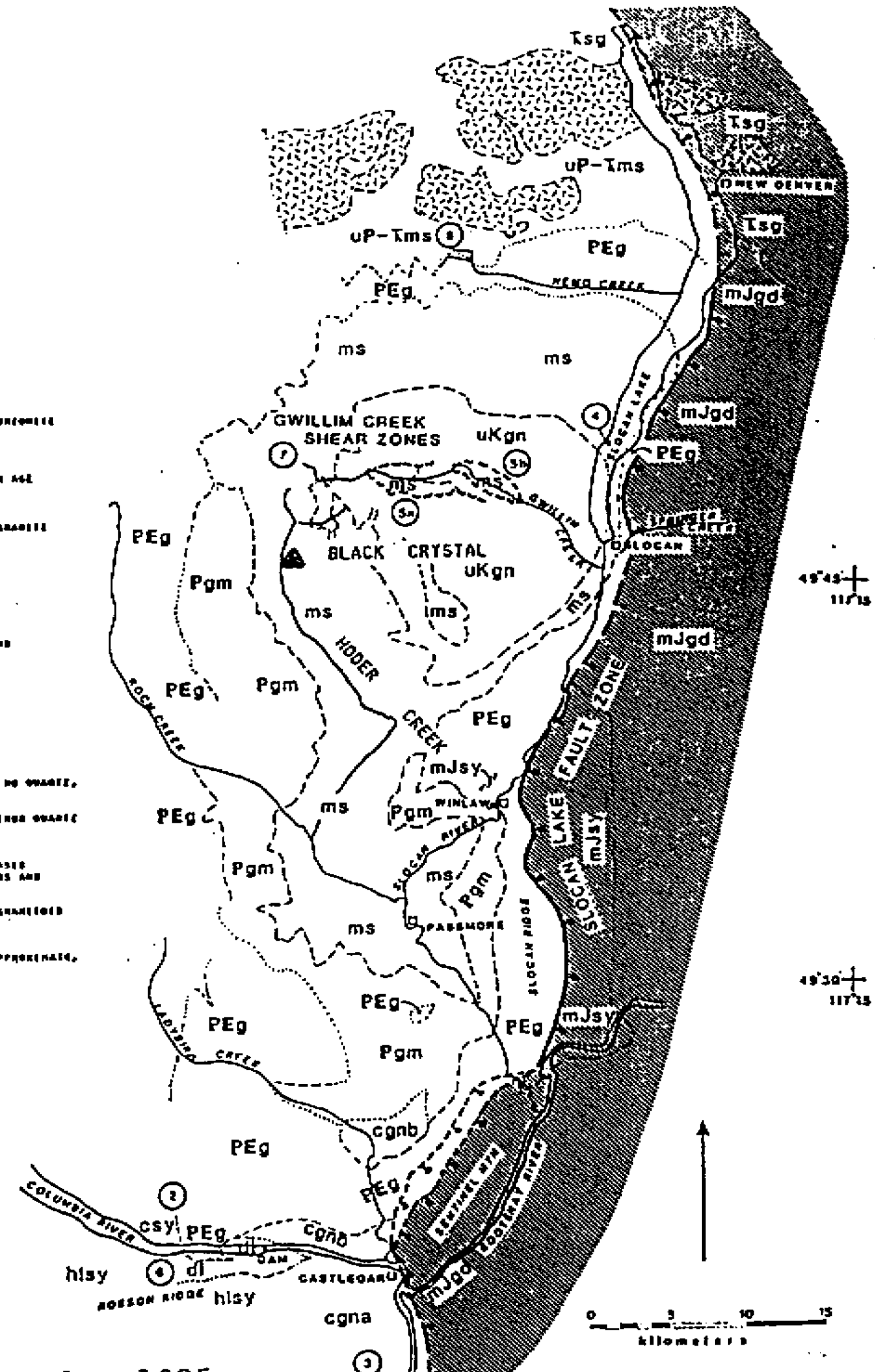
PAUL SCHILLER'S CLAIMS

REGIONAL GEOLOGY

BLACK CRYSTAL PROJECT

SCALE: as shown

D.D.H. GEOMANAGEMENT LTD.



LEGEND

TERTIARY

EOCENE OR PALEOCENE

PEg UNIT 4: LEUCOCRATIC BIOTITE QUARTZ MONZONITE

PALEOCENE

Pgm UNIT 3: K-FELDSPAR MEGACRYSTIC [illegible] QUARTZ MONZONITE

LATE CRETACEOUS

uKgn UNIT 2: [illegible] GRANITOID VEINS OF UNCERTAIN AGE

MIDDLE JURASSIC

mJgd NELSON BATHOLITH: [illegible]

mJsy NELSON BATHOLITH: [illegible] SYENITE

TRIASSIC

Tsg SLOCAN GROUP: SLATE, ARGILLITE

UPPER PALEOZOIC AND/OR TRIASSIC

uP-Tms [illegible] SEMI-PELITE AND PELITE, CALCAREOUS SCHIST, AMPHIBOLITE AND ULTRAMAFIC ROCK

PRE-MIDDLE JURASSIC

ms UNIT 1: [illegible] INTRUDED BY LEUCOCRATIC [illegible] OF UNCERTAIN AGE

AGE UNCERTAIN (ORDER DOES NOT IMPLY RELATIVE AGE)

GRANITIC INTRUSIONS: MASSIVE

csy COARSE GRAINED LEUCOCRATIC SYENITE: [illegible]

hlsy HORNBLENDE LEUCOCRATIC SYENITE: [illegible]

CASTLEGAR GNEISS

cgna [illegible]

cgnb [illegible]

dl HORNBLENDE DIORITE: [illegible]

SLOCAN LAKE FAULT ZONE; [illegible]

DUCTILE SHEAR ZONE

GEOLOGIC CONTACTS; (DEFINED, ASSUMED)

③ LOCATION OF FIGURE

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JAN 16 1995

Modified from Parrish R. et al., 1985

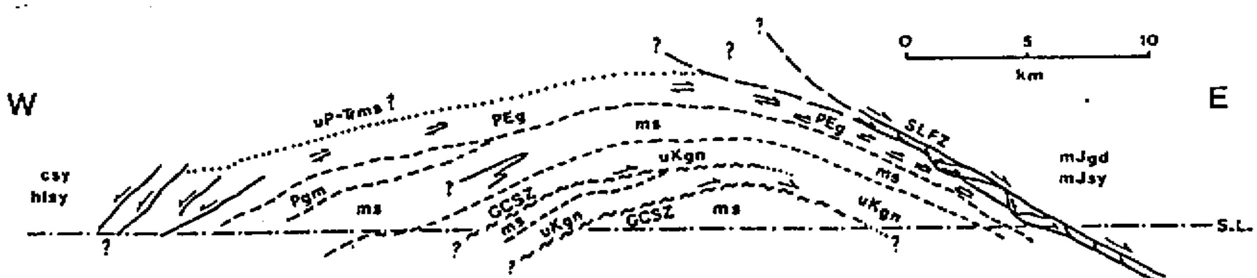
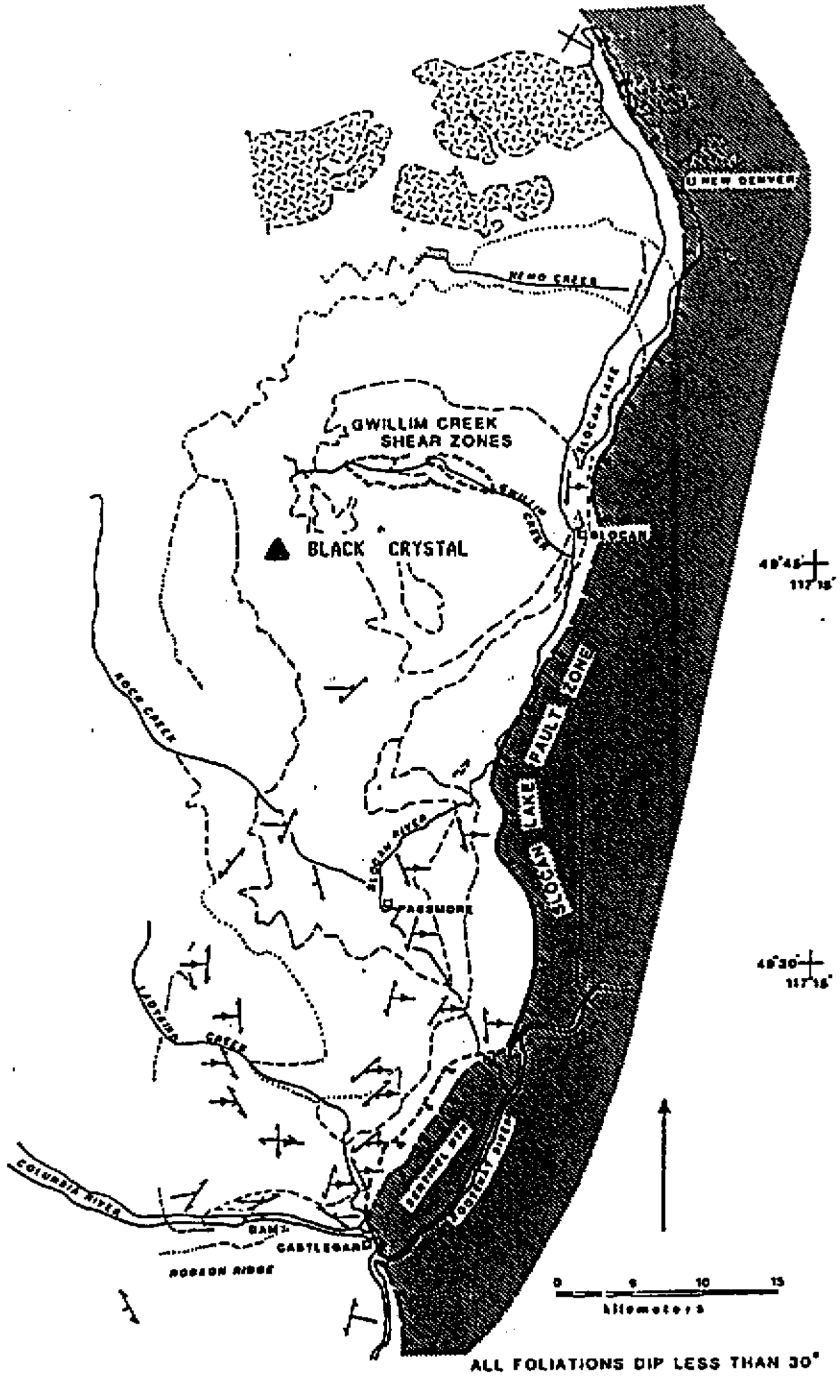


FIGURE 4 *Geological map, legend, and a schematic cross-section for the Valhalla Range, southeastern British Columbia. The east-west cross-section is drawn to represent relations between rock units in the vicinity of Gwillim Creek and Slocan. On the section the west-directed shears on the left (west) side are projected northwards from the Columbia River area.*



ALL FOLIATIONS DIP LESS THAN 30°

FIGURE 5 *Structure map of Valhalla gneiss complex shows location and sense of shear of kinematic indicators. Data distribution reflects areas studies; for supplementary structural information refer to Reesor (1965).*

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[1] easterly-directed: indicates movement of upper member of shear couple

Modified from Carr, S.D., 1985

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FIGURE 5
PAUL SCHILLER'S CLAIMS
REGIONAL STRUCTURE
BLACK CRYSTAL PROJECT
SCALE: as shown
D.D.H. GEOMANAGEMENT LTD.

PROPERTY GEOLOGY

The Black Crystal Property is located totally within the central portion of the Valhalla Gneiss Complex which is a domal structure comprised of high grade paragneiss structurally overlain and interlayered with thick granitoid sheets. Geologic mapping (Figure 6) by Reesor (1965), a Geologic Survey of Canada geologist, provides the greatest geologic detail in the area covered by the claims. Note that the "Hybrid Gneiss" of Ressor(1965) is equivalent to unit Ms in mapping by Carr and Parrish and as shown on figures 4 and 5 in this report. The writer has subdivided at least a portion of the "Hybrid Gneiss" in the mineralized area into mineral defined mappable units in order to show various graphite affinities (See Figure 7 and cross-sections).

Ressor's (1965) mapping (Figure 6) shows the western one quarter of the property underlain by Mixed Gneiss (Unit 3) which consists of mainly foliated leucogranodiorite, leucoquartz monzonite and granitic gneiss. The leucogranodiorite-gneiss contains remnants and extensive layers of hornblende granodiorite-gneiss, some metasedimentary gneisses and amphibolite. The eastern three fourths of the property is mainly underlain by undifferentiated "Hybrid Gneiss" (Unit 1) which is defined as intimately interlayered rocks consisting of a metasedimentary fraction with leucogranite-gneiss and pegmatitic interlayers, much migmatite and minor amphibolite. On the eastern boundary of the property is a moderately wide band of marble and/or calc-silicates (Unit 1b). These rocks are derived from limestone or argillaceous quartzitic limestones. Ressor (1965) states that the limey rocks occur in thin layers up to 100 feet thick or as elongate boudins many hundreds of feet long. These rocks range in composition from coarse marble with grain sizes up to 10 millimetres, to diopsidic, foresteritic or graphitic marbles, to diopside-plagioclase or diopside-scapolite granulites. The marble/calc-silicate unit is locally a very prominent unit on this part of the property as it stands out above everything else because of its competency. The sinuous map pattern (Figure 6) of the marble/calc-silicate unit (Unit 1a) suggests that the unit has undergone intense isoclinal folding and is probably present in a lot more locations on the property than is obvious from the mapping to date. The writer originally thought that the above unit (1a) was probably equivalent to the calcareous unit hosting the graphite mineralization on the Molly claims but has since questioned this conclusion because of the marked recessive nature of the mineralized diopside-quartz-(graphite) marble (Howard, January, 1994). It is probable that the graphite mineralization is associated with a portion of this unit, but not the portion mapped by Ressor and others. The graphite mineralized marble except for rare occurrences does not outcrop and therefore would be missed in any regional mapping program such as the one conducted by Ressor.

Due to the amount of cover in the area examined, the detailed sampling and geologic mapping by the writer is restricted to road cuts on the Molly Claims. The writer has sub-divided the various phases of

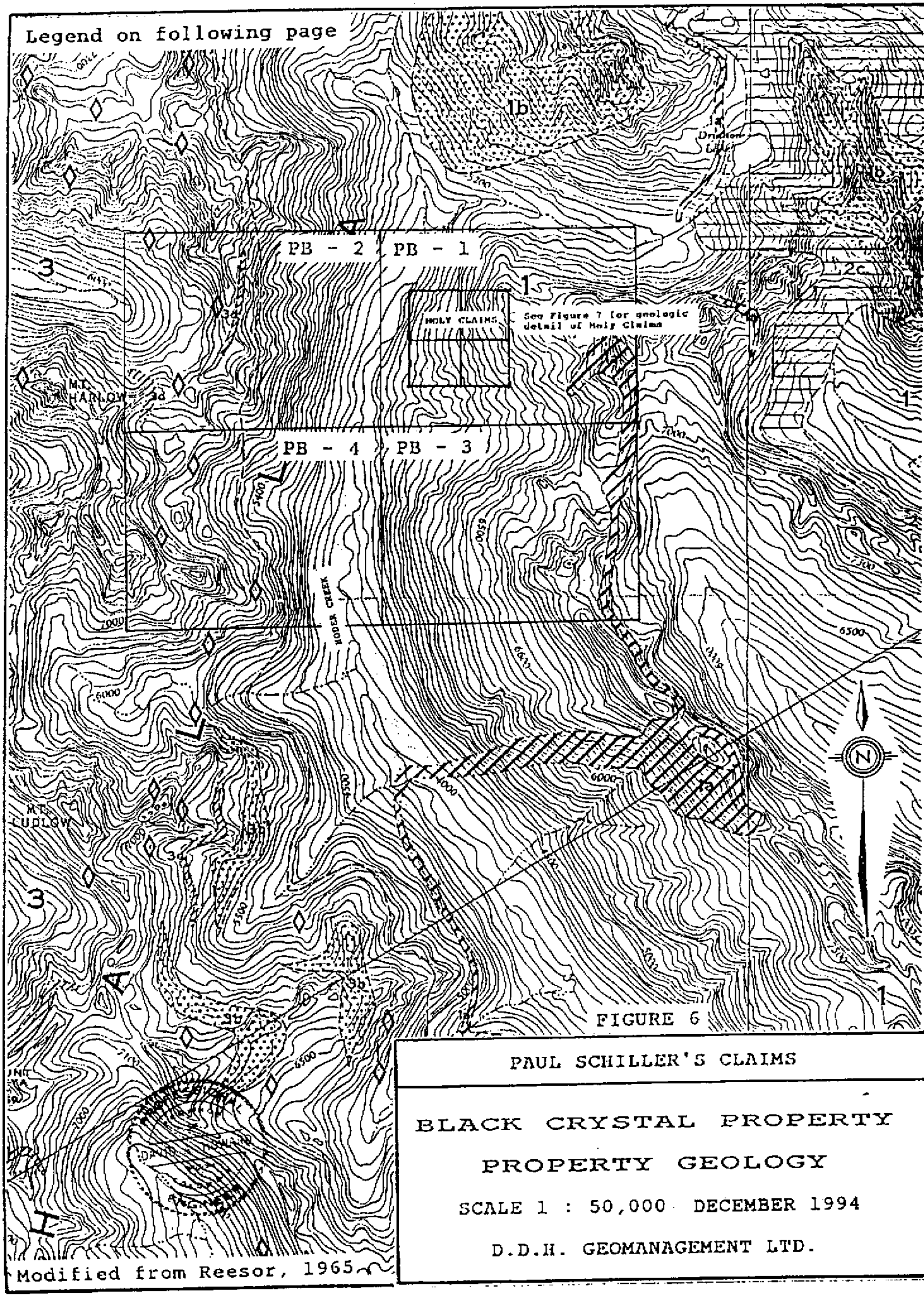

FIGURE 6

PAUL SCHILLER'S CLAIMS

BLACK CRYSTAL PROPERTY

PROPERTY GEOLOGY

SCALE 1 : 50,000 DECEMBER 1994

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LEGEND

Modified from Reesor, 1965

STRUCTURAL UNITS OF THE GNEISS DOMES

(with no implication of relative age or "stratigraphic" succession)

3 — ***Mixed gneisses:*** *mainly foliated leucogranodiorite, leucoquartz monzonite, and granitic gneiss (in places garnetiferous); leucogranodiorite-gneiss contains remnants and extensive layers of hornblende granodiorite-gneiss; some metasedimentary gneisses and amphibolite*

- **a** — *With inclusions of hornblende granodiorite-gneiss (containing augen of potash feldspar)*
- **b** — *Hornblende granodiorite-gneiss (with augen of potash feldspar)*
- **c** — *3b veined with leucogranodiorite and leucogranitic veins*
- **d** — *Granular and gneissic rocks of metasedimentary origin*
- **e** — *Quartz monzonite and leucoquartz monzonite, well foliated with megacrysts of potash feldspar*

2 — ***Veined granodiorite-gneiss:*** *chiefly an augen granodiorite-gneiss veined with leucogranodiorite, leucogranite, and pegmatite*

- **a** — *With augen of potash feldspar*
- **b** — *With hornblende*
- **c** — *With fifty per cent or over leucocratic veins*

1 — ***Hybrid gneiss:*** *Intimately interlayered rocks consisting of a metasedimentary fraction with leucogranite-gneiss and pegmatitic interlayers, much migmatite, minor amphibolite*

- **a** — *Marble and/or calc-silicates*
- **b** — *Layers and lenses with over seventy-five per cent of quartzofeldspathic rocks ranging in composition from leucogranodiorite to granite and pegmatite, and in texture from massive to mildly foliated to gneissic (all boundaries are gradational and arbitrary with surrounding hybrid gneiss)*
- **c** — *With megacrysts of potash feldspar*
- **d** — *Garnet-hornblende augen gneiss; some garnetiferous leucogranite-gneiss, and some amphibolite*

Heavily drift covered area . . . .

Fault (defined, approximate, assumed) . . . . 〰〰 〰 ~ ~

Note: for sections along lines A-B, C-D, E-F, G-H, R-S-T, U-V, and W-X, see Figure 26

Geology by J. E. Reesor, 1958-60

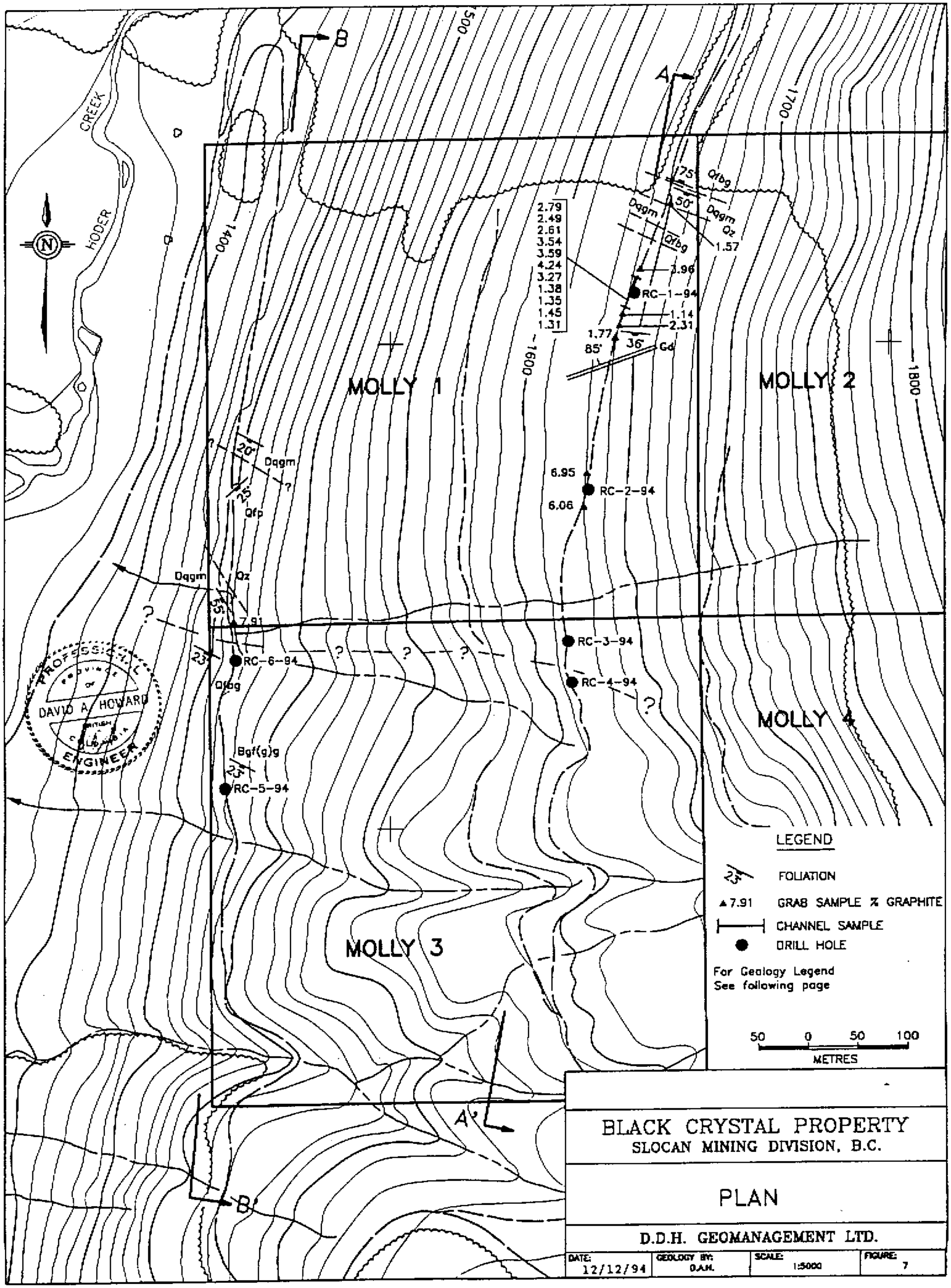
the "Hybrid Gneiss" into a number of mineral defined mappable units. The sub-division of the larger undifferentiated "Hybrid Gneiss" unit also allows the writer to show the important relationship between mineralization and the various rock types. Figure 7 shows the location of the drill holes and the results of the present geologic mapping program plus the very limited sampling program conducted on two of the Molly claims on November 11, 1993. Geologic features and drill hole locations are plotted on a newly prepared corrected topographic base map prepared by Eagle Mapping Services Ltd. which allowed for very accurate location of any feature.

Geologic mapping (Figure 7) by the writer of the better exposed road exposures on Molly 1, 2 and 3 shows that the mineralized area is underlain by a complex banded sequence of metasediments ("Hybrid Gneiss") that has been intruded by a few narrow medium grained granodiorite dykes.

The banded, locally well foliated metasediments consist of diopside-quartz-(graphite)-(garnet) marble (Dqgm), biotite-quartz-feldspar-(graphite) gneiss (Bqf{g}g), quartz-feldspar-biotite gneiss(Qfbg), quartz-feldspar-(biotite) pegmatite (Qf{b}p) and quartzite (Qz). The diopside-quartz-(graphite)-(garnet) marble (Dggm) is medium to very coarse grained, locally shows moderate foliation (compositional banding) and ranges in composition from almost a pure marble to 50-80 percent quartz and diopside with very minor garnet content. Graphite occurs as discrete crystalline grains (0.25 - 2mm) either disseminated and/or concentrated along planes of foliation.

The biotite-quartz-feldspar-(graphite) gneiss (Bqf[g]g) is dark brown, fine to medium grained, well foliated and coarsely banded. The individual bands range in thickness from 30 centimetres to over 1 metre and are quite variable in composition and texture. The foliation is defined by either biotite and/or graphite with a large variation in graphite content (from nil to 10 percent) between bands with normally a decrease in biotite as the graphite content increases. The graphite flakes or crystals range in size from 0.25 millimetres to 2 millimetres and are always parallel to the foliation. The large variation in composition and texture between the various bands suggests that the foliation and banding probably parallels the original bedding in the pre-metamorphic rock. This rock type does not appear to contain any carbonate minerals.

The white quartz-feldspar-biotite gneiss (Qfbg) is medium to coarse grained, irregularly foliated, very massive and hard. This unit contains less than 5 percent biotite and occasionally a few specks of graphite. Narrow (10 - 20 centimetres) bands of fine grained quartz-feldspar-biotite-graphite gneiss are common within this unit. It is these bands of graphitic material that account for the graphite content in the top portion of hole RC-6-94. This unit contains minor carbonate (est. +/- 5 percent) that is not obvious in outcrop, but shows in freshly drilled specimens.


MOLLY 1
MOLLY 2
MOLLY 3
MOLLY 4
HODER CREEK
RC-1-94
RC-2-94
RC-3-94
RC-4-94
RC-5-94
RC-6-94
LEGEND
FOLIATION
GRAB SAMPLE % GRAPHITE
CHANNEL SAMPLE
DRILL HOLE
For Geology Legend
See following page
50 0 50 100
METRES
BLACK CRYSTAL PROPERTY
SLOCAN MINING DIVISION, B.C.
PLAN
D.D.H. GEOMANAGEMENT LTD.
DATE: 12/12/94
GEOLOGY BY: D.A.H.
SCALE: 1:5000
FIGURE: 7

LEGEND
(For figure 7)

Dq(g)m - Diopside-quartz-graphite marble: Marble that ranges in composition from near pure marble to 50-80 percent quartz and diopside. Graphite occurs as discrete grains either disseminated and /or concentrated along foliation planes.

Bqf(g)g- Biotite-quartz-feldspar-(graphite) gneiss: Dark brown , fine to medium grained, well foliated , coarsely banded biotite-quartz-feldspar-(graphite) gneiss. Foliation defined by graphite and /or biotite grains with normally a decrease in graphite as percentage of biotite increases.

Qfbg- Quartz-feldspar-biotite gneiss: White, medium to coarse grained, irregularly foliated, massive and hard quartz-feldspar-biotite gneiss containing less than 5 percent biotite and an occasional flake of graphite.

Qfp - Quartz-feldspar-(biotite) pegmatite: Unit similar to quartz-feldspar-biotite gneiss except for containing less biotite and pegmatitic grain size.

Qz - Quartzite: Medium to coarse grained, totally recrystallized, commonly moderately limonitic quartz. No obvious sulfides present.

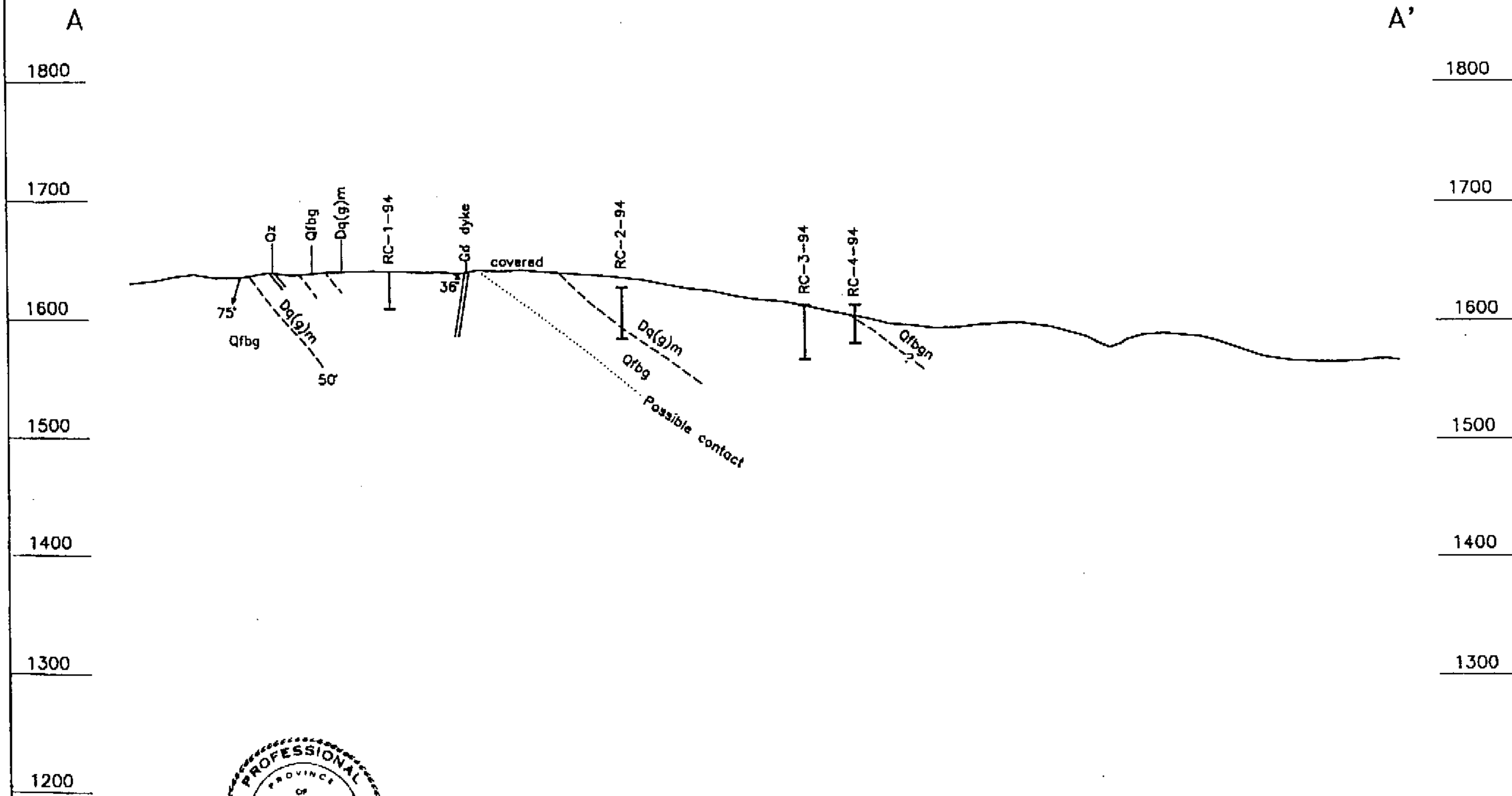
The white quartz-feldspar-(biotite) pegmatite (Qfp) is very similar to the above white quartz-feldspar-biotite gneiss except for apparently less biotite and the much coarser grain size. The white feldspar crystals are commonly 2 centimetres in length and make up to 50 percent of the rock. Rare fine grain clots of graphite are commonly associated with this unit. Although not obvious in outcrop but from drill data the unit (Qfp) contains a few percent carbonate.

The quartzite (Qz) is medium to very coarse grained, totally recrystallized, commonly limonitic stained and occurs in narrow (a few metres thick) bands within the diopside-quartz-(biotite) gneiss. The limonitic staining appears to be due to the weathering of biotite because no sulfides of sulphide remnants were noted. The lack of sulfides holds true for all of the above rock types which is a very plus factor in a graphite deposit.

The presence of calcite was noted in all of the above rock types except the biotite-quartz-feldspar-(graphite) gneiss and the coarsely crystalline quartzite. This presence/absence calcite relationship divides the deposit into two domains defined by the easterly trending contact between the biotite-quartz-feldspar-(graphite) gneiss and the diopside-quartz-(graphite) marble (See figure 7). The presence of abundant calcite in a large portion of the graphite deposit is being stressed because it allows the graphite once it is removed from the gangue (Floated) to be easily and cheaply beneficiated to a high grade graphite product by a simple leaching step. From Figure 7 it can be seen that the diopside-quartz-(graphite) marble and other carbonate rich rock types make up a very large portion of the known or inferred mineralized area (300 X 600 metres).

The carbonate rich rock in the mineralized area is intensely weathered and is now essentially an in-place sand with most of its rock fabric still discernible. This friable character is ideal for the recovery of graphite because the material has such a low grinding index and as a result will liberate its graphite grains with only minimal reduction in graphite grain size. The depth of the friable zone based on limited drill data appears to be about 10 - 15 metres.

Structurally the graphite bearing metasediments strike 100 to 150 degrees and dip gently 20 to 36 degrees south except for near the apparent northern boundary of the mineralization where possible faulting has locally steepened the dip to 50 - 55 degrees. All strikes and dips were measured on well developed foliation and compositional banding which appears to conform to original bedding in the pre-metamorphic sediments. The exact structural configuration of the mineralized package is impossible to determine because of lack of continuous outcrop, but it appears to be a simple layered complex with the siliceous metasediments overlaying the calcareous metasediments (Figures 8, 9). Small scale isoclinal folding indicative of large scale isoclinal folding is not obvious in the area mapped. The outcrop pattern of Ressors (1965) mapping of unit 1a (Figure 6) outside the mineralized area suggests strong isoclinal folding which would allows for multiple repetition of



PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
DAVID A. HOWARD

LEGEND

RC-3-94 ├──┤ DRILL HOLE

For Geology Legend
See following page

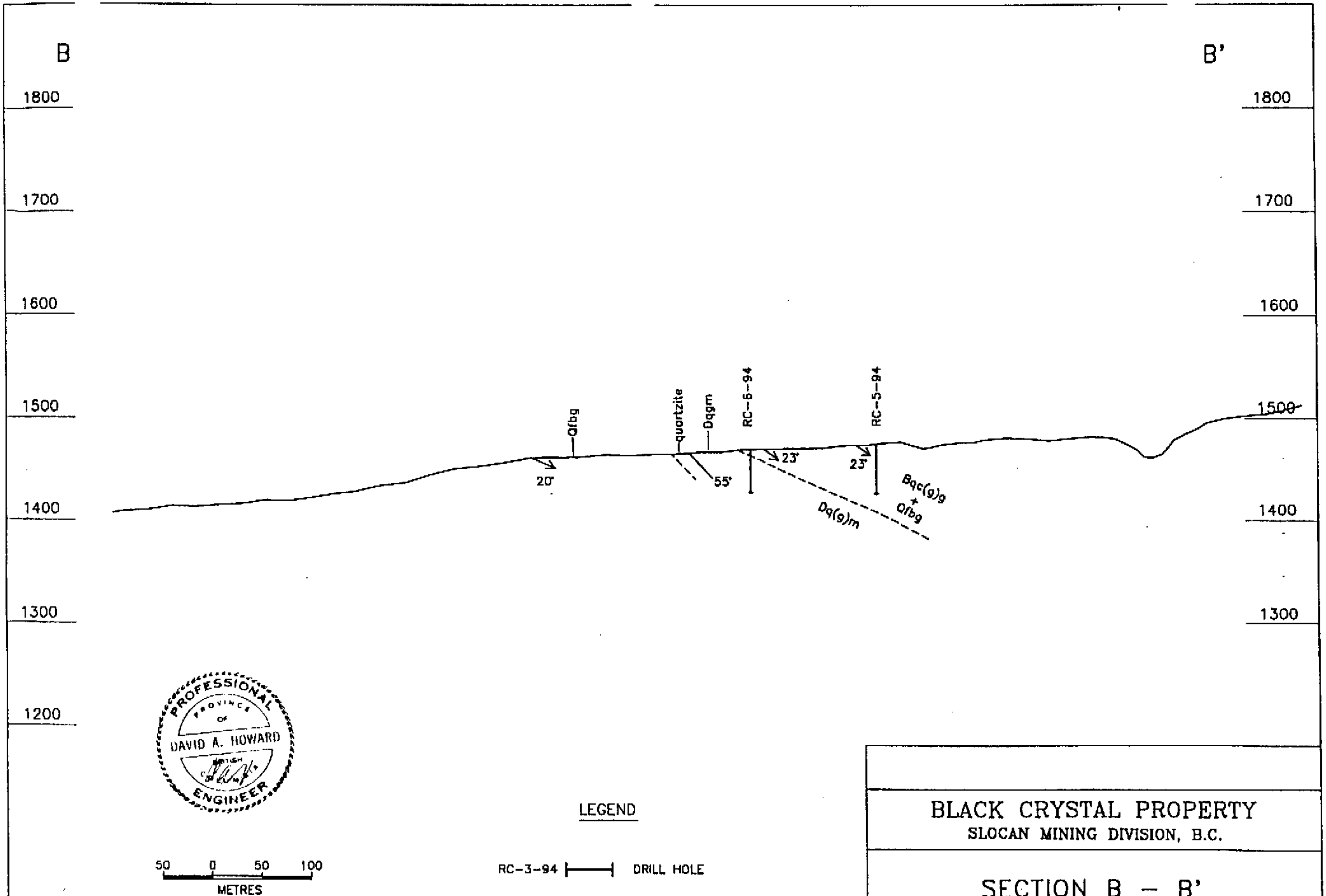
50 0 50 100
METRES

BLACK CRYSTAL PROPERTY
SLOCAN MINING DIVISION, B.C.

SECTION A – A'

D.D.H. GEOMANAGEMENT LTD.

DATE:	GEOLOGY BY:	SCALE:	FIGURE:
12/12/94		1:5000	8



LEGEND

RC-3-94 ├───┤ DRILL HOLE

For Geology Legend
See following page.

BLACK CRYSTAL PROPERTY

SLOCAN MINING DIVISION, B.C.

SECTION B – B'

D.D.H. GEOMANAGEMENT LTD.

DATE:	GEOLOGY BY:	SCALE:	FIGURE:
12/12/94		1:5000	9

the mineralized units if the same folding pattern exists. Further trenching and geologic mapping will be required to determine if the mineralized metasediments follow the same structural pattern as the regional mapped unit 1a.

DRILLING AND SAMPLING PROGRAM

Discussion of the drilling and sampling program on the Black Crystal property is necessary prior to discussing the mineralization because the assay type and sampling method has a direct bearing on the overall grade of the graphite mineralization.

The 1994 drill program consisted of 6 - 4.5 inch dual wall reverse circulation holes that ranged in depth from 30 to 51.8 metres (100 to 170 feet) for a total of 250 metres. Drilling was done with a Mobile Drill utilizing an air operated "down the hole hammer". In reverse circulation drilling, the hammer is about 5 feet long and the sample inlet is located just behind the hammer mechanism. When drilling with this system, the drilling fluid is forced down the outer annulus of the dual wall pipe to the drill bit where it operates the percussion mechanism. The drilling fluid (air and/or water) and rock cuttings then exit the hole along the outside of the hammer until they reach 2 small slots in the drill pipe above the hammer. A portion of the sample enters the centre tube of the drill pipe through the two small slots and is airlifted to the surface. The remainder of the sample blows by the sample orifice and is blown out of the hole and thus lost. The volume of sample collected when drilling dry is reasonably uniform and therefore is considered fairly reliable by most workers. Drilling wet is considered by most workers to provide only a rough approximation of the true grade of the commodity.

The air operated hammer requires oil lubrication which is accomplished by either an air line oiler or in the case of the Mobile Drill, pouring 0,5 litre of oil down the drill pipe before every run where most of it ends up in the sample and/or coating the centre return pipe. In the writer's experience this method of lubricating the drill hammer by pouring oil down the hole was new and as an after-thought it is a method that should be avoided at all cost. The reason being is that the oil adheres to the mineral particle, particularly graphite and causes it to stick to the hole wall, drill pipe wall and makes the particle very floatable if any water is present. If the drilling is totally dry the major losses would be (1) blow by of the light graphite particles past the sample inlet hole at the top of the hammer and (2) the losses caused by the particles sticking to the drill pipe and the hole which should not be too great but indications from hole RC-1-94 and a large bulk sample collected very near the collar of the hole suggest that there has been a major loss of graphite from one of these causes. The reason that blow by presents a great potential loss is the physical nature of the graphite particle. Graphite is a very light mineral (specific gravity 2.2 to 2.3) and it's platy habit presents a large surface area which can be effected by the high velocity air escaping up the outside of the drill pipe. The other minerals in the rock are more tabular in nature (particularly the diopside marble) and are less likely to become airborne. A case to illustrate the first and second points is hole RC-1-94. Hole RC-1-94 in the interval of 0-10 feet assayed 2.63 percent graphite (Leco assay method) and the 440 kilogram bulk sample collected 2 metres from the collar of RC-1-94 of essentially the same material assayed 4.00 percent graphite by the Leco method which suggests a loss of 34.25 percent when using the same assay technique. This comparison in the writer's opinion offers conclusive evidence that samples obtained by reverse circulation drilling (at least with the drilling procedure described above) error on the low side because of the graphite sticking to the oily surfaces on the drill pipe, hole wall and sampling equipment even when the drilling is done dry. As for a quick comparison of assay methods, the 440 kilogram bulk sample yielded 36.53 kilograms of graphite concentrate assumed to be grading 75 percent graphite (27.40 kilograms at 100 percent graphite) or an original grade of 6.23 percent graphite. A more complete discussion of variation in graphite content as it is related to assay type will be addressed in the "Graphite Grades" section following the section on mineralization.

In water saturated ground it is necessary to inject water into the down the hole hammer drill in order to keep the hole clean. Unfortunately the mixture of oil, water and air create an environment perfect for the good flotation of graphite. In collecting the wet samples the writer noted abundant graphite floating on the surface of the water in most of the samples. The wet samples were collected in porous bags that allowed the water to escape and hopefully not the graphite, but a lot of the graphite did escape. Unfortunately without diamond drill and/or bulk sample results from the identical sample interval it is impossible to determine how much graphite was lost due to sticking to the equipment and floating off when the sample was collected. It is the writer's opinion that the loss was very great based on what was observed in the field.

MINERALIZATION

Graphite mineralization on the Black Crystal property consists of disseminated fine to coarse grained (<100 mesh to +10 mesh - Tyler) crystalline graphite concentrated in the diopside-quartz - (graphite) marble and the biotite-quartz-feldspar-(graphite) gneiss units. The graphite occurs as individual crystal grains along foliation planes and as local disseminations within the rock. Under moderate magnification the individual grains appear to be free of other mineral inclusions which probably accounts for the excellent recoveries obtained in the metallurgical tests (See below). The graphite mineralization is associated with two distinct rock types (diopside-quartz-graphite marble and biotite-quartz-feldspar-[graphite] gneiss). Based on surface samples, the graphite mineralization associated with the biotite-quartz-feldspar-[graphite] gneiss (Bqf[g]g) occurs in narrow high grade bands (5-7 percent graphite) less than 1-2 metres in thickness separated by lower grade to barren bands of the same thickness. The apparent average grade (0.265/45.7 metres) of hole RC-5-94 (Figure 9) which is totally within the biotite gneiss unit is lower grade than the holes within the diopside marble which is probably a reflection of the dilution by the barren bands rather than a reduction in grade within the mineralized bands. Apparent average grade was used in the preceding sentence because of the problems encountered in sampling the water/oil impregnated sample (See sections "Drilling and Sampling Program" and "Graphite Grades"). The sample interval for all the drilling is 10 feet (3 metres) which is greater than the average band width. Unfortunately the drill cuttings from the reverse circulation drilling were so fine grained that it is impossible to determine with any accuracy small changes in rock type or in degree of mineralization. The thickness and lateral extent of the biotite-quartz-feldspar-(graphite) gneiss is unknown. Its northern contact (Figure 7) is based on two drill hole intersections (RC-4-94 and RC-6-94) and its dip from dip measurements in the only outcrop of the rock type near drill hole RC-5-94. The contract trace was determined by the up dip projection from the contact intersection in the hole using surface dips to establish the contact geometry.

Graphite mineralization associated with the diopside-quartz-(graphite) marble (Dqgm) occurs as discreet crystalline grains in a more disseminated fashion than its occurrence in the biotite-quartz-feldspar-graphite gneiss. The graphite still occurs along foliation planes and is aligned parallel to these planes, but the foliation in the marble is not as well defined as in the gneiss. In the nearly pure marble sections it is impossible to determine foliation directions and the graphite occurs as purely disseminated grains. In the more siliceous sections the foliation is better developed and the graphite is aligned. Since the marble contains varying amounts of diopside, quartz and other silicate minerals an attempt was made to visually determine if the graphite had any particular affinity for any particular mineral. Based on limited observations it appears that the graphite is mainly attached to the calcite even though silicate minerals may be present in quite high amounts. If this close association between calcite and graphite is true for a large part of the deposit then it will be possible to produce a very pure graphite product at a low cost because to clean the graphite only requires a simple acid wash.

The graphite assay results (Appendix A) from the reverse circulation drilling suggests that the higher grade graphite occurs in bands up to 15 metres (50 feet) in thickness, although lower grade graphite is present in the entire length of the hole in all of the holes drilled to date.

GRAPHITE GRADES

The presentation of graphite grades for samples obtained from the Black Crystal deposit presents a very complex problem related to sample collection and assay reliability. Problems associated with sampling with a reverse circulation drill and the physical loss of graphite have been addressed above in the section on the drill program. The graphite losses caused by "blow by" and the flotation of graphite on oily water bear repeating because they truly represent a major loss of product. The loss due to the graphite particles sticking to the equipment probably does not represent too great a loss.

In addition to graphite recovery problems associated with sample collection there is a major problem of assay reliability related to the assay sample size used in the "Leco Method" used to analyze for graphite. The Black Crystal samples were all analyzed using the Leco method. In the Leco analysis one gram of sample is digested in nitric acid to remove any Sulphur bearing minerals (The Leco method is also used to analyze for Sulfur, so any Sulfur in the sample would report as an increase in graphite content.), it is then digested in hydrofluoric acid to remove any silicates and the residue is then analyzed in the Leco analyzer. The analysis is made by determining the amount of carbon dioxide produced when the graphite is oxidized. The method is fairly reliable on low concentrations of carbon but has problems with high concentrations. The main problem with the method is the original sample size (1 gram). It is unrealistic to think that 1 gram is representative of a tonne of material. In the writer's experience it has been found that the graphite grade generated by the Leco method error on the low side. Confirmation of this fact is obtained by doing a flotation test on a large sample of the material, then weighing the resulting graphite product and then determining the amount of graphite present by the "Double Loss on Ignition" method. This latter method corrects for any moisture present and then totally oxidizes the graphite to carbon dioxide. The resulting residue is weighed and then subtracted from the original sample weight less the loss of water and other volatiles.

Due to the high cost of doing flotation tests on every sample, an attempt was made to determine if the error between Leco assays and actual recovery results by flotation were consistent. The following table lists all of the flotation recovery results and the associated Leco assay data to date:

TABLE 1

Graphite Grade Comparisons

Rcd=Reverse circulation' sampled dry
Rcw=Reverse circulation, sampled wet
Blk=Bulk sample, sampled dry

LOCATION GRAPHITE	SAMPLE NO./ TYPE	DEPTH	LECO ASSAY % Graphite	SAMPLE WEIGHT	FLOTATION GRADE	UPGRADE PERCENT
RC-1-94	09964/Rcd	0 - 10'	2.63	1.859Kg	5.40	+105%
RC-1-94	09965/Rcd	10 - 20'	1.92	1.825Kg	4.42	+130%
RC-1-94	09966/Rcd	20 - 30'	2.58	1.791Kg	4.88	+92%
RC-1-94	09967/Rcd	30 - 40	1.43	1.901Kg	1.52	+6%
RC-1-94	09968/Rcd	40 - 50	1.87	1.949Kg	3.71	+98%
RC-2-94	09975/Rcd	0 - 10'	2.04	1.911Kg	4.38	+115%
RC-2-94	09976/Rcd	10 - 20'	1.26	1.831Kg	4.38	+248%
RC-2-94	09977/Rcd	20 - 30'	0.79	1.907Kg	2.91	+268%
RC-3-94	09995/Rcw	50 - 60'	1.12	1.751Kg	4.95	+342%
RC-5-94	R8522/Rcw	20 - 30'	1.25	1.936Kg	2.40	+92%
Sta.1+73S upper road	G1305/Blk	Surface	4.00	440.00Kg	6.23	+56%
RC-6-94	R8548	110-120	0.44	11.571Kg	1.31	+197%
RC-6-94	R8549	120-130'	0.72	14.08Kg	0.93	+29%
RC-6-94	R8550	130-140'	0.53	15.66Kg	1.18	+123&
				AVERAGE UPGRADE		+122%

Table 1 above clearly illustrates the sampling and assaying problems associated with graphite. The assay grades associated with flotation products listed above are determined by dividing actual weight of graphite recovered by flotation from the sample by the weight of the original flotation sample. In other words this number represents an actual mill recovery grade. The marked increase in actual contained graphite verses the assay (Leco) grade ranges from plus 6 percent to 342 percent or an average increase in actual grade of 122 percent. It is the writer's opinion that the marked increase in contained graphite in the flotation sample is due primarily to the small sample size used in the Leco assay method. The Leco assay method for graphite uses a one gram sample and it is just not large enough to be representative of the large sample.

The writer hesitates to suggest using the above upgrade factor (122 percent) on the remainder of the drill hole assay data (See Appendix A) because of a possible perceived notion that the factor was derived by using only selected data to establish it. Despite this hesitancy it is difficult to argue with the results to date. In Table 2 below a factor of 86 percent is used which corresponds to the average up grade achieved in the flotation of the top 50 feet of hole RC-1-94. The samples used in the above Table 1 represent for the most part samples from the higher grade intersections, but it is the writer's opinion that the results will be the same on the lower grade material. This opinion is supported by the results of hole RC-2-94 from 20-30 feet which assayed 0.79 percent graphite by the Leco method and contained 2.91 percent graphite when 1.907 kilograms of the material was floated (See Table 1 above).

Since the Black Crystal property will be evaluated as an open pit deposit the following Table 2 shows the average grades from the drilling to date broken up into bench intervals with a bench height of 50 feet (15 metres). The reader is cautioned that the Leco assay grades from the drilling are at this time thought by the writer to be not representative of the true grade of the deposit because of the various problems associated with how the samples were obtained (Reverse Circulation drilling with water) and the sample size problem associated with Leco assaying for graphite (See above).

Table 2 below is assay summary of the drilling to date and a column showing the use of an up grade factor is included to illustrate how the above up grade factor (122 percent) would affect the grade of the deposit if it were to be used

TABLE 2

COMPARISON OF 50′ BENCH ASSAYS USING UPGRADE FACTOR (86%)

HOLE NO.	INTERVAL Feet	AVERAGE LECO ASSAY Percent graphite	UPGRADED ASSAY Percent graphite
RC-1-94	0 - 50′	2.09	3.89
RC-1-94	50 - 100′	0.20	0.37
RC-2-94	0 - 50′	1.04	1.93
RC-2-94	50 - 100′	0.59	1.10
RC-2-94	100 - 150′	0.15	0.28
RC-3-94	0 - 50′	0.49	0.91
RC-3-94	50 - 100′	0.88	1.64
RC-3-94	100 - 150′	0.39	0.73
RC-4-94	0 - 50′	0.43	0.80
RC-4-94	50 - 100′	0.14	0.26
RC-5-94	20 - 70′	0.49	0.91
RC-5-94	70 - 120′	0.20	0.37
RC-5-94	120 - 170′	0.12	0.22
RC-6-94	0 - 50′	0.25	0.47
RC-6-94	50 - 100′	0.11	0.20
RC-6-94	100 - 140′	0.51	0.95

The low number of holes (6 holes) and wide spacing of the drilling to date precludes any engineering acceptable definition of overall grade or ultimate tonnage. The work to date does shows that the deposit is very large (300 metres by 600 metres) and it appears to be open on three sides and down dip. Although the limited drilling does not indicate the potential grade it can be shown by the limited surface sampling that the large mineralized block shown on Figure 7 contains many zones of graphite mineralization in the 2 to 5 percent range. The higher grade graphite zones appear to occur in bands as evidenced by the higher grade intersections in the drill holes, i.e. RC-1-94 - 0-50' grading 4.0 percent recoverable graphite.

METALLURGICAL TESTING

The original metallurgical testing (Howard, 1994) was conducted by Process Research Associates Ltd., 9145 Shaughnessy Street, Vancouver, B.C. The purpose of these tests were to confirm assay grades and to provide data on the physical character of the graphite, size distribution, over all recoveries and potential product grade.

The test procedure used by Process Research consisted of screening and crushing the sample, flotation using Dowfroth 250 and Varsol as a promoter, leaching the concentrate with hydrochloric acid to remove carbonate and/or iron and assaying the rougher concentrate.

All recent metallurgical work on the Black Crystal property has been conducted at the Quinto Mining Corporation Metallurgical Lab in Lumby, B.C. under the direction of Mr. Dusan Milojkovic. The metallurgical testing of the drill cuttings and bulk sample was done at the Quinto Lab. The method used to float the graphite was similar to the method used by Process Research except pine oil was used as a frother rather than Dowfroth 250. A dispersant was used on a few of the samples that contained a large amount of clay. These samples were usually the ones from on surface or from the shallow portions of the drill hole. In a production situation the clay would be removed by a cyclone and no other chemicals would be required.

The following table shows the results of one 97.6 kilogram bulk sample run to obtain bulk assay grade, recovery data and product grain size. In graphite the coarser the grain size the higher the price realized for the product. The reader should note that at least in this particular sample that more than 21 percent of the recovered graphite is greater than 48 mesh which is considered coarse grained flake.

TABLE 3

TABLE SHOWING RESULTS OF A TYPICAL METALLURGICAL TEST
ON THE BLACK CRYSTAL GRAPHITIC MATERIAL

	Estimated Mass Balance for -12 mesh		Graphite Feed				
Product	Size, mesh	Size, microns	Weight, gms	% Weight	Cumm. Weight	% Graphite *	% Recovery
Gra Conc 1	+ 20	+730 top	2.70	0.00	100.00	98.00	0.06
Gra Conc 2	+ 48	-730+258	903.80	0.93	100.00	98.00	21.68
Gra Conc 3	+100	-258+130	1661.00	1.70	99.07	98.00	39.85
Gra Conc 4	+200	-130+64	372.60	0.38	97.37	98.00	8.94
Gra Conc 5	-200	-64+0	1036.80	1.06	96.99	98.00	24.88
Tot Tails			93623.10	95.93	95.93	0.20	4.58
Head			97600.00	100.00		4.19	100.00
* assumed assays		Comment: Graphite concentrate cleaned twice and partially leached with HCl.					

The above test results are for a combined surface sample from which no head assay data was available. The main purpose of the test was to determine an estimate of the size distribution of the graphite in the deposit.

CONCLUSIONS AND RECOMMENDATIONS

The results of the 1994 reverse circulation drill program, bulk sampling and metallurgical testing have shown that the Black Crystal property has an excellent potential for becoming a major graphite deposit based on its indicated size, grade, ease of mining, ease of milling and the coarse grained flake size of the graphite.

Geologic mapping and drill results have established that graphite mineralization is present in an area measuring 300 metres by 600 metres and appears to be open in at least 3 directions (east, west and south) and down dip for an unknown distance. Drill information is limited to 100 to 170 feet (30-52 metres) but is exposed on the surface over a vertical distance of 190 metres (623 feet). The graphite mineralization is present throughout the large mineralized block in addition to higher grade bands of varying thickness that strike northwest-southeast with a shallow southwest dip (20-30 degrees). The location of the high grade bands has only been partially defined at this time, but with the limited data available they appear to be present throughout the mineralized block.

The limited reverse circulation drill program (6 holes for a total of 250 metres) and problems associated with sample collection in a wet environment can only be used as an indicator of mineralization and not as an indication of ultimate grade. The drilling did show that the distribution of graphite mineralization is well disseminated and contains higher grade bands that could be mined in an open pit manner. The deposit is situated on a fairly steep slope which would allow an open pit configuration with a very low stripping ratio. In some areas (near RC-1-94) the stripping ratio would be nearly 0:1 since the mineralization starts right at surface.

Experience has shown that the only way to obtain a reliable assay of the graphitic material is to use flotation and measure the actual amount of graphite produced. Fortunately because of the high percentage of graphite and its physical characteristics it will be possible to estimate the grade visually once the grade parameters are established.

The high content (+/-20 percent) of coarse flake graphite makes this property particularly attractive because this is the highest price graphite. Madagascar crucible grade coarse grain graphite must have a minimum of 85 percent carbon and be between minus 20 mesh and plus 80 mesh particle size (Taylor,1992).

From an environmental prospective graphite is an inert nontoxic substance requiring only dust control to meet regulatory requirements.

The proposed two phase exploration program is one of deposit definition rather than pure exploration. Admittedly the boundary limits of the deposit have not been defined but the data available to date indicates that it is a very large deposit with an overall high average grade. The proposed program will define higher grade areas where further definition can take place as required.

The Phase 1 exploration program will consist of 2000 metres of definition drilling using a large core diamond drill and a concurrent program of cleaning and widening all existing roads with a large dozer to expose in place mineralization in the high bank followed by a detailed geologic mapping, sampling and assaying. The layout of sampling will be based on the geologic mapping results that will pay particular attention to differentiating the silicate and carbonate sections plus defining the location and extent of high grade graphite bands. It is felt that the carbonate rich sections will contain the coarsest grain size graphite.

The second phase of the program is unique to industrial minerals. In dealing with industrial minerals it is necessary to tie the potential future sale of the industrial mineral product to the capability of the deposit to produce the product in various quantities and differing specifications. In order to do this it is necessary to produce the product and distribute large samples to potential end users very early in the program, preferably during late stage exploration. This preliminary production stage requires the use of a pilot plant or small mill facility. At the present time the only pilot mill facility with personnel familiar with graphite recovery that is close enough to do this testing is the Quinto Mining Corporation mill at Lumby, B.C. Unfortunately this mill at the present time is totally committed to work for The Quinto Mining Corporation and is unable to do the bulk milling required. It is therefore recommended that a new small scale milling facility be constructed at an acceptable location near power and transportation. One potential mill site that is presently under consideration by Mr. Schiller is located on the Slocan Lakes road near the Koch Creek bridge.

CERTIFICATION

I, David A. Howard, of the City of Vancouver, Province of British Columbia, hereby certify as follows:

1. I am a geologist residing at 9040 Glenallan Gate, Richmond, B.C., with an office at 422-470 Granville Street, Vancouver, B.C.

2. I am a registered Professional Engineer of the Province of British Columbia. I graduated from Montana State University in 1964 and from the University of Washington in 1967.

3. I have practised my profession continuously since June, 1966.

4. I am the author of this report which is based on personal knowledge of the property and from data contained in the files of D.D.H. Geomanagement Ltd.,private reports and government publications.

5. I have no direct interest in the mining claims which constitute the Black Crystal property but I am a share holder of companies controlled by Mr. Paul Schiller the owner of the Black Crystal property.

6. This report may be utilized for development of the property provided that no portion may be used out of context in such a manner as to convey a meaning which differs from that set out in the whole.

7. Consent is hereby given to Mr. Paul Schiller to use or reproduce this report or any part of it for the purposes of development of the property, or related to the raising of funds.

Dated at Vancouver, B.C. this 16th day of January, 1995.

PROFESSIONAL PROVINCE OF DAVID A. HOWARD BRITISH COLUMBIA ENGINEER

David A. Howard, M.Sc., P.Eng.

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APPENDIX A

Assays

ACME ANAL[illegible]AL LABORATORIES LTD. 852 E. HASTINGS ST. VA[illegible]ER B.C. V6A 1R6 PHONE(604)253-3158 FAX(60[illegible]3-1716

GEOCHEMICAL ANA[illegible]IS CERTIFICATE

D.D.H. Geomanagement Ltd. File # 93-3301
422 - 470 Granville St., Vancouver BC V6C 1V6

SAMPLE#	C/TOT %	C/GRA %	CO2* %	SAMPLE gm
Z 9023	2.27	1.57	1.66	1265
Z 9024	3.50	2.52	1.89	1495
Z 9025	5.89	4.74	2.38	1285
Z 9026	5.60	4.61	2.22	1190
RE Z 9026	~~5.57~~	~~4.74~~	~~1.57~~	-
Z 9027	3.48	2.79	2.02	1200
Z 9028	3.30	2.49	2.09	1275
Z 9029	6.16	2.61	12.30	985
Z 9030	5.50	3.54	6.40	1480
Z 9031	6.13	3.59	8.55	1150
Z 9032	5.41	4.24	3.95	1310
Z 9033	4.32	3.27	3.46	1275
Z 9034	4.16	1.38	9.37	1195
Z 9035	2.09	1.35	2.12	1365
Z 9036	2.08	1.45	1.76	1395
Z 9037	2.21	1.31	2.25	1115
Z 9038	4.17	1.14	11.03	515
Z 9039	3.39	1.06	7.96	1630
Z 9040	2.91	2.31	1.86	1680
Z 9041	7.10	5.52	3.30	1545
Z 9042	8.14	7.02	2.51	1770
Z 9043	8.97	7.76	2.87	1330
Z 9044	8.86	7.51	3.07	2175
Z 9045	3.78	3.34	.72	630
Z 9046	3.62	1.65	5.45	585
Z 9047	.61	.37	.33	1880

Surface samples

CO2* - TOTAL C MINUS C REMAINED AFTER 15% HCL LEACHING. TOTAL C BY LECO.
GRA/C - BY HNO3 & HF LEACHED.
- SAMPLE TYPE: SAND Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: NOV 16 1993 DATE REPORT MAILED: *Nov 25/93* SIGNED BY. *D.Toye* ...D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

ACME ANA ICAL LABORATORIES LTD. 852 E. HASTINGS ST. VA OUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(6 253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Quinto Mining Corp. File # 94-4253
200 - 626 W. Pender St., Vancouver BC V6B 1V9

SAMPLE#	GRA/C %
G 1305	4.00

GRA/C - HNO3 + HF, ANALYSIS BY LECO.
- SAMPLE TYPE: CUTTING

DATE RECEIVED: NOV 24 1994 DATE REPORT MAILED: Dec 2/94 SIGNED BY. D. Toye ......D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

440 Kg Bulk sample from near RC-1-94

ACME ANAL[illegible]AL LABORATORIES LTD. 852 E. HASTINGS ST. VA[illegible]VER B.C. V6A 1R6 PHONE(604)253-3158 FAX(60[illegible]53-1716

GEOCHEMICAL ANAL[illegible]IS CERTIFICATE

D.D.H. Geomanagement Ltd. File # 93-3301

422 - 470 Granville St., Vancouver BC V6C 1V6

SAMPLE#	C/TOT %	C/GRA %	CO2* %	SAMPLE gm
Z 9023	2.27	1.57	1.66	1265
Z 9024	3.50	2.52	1.89	1495
Z 9025	5.89	4.74	2.38	1285
Z 9026	5.60	4.61	2.22	1190
RE Z 9026	~~5.57~~	~~4.74~~	~~1.57~~	-
Z 9027	3.48	2.79	2.02	1200
Z 9028	3.30	2.49	2.09	1275
Z 9029	6.16	2.61	12.30	985
Z 9030	5.50	3.54	6.40	1480
Z 9031	6.13	3.59	8.55	1150
Z 9032	5.41	4.24	3.95	1310
Z 9033	4.32	3.27	3.46	1275
Z 9034	4.16	1.38	9.37	1195
Z 9035	2.09	1.35	2.12	1365
Z 9036	2.08	1.45	1.76	1395
Z 9037	2.21	1.31	2.25	1115
Z 9038	4.17	1.14	11.03	515
Z 9039	3.39	1.06	7.96	1630
Z 9040	2.91	2.31	1.86	1680
Z 9041	7.10	5.52	3.30	1545
Z 9042	8.14	7.02	2.51	1770
Z 9043	8.97	7.76	2.87	1330
Z 9044	8.86	7.51	3.07	2175
Z 9045	3.78	3.34	.72	630
Z 9046	3.62	1.65	5.45	585
Z 9047	.61	.37	.33	1880

Surface samples

CO2* - TOTAL C MINUS C REMAINED AFTER 15% HCL LEACHING. TOTAL C BY LECO.
GRA/C - BY HNO3 & HF LEACHED.
- SAMPLE TYPE: SAND   Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: NOV 16 1993 DATE REPORT MAILED: Nov 25/93 SIGNED BY. D.Toye ...D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

D.D.H. Geomanagement Ltd. File # 94-3603 Page 1

722 - 470 Granville St., Vancouver BC V6C 1V5

	SAMPLE#	GRA/C %	
Rc-1-94	09964 B	2.63	0-10
	09965 B	1.92	10-20
	09966 B	2.58	20-30
	09967 B	1.43	30-40
	09968 B	1.87	40-50
	09969 B	.24	50-60
	09970 B	.12	60-70
	09971 B	.21	70-80
	09972 B	.22	80-90
	09973 B	.21	90-100
	09974 B	.22	100-109
RC-2-94	09975 B	2.04	0-10
	09976 B	1.29	10-20
	RE 09976 B	1.22	10-20
	09977 B	.79	20-30
	09978 B	.46	30-40
	09979 B	.66	40-50
	09980 B	.68	50-60
	09981 B	.49	60-70
	09982 B	.56	70-80
	09983 B	.53	80-90
	09984 B	.68	90-100
	09985 B	.36	100-110
	09986 B	.07	110-120
	09987 B	.09	120-130
	09988 B	.08	130-140
	09989 B	.13	140-150
RC-3-94	09990 B	.66	0-10
	09991 B	.24	10-20
	09992 B	.64	20-30
	09993 B	.41	30-40
	09994 B	.51	40-50
	09995 B	1.12	50-60
	09996 B	.49	100-110
	09997 B	.59	110-120

GRA/C - HNO3 + HF, ANALYSIS BY LECO.
- SAMPLE TYPE: ROCK CHIP
<u>Samples beginning 'RE' are duplicate samples.</u>

DATE RECEIVED: OCT 21 1994 DATE REPORT MAILED: Nov 4/94. SIGNED BY .... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

	SAMPLE#	GRA/C %	
	09998 B	.44	120-130
	09999 B	.24	130-140
RC-3-94	10000 B	.19	140-150
	R 8512	.06	0-10
RC-4-94	RE R 8512	.04	0-10
	R 8513	.16	10-20
	R 8514	.08	20-30
	R 8515	.12	30-40
	R 8516	1.73	40-50
	R 8517	.20	50-60
	R 8518	.09	70-80
	R 8519	.17	60-70
	R 8520	.04	80-90
	R 8521	.20	90-100
RC-5-94	R 8522	1.25	20-30
	R 8523	.37	30-40
	R 8524	.20	40-50
	R 8525	.30	50-60
	R 8526	.34	60-70
	R 8527	.18	70-80
	R 8528	.24	80-90
	R 8529	.20	90-100
	R 8530	.19	100-110
	R 8531	.18	110-120
	R 8532	.10	120-130
	R 8533	.06	130-140
	R 8534	.08	140-150
	R 8535	.22	150-160
	R 8536	.15	160-170
RC-6-94	R 8537	.20	0-10
	R 8538	.23	10-20
	R 8539	.14	20-30
	R 8540	.62	30-40
	R 8541	.08	40-50
	R 8542	.13	50-60

Sample type: ROCK CHIP. Samples beginning 'RE' are duplicate samples.

ACME ANALYTICAL

D.D.H. Geomanagement Ltd. FILE # 94-3803

ACME ANALYTICAL

	SAMPLE#	GRA/C %	
RC-6-94	R 8543	.09	60-70
	R 8544	.02	70-80
	R 8545	.15	80-90
	R 8546	.15	90-100
	R 8547	.34	100-110
	R 8548	.44	110-120
	R 8549	.72	120-130
	RE R 8549	.59	130-140
	R 8550	.48	130-140

Sample type: ROCK CHIP. Samples beginning 'RE' are duplicate samples.

[illegible] E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-[illegible]

GEOCHEMICAL ANALYSIS CERTIFICATE

Quinto Mining Corp. File # 94-4220

200 - 626 W. Pender St., Vancouver BC V6C 1V9

	SAMPLE#	GRA/C %	
RC-3-94	G 1301	2.04	60-70
	G 1302	.35	70-80
	G 1303	.52	80-90
	G 1304	.43	90-100
	RE G 1304	.31	90-100

GRA/C - HNO3 + HF, ANALYSIS BY LECO.
- SAMPLE TYPE: CUTTING
Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: NOV 21 1994 DATE REPORT MAILED: Dec 2/94 SIGNED BY. [signature] .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

** TOTAL PAGE.002 **

APPENDIX B

Drill logs

DIAMOND DRILL LOG

PROPERTY: BLACK CRYSTAL **TOWNSHIP:**

DATE: September 15, 1994

HOLE: RC-1-94 **DIP:** 90 **AZMUITH:** **LOGGED BY:** D.A. Howard

CORE SIZE: 4.5" **TOTAL FOOTAGE:** 109', 33.2m. **DIP TEST:** YES/NO

DIP FOOTAGE AND DEGREE: **LOCATION:** 1+75S up. rd. grid

CASING LEFT IN HOLE: YES/NO **CASING FOOTAGE:**

DRILL TIME: START FINISH MECHANICAL TIME

MISCELLANEOUS PROBLEMS:
Button broke off bit at approximately 106 feet; could not get back down hole with new bit.

FOOTAGE:	**DESCRIPTION:**	**ASSAYS:** Percent Graphite
0 - 10'	Pale tan, sandy, graphitic (+/-5%). First 5' collected from blow by. Very calcareous. (Dqgm) Marble Sample collected dry.	2.63
10 - 20	Pale grey w/ a few pale tan sections. Total sample from cyclone. Very calcareous. (Dqgm) Marble Very graphitic (+/-5%) Sample collected dry.	1.92
20 - 30	20-22 Pale grey, 22-27 pale tan to br., 27-30 grey. Ground hard at 27' Very calcareous. (Dqgm) Marble. Very graphitic (+/- 5%) Sample collected dry.	2.58
30 - 40	30-35 Pale grey, 35-36 brown, 36-40 grey. Hard. Very calcareous. (Dqgm) Marble Very graphitic (+/- 5%) Sample collected dry.	1.43

HOLE NO. RC-1-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent Graphite
40 - 50	40-45 Grey and hard, 45-50 brown and soft. Very calcareous. (Dqgm) Marble Very graphitic (+ 5%) Sample collected dry.	1.87
50 - 60	50-53 Pale brown, 53-60 pale grey Moderately soft. Very Calcareous. Moderately graphitic (2-3%) Sample collected dry.	0.24
60 - 70	Pale grey, moderately hard starting @ 72' Very calcareous qu-feld-bio gneiss, possibly a mixture of gneiss and marble +/- carbonate, <1% graphite. Sample collected dry.	0.12
70 - 80	Pale grey to off white Very calcareous (Dqgm) with some biotite possibly a mixture mainly marble and minor gneiss. Minor graphite (+/- 1%). Sample collected dry.	0.21
80 - 90	Pale grey to off white. No biotite. Very calcareous (Dqgm) marble. Minor graphite (+/- 1%) Sample collected dry.	0.22
90 - 100	Pale grey to off white. No biotite Very calcareous (Dqgm) Marble. Tr pyrite. Moderate to very graphitic (2-3%). Sample collected dry.	0.21
100 - 109	Pale grey with def. harding at 105' Very calcareous (Dqgm) with Tr biotite. Probable mixture of marble and gneiss Very minor graphite. Hit heavy water at 105' abandoned hole. Sample collected in dry manner, but very damp.	0.22

E.O.H. 109 FEET

DIAMOND DRILL LOG

PROPERTY: BLACK CRYSTAL **TOWNSHIP:**

DATE: September 15, 1994 **PAGE:** 1 **OF** 3

HOLE: RC-2-94 **DIP:** 90 **AZMUITH:** **LOGGED BY:** D.A. Howard

CORE SIZE: 4.5" **TOTAL FOOTAGE:** 150', 45.7m. **DIP TEST:** YES/NO

CASING LEFT IN HOLE: YES/NO **CASING FOOTAGE:**

DRILL TIME: START FINISH MECHANICAL TIME

MISCELLANEOUS PROBLEMS:

FOOTAGE:	**DESCRIPTION:**	**ASSAYS:** Percent graphite
0 - 10	Medium dark brown, sandy material. Very calcareous, (+/- 50%) (Dqgm) marble Very graphitic (3-4%) Sample collected dry.	2.04
10 - 20	Medium dark brown 10-15', light tan 15-20' sandy material. Very calcareous (Dqgm) Marble. Very graphitic (+/- 5%) Sample collected dry.	1.26
20 - 30	Pale grey, moderately soft graphitic material. Very calcareous (Dqgm) marble. Very graphitic (+/- 5%). Sample collected dry.	0.79
30 - 40	Pale grey, moderately soft graphitic material. Very calcareous (Dqgm) marble Moderately graphitic (2-3%) Sample collected dry.	0.46
40 - 50	Pale grey, moderately soft graphitic material w/ minor biotite. Sample mainly Dqgm. Very calcareous. Very graphitic (+/- 5%). Sample collected dry.	0.66

HOLE NO. RC-2-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent Graphite
50 - 60	Pale grey, moderately soft graphitic material w/ minor biotite. Sample mainly Dqgm. Very calcareous. Very graphitic (+/- 5%). *Sample collected dry.*	0.68
60 - 70	Pale grey moderately soft graphitic marble. Very calcareous (Dqgm) Trace biotite. Very graphitic (+/- 5%). Sample collected dry.	0.49
70 - 80	Pale grey moderately soft graphitic marble. Very calcareous (Dqgm) Trace biotite. Very graphitic (+/- 5%). Sample collected dry.	0.56
80 - 90	Pale grey moderately soft graphitic marble. Very calcareous (Dqgm) Trace biotite. Very graphitic (3-4%). Sample collected dry.	0.53
90 - 100	Pale grey moderately soft graphitic marble. Very calcareous (Dqgm) Trace biotite. Very graphitic (+/- 5%). Sample collected dry.	0.68
100 - 110	Pale grey moderately soft graphitic marble. Very calcareous (Dqgm) Trace biotite. Very graphitic (+/- 5%). Sample collected dry. Contact at 110 feet	0.36
110 - 120	Pale grey to pale tan moderately soft Quartz-feldspar-biotite gneiss. No carbonate. Minor to trace graphite (<<1%) Sample collected dry.	0.07
120 - 130	Pale grey to pale tan moderately soft Quartz-feldspar-biotite gneiss. No carbonate. Minor to trace graphite (<<1%) Sample collected dry.	0.09

HOLE NO. RC-2-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent Graphite
130 - 140	Pale grey to pale tan moderately soft Quartz-feldspar-biotite gneiss. No carbonate. Minor to trace graphite (<<1%) Sample collected dry.	0.08
140 - 150	Pale grey moderately soft to 143' then very hard qu-feld-bio gneiss. No carbonate. Minor graphite 140-143 then only a trace. Trace pyrite in harder gneiss. Sample collected dry. Hit water at 150'	0.13

E.O.H. 150 feet.

DRILL LOG

PROPERTY: BLACK CRYSTAL **TOWNSHIP:**

DATE: September 16, 1994 **PAGE:** 1 OF 3

HOLE: RC-3-94 **DIP:** 90 **AZIMUTH:** **LOGGED BY:** D.A. Howard

CORE SIZE: 4.5" **TOTAL FOOTAGE:** 150', 45.7m. **DIP TEST:** YES/NO

CASING LEFT IN HOLE: YES/NO **LOCATION:** 5+47S up. Rd. Grid

DRILL TIME: START FINISH MECHANICAL TIME

MISCELLANEOUS PROBLEMS:

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
0 - 5	Overburden (Contains some graphite).	
5 - 10	Dark brown, sandy material (qu and feld.) Moderately calcareous, contains some Dqgm. Moderately graphitic (3-4%). Sample collected in dry manner, but very damp.	0.66
10 - 20	Medium brown, sandy material (qu and feld.) Rock contains less limonite neat bottom of interval. Moderately calcareous, contains some Dqgm. Some graphite (1-2%) Interval becoming wet. Sample collected in dry manner. Hit water 15'	0.24
20 - 30	Medium to dark brown, sandy material (Qu and feld.). Very calcareous. Moderately graphitic (2-3%). Sample collected wet (from blow by)	0.64
30 - 40	Pale brown to tan, qu-feld-bio gneiss Moderate graphite indicated by abundant graphite on drill water surface. Slightly calcareous. Sample collected wet.	0.41

HOLE NO. RC-3-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent Graphite
40 - 50	Pale grey to tan, very calcareous quartz-feldspar-biotite gneiss and quartz-diopside-graphite marble. Probable banded unit. Abundant graphite on drill water surface. Much graphite lost in sampling. Sampled wet.	0.51
50 - 60	Tan, very calcareous (+50%) Diopside-quartz-(graphite) marble (Dqgm). Very graphitic. Abundant graphite on drill water surface. Much graphite lost in sampling. Sampled wet.	1.12
60 - 70	Tan very, calcareous (+50%) Diopside-quartz-(graphite) marble (Dqgm). Very graphitic. Abundant graphite on drill water surface. Much graphite lost in sampling. Sampled wet.	2.04
70 - 80	Pale tan, very calcareous (+70%) Diopside-quartz-(graphite) marble (Dqgm). Very graphitic, particularly in first part of interval. Abundant graphite on drill water surface. Much graphite lost in sampling. Sampled wet.	0.35
80 - 90	Tan, very calcareous (+50%) Diopside-quartz-(graphite) marble (Dqgm) Turned quite hard at 85' with sharp reduction in graphite content. Less graphite than above. Sampled wet.	0.52
90 - 100	Dark tan to brown, very calcareous mixed diopside-quartz-(graphite)-marble and quartz-feldspar-biotite gneiss. Abundant graphite on water surface in lower part of interval which was very brown (high bio. content) Sampled wet.	0.43

HOLE NO. RC-3-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent Graphite
100 - 110	Tan, very calcareous (+50%) Diopside-quartz-(graphite) marble (Dqgm). Very graphitic. Abundant graphite on drill water surface. Much graphite lost in sampling. Sampled wet.	0.49
110 - 120	Pale grey, very calcareous (+70%) Diopside-quartz-(graphite) marble Abundant graphite on drill water surface. Much graphite lost in sampling. Sampled wet.	0.59
120 - 130	Same as above.	0.44
130 - 140	Brown, moderately calcareous (10-15%) quartz-feldspar-biotite gneiss. Moderately graphitic. Abundant graphite on drill water surface. Sampled wet.	0.24
140 - 150	Pale grey, very calcareous (+50%) Diopside-quartz-(graphite) marble Moderate graphite on drill water surface. Much graphite lost in sampling. Sampled wet. stopped hole because of serious cave. Driller reported sample loss due to vuggy ground.	0.19

E.O.H. 150'

DRILL LOG

PROPERTY: BLACK CRYSTAL **TOWNSHIP:**

DATE: September 17, 1994 **PAGE:** 1 OF 2

HOLE: RC-4-94 **DIP:** 90 **AZIMUTH:** **LOGGED BY:** D.A. Howard

CORE SIZE: 4.5" **TOTAL FOOTAGE:** 100', 30.5m. **DIP TEST:** YES/NO

CASING LEFT IN HOLE: YES/NO **LOCATION:** 5+95S up. Rd. Grid

DRILL TIME: START FINISH MECHANICAL TIME

MISCELLANEOUS PROBLEMS:

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
0 - 5	Overburden	
5 - 10	Light tan quartz-feldspar-biotite gneiss. No carbonate. Mod. hard. Very minor graphite. (<<1%) Sampled dry.	0.05
10 - 20	Light tan quartz-feldspar-biotite gneiss. No carbonate. Mod. hard. Very minor graphite. (<<1%) Sampled dry.	0.16
20 - 30	Light tan quartz-feldspar-biotite gneiss. Limonitic zone at 23' (fault?). Rock turns light grey below 23'. No carbonate. Very minor graphite (<<1%) Sampled grey.	0.08
30 - 40	Light grey quartz-feldspar-biotite gneiss. Tr biotite. Trace carbonate. Trace to very minor graphite.	0.12

HOLE NO. RC-4-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
40 - 50	Brownish grey quartz-feldspar-biotite gneiss mixed with diopside-quartz-(graphite) marble. Brown garnets noted. 40-48' nil to very minor graphite. 48-50' abundant graphite (+/-4%) Interval moderately calcareous. Sampled dry, but interval very wet.	1.73
50 - 60	Light grey moderately siliceous diopside-quartz-(graphite) marble. Very calcareous. Trace to minor graphite. Started water injection. Sampled wet.	0.20
60 - 70	Pale tan, slightly calcareous quartz-feldspar-biotite qneiss. Very heavy water flow. Moderate carbonate (10-15%) Moderate to abundant graphite on drill water surface. Sampled wet.	0.17
70 - 80	Pale tan quartz-feldspar-biotite gneiss Trace carbonate. Very minor graphite. Sampled wet.	0.09
80 - 90	Pale grey quartz-feldspar-biotite gneiss. No carbonate. Trace graphite. Interval extremely hard. Probable contact at +/- 80' Sampled wet.	0.04
90 - 100	Pale grey diopside-quartz-(graphite)-Marble. Very high quartz-feldspar content. Moderate carbonate content (+/- 20%). Minor graphite content. Extremely hard. Sampled wet.	0.20

E.O.H. 100 feet

DIAMOND DRILL LOG

PROPERTY: BLACK CRYSTAL **TOWNSHIP:**

DATE: September 18, 1994 **PAGE: 1 OF 3**

HOLE: RC-5-94 DIP: 90 AZMUITH: LOGGED BY: D.A. Howard

CORE SIZE: 4.5" TOTAL FOOTAGE: 170', 51.8m. DIP TEST: YES/NO

DIP FOOTAGE AND DEGREE **LOCATION: 7+76S L. Rd. Grid**

CASING LEFT IN HOLE: YES/NO **CASING FOOTAGE:**

DRILL TIME: START FINISH **MECHANICAL TIME**

MISCELLANEOUS PROBLEMS:

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
0 - 20	Overburden. Hit water in overburden.	
20 - 30	Light tan to grey quartz-feldspar-biotite gneiss. No Carbonate. Abundant graphite on drill water surface. Sampled wet.	1.25
30 - 40	Dark brown biotite-quartz-feldspar-gneiss. No carbonate. Abundant graphite but less than previous interval. Interval relatively soft. Sampled wet.	0.37
40 - 50	Light tan to grey quartz-feldspar-biotite-gneiss. No carbonate. Moderate to abundant graphite on drill water. Moderately soft. Sampled wet.	0.20
50 - 60	Dark brown biotite-quartz-feldspar gneiss. No carbonate. Moderately soft. Moderate to abundant graphite on drill water. Sampled wet.	0.30
60 - 70	Same as above	0.34

HOLE NO. RC-5-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
70 - 80	Dark brown biotite-quartz-feldspar gneiss. No carbonate. Very high biotite content. Minor to nil graphite on drill water. Sampled wet.	0.18
80 - 90	Dark brown biotite-quartz-feldspar gneiss. No carbonate. Moderate amount of graphite on drill water surface. Sampled wet.	0.24
90 - 100	Same as above.	0.20
100 - 110	Same as above except for contamination by caved material from higher in hole.	0.19
110 - 120	Light tan to grey quartz-feldspar-biotite gneiss. Same rock type as above except for decrease in biotite content. No carbonate. Moderate to minor graphite. Less graphite than in previous interval. Sampled wet. Moderately hard.	0.18
120 - 130	Same as above. Minor graphite on drill water surface.	0.10
130 - 140	Light grey quartz-feldspar-biotite gneiss. Trace to minor carbonate. Minor coarse grained graphite noted on drill water surface. (Not evident from assays). Sampled wet.	0.06
140 - 150	140-145 same as above. Interval 145-150 noted increase in graphite content and decrease in hardness. Trace to minor carbonate. Sampled wet.	0.08

HOLE NO. RC-5-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
150 - 160	Interlayered light grey and brown bands of quartz-feldspar-biotite gneiss. Dark bands appeared to contain more graphite. Overall graphite content low. Sampled wet. Trace carbonate.	0.22
160 - 170	Mainly light grey quartz-feldspar-biotite gneiss containing darker high biotite bands. No carbonate. Moderately hard. Moderate graphite throughout section.	0.15

E.O.H. 170 feet.

DIAMOND DRILL LOG

PROPERTY: BLACK CRYSTAL　　　**TOWNSHIP:**

DATE: September 19, 1994　　　

HOLE: RC-6-94　**DIP:** 90　**AZMUITH:**　　　**LOGGED BY:** D.A. Howard

CORE SIZE: 4.5"　**TOTAL FOOTAGE:** 140', 42.7m.　**DIP TEST:** YES/NO

DIP FOOTAGE AND DEGREE　　　**LOCATION:** 6+43S L. Rd. Grid

CASING LEFT IN HOLE: YES/NO　　　**CASING FOOTAGE:**

DRILL TIME: START　　FINISH　　MECHANICAL TIME

MISCELLANEOUS PROBLEMS:

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
0 - 5'	Overburden	
5 - 10	Medium grey quartz-feldspar-biotite gneiss. Extremely hard. Minor graphite. Sampled dry.	0.20
10 - 20	Same as above 10-15. 15-20' medium brown quartz-feldspar-biotite gneiss. Softer than above. Trace to minor carbonate. Sulfur smell when cuttings in contact with HCl No obvious sulfides. Trace to minor graphite. Sampled dry.	0.23
20 - 30	Medium grey quartz-feldspar-biotite gneiss. Very minor carbonate. Minor to trace graphite. Hit heavy water flow at 28 feet, could not sample interval 28-30 feet. Sampled dry. Extremely hard.	0.14

HOLE RC-6-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
30 - 40	Pale grey diopside-quartz-(graphite) marble- very siliceous and hard. Moderate carbonate content (+10%) Interval contains some biotite, originally logged as biotite bearing quartzite. Moderate graphite on drill water surface. Sampled wet. Extremely hard.	0.62
40 - 50	Pale grey diopside-quartz-(graphite) marble- very siliceous and hard. Moderate carbonate content (10-15%) Interval contains minor biotite, originally logged as biotite bearing quartzite. Minor graphite on drill water surface. Sampled wet. Extremely hard.	0.08
50 - 60	Pale grey diopside-quartz-(graphite) marble- very siliceous and hard. High carbonate content (+/-30%) Interval contains minor biotite, originally logged as biotite bearing quartzite. Minor graphite on drill water surface. Sampled wet. Extremely hard with a few soft sections.	0.13
60 - 70	Pale grey diopside-quartz-(graphite) marble- very siliceous and hard. Low carbonate content (+/-10%) Interval contains minor biotite, originally logged as biotite bearing quartzite. Minor graphite on drill water surface. Sampled wet. Extremely hard with a few soft sections.	0.09
70 - 80	Pale grey diopside-quartz-(graphite) marble- very siliceous and hard. Low carbonate content (+/-10%) Interval contains minor biotite, originally logged as biotite bearing quartzite. Minor graphite on drill water surface. Sampled wet. Extremely hard with a few soft sections.	0.02

HOLE RC-6-94

FOOTAGE:	DESCRIPTION:	ASSAYS: Percent graphite
80 - 90	Pale grey diopside-quartz-(graphite) marble- very siliceous and hard. Low to moderate carbonate content (10-15%) Interval contains minor biotite, originally logged as biotite bearing quartzite. Minor graphite on drill water surface. High grade section around 87' Sampled wet.	0.15
90 - 100	Pale grey to near white diopside-quartz-(graphite) marble, very siliceous and hard. Nil biotite. Moderately calcareous (15-20%). Minor graphite on drill water surface. Sampled wet.	0.15
100 - 110	Pale grey to near white diopside-quartz-(graphite) marble, very siliceous and hard. Nil biotite. Moderately calcareous (15-20%). Minor to moderate graphite on drill water surface, more than the above interval. Sampled wet. 107-110 much softer.	0.34
110 - 120	Pale grey to near white diopside-quartz-(graphite) marble. Much softer. Nil biotite. Very calcareous (+/-50%). Moderate graphite on drill water surface. Sampled wet.	0.44
120 - 130	Pale grey to near white diopside-quartz-(graphite) marble. Much softer. Nil biotite. Very calcareous (+/-50%). Moderate graphite on drill water surface. Sampled wet.	0.72
130 - 140	Pale grey to near white diopside-quartz-(graphite) marble. Much softer. Nil biotite. Very calcareous (+/-50%). Moderate graphite on drill water surface. Graphite very coarse grained. Sampled wet. E.O.H. 140 feet	0.72