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2000 Diamond Drill Report

on the

Black Crystal Graphite Property
(Molly 1-4, PB#1 - #4, PB-5, PB-6)

Lat. 49°, 46' North
Long. 117° 46.5' West
Map#s: 082F.071, 082F.072, 082F.082

of

CRYSTAL GRAPHITE CORPORATION
Suite 1750 – 999 West Hastings Street
Vancouver, B.C.
V6C 2W2

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

26,622

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By: Bernhardt Augsten P.Geo.
June, 2001

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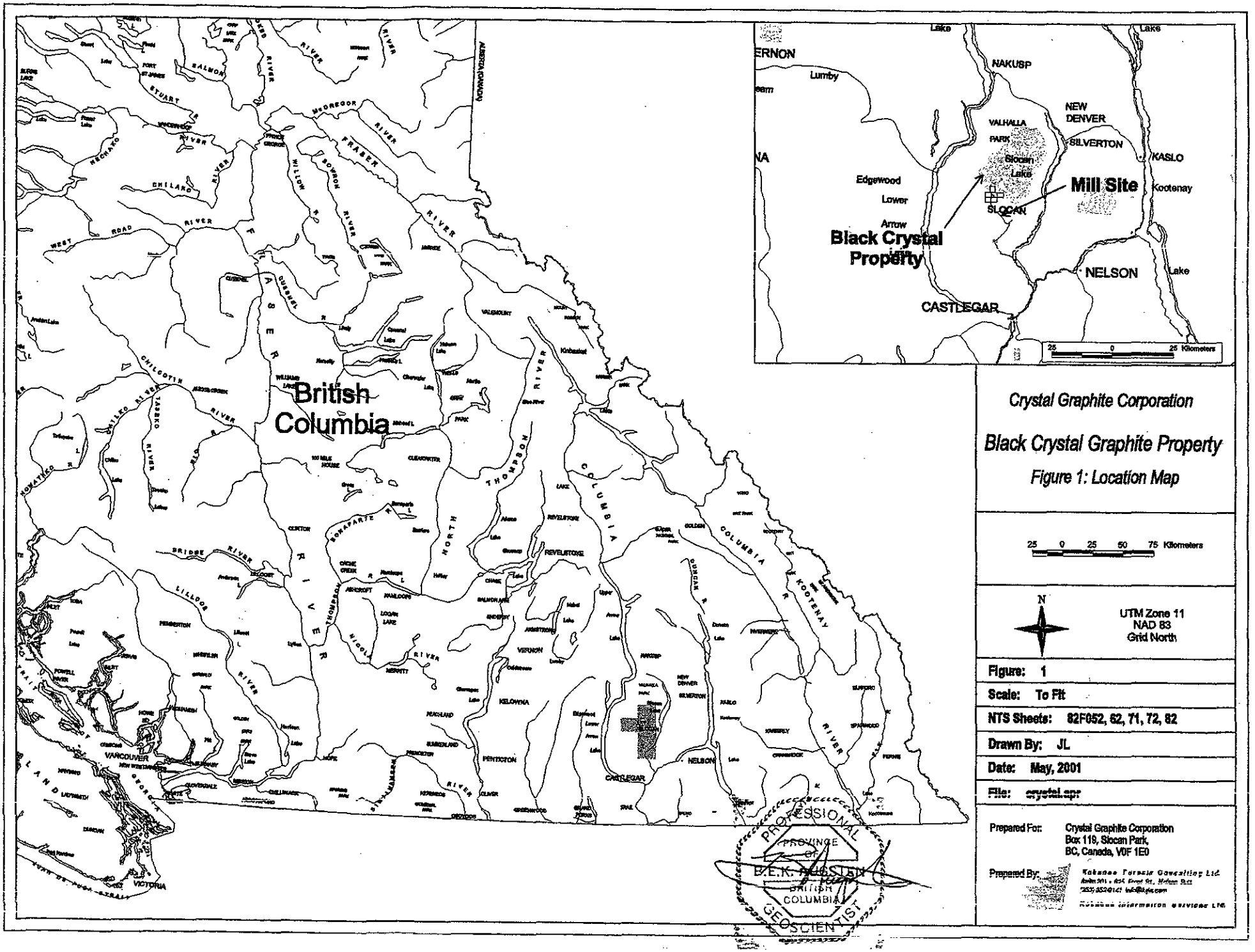
1.0 INTRODUCTION

In late fall of 2000, Crystal Graphite Corporation undertook a diamond drilling and trenching program on their 100% owned Black Crystal graphite project. The project is located in southeastern British Columbia approximately 51 kilometres north of Castlegar. Approximately 1181 metres of NQ core were drilled and twenty-seven vertical trenches were excavated. The diamond drilling was successful in identifying two principal graphite-bearing horizons which can be traced both up and down dip and along strike. These horizons where drilled occur at or very close to surface and mimic the slope of the hill they are located on. This has important extractive implications. In addition trenching of unconsolidated material has added to the understanding of the graphite grade and distribution within this material. Further trenching, drilling and mapping is recommended for the 2001 field season.

2.0 LOCATION, ACCESS AND PHYSIOGRAPHY

The Black Crystal property is located in southeastern British Columbia approximately 51 kilometres north of Castlegar and 27.5 kilometres northwest of Passmore, BC., within what is known as the Valhalla Range of the southern Selkirk Mountains. The property is located near the headwaters of Hoder Creek, a tributary of the Little Slocan River, and the geographic center of the property is at latitude 49° 46.5' North and longitude 117° 46' West in the NTS map area 82F/13, (See Fig. 1).

The property is readily accessed from BC Highway #6, exiting the highway immediately north of the village of Passmore, on the Upper Passmore Road. The access road follows the Little Slocan River for 24 kilometres, thence following Hoder Creek for a further 18 kilometres. At this point old logging roads access various parts of the active part of the property. All roads are well-maintained gravel roads capable of handling heavy trucks. For the most part four-wheel drive is not needed, but it is recommended.


British Columbia
Black Crystal Property
Mill Site
NAKUSP
NEW DENVER
SILVERTON
KASLO
NELSON
CASTLEGAR
SLOCAN
Slocan Lake
Edgewood
Lower Arrow
Kootenay Lake
25 0 25 Kilometers
Crystal Graphite Corporation
Black Crystal Graphite Property
Figure 1: Location Map
25 0 25 50 75 Kilometers
N
UTM Zone 11
NAD 83
Grid North
Figure: 1
Scale: To Fit
NTS Sheets: 82F052, 62, 71, 72, 82
Drawn By: JL
Date: May, 2001
File: crystal.apr
Prepared For: Crystal Graphite Corporation
Box 119, Slocan Park,
BC, Canada, V0F 1E0
Prepared By:
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
B.E.K. AUGSTEN
GEOSCIENTIST

Topography on the property can be considered rugged overall with elevations ranging from 1370m to 2380m. The area of current activity is situated on a westerly facing slope that was logged in the late 1970's and now consists of a second growth of spruce and alpine fir with thick underbrush of slide alder. Several small creeks draining the property provide the main water source for drilling.

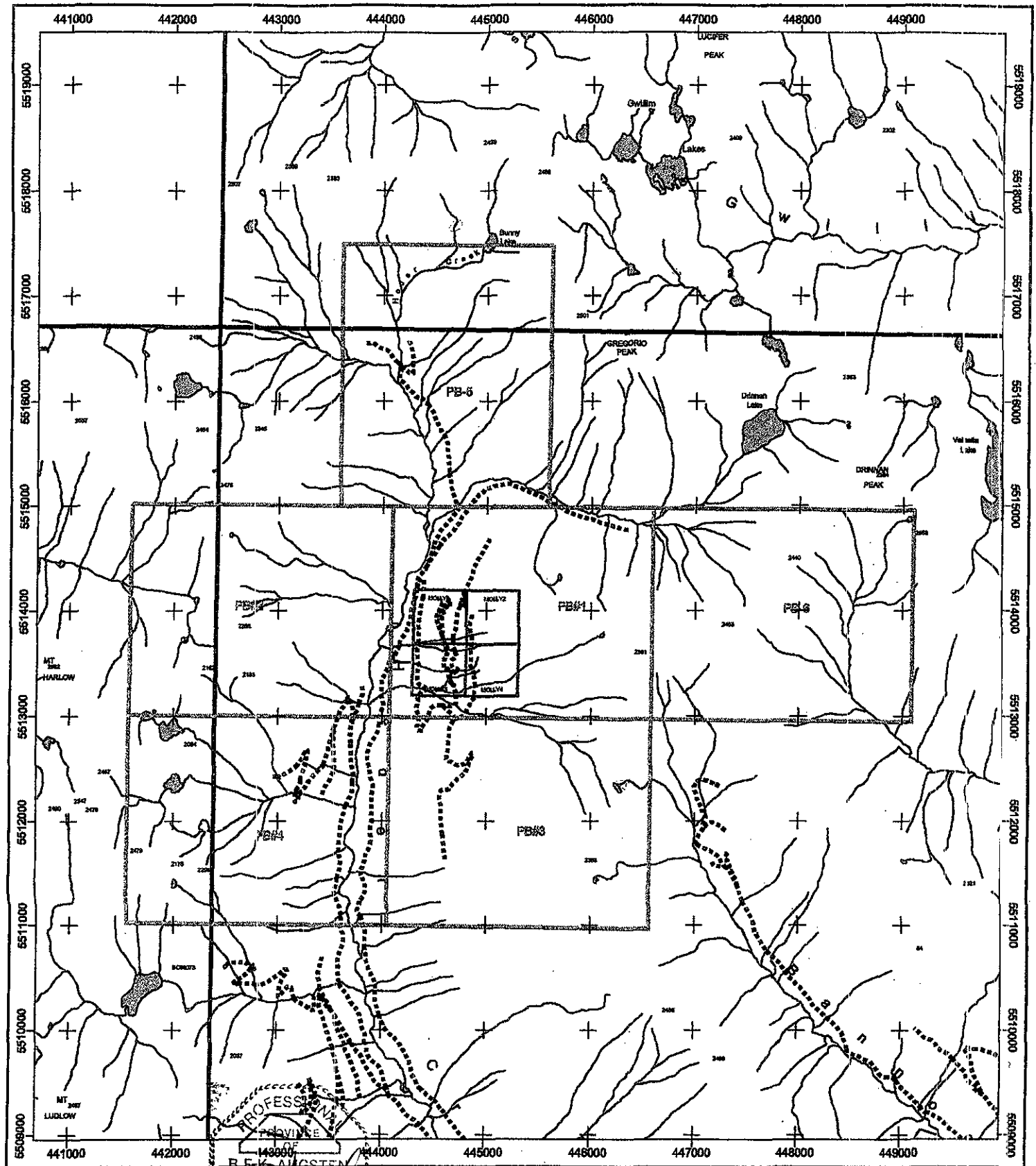
3.0 CLAIM STATUS

Crystal Graphite Corporation owns a 100% interest in 10 claims covering 124 mineral claim units comprising the Black Crystal Project. The 10 claims cover an area of approximately 2900 hectares. The claim holdings include four 2-post mineral claims of one unit each and six 4-post mineral claims of 20 units each, (See Fig. 2).
Pertinent claim data is provided in Table 1 below.

TABLE 1 CLAIM STATUS

CLAIM NAME	TENURE NO.	CLAIM TYPE	NUMBER OF UNITS	EXPIRY DATE*
MOLLY 1	305145	2POST	1	September 20, 2011
MOLLY 2	305146	2POST	1	September 20, 2011
MOLLY 3	305147	2POST	1	September 20, 2011
MOLLY 4	305148	2POST	1	September 20, 2011
PB #1	318625	GRID	20	June 28, 2007
PB #2	318626	GRID	20	June 28, 2006
PB #3	318627	GRID	20	June 28, 2006
PB #4	318628	GRID	20	June 28, 2006
PB-5	371670	GRID	20	September 14, 2006
PB-6	371671	GRID	20	September 18, 2006

* Claim status assuming acceptance of this report.



N

UTM Zone 11
NAD 83
Grid North

Crystal Graphite Corporation

Black Crystal Graphite Property

Figure 2: Property Map

500 0 500 1000 1500 Meters

Figure:	2
Scale:	1:50,000
NTS Sheet:	82F072
Drawn By:	JL
Date:	May, 2001
File:	crystal.apr

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GEOSCIENTIST

4.0 EXPLORATION HISTORY

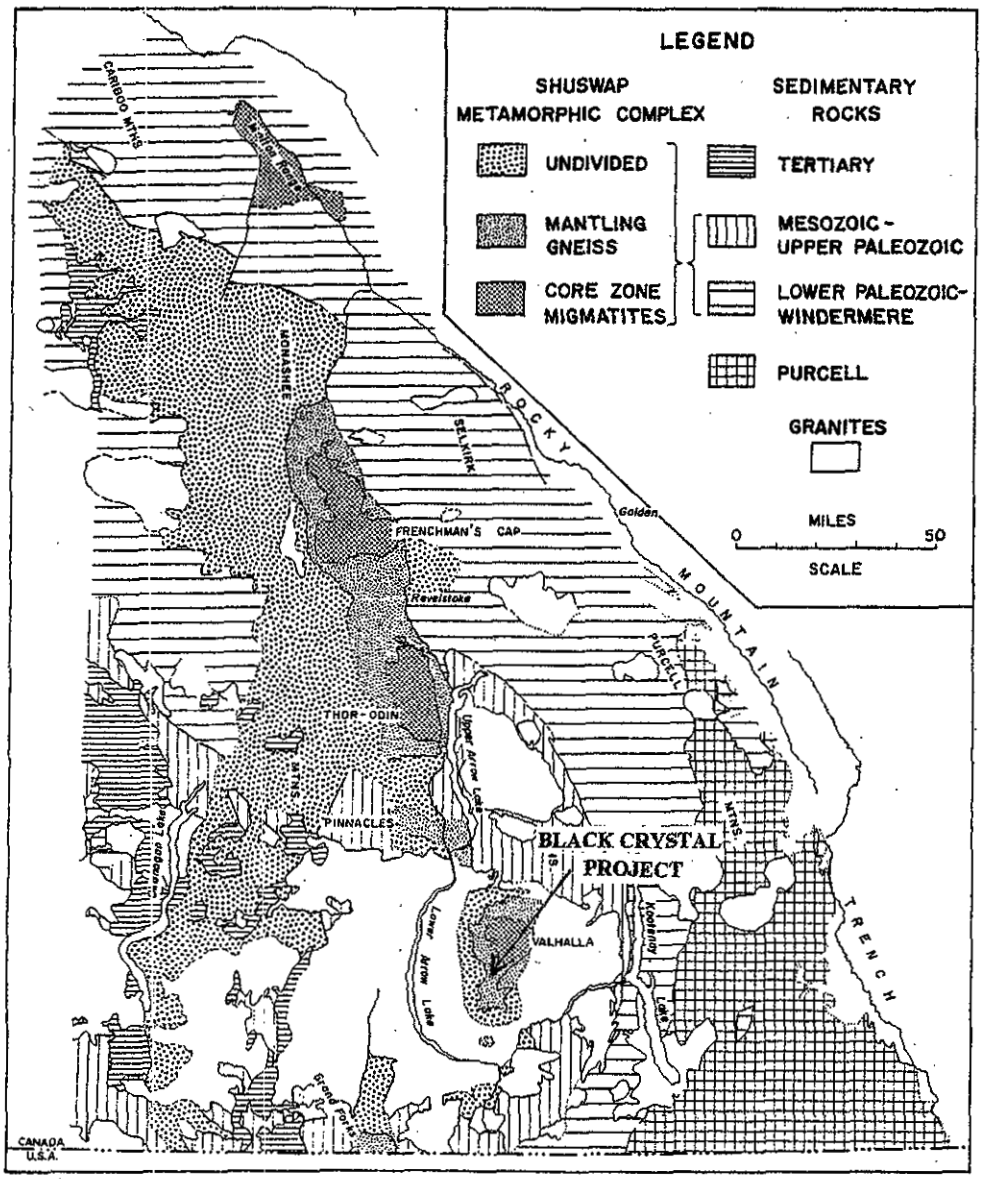
The Black Crystal property was originally discovered and staked by Mr. Steve Paszty of Castlegar, BC in the early 1970's as the Molly 1-4 claims. In the ensuing years the claims were allowed to lapse due to the lack of interest in graphite at the time. The claims were restaked by Mr. Paszty in early 1992 and optioned to Mr. Paul Schiller in July, 1993. Further claims were staked after this to consolidate the land package. A reverse circulation drilling program was conducted in 1994 consisting of six holes totalling 250 metres. Graphite recovery was a problem using this method of drilling. In 1995 a diamond drilling program was undertaken which was comprised of 13 holes totalling 577 metres. In late fall of 1995 a bulk sample of 3000 tons was mined and hauled to the mill site at Koch Creek. Some metallurgical work was carried out on this bulk sample.

5.0 REGIONAL GEOLOGY

The Black Crystal Graphite Project of Crystal Graphite Corporation is located in the southern Omineca Morphogeological Belt. This belt along with four others form the Canadian Cordillera continental crust. Each belt is defined by a combination of lithological, structural, tectonic and physiographic characteristics. The Omineca belt is an uplifted region, extensively underlain by metamorphic and granitic rocks, (Gabrielse et al. 1991).

The Project is located within a metamorphic core complex, '*the Valhalla Complex*' which is a domal culmination in the southern Omineca belt. The Valhalla complex is a 30km x 90km upper amphibolite gneiss complex located at the eastern exposed edge of the Shuswap complex and is comprised of sheet-like layers of variably deformed paragneiss and middle Cretaceous to Eocene igneous rocks. The domal shape of the Valhalla complex is interpreted to be a result of tectonic denudation due to exhumation along Eocene normal faults, (Carr et al. 1987). The Valhalla complex is bounded on the top by the easterly directed Valkyr-Slocan Lake normal fault system. The Valkyr shear zone is a ductile shear zone that is arched over the complex and was active between 59 and 56 Ma. The Slocan Lake fault zone, which bounds the eastern margin of the complex, is a ductile-brittle normal fault that dips 30° to the east and may have had up to 15 – 20 km of dip-slip displacement along its central portion. Within the large scale 'dome' there are three subculminations or domes termed the Valhalla dome, the Passmore dome and southern Valhalla complex.

The project area is located specifically on the west-central flank of the Valhalla dome, (See Fig. 3). The Valhalla assemblage exposed on the west flank of the Valhalla dome, consists of a heterogeneous ~ 1.5km thick package of upper amphibolite facies pelitic schist, marble, calc-silicate gneiss, psammitic gneiss, metaconglomerate, amphibolite gneiss, and ultramafic schist. The base of the section is comprised of a sequence of conglomerate, calc-silicate gneiss, and marble interlayered with 50-100 m thick units of aluminum-poor semi-pelitic and pelitic schist, (units 1-3). Continuing up structural section the sequence becomes more carbonate rich, with metre-thick marbles and calc-silicate gneisses interlayered with quartzites and sillimanite-bearing pelitic schists (units 4-8). It also contains amphibolite gneiss and ultramafic schist, which do not occur in the structurally lower sections. The upper portion of the exposed sequence contains 30 m thick marble and quartzite layers (units 9 and 10). Metasedimentary rocks in the core of the Valhalla dome generally consist of psammite, semipelitic and pelitic schist, quartzite, marble, and calc-silicate and amphibolite gneiss. The main graphite-bearing units on the Black Crystal Property are part of unit 9, the Rinda marble of Shaubs and Carr. They describe it as a 20-40 m thick, massive coarse-grained granoblastic marble with layering



Regional geological setting of the Shuswap Metamorphic Complex in southeastern British Columbia.

FIGURE 3 – REGIONAL GEOLOGY (after Reesor & Moore, 1971)

where present, defined by thin graphitic layers and 30 cm to 1 m thick diopside-rich calc-silicate gneiss horizons and boudins.

6.0 DIAMOND DRILLING

Between November 4th and December 15th of 2000, Crystal Graphite Corporation conducted a diamond drilling program on their Black Crystal Graphite project in southwestern British Columbia. Twenty-two holes for a total of 1181 metres were drilled. (See Fig.4). Pertinent drill data are listed below.

TABLE 2 DRILL HOLE DATA

HOLE #	Grid Coordinates (GPS)		Dip of Hole	Azimuth of	Casing	Total
	Easting	Northing		Hole	Length (M)	Length (M)
BC0001	444725.252	5513997.064	-52.33	041.67	4.27	106.68
BC0002	444723.887	5513995.780	-90	ND	4.57	44.50
BC0003	444712.963	5513916.268	-54.67	040.50	2.44	82.30
BC0004	444711.543	5513915.072	-90	ND	3.05	52.12
BC0005	444764.483	5514096.948	-54.67	039.50	3.66	60.96
BC0006	444575.126	5513932.415	-53.00	045.33	0.92	63.70
BC0007	444574.105	5513931.189	-90	ND	2.13	49.68
BC0008	444576.748	5513820.362	-57.67	042.25	3.05	79.25
BC0009	444575.252	5513819.386	-90	ND	4.27	37.49
BC0010	444576.123	5513820.015	-70	042.25	2.74	21.95
BC0011*	444572	5513787	-54	042.00	1.83	39.62
BC0012	444578.510	5513751.248	-54.67	043.17	1.83	47.85
BC0013	444577.610	5513750.074	-90	ND	2.13	52.73
BC0014*	444525	5513929	-54.17	046.83	3.05	53.04
BC0015*	444533	5513880	-54.17	042.50	2.14	67.60
BC0016*	444597	5513685	-55.83	045.00	2.74	35.97
BC0017*	444842	5513871	-58.25	045.33	7.32	45.72
BC0018	444695.563	5513820.871	-54.58	047.67	4.57	51.82
BC0019	444676.950	5513725.433	-56.08	043.92	3.66	42.67
BC0020	444252.131	5513878.847	-90	ND	9.14	51.82
BC0021	444170.866	5513728.238	-90	ND	19.20	51.82
BC0022	444100.885	5513578.011	-90	ND	21.95	42.67

* **Coordinates for these holes attained using a handheld Garmin 12 GPS unit.**

FIGURE 4
Black Crystal Graphite Property
Quarry Site
1997/2000 Drill Hole Locations

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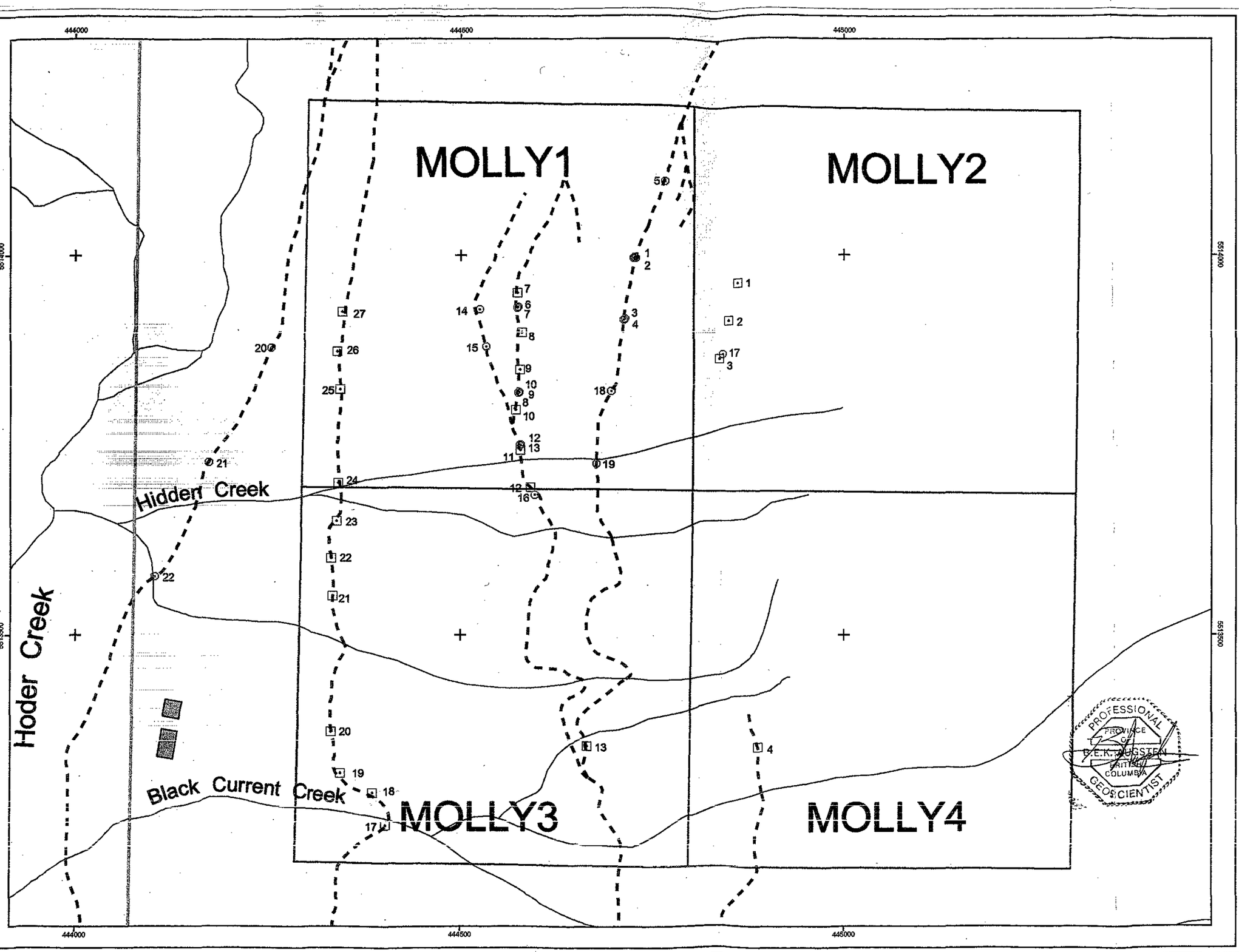


Map Data Legend

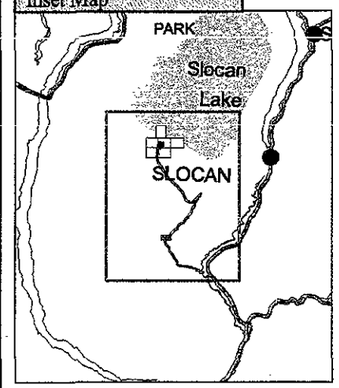
Plotting Date: February 27, 2001.
Plotting Scale: 1:5,000

Projection: UTM, Zone 11
North American Datum (NAD) 1983

TRIM Reference Sheets (1:20,000):
82F052, 82F062, 82F071, 82F072, 82F082

50 0 50 100 Meters

Inset Map



Cartographic Legend

- Road - Loose 1 Lane
- Road - Loose 2 Lanes
- Road - Paved
- Road - Rough
- Transmission Line
- Bridge
- Index Contour
- Intermediate Contour
- Building
- Graphitic Material Stockpile
- Middlings Storage Area
- Settling Pond
- Property Boundary
- Mineral Claim Boundary
- 2000 Drill Hole Location (GPS Verified)
- 1997 Drill Hole Location (GPS Verified)

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6.1 METHODOLOGY

Bergeron Drilling and Exploration Ltd. of Greenwood, BC was contracted to complete the diamond drilling. A track-mounted Longyear 38 was utilized. This is a self-contained unit with integral mud tanks and rod storage. The unitized mobile drill facilitated rapid drill moves and minimized site disturbance. Local streams provided drill water, though, because of the cold weather and single drill shift, a water truck was used to move water from streams to the drill. Drill collar locations were surveyed and the dip and azimuth of inclined holes were surveyed as well. At least one downhole survey was completed on each hole using a Tripari instrument which measures both dip and azimuth. Most hole locations were also picked up using a differentially-correctable GPS unit and all locations were also recorded by a non-correctable handheld GPS unit.

All core was logged at the company's mill site at the confluence of Koch Creek and the Little Slocan River. Core logging followed a chronological sequence as follows:

1. core layed out in sequence on benches,
2. footage blocks converted to metric
3. core recoveries calculated
4. box ends labelled
5. geotechnical logging of core completed
6. core logged geologically
7. samples identified and labelled for analysis
8. core photographed
9. core stacked to await splitting
10. relevant core split
11. samples bagged to await shipment

All core is presently stacked in a covered core storage facility and is easily accessible. Holes were labelled using a alpha-numeric system eg. BC0001 where BC – represents the property ie. Black Crystal, 00- year drilling occurred, ie. 2000 and 01 thru 22, hole number.

6.2 LITHOLOGICAL DESCRIPTIONS

No detailed surface mapping has been done to date on the Black Crystal Graphite property. In general, mapping is hampered by poor outcrop exposure in the lower elevation areas. However, bulk sample extraction, trenching and substantial drilling completed to date have assisted in the clarification of the property geology.

The property is underlain by paragneisses and marbles intruded by pegmatites, and leucocratic intrusive rocks belonging to the Eocene Ladybird intrusive suite.

The primary graphite bearing units identified to date are two conformable but distinguishable 'beds' of calcsilicate gneiss, (CS1 and CS2). These beds where mapped, striking at approximately 130° and dipping to the south at about 35°. Figure 5, illustrates a typical sectional view parallel to drill holes BC0001 and BC0002.

CALCSILICATE GNEISS 1: *This is one of the two principal graphite-bearing units* identified to date within the Black Crystal graphite property.

This rock is fine to medium grained, varying in colour from a light to medium grey to light to medium greenish grey. This unit is usually weakly to moderately foliated. It is also characterized by a distinctive grainy sucrosic texture. This unit reacts strongly to cold dilute hydrochloric acid. Mineralogy of this unit is comprised of calcite, quartz, diopside, graphite, pyrrhotite +/- pyrite, feldspar and scapolite.

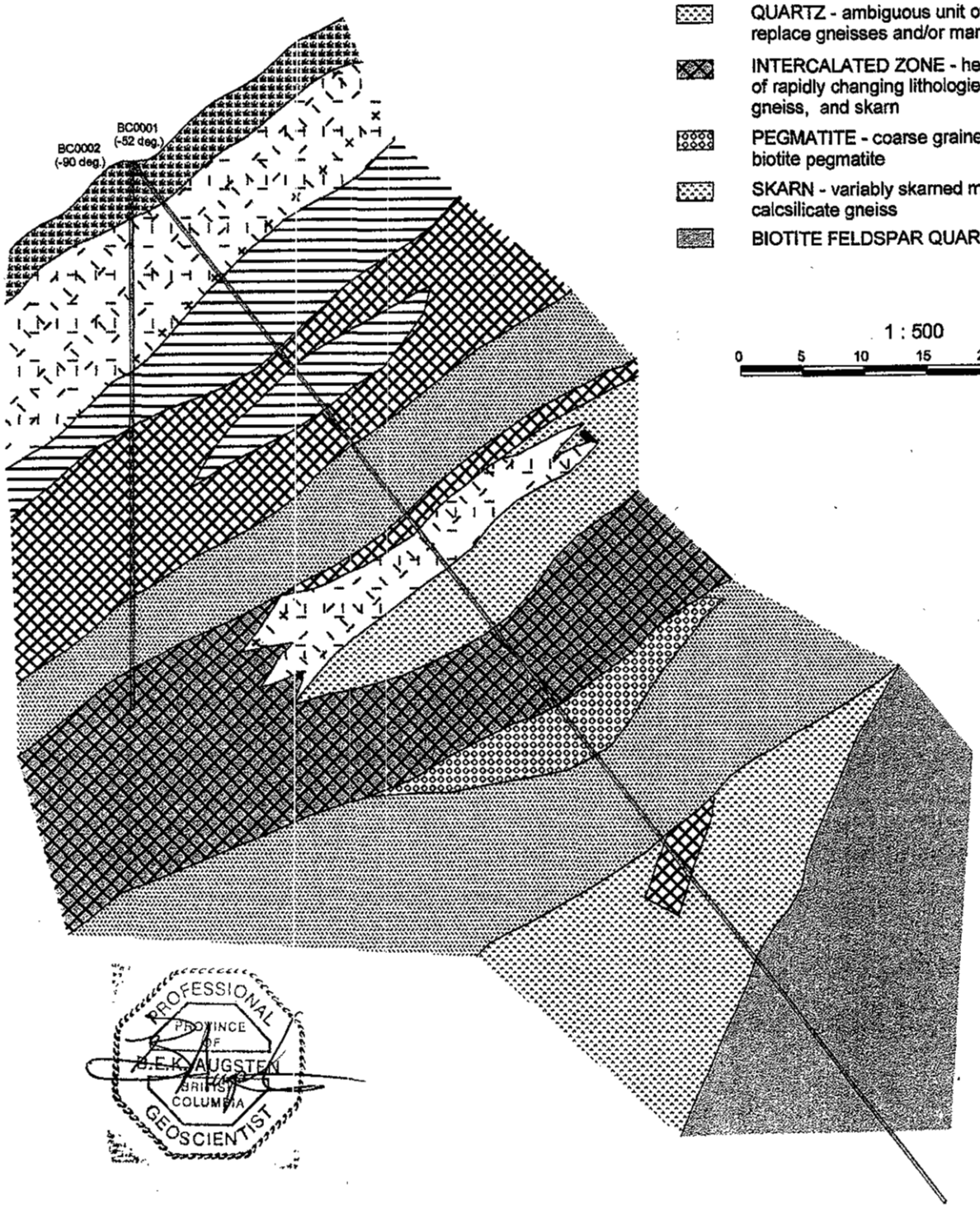
Modal Composition:	Quartz	35%
	?Scapolite	25%
	Clinopyroxene	15%
	Calcite	10%
	K-feldspar	5%
	Graphite	5%
	Pyrrhotite	2-3%
	Sphene	1-2%
	Amphibole	<1%
	Apatite	<1%

Note: Scapolite, Amphibole, Sphene, Feldspar and Apatite were not identified in hand specimen.

FIGURE 5

Longsection View Looking 310 deg.

Drill Holes BC0001, BC0002



Legend

- Drill Hole
- OVERBURDEN - heterogeneous stratified material comprised of organics, B-horizon, glacial till, and weathered bedrock.
- CALCSILICATE GNESS 1 - 1-3% graphite
- CALCSILICATE GNESS 2 - 2-5% graphite
- GRANODIORITE/QTZ MONZONITE - silts and dikes
- MARBLE (M1) - impure quartz, diopide graphite marble
- QUARTZ - ambiguous unit of quartz flooded, replace gneisses and/or marbles
- INTERCALATED ZONE - heterogeneous unit of rapidly changing lithologies including marble, gneiss, and skarn
- PEGMATITE - coarse grained feldspar quartz biotite pegmatite
- SKARN - variably skarned marble and calcsilicate gneiss
- BIOTITE FELDSPAR QUARTZ GNEISS

1 : 500

0 5 10 15 20 25 Meters

The textures and mineralogy of this rock suggests that this rock was probably derived by metamorphism of an impure calcareous sedimentary protolith.

CALCSILICATE GNEISS 2: This is the second of the two principal graphite bearing units on the Black Crystal Property. Both CS1 and CS2 are conformable to one another and in some instances are seen to be intercalated.
This unit is fine grained, moderately to well-foliated, and variable in colour from medium to dark grey to medium greenish-grey. This rock also has a grainy sucrosic tecture.
This rock is distinguishable from CS1 by two main factors. This rock tends to be darker in colour, somewhat finer grained, and contains small amounts, <1%, of a very distinctive, bright green, fine-grained, (<1mm), spinel with the colour of an emerald. This mineral is only seen in this unit, although short intercalations of this unit have been logged within larger sections of CS1 in a couple of holes, (BC0002, BC0012).

Modal Composition:	Quartz	30%
	?Scapolite	30%
	Clinopyroxene	10%
	Calcite	10%
	K-feldspar	10%
	Graphite	5%
	Pyrrhotite,pyrite	1-2%
	Sphene	1-2%
	Amphibole	<1%
	Spinel	<1%
	Apatite	2-3%
	Chlorite	trace

Note: This modal composition is from petrological work that was done on similar material from core extracted during the 1997 drilling program. (BCTT-4).

Also note, the scapolite identified in thin section was not recognized in hand specimen.

QUARTZ:(Q): Quartz occurs in the stratigraphic column usually as the footwall of the graphite bearing CS1 and CS2 units. This quartz has variable textures but is often characterized by a moderately to strongly limonite-stained, coarse-grained, recrystallized quartz. In places the quartz appears to replace biotite-feldspar gneiss, calcsilicate gneiss and coarse-grained marble. Thin section work has identified in addition to the quartz, minor sulfides (pyrrhotite), and traces of feldspar and chlorite/hydrobiotite). This rock has an ambiguous genesis but may in part be the product of partial melting of other rocks. Alternatively this quartz 'unit' may represent quartz flooding and as such is manifesting a cryptic structure.

MARBLE: (M1): This is a pale grey to almost white to pale greenish-grey, medium to coarse-grained quartz marble. This rock tends to be massive to very weakly foliated. This rock is comprised primarily of calcite, quartz, +/- diopside, locally phlogopite, rare pyrrhotite and/or pyrite, and variable amounts of graphite (usually <0.5%).
Modal Composition of this rock from petrographic work from 1997 core samples. These modal compositions can vary considerably from sample to sample, but the three main constituents are calcite , quartz, and diopside (clinopyroxene).

Modal Composition:	Calcite	55%
	Quartz	20%
	Clinopyroxene	5%
	Plagioclase(?labradorite)	7%
	Scapolite	7%
	Graphite	2-3%
	Pyrrhotite,pyrite, sphalerite	2-3%
	Sphene	1%
	K-feldspar	<1%
	Amphibole	1%
	Apatite	<1%

From the petrological description, graphite forms mainly euhedral, commonly bent flakes up to 1mm in diameter, in places associated with minor pyrrhotite as subhedra to 0.5mm, pyrite as subhedra to 1mm and traces of sphalerite to 0.35mm (sphalerite is dark red-brown and therefore is likely Fe-rich.)

QUARTZ SYENITE: (SY): This is a white to pale grey, massive, medium grained felsic rock composed mainly of white feldspar, with lesser grey quartz and minor green mafics. The feldspar is predominantly white k-feldspar (microperthitic?). This rock usually forms small sills or dikes within the metamorphic sequence.
From the petrographic description; the texture is certainly igneous-looking, but given the high grade of metamorphism, it could easily be derived by partial melting of a metasediment or metaintrusive. The field relations would be more helpful in determining this and in point of fact, they do appear to be crosscutting in drill core and in fact they appear to have thermal effects upon the surrounding calcsilicate rocks or marbles.

GRANODIORITE: (GD): Medium grained leucocratic biotite granodiorite. Composed of quartz (12-15%), Plagioclase (65%), Kspar (7%), Biotite (3-7%) and trace pyrite. This intrusive varies from massive to weakly foliated (gneissosity). This granodiorite forms sills and dikes on the property and specifically forms the northern boundary of the deposit. Petrological work has identified this as being a quartz monzonite.

PEGMATITE: (P): This is a medium to coarse grained leucocratic pegmatite comprised principally of feldspar, quartz, and minor biotite, pyrrhotite.
In places rocks labelled pegmatite are clearly such and in others the distinction is not so clear. Petrographic work on one sample from the 1997 drilling illustrates this. See sample #BCTT-17. In hand sample the rock is a white coarse-grained, massive gneiss or ?intrusive rock composed mostly of white feldspar and minor quartz with accessory deep brown ?biotite and sulfides that are weakly magnetic. 'Given the high-grade metamorphic setting, and the associated calc-silicate gneisses, it seems more likely to have been derived from a similar rock to that responsible for the calc-silicate gneisses (note relict ?scapolite) or by partial melting(sweating) of a similar rock.' Clearly these rocks are not easy to label.

The pegmatites usually occur as small dikes/sills or metamorphic 'sweats' intrusive to or part of all other units except perhaps for the granodiorite intrusion itself. They can occur in core lengths up to 2 metres but more typically are seen as 10 to 20 centimetre dikes or sweats. They are significant for two reasons:

1. these pegmatites usually carry no or very little graphite,
2. the pegmatites occur with some frequency including within the graphite-bearing calcsilicate gneisses such that in some instances they can comprise 25 - 30% of the interval, thereby diluting the overall grade,(e.g. BC0001, BC0012).

Pegmatites often have a well-defined thermal effect on the surrounding calcsilicate rocks, producing varying forms of contact skarn.

SKARN: (SK): The rock unit labelled skarn is an aphanitic, medium to dark green *quartz diopside calcite rock. This rock typically contains no graphite, but contains* variable amounts of sulphides, usually pyrrhotite +/- pyrite to 2 to 3%. Contacts are gradational. Within this unit, one occasionally sees biotite-rich sections that are manifested as aphanitic purplish-brown coloured rock, probably a type of hornfels. Also within this skarn we can see small(5-10cm) sections of recrystallized M1 marble which are converted to a quite coarse-grained calcite-rich rock with individual calcite crystals to 5mm and also distinctive small (1mm x 1mm) dark green garnet? metacrysts and occasionally coarse-grained tremolite. It appears that this skarn rock is a result of contact metamorphism by pegmatite and/or qtz syenite dikes.

INTERCALATED ZONE: (IZ): This is a somewhat enigmatic 'unit' consisting of a rapidly changing intercalated sequence of various lithologies. Typically this sequence comprises skarned and hornfelsed metasediments, biotite gneiss, marble and both pegmatitic and quartz syenitic intrusions. Contacts with other units are typically gradational. For instance, frequently as in BC0004 this zone grades into a predominantly marble (M1) unit. The contact is placed where marble predominates and as such is somewhat subjective.

BIOTITE-FELDSPAR-QUARTZ GNEISS: (BFQGN): This is a fine to medium grained, well-foliated rock, dark brown to brown with white bands and lenses of varying proportions of quartz and feldspar. Overall composition includes biotite, feldspar and quartz with variable amounts of sulphides. Occassional garnets are seen in this unit as well. This is not an ore-bearing unit.

6.3 DESCRIPTION OF UNCONSOLIDATED MATERIALS

The bedrock surface on the Black Crystal Property is mantled by a heterogeneous cover which includes organic material, B-horizon soils, heterogeneous glacial till and variably weathered bedrock. With the exception of the organic layer, all layers contain graphite to a greater or lesser extent. It is important to note that the total thickness of the unconsolidated material varies greatly from 1.5 metres to plus 5 metres. The organics layer appears constant in thickness at about 25 to 30 centimetres. All other layers are variable in thickness.

The best graphite-bearing material is contained within the weathered bedrock, specifically weathered ***calcsilicate gneiss 1*** and ***calcsilicate gneiss 2***. The graphite grade in this material appears to be upgraded for the following reasons.

1. Sulphides within the calcsilicate gneiss are oxidized producing sulphuric acid which leaches the carbonate from the rock producing an enriched material with respect to graphite, and
2. Sampling of this material is selective in the sense that large pieces of contained pegmatite are either not sampled or screened out during bulk sample extraction.

6.4 MINERALIZATION AND ALTERATION

Graphite mineralization occurs in several different rock types on the Black Crystal Property but only occurs in significant amounts in two conformable calcsilicate gneiss units, CS1 and CS2. In both of these rock units graphite occurs as disseminated individual crystals varying in size from 0.5mm to 1.0mm. Graphite crystals define a weak to moderately well-developed foliation. In CS1 graphite varies from 1-3% as disseminated crystals and in CS2 from 2-5%. CS2 is consistently a higher grade unit. This unit is distinguished by the presence of 0.5 to 1.0% disseminated bright emerald green spinel metacrysts. In addition this unit appears to contain higher concentrations of pyrrhotite to 2-3%. Graphite mineralization is not related to any secondary alteration identified to date. The most important alteration observed is contact metasomatism between calcsilicate and/or marble units and pegmatites, granodiorite intrusions or quartz syenite intrusions. These contacts are clearly skarned as described earlier. The net effect however is the decrease in graphite content in these zones.

6.5 ANALYTICAL METHOD

All split core was sent to International Metallurgical and Environmental Inc. in Kelowna, BC for analysis. Analytical Results are available in Appendix I. Samples are first dried and then crushed using a TM engineering jaw crusher to produce a product that is approximately 100 percent minus 6mesh. This crushed product is used for sub-sampling and assaying. The crushed material is riffle split to produce a 200 gram sample for pulverizing in preparation for assaying. Samples are then pulverized using a ring and puck pulverizer. A product is produced that completely passes 150 mesh. Typically the pulverizer is cleaned with silica sand between samples to minimize contamination of concurrent samples.

The actual analytical procedure to arrive at the graphite content is a two stage process based on total carbon analysis. An assumption is made regarding the occurrence of carbon bearing minerals in this procedure, in that they are either acid soluble carbonates or graphite. The presence of organic carbon in the form of plant matter or soil can render this procedure inaccurate.

In summary all samples are washed in dilute acid in order to eliminate any carbonates from samples prior to total carbon analysis. A Leco carbon analyzer is used for total carbon analysis.

The procedure is as follows:

1. A 0.010g – 0.250g sample is accurately weighed into a Leco crucible. (Sample weight may be altered depending on expected graphite content)
2. Connect crucibles to filtering apparatus.
3. Rinse with acetone, then rinse with small amounts of dilute HCl (small amount of liquid is used to ensure the graphite does not climb up and over top of crucible)
4. Repeat step 3 until fizzing stops completely (this indicates the removal of all carbonate)
5. Final rinse is with acetone to push the graphite down into the bottom of crucible.
6. Dry in oven at 100 degrees C for 20-25 minutes.
7. Now the samples are ready for carbon analysis using the LECO analyzer. The total carbon value obtained from the LECO analysis is reported as the graphite content.

6.6 RESULTS

The diamond drilling program was successful in outlining two conformable calcsilicate units that contain significant graphite concentrations. Importantly, these graphite bearing units are distinguishable and somewhat predictable in their spatial distribution. Because any discussion of economics is so dependent on the marketing aspects of graphite, it is somewhat difficult to categorize intersections in an economic sense, it is better at this stage to discuss intersections in terms of higher or lower grade. Intersections of greater than 1% are tabulated below.

TABLE 3 SIGNIFICANT DRILL INTERCEPTS

HOLE #	FROM (M)	TO (M)	WIDTH (M)	GRAPHITE (%C)
BC0001	**10.00**	**19.74**	**9.74**	**2.03**
including	**11.55**	**19.74**	**8.19**	**2.79**
	39.00	41.87	2.87	1.48
	61.00	69.92	8.92	1.84
including	16.60	20.00	3.40	2.74
BC0003	**2.66**	**18.43**	**15.77**	**1.50**
including	2.66	4.60	1.94	4.17
BC0004	**3.43**	**22.12**	**18.69**	**1.48**
including	3.43	6.16	2.73	2.79
BC0005	6.70	9.83	3.13	1.44
BC0008	**3.05**	**7.86**	**4.81**	**2.14**
	11.86	**26.23**	**14.37**	**1.28**
BC0009	**5.21**	**28.90**	**23.69**	**1.43**
BC0011	**8.92**	**32.00**	**23.08**	**1.47**
including	**8.92**	**17.10**	**8.18**	**2.12**
BC0012	*6.00*	*22.00*	*16.00*	*1.18*
	25.55	37.00	11.45	1.15
BC0013	**8.00**	**49.86**	**41.86**	**1.10**
including	8.00	11.58	3.58	1.51
	13.71	16.59	2.88	2.50
	22.51	25.00	2.49	1.13
	28.00	34.00	6.00	1.26
	38.00	41.86	3.86	1.63
	42.65	44.00	1.35	1.34
	47.18	49.86	2.68	1.37
BC0014	**8.00**	**9.79**	**1.79**	**1.79**
BC0015	**2.44**	**12.60**	**10.16**	**1.56**
BC0016	4.00	6.00	2.00	1.09
	10.00	12.00	2.00	1.10
	16.00	18.00	2.00	1.47
	20.00	22.00	2.00	1.40
BC0017	**9.09**	**12.72**	**3.63**	**1.47**
	17.39	30.15	12.76	1.50
including	**17.39**	**20.85**	**3.46**	**1.93**
BC0018	**4.57**	**8.65**	**4.08**	**2.32**
	12.69	30.87	18.18	1.41
BC0019	**3.66**	**4.86**	**1.20**	**3.31**
	10.74	**27.43**	**16.69**	**1.83**
including	10.74	11.74	1.00	4.48
including	13.65	17.40	3.75	2.33
including	18.82	27.43	8.61	1.93
	30.85	34.47	3.62	1.36
BC0020	45.43	46.63	1.20	1.47
BC0021	26.25	27.35	1.10	2.08

6.7 GRAPHITE GENESIS

Marchildon et al, 1992 in their paper on the AA Graphite Deposit near Bella Coola describe some possible sources of carbon which may have been the source of the graphite in that deposit. The suggestions are valid for the Black Crystal deposit and at the very least provoke some different ways of thinking with respect to the genesis.

They are as follows.

1. in situ reduction of organic matter during metamorphism
2. devolatilization of organic matter to produce CO_2 or CH_4 (or both) in the fluid phase.
3. destabilization of early graphite to produce carbon-bearing volatiles CO_2 and CO_4
4. decarbonation of carbonate minerals
5. injection of carbon-bearing fluids from the deep crust or mantle
6. a combination of the above.

Within the Black Crystal deposit, the uniform disseminated nature of the graphite within the calcsilicate gneisses and marbles (high grade metamorphic rocks) suggests in situ reduction of some form of organic matter during metamorphism.

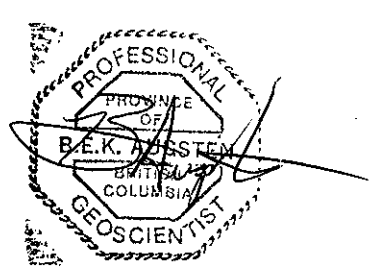
7.0 CONCLUSIONS AND RECOMMENDATIONS

The diamond drilling program was successful in identifying the important graphite-bearing horizons. In addition the drill program added to our knowledge of the spatial distribution of those horizons. These horizons are still open to the west, east and south but appear to be cut off to the north. While we did gain appreciable knowledge of the important stratigraphy there are still some questions to be resolved regarding the apparent structural reversals that we observed between the two principal calcsilicate gneiss horizons.

Future drilling and exploration should be directed toward extending the known graphite-bearing zones along strike and up and down dip. In addition the drilling should be of sufficient density to explain the structural ambiguities and to be able to calculate a measured and indicated reserve. Because of the apparent shallow nature of the zone, drill holes will be relatively short. A total of 1500 metres of drilling is recommended in approximately 30 holes.

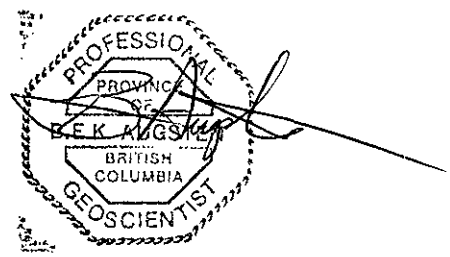
With respect to the unconsolidated material more trenching is recommended with a sufficient density to both understand the spatial and grade distribution within this material. A series of vertical trenches along existing and new access trails with a spacing of not more than 50 metres is recommended. A minimum of 100 such trenches would be required.

Lastly, it is strongly recommended that surface geological mapping be undertaken as early as possible in the upcoming field season. This will be an ongoing effort as new access trails are constructed for trenching and drilling. This will aid considerably in the geological interpretation and may help to unravel some of the structural ambiguities that were seen in the drilling.



8.0 STATEMENT OF EXPENDITURES

Diamond Drilling	Bergeron Drilling and Exploration Ltd. 1181 metres of NQ core	$73,360.00
Water Truck	October 29th to December 12th /2000	5,550.00
Excavator	55 hrs @ $135.00	7,425.00
Labour	Geologist 46.5 days @ $350.00/day Core splitter (29.5 hrs @ $15.00) Surveyer (73 hrs @ $25.00)	16,275.00 442.50 1,825.00
Truck (4x4)	46.5 days @ $60.00	2,790.00
Fuel		1,319.87
Tripari	Downhole Survey instrument (Nov.4 – Dec. 15)	1,466.39
Analyses/Petrography	Graphite assays Petrographic studies	8,041.00 1,911.56
Shipping/Freight		1,140.24
Report Preparation		5,000.00
	FINAL TOTAL	$126,546.56



9.0 REFERENCES

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10.0 STATEMENT OF QUALIFICATIONS

I, Bernhardt E.K. Augsten of the City of Nelson, British Columbia, hereby certify that:

1. I am a graduate of Carleton University with a B.Sc. Hons. in Geology (1985).

2. I am presently self-employed as a Consulting Geologist

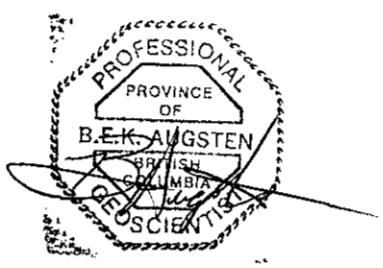
3. *I have practiced as a geologist for the last 16 years in Ontario, Quebec,* Manitoba, British Columbia, Arizona, Alaska and Mexico.

4. I supervised this diamond drill program including logging and sampling all the core.

5. I have worked on several other projects in the region over the last nine years

6. I am a registered Professional Geologist, registered in the Province of British Columbia..

7. I have not received, nor do I expect to receive, any interest in the properties or securities of Crystal Graphite Corporation.



APPENDIX I ANALYTICAL RESULTS

International Metallurgical and Environmental Inc.
Certificate of Analysis

Project: Industrial Mineral Park Mining Corp.
Certificate No: 2809
Date: December 6, 2000

Sample	% Graphite	Sample	% Graphite
4801	0.43	4815	1.66
4802	0.58	4816	0.14
4803	1.00	4817	0.49
4804	1.01	4818	1.44
4805	2.45	4819	1.59
4806	3.83	4820	1.84
4807	3.10	4821	2.56
4808	1.83	4822	1.57
4809	2.07	4823	1.08
4810	0.11	4824	2.53
4811	2.74	4809 dup	2.46
4812	0.93	4818 dup	1.43
4813	2.28	1% std	1.09
4814	0.14		

Approved: H Dufresne

Send copy to Doug Gray

International Metallurgical and Environmental Inc.
Certificate of Analysis

P.O. #: 2820
Project: Crystal Graphite
Date: January 4, 2001

Sample	% Graphite	Sample	% Graphite
4825	0.42	4861	0.15
4826	0.75	4862	0.35
4827	0.71	4863	0.28
4828	0.71	4864	0.27
4829	1.03	4865	0.43
4830	1.49	4866	0.02
4831	1.78	4867	3.53
4832	2.30	4868	1.80
4833	3.04	4869	0.61
4834	0.92	4870	0.97
4835	0.04	4871	1.21
4836	0.15	4872	1.60
4837	0.20	4873	1.54
4838	0.42	4874	1.51
4839	0.34	4875	1.38
4840	0.09	4876	1.20
4841	0.13	4877	0.14
4842	4.17	4878	0.13
4843	0.74	4879	0.06
4844	1.07	4880	0.10
4845	1.03	4881	0.09
4846	1.22	4882	0.25
4847	1.27	4883	0.24
4848	1.40	4884	0.20
4849	1.25	4885	0.33
4850	0.96	4886	0.32
4851	0.10	4887	0.46
4852	0.20	4888	0.22
4853	0.16	4830 prep ck	1.43
4854	0.25	4835 prep ck	0.02
4855	0.11	4839 prep ck	0.36
4856	0.13	4841 prep ck	0.10
4857	0.03	4862 prep ck	0.41
4858	0.17	4869 prep ck	0.67
4859	0.03	4874 prep ck	1.56
4860	0.08	4876 prep ck	1.33
1% Std	0.90	10% Std	9.6

International Metallurgical and Environmental Inc.
Certificate of Analysis

P.O. #: 2832
Project: Crystal Graphite
Date: January 16, 2001

Sample	% Graphite	Sample	% Graphite
4889	1.70	4916	0.15
4890	1.25	4917	0.28
4891	0.19	4918	0.14
4892	0.02	4919	<0.02
4893	0.20	4920	0.07
4894	0.02	4921	0.98
4895	0.16	4922	0.72
4896	0.05	4923	0.95
4897	0.04	4924	0.05
4898	0.23	4925	0.05
4899	0.41	4926	0.09
4900	0.12	4927	0.20
4901	0.10	4928	0.24
4902	0.17	4929	0.20
4903	0.20	4930	0.37
4904	0.06	4931	0.41
4905	0.10	4932	0.47
4906	0.07	4933	0.14
4907	0.14	4934	0.08
4908	0.19	4904 prep ck	0.07
4909	0.80	4908 prep ck	0.14
4910	0.10	4911 prep ck	0.17
4911	0.19	4926 prep ck	0.09
4912	0.13		
4913	0.60	1.00% std	0.95
4914	0.37	10.0% std	9.7
4915	0.36		

Approved: H. Dahl

International Metallurgical and Environmental Inc.
Certificate of Analysis

P.O. #: 2844
Project: Crystal Graphite
Date: February 1, 2001

Sample	% Graphite		Sample	% Graphite
4935	2.41		4971	1.73
4936	1.91		4972	1.05
4937	2.06		4973	1.49
4938	0.31		4974	1.29
4939	0.81		4975	1.21
4940	0.47		4976	1.56
4941	1.44		4977	1.46
4942	1.06		4978	1.39
4943	1.51		4979	1.05
4944	1.37		4980	1.06
4945	1.03		4981	0.07
4946	1.23		4982	<0.02
4947	1.17		4983	0.81
4948	1.64		4984	0.73
4949	0.06		4985	0.85
4950	0.12		4986	0.42
4951	0.13		4987	1.27
4952	0.05		4988	1.48
4953	0.13		4989	2.39
4954	0.23		4990	3.30
4955	0.39		4991	0.33
4956	0.15		4992	1.11
4957	0.30		4993	1.01
4958	0.42		4994	1.37
4959	0.54		4995	1.15
4960	0.35		4996	1.0
4961	0.19		4997	1.34
4962	0.34		4998	1.46
4963	0.40		4999	0.90
4964	0.13		5000	0.15
4965	0.52		5001	0.07
4966	0.10		5002	0.03
4967	0.33		5003	0.40
4968	1.53		5004	0.16
4969	2.84		5005	0.89
4970	1.85		5006	0.31

Approved: H. Dufresne

International Metallurgical and Environmental Inc.
Certificate of Analysis

P.O. #: 2844
Project: Crystal Graphite
Date: February 1, 2001

Sample	% Graphite		Sample	% Graphite
5007	0.92		5043	1.20
5008	2.10		5044	1.19
5009	1.46		5045	1.38
5010	1.01		5046	0.72
5011	0.54		5047	0.68
5012	1.51		5048	1.25
5013	0.49		5049	2.05
5014	2.60		5050	0.05
5015	0.87		5051	1.34
5016	1.39		5052	0.40
5017	0.42		5053	0.04
5018	0.14		5054	1.25
5019	1.09		5055	1.62
5020	0.58		5056	0.12
5021	1.35		5057	0.06
5022	1.55		5058	0.90
5023	1.29		5059	0.35
5024	1.05		5060	1.79
5025	0.72		5061	0.20
5026	0.19		5062	0.19
5027	0.80		5063	0.26
5028	0.54		5064	0.36
5029	0.19		5065	0.34
5030	0.89		5066	0.10
5031	1.43		4944 prep ck	1.37
5032	1.62		4954 prep ck	0.2
5033	0.34		4964 prep ck	0.18
5034	1.34		4974 prep ck	1.38
5035	2.93		4984 prep ck	0.79
5036	0.72		4994 prep ck	1.30
5037	1.59		5004 prep ck	0.13
5038	0.09		5014 prep ck	2.54
5039	2.23		5024 prep ck	1.04
5040	0.99		5034 prep ck	1.27
5041	0.22		5044 prep ck	1.17
5042	0.75		1.00 % std	0.97

Approved: H. Dyf

International Metallurgical and Environmental Inc.
Certificate of Analysis

P.O. #: 2861
Project: Crystal Graphite
Date: February 9, 2001

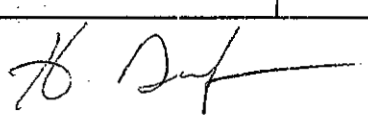
Sample	% Graphite		Sample	% Graphite
5067	1.28		5092	1.09
5068	1.65		5093	0.11
5069	1.61		5094	0.16
5070	1.51		5095	1.10
5071	1.63		5096	0.65
5072	1.65		5097	0.77
5073	<0.02		5098	1.47
5074	0.19		5099	0.77
5075	0.31		5100	1.40
5076	0.10		5101	0.42
5077	0.13		5102	1.47
5078	0.09		5103	0.07
5079	0.15		5104	0.84
5080	0.11		5105	0.09
5081	0.22		5106	0.17
5082	0.23		5107	3.75
5083	0.06		5108	1.12
5084	0.30		5109	0.08
5085	0.52		5110	1.58
5086	0.32		5111	1.18
5087	0.22		5112	1.42
5088	0.28		5113	1.76
5089	0.38		5114	1.04
5090	0.16		5115	0.03
5091	0.35			
5072 prep ck	1.63		5106 prep ck	0.12
5082 prep ck	0.18		5115 prep ck	0.02
5092 prep ck	1.02		1 % std	0.97

Approved:

International Metallurgical and Environmental Inc.
Certificate of Analysis

P.O. #: 2862
Project: Crystal Graphite
Date: February 9, 2001

Sample	% Graphite		Sample	% Graphite
5116	1.58		5146	2.08
5117	3.37		5147	1.44
5118	2.42		5148	2.55
5119	0.25		5149	0.35
5120	0.25		5150	0.42
5121	0.03		5151	1.35
5122	1.61		5152	1.38
5123	1.39		5153	0.70
5124	1.28		5154	1.24
5125	1.42		5155	0.95
5126	1.25		5156	0.26
5127	1.37		5157	0.62
5128	1.26		5158	0.73
5129	1.29		5159	0.42
5130	2.40		5160	0.16
5131	1.36		5161	1.47
5132	0.35		5162	0.36
5133	3.31		5163	0.32
5134	0.23		5164	0.32
5135	0.20		5165	2.08
5136	0.12		5166	0.48
5137	0.03		5167	0.08
5138	4.48		5168	0.16
5139	0.09		5169	0.69
5140	0.68		5170	0.46
5141	2.83		5171	0.48
5142	2.05		5172	0.20
5143	0.07		5173	0.36
5144	2.50		5174	0.04
5145	1.51		5175	0.38
5125 prep ck	1.43		5156 prep ck	0.26
5136 prep ck	0.18		5166 prep ck	0.41
5146 prep ck	2.08		50% std	48.0

Approved: 

APPENDIX II DIAMOND DRILL LOGS

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0001** **Page** **1** **of** **7**

SURVEY DATA											DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1314.95
Collar			-52..33°		041	40						APPROX. EASTING (m)	725.26
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1631.27
	170		52°		013°							DATE DRILLING STARTED	NOV. 4/2000
	340		53°		023.5°							DATE DRILLING ENDED	NOV. 8/2000
													(ft) (m)
												TOTAL DEPTH	350' 106.68
												CASING DEPTH	14 4.27
												CASING	
												STEEL IN HOLE	NO Ft.
												LOGGED BY	B.E.K. AUGSTEN
												LOGGING DATE	NOV. 14-23/2000

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
0	4.27		OVERBURDEN sand,boulders, fine gravel			
4.27	11.55	CS1	CALCSILICATE GNEISS 1 Lithology: light to medium grey to light grey/green coloured rock, fine to medium grained with calcite grains <1mm in diameter. Rock has a sucrosic texture. Mineralogy: Rock is distinguished by the presence of 3-5% light to medium green diopside grains which produces the green colouration. Rock also contains 1-2 % graphite as discrete discs (<0.5mm diameter) which describe a weak lepidoblastic foliation. Locally over 5-10cm, heavier concentrations of graphite giving the rock a darker grey look. *Structure*: *Rock has a weak lamination/foliation manifested by the orientation of the graphite.* (gneissic foliation) Foliation (S_1.) @ 75-85° to C.A. Within this unit there is some mineralogical and more significantly textural variability. There are some coarse grained sections as follows: 8.50 – 9.02 – somewhat coarser material of similar composition. Grain size 1 - 1.5 mm with corresponding increase in graphite grain size 10.30 – 10.66 - pale beige/yellowy cream coloured coarse marble with grain size of 1-1.5mm and graphite crystals to 1.5mm but average 0.75 mm.	4.27	6.00	4801
				6.00	8.00	4802
				3.00	10.00	4803
				10.00	11.55	4804

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			As well with in this calc-silicate unit there are several qtz/fsp/+/- biotite +/-graphite, 'pegmatite' sweats. (recrystallized qtz-feldspathic material – protolith unknown). We see these in outcrop as discontinuous lenses or boudins up to and perhaps exceeding 4mX 3m. They generally contain variable amounts of coarser graphite but usually <0.3%. They are however, significant in that they make up a large proportion (25%) volumetrically of this marble unit. They occur @: 4.35 - 4.46 (.11) 4.64 - 4.75 (.11) 6.41 - 6.62 (.21) 6.76 – 7.17 (.41) 1.84 m (25% of unit) 8.11 – 8.27 (.16) 8.61 – 8.66 (.05) 9.16 – 9.38 (.22) 10.97 – 11.5 (.58) Alteration: Fracture controlled oxidation is well developed throughout unit manifested as limonite development on fxs.			
		CS2	CALCSILICATE GNEISS 2:	11.55	13.00	4805
11.55	19.74		Lithology: Medium to dark grey, fine-grained foliated gneiss containing variable amounts of diopside, graphite and spinel. This unit is distinguishable by two mineralogical features, graphite and spinel. This is the graphite-bearing gneiss unit that weathers to a sand like consistency at surface. Mineralization: Rock contains 5-7% fine grained graphite at 0.25 – 0.50mm in diameter. What really distinguishes this unit is the presence of bright emerald- green spinel grains (<0.5%) typically 0.1-0.3 mm in diameter. (Note: we only see this spinel in the this unit) Trace pyrite +/- pyrrhotite. Structure: Structurally this rock is distinguishable from the other gneiss unit by a well-developed foliation or schistosity S_1= 75° to C.A. @ 13.74 → 14.02 – variable folding foliation. (Note: we don't see upper contact with the other marble unit. Upper contact with a quartz feldspar boudin. L.C. sharp @ 75° to C.A. Med → coarse-grained granodiorite dikes/dikelets occur at the following locations.	13.00	15.00	4806
				15.00	17.00	4807
				17.00	18.00	4808
				18.00	19.74	4809

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			They occur @ 16.04 -16.07 (.03) 16.15 - 16.22 (.07) 16.29 – 16.31 (.02) 16.38 – 16.61 (.23) 17.52 – 17.56 (.04) 17.91 – 17.93 (.02)			
19.74	21.33		Granodiorite Gneiss: (Foliated Granodiorite): Medium grained leucocratic biotite granodiorite*; **(Note: subsequent petrological work has shown this unit to be a quartz monzonite.)***	19.74	21.33	4810
			Model Composition: Qtz: 12-15% Plag: 65% Kspar: ? 7% Biotite: 5.7% Py/Po: Trace			
			Non magnetic. This intrusive has a weakly- developed foliation (gniessosity) manifested by the biotite. S_1= 80° to C.A. @ 20.85 granodiorite grades into = more leurocratic intrusive with no or minor biotite and increase in disseminate py+/- (<0.7%) L.C. market by a contact metamorphic assemblage of coarse crystalline calcite green grossular garnet, and graphite. L.C. sharp @ 35° to C.A.			
21.33	25.61	CS2	**CALCSILICATE GNEISS 2:** (Same unit as above the granodiorite).	21.33	23.00	4811
(4.28)				23.00	24.00	4812
			- Strong contact effect for 15cm below contact. Normally fine grained foliated Graphite-bearing marble converted to a coarsely crystalline marble/calcsilicate with coarse graphite crystals and section of green grossular garnet crystals. - Mineralization: Overall 5-7% diss graphite. Locally much higher as at 24.37 to 24.65 where graphite exceeds 10% - Several qtz – rich metamorphic "sweats" totalling ~ 45 cm within this section. These typically don't have much or any graphite.	24.00	25.61	4813
25.61	29.59		**Foliated Granodiorite (Qtz Monzonite).** Same rock as @ 19.74 → 21.33m - Med grained ;eurocratic biotite granadiarite. - C.I = 5			

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			5-7 % biotite weakly → modestly foliated as manifested by biotite Foliation: 40° to C.A. (variable) U.C. @ 65° to C.A. L.C. @ 40° to C.A. Note: U.C. displays a 1cm chill margin.			
29.59	31.06	SK	**SKARN:** Qtz-diopside – Actinolite Skarn Med → dk green, hard, massive rock consisting of intergrown qtz/diopside+/- actinolite 1-2 % diss py Surprisingly abrupt but irregular lower contact.			
31.06	36.50	M1	**Quartz-Diopside Marble – M1** - *Pale grey to pale greenish grey medium to coarse grained qtz marble* - Recrystallized qtz grains to 2mm X 3mm - Contains tr→ <0.5 % diss graphite. Note: Graphite in this particular rock is generally fine grained but somewhat variable. Generally graphite grain size appears to mimic host rock grain size. - Several 10-15cm zones of fracture-controlled oxidation manifested by fracture-controlled and weak pervasive limonite. - Marble varies in structure from massive to having a weak planar fabric @ 70° to C.A - < 0.5% diss pyrite. - - Tr. diss po (non-mt. Po). From 35.24 → 36.17 – see ~1% med. green grossular garnet metacrysts. L.C. abrupt but somewhat irregular @ ~ 15° to C.A.	31.06 33.00 35.00	33.00 35.00 36.50	4814 4815 4816
36.50	41.87	GD	**Biotite Phlogopite Granodiorite:** Med → coarse – grained non – fol. → wkly foliated two mica granodiorite. - <0.5% diss py - 4-5% biotite			

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			Tr. Phlogopite; Non-magnetic; U.C. strongly altered or may contain a 20cm section of digested marble.			
				38.05	39.00	4817
38.05	41.87	CS1	**Calcsilicate Gneiss 1:** - Weakly foliated/laminated, fine to med. – grained, med grey → to faint greenish grey coloured rock - *1-3% diss graphite as discrete diss crystals with crystal size typically < 0.5 X 0.5mm; Tr. → <<0.3% diss. Pyrite* 38.05 - 38.70 – Upper 65cm of unit composed almost entirely of a coarse grained limonitically stained gtz feldspar pegmatitic sweat. 40.40 – 41.24 - Marble has been pervasively limonitized – (I'm not sure what is being converted to limonite? (biotite?). @ 41.70 – well developed foliation @65° to C.A.	39.00	41.00	4818
				41.00	41.87	4819
41.87	48.17	Q	**'Qtz Vein'** - Recrystallized qtz-rich metamorphic sweat with the appearance of a qtz vein. When seen in outcrop they tend to be discontinuous boudin- like bodies of variable size but measured up to 4m X 3m. - In core the unit has a coarse 'crystalline' ? /granular look to it – composed primarily of qtz with lesser feldspar, and minor biotite. - Within the vein are several small intervals of biotite fsp-gtz gneiss and biotite - calc-silicate gnesiss. - What distinguishes this unit visually is the strong fracture-controlled and pervasive limonite. - Mineralization: Tr. Graphite Tr. Po, py. - Structure: Gneissic foliation @ 85° to C.A. - Lower contact not abrupt but more gradational in the sense that we start seeing more and more biotite – fsp-qtz gneiss intervals with a minor lesser after vein zones.			
48.17	56.58	IZ	***INTERCALATED ZONE:*** - Intercalated sequence of a fine grained biotite qtz-fsp gneiss with a med green qtz-diopside calcsilicate rock (skare) - minor narrow ,<10cm lenses of coarse – grained calcite – garnet - graphite marble - (Note: other than small marble layers no reaction to dilute HCl. - (Note: Garnet is a medium green – grossular? Garnet) - True pyrrhotite? ? ??? in gneissic layers.			

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			Intercalated Zone continued: - The BFQG is readily distinguished by it's reddish brown colouration intermixed in variable amounts with the white feldspar-qtz material. To the untrained eye this may first appear to be graphite – rich gneissic layers but that is not the case. - The last 1.3m of this section has more coarse grained qtz-diopside-calcite +/- graphite +/- garnet layers. These layers have a moderate reaction to HCl. - Lower contact abrupt @70° to C.A. - Some moderate F.C. limonite staining for 50cm above lower contact.			
56.58	61.29	P	**PEGMATITE:** - Coarse grained Feldspar Biotite – Qtz- Pyrrhotite Pegmatite ~1-2% pyrrhotite along fractures. This po is mt- whereas some of the other po seen in gneisses/ calcsilicate rocks tends not to be mt 57.87 – 58.30 – coarse grained calcite – qtz diopside marble with <0.5% coarse graphite metacrysts to 2mm X 1.5 mm. 58.86 – 59.79 – several screens of biotite – fsp qtz gneiss L.C. abrupt @ 85° to C.A.			
61.29	69.92	M1	**Qtz – Diopside – Graphite Marble: M1** - Medium to coarse grained, pale grey to pale greenish grey marble. - <0.5% diss fine → med grained graphite thoughout - Texture generally massive with a weak lamination evident occasionally - Tr. Diss po throughout - L.C. sharp but undulating @ about 60° to C.A. with minor skarning.	61.29 63.00 65.00 67.00 69.00	63.00 65.00 67.00 69.00 69.92	4820 4821 4822 4823 4824
69.92	73.02	GD	**Biotite Granodiorite:** - Medium grained weakly foliated granodiorite - Non-mt - Tr. Sph?, Tr. Po - L.C. abrupt @ 50° to C.A. with contact effect on underlying metasediments			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0001** **Page** 7 **of** 7

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			- Calcsilicate is disrupted by several qtz-feldspar 'veins" or pegmatitic sweats.			
			Mineralogy of the calcsilicate:			
			Qtz- 30-40%			
			Diopside 20-49%			
			Garnet 25%			
			Calcite 40%			
			Pyrrhotite 1-3%			
			Note: Pyrrhotite occurs throughout unit as 1-3% disseminated grains typically <1mm in size.)			
			See several narrow zones of coarse grained translucent calcite (recrystallized marble) with 2% med→dk green euhedral phenocrysts of garnet? to 2mm x 0.5mm (grossular?)			
			Within this unit as elsewhere in the entire hole – see several sections of coarse-grained qtz feldspar +/- sericite/chlorite pegmatitic sweats. These vary in width from ~5cm to 35cm and as seen in outcrop are usually discontinuous boudinaged bodies.			
			79.95 – 80.15 – biotite granodiorite gneiss			
			81.10 – 81.72 – biotite granodiorite gneiss – small dike			
			L.C. abrupt @ 50° to C.A. and marked by a mixture of biotite granodiorite gneiss and pegmatitc sweats.			
81.95	106.68	BQFG	**Biotite – Qtz – Fsp Gneiss:**			
			- Med to dark reddish brown coloured rock with a well – defined foliation			
			- Rock unit is not completely homogeneous in that it contains intercalations of skarn above and once again as seen in other rock units is cut by pegmatitic sweats- usually coarse grained and composed of qtz – feldspar with biotite –			
			- Biotite gneiss is fine-grained with biotite metacrysts to ≤1mm			
			- 84.62 – 86.55 – Biotite Granodiorite Gneiss – well foliated leuocratic → mesocratic intrusive			
			Note: preliminary petrological work suggests that these are actually qtz syenites (feldspar predominately kspar)			
			U.C. @ 65° to C.A.			
			<0.5% diss po throughout			
			Gneissosity / Foliation somewhat variably but usually btw. 70-85° to C.A. with local changes to 45° to C.A.			
			E.O.H. @ 106.68			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT Geological Log Hole-ID: BC0002 Page 1 of 3

SURVEY DATA											DRILLING DATA	
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID			GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1313.62
Collar			-90									APPROX. EASTING (m)	724.05
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1631.43
		43.59	-88		325.50							DATE DRILLING STARTED	NOV. 8 /2000
												DATE DRILLING ENDED	NOV. 9 /2000
													(ft.) (m)
												TOTAL DEPTH	146 44.50
												CASING DEPTH	15 4.57
												CASING	
												STEEL IN HOLE	NO -Ft.
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	NOV. 26 /2000

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
4.57	16.60	CS1	CS1 – CALCSILICATE GNEISS 1 - Pale – medium grey to pale green/grey- coloured rock - Relatively fine-grained with a distinct sucrosic texture. - Well- laminated/ banded? with gneissic foliaton @53° to C.A. The lamination is manifested by a preferred orientation and segregation of diopside-rich bands (green), and qtz + calcite-rich bands, (beige to whitish) and narrow 2-3 mm graphite rich bands - rock contains 3% graphite? – Graphite metacrysts to 0.5mm - <1% py +/- po Note: non-mt. - rock reacts strongly to cool dilute (10%)HCl - 11.98-16.60 – strong pervasive 2° oxidation manifested by the presence of limonite - somewhat patchy ie. Comes and goes – related to fracturing. Oxidation of pyrrhotite +/- biotite; - in places the rock is considerably weakened by oxidation such that it can be broken up by hand - Also within this unit as well as throughout the metasedimentary/gneissic horizons, we see several lenses/boudins of qzt-feldspar biotite +/- pyrrhotite metamorphic pegmatitic sweats. Near surface they tend to be oxidized with moderated to strong limonite. These lenses/boudins renge in size from 2cm – 35 cm.	4.57	6.00	4825
				6.00	8.00	4826
				8.00	10.00	4827
				10.00	12.00	4828
				12.00	14.00	4829
				14.00	15.00	4830
				15.00	16.60	4831

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BCOOO2** **Page** **2** **of** **3**

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			CS1 Continued: - In total within this unit (4.57-16.60) they have a cumulative total length (thickness) of 1.09m. This amounts to ~9% of this interval. Noteworthy is the fact that they do not contain graphite and that they are much harder than the host unit. - L.C. is abrupt but conformable and may represent a facies change. L.C. @ 55° to C.A.			
16.60	21.23	CS2	**CALCSILICATE GNEISS 2:** -very similar unit to CS1 with some notable exceptions. Mineralogy is almost the same except that this unit has visually more graphite and contains the distinctive bright green, fine grained spinel - ~≤1% spinel as solitary 0.5mmx0.5mm, disseminated bright emerald-green metacrysts - This rock tends to be a med→dark grey colour which probably reflects higher graphite content - Graphite: 3-5% (locally→7%) - Pyrrhotite: 0.5% disseminated - Well foliated with gneissic foliation @45-60° to C.A. - On average, this unit tends to be finer grained than CS1 (Note: minor interbeds of CS1 w/in this unit) - rock reacts moderately to cool dilute (10%) HCl - 20.27-21.23 – last lm? Of this unit has been 'skarned'? by the contact w/ the grerodiarite? Gneiss - this 'skarning' has destroyed the graghite for the most part and produced a dark green, fine grained, qtz – diopside? – actinolite +/- chlorite +/- pyrshotite rock - minor disseminated calcite - 1-2% F.C. +diss po. L.C. sharp@ to C.A.	16.60 18.00 20.00	18.00 20.00 21.23	4832 4833 4834
21.23	34.88		**BIOTITE GRANODIORITE(QTZ MONZONITE):** (thin section says this is a qtz monzonite). - Medium grained, leucocratic→mesocratic, pale grey coloured rock w/ a salt and pepper texture. - Rock is composed of feldspar (plagioclase)? Qzt and biotite w/ accessory Po - Feldspar - 75% - Qzt - 15% - Biotite – 5% - Po - <0.5% - Qtz occurs as anhedral grains, 1mmx1mm with larger aggregates – qtz has a faint pinkish to light grey hue to it	21.23	22.00	4835

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT Geological Log Hole-ID: BC0002 Page 3 of 3

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			Biotite produces a weak→mod. Foliation typically @70° to C.A. - 23.97 – 24.77 – aphanitic Pale grey→v. pale pinkish grey aplitic phase within the granodiorite. Contacts are not sharp - contains 3% very fine grained biotite. (Note: this rock does not react at all to cold dilute HCl) - 32.69 – 33.04 – inclusion or xenolith of graphite – bearing marble/calcsilicate. Strong limonite staining. Strong skarning on part of xenolith. L.C. sharp @ 52° to C.A. although evidence of digestion and stoping of underlying marble.			
34.33	41.10	M1	**MARBLE (M1):** - Medium grained massive to weakly foliated pale grey impure marble - Contains <0.5% diss graphite - <0.5% diss po +/- py - contains 5-7% qtz as anhedral aggregates/ metacrysts usually 1mm x 1mm but variable up to + 1cm x 1cm - contains 4 -7% diopside - At upper contact see a 12-15cm contact skarn effect producing a medium green qtz-calcite – actinolite +/- green garnet (grossular?). - Rock reacts vigorously to cool dilute HCl - Lower content (L.C.) is a gradational contact marking a change from a relatively homogenous marble (M1) to an intercalated sequence of coarse – grained marble and skarn/calc-silicate bands as described below. Contact established at first "skarn "band.	34.88	36.00	4836
				36.00	38.00	4837
				38.00	40.00	4838
				40.00	41.10	4839
41.10	44.50		**MARBLE/CALC SILICATE SKARN:** - This is a rapidly intercalating sequence of coarse-grained qtz-rich +/- graphite marble with variably textured skarned metasediments including dark green, massive qtz rich actinolite skarn and biotite-rich bands. - Also includes several qtz-rich metamorphic sweats /veins? - The finer grained metaseds contain 3-5% disseminated py +/- po. - Overall graphite grade <0.3% and concentrated in the qtz-marble bands. - @ end of hole small piece of biotite qtz-feldspar intrusive?	41.10	43.00	4840
				43.00	44.50	4841

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT

Geological Log Hole-ID: BC0003 **Page 1 of 6**

SURVEY DATA												DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE	
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1234.13	
Collar			-54.67°		40	30						APPROX. EASTING (m)	712.39	
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1625.02	
		39.62	-53	-53	021.0	039.50						DATE DRILLING STARTED	NOV. 10/ 00	
		80.16	-53	-53	021.5	040.00						DATE DRILLING ENDED	NOV. 12/2000	
													(ft.)	(m)
												TOTAL DEPTH	270	82.30
												CASING DEPTH	8	2.44
												CASING		
												STEEL IN HOLE	NO	Ft.
												LOGGED BY	B AUGSTEN	
												LOGGING DATE	NOV.29-30 / 2000	

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	2.44		Casing - till, weathered graphitic calcsilicate.			
2.44	2.66	M3	MARBLE (likely boulder) – Coarse – grained pale grey → beige marble with accessory diopside And coarse muscovite/ sericite on fractures - Minor graphite - Strong limonite, staining on fxs. - Interval consists entirely of a few small , 7cm long pieces.			
2.66	4.60	CS2	CALCSILICATE GNEISS 2: - fine → med grained med → dark grey foliated rock composed of qtz diopside calcite graphite and spinel - Model composition Qtz 45% Caloite 35-40% Diopside 10-12% Graphite 3-5% Spinel 1% Py < 1% Rock is readily distinguishable by its dark grey colour, foliated texture and most importantly, by the presence of bright green spinel metacrysts. -Foliation @ 55-70° to CA	2.66	4.60	4842

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS2 continued: - See minor narrow zones of oxidation where rock is limonitically stained – presumably Fe-sulfides oxidated by meteoric water. Possible biotite oxidation. - @ 4.05 m. a 15cm long section with a distinctive banded appearance manifested by coarse, lenticular accumulations of diopside,+/- spinel aligned with the gneissic foliation. - This rock reacts strongly to cool dilute (10%) HCR. - Graphite metacrysts to 0.5 x 0.5mm with rarely larger - L.C sharp but undulating @ 65-75° with a distinctive 1-2 cm contact effect producing a weak skarning.			
4.60	18.43	CS1	CALCSILICATE GNEISS 1: - Very similar to CS2 in many aspects. This rock varies in colour, grain size and mineralogy w.r.t. CS2. - This is a weakly foliated to foliated ,med grey → pale greenish grey, medium grained rock - Overall mineralogy is similar to 2 except for the lack of spinel. For the same reason it does not include the bright green spinel. Model Composition: Qtz: 30-35% Diopside: 15% Calcite: 45% Graphite: 2-3% Py+/-Po: <1% -Gneissic foliation compositional banding very firm 40° to 70° to C.A. - Reacts strongly to dilute 10% HCl (except for pegmatitic lenses/boudins)- While overall this rock unit is relatively homogeneous in and of itself, crosscutting or intruding this unit are numerous small to large felsic metamorphic sweats, pegmatitic sweats and intrusive dikelets of possible quartz syenite composition - They vary in size from 5cm to greater than 30cm. In total within this rock unit they have an accumulative ore length of a 2.66 m comprising 19% of the total. - These are significant because of their typical lack of graphite – although some have small amounts of coarse graphite - and their hardness. L.C. marked by a large pegmatitic dike – sharp @ 40° to C.A Also note LC marked by moderate skarnig and recrystallization creating a coarse grained marble with green garnets? (25cm).			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0003** **Page** **3** **of** **6**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
18.43	19.02	P	**PEGMATITE** : - Course grained gtz-feldspar pegmatite with meta? – to 3°mX 1cm.	18.43	19.02	4851
19.02	20.04	SK	**SKARN:** AphAnitic, medium → dark green quartz-diopside-calcite skarn. - No visible graphite - 2% diss po+/-py. - Lower 4cm marked by very fine grained biotite giving the rock a purplish tint - L.C somewhat gradational @ 60° to C.A.	19.02	20.04	4852
20.04	23.77	Q	**PEGMATITIC QUARTZ VEIN:** - Limonitically – stained, glassy, coarse-grained qtz vein with somewhat variable textures including sections of definite pegmatite characteristics including coarse grained feldspars. - Also small sections of igneous textures. - L.C./ sharp @ 5 ° to C.A.			
23.77	31.20	GD	**GRANODIORITE (QTZ MONZONITE)** Note: petrographic work determined this is a quartz monzonite. - Medium grained equigranular, leucocratic to mesocratic light → medium grey-coloured biotite granodiorite. Model composition: Qtz: 12-15% Feldspar: 75% Biotite: 3-5% Py?: <0.5% diss Phlogpite: <1% - Rock does not react at all to coal dilute (10%) HCI - Foliation @45° to C.A. (foliation is weak overall) - From upper contact to 28.29m intrusive has been weakly to moderately oxidized manifested by varying degrees of pervasive limonite. - Intrusive includes two small sections of qtz vein material similar to large 'vein' ? L.C. @ 25° to C.A.			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
31.20	39.62		**PEGMATITE DIKE:** Coarse – grained qtz-kspar – garnet – actinolite pegmatite. - Quartz and feldspar metacrysts to 2cm x 1cm - Brown – reddish/brown "andradite"? garnet - Patches of retrograde actinolite after chlorite? - Within the dike or cut up or surrounded by dikes are varying sized segments of M1 marble. Where these section are small they have been completely recrystallized into a very coarse-grained, calcite and green garnet assemblage manifesting a strong thermal effect. As, the lower contact is approached there are larger and larger sections of M1 marble and in these the thermal effect is most notable at the contacts although there appears to have been a general coarsening in the grain size. The lower contact therefore is somewhat gradational and arbitrary. It was picked where it appears that the M1 marble predominates. Note: Large section of M1 marble as follows: 1. From To Length 35.70 36.30 0.60m 37.02 37.34 0.32m 37.43 38.05 0.62m 38.15 38.83 0.68m Perhaps the contact could be placed at 37.02? Note: Contact @ 37.02 is @ 40° to C.A. Contact is sharp but undulatory. 2. Section @ 37.02 → 37.34 has the appearance closer to CS1.			
				37.02	38.00	4853
				38.00	39.62	4854
39.62	58.65	M1	**M1 MARBLE:** Quatrz- diopside – Graphite Marble: Model Composition: Qtz: 5-10% Calcite: 8.5% Diopside: <3% Graphite: <0.5% Py+/-Po: <1% diss. - Med → pale grey, med → coarse grained massive to locally weakly foliated marble. - Foliation / compositional banding @ 55-60° to C.A.	39.62	41.00	4855
				41.00	43.00	4856
				43.00	45.00	4857
				45.00	47.00	4859
				47.00	49.00	4860
				49.00	51.00	4861
				51.00	53.00	4862
				53.00	55.00	4863
				55.00	57.00	4864

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			M1 Marble continued:	57.00	58.65	4864
			Note: This is a relatively, clean easily recognizable marble – unfortunately the graphite grade visually looks low in this unit.			
			- Graphite metacrysts tend to be somewhat larger, although on average still <1mm x 1mm.			
			- Some limonite development on fxs.			
			Note: Occasionally see small segments with a light brown phlogopite development such as at 54.74 → 54.92m Here phlogopite makes up 3-5% of rock.			
			L.C. somewhat gradational and marked by increasing percentage of bands of CS1. L.C. / compositional banding/gneissic foliation @ 65° to C.A.			
58.65	59.93	CS1	**CALCSILICATE GNEISS 1:** - Fine grained foliated med → dark grey → greenish grey- coloured rock. Similar in appearance to CS2 without the spinel - Also contains more sulphide than typical - ~2% diss py +/- po - Reacts strongly to cold dilute (10%) HCl - Well developed limonite on fxcs– fxcs parallel to foliation @ 55° to C.A. - 2-3% diss graphite L.C. very irregular but sharp	58.65	59.93	4865
59.93	61.23	P	**PEGAMITITE:** Coarse grained, qtz – feldspar- biotite pegmatite. - <0.5% po. - Does not react to cold dilute (10%) HCl - Overall colour white → pale grey.			
61.23	64.90	SK	**SKARN ROCK:** - Med → dark green, aphanitic, rock composed of diopside.? + quartz. +/- calcite - No graphite - This rock is extremely hard. - Locally this unit will react to cold dilute HCl - This interval is not homogeneous in that it includes several small sections usually (<10cm) of coarse – grained recrystallized M1 several small <5cm pegmatitic sweats and ore large pegmatitic sweat (dike) @ 62.5→ 62.91m Note: the recrystallized M1 sections are now quite coarse grained with individual calcite grains to 5mm across. Typically this calsite is white →lt. Grey included commonly in these sections are small <1mmX1mm dark green garnet (pending thin section) metacysts. Also see <0.5% diss. Pyrite. -In addition, btw 63.68 and 63.91 rock is biotite- rich producing a banded green and reddish / brown rock relflecting respectively more diopside and biotite- rich sections. L.C @70° and marked by a decrease in grain size and increase in qtz.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0003** **Page** **6** **of** **6**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
64.90	68.48		**GRANODIORITE GNEISS;** Light → medium grey, leurocratic → mesocratic biotite grandiorite gneiss. (med grained) (gtz syenite gneiss?) - U.C. marked by a 1cm chill margin - does not react to cool dilute HCl - L.C. sharp @ 80° to C.A. - Gneissic foliation @ 70-75° to C.A.			
68.48	82.30		**M1 MARBLE:** Intercalated sequence of predominately variably recrystallized M1 marble with minor biotite – feldspar gneiss and several small and large pegmatitic "sweats" and /or dikes. - The impression one gets is that the pegmatitic intrusions are responsible for the recrysatalliaztion of the marble. - Overall colour of the marble is a pale → med grey → grey/green colour. - Marble is composed of variable proportions of qtz-diopside -- calcite with / accessory sulphides +/- graphite. - Overall graphite grade is <0.3% with locally higher - Marble varies from appearing massive to weakly foliated. - Large pegmatite dikes occur @ 70.48 → 71.55 76.47 → 77.93 @72.50 well-developed compositional banding within small segment of CS1 @ 60° to C.A. @ 82.05 a 10 cm section of med → dark green massive qtz-diopside rock with 5-10 % po as semi-massive aggregates and 'veins' to 0.5cm. tr. Cpy. Note: Minor F.C limonite to bottom of hole.			
	E.H.O					

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0004** **Page** 1 **of** 4

SURVEY DATA											
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID			
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)
Collar			-90								
Down Hole	(ft.)	(m)	Read	True	Read	True					
		49.07	-88	-88	32.5	051.0					

DRILLING DATA		
GRID SYSTEM	MINE	
APPROX. NORTHING (m)	1232.97	
APPROX. EASTING (m)	711.27	
APPROX. ELEVATION (m)	1625.10	
DATE DRILLING STARTED	NOV. 12/2000	
DATE DRILLING ENDED	NOV. 13/2000	
	(ft.)	(m)
TOTAL DEPTH	171	52.12
CASING DEPTH	10	3.05
CASING		
STEEL IN HOLE	NO	-Ft.
LOGGED BY	B. AUGSTEN	
LOGGING DATE	Dec. 4, 2000	

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	3.05		**CASING**			
3.05	3.43		**M1 – Marble:** (possible boulders) - Coarse grained marble with minor diopside – rich (green) bands +5-10% disseminated grains of yellowy-orange mineral – possible scapolite. Overall colour is beige → pale grey. - <0.1% diss graphite - Tr. Diss py. - Calcite crystals to 5mm - Compositional banding @60 ° to C.A, - Reacts vigorously to cool dilute (10%) HCl	3.05	3.43	4866
3.43	6.16	CS2	**CALCSILICATE GNEISS 2:** Med > dark grey fine- grained foliated rock consisting of quartz, calcite, diopside, graphite, spinel and minor sulphides.	3.43 5.00	5.00 6.16	4867 4868

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS2 continued: - 5-7% graphite - <0.5 % diss py – poss. Tr. Cpy. - Unit readily distinguishable by presence of 1-2% diss. bright green (<1mm) spinel metacrysts *Gneissic foliation @ 55° to C.A.* (Note: @ 4.2 → 4.76 unique texture manifested as coarse 'clots ' of diopside? (pale green) to 5mm x 3mm aligned parallel to gneissosity. Have seen this tecture elsewhere in this unit). @ 5.30 pervasive limonite development over 10 cm weakening the rock somewhat and probably related to the undulating contact with pegmatitic sweat. - 5.35 → 6.07 – Pegmatitic 'Sweet" (Dike). - Medium → coarse grained qtz-feldspar – garnet igneous rock with <1% diss py+/-po, possible tr. Sphalerite. - Has a weak patchy pervasive limonite 'wash' through the unit. (Note: L.C. not clear due to altered zone @ contact. – see below for descriptions) (Note: 1- small amount of CS2 on other side of dike. 2- CS2 reacts strongly with dilute 10% HCl)			
6.16	22.12	CS1	**CALCSILICATE GNEISS1:** - Med grey → med → pale grey/green, fine → medium grained - Rock varies from a massive texture → weakly → well foliated. - Overall graphite 2-3% - Rock is composed of quartz, calcite, diopside, graphite, pyrite, +/- po. Also possible small amounts of scapolite. - Very similar to CS2 and usually units occur together – CS2 tends to have a higher graphite grade visually and also has the unique spinel. - 6.16 – 6.64 – CS1 converted to a fine-grained hard, dense rock, composed of qtz, diopside, + minor calcite. Rock has a med. green colour. - No graphite - Appears to be a 'skarn' of CA1 – related to proximity to two felsic, pegmatitic dikes perhaps?? - Contacts are gradational. - @ 6.75 well-dev. Compositional banding/gneissic foliation @50° to C.A. - 7.01 – 7.50 - Pegmatite Sweat/Dike – coarse-grained feldspar-qtz-garnet +/- py/po with patchy weak pervasive limonite development (Note: @ contacts of pegmatite - CS1 becomes coarser grained – markedly so @ upper contact where CS1 converted to coarse-grained M1 marble.) (Note: Several small felsic/pegmatitc dikes/sweats throughout unit. These tend to be lensoidal/boudinage bodies.	6.16	8.00	4869
				8.00	10.00	4870
				10.00	12.00	4871
				12.00	14.00	4872
				14.00	16.00	4873
				16.00	18.00	4874
				18.00	20.00	4875
				20.00	22.12	4876

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED: - @ 19.20 gneissic foliation @65° to C.A. - L.C. is somewhat obscured by alteration hole from pegmatite dike.			
22.12	27.05	P	**PEGMATITE DIKE:** - Coarse grained, rusty-weathering feldspar-qtz – biotite +/-po pegmatitc - Patchy pervasive limonite throughout - Individual feldspar phenocrysts to + 2cm x 1cm - L.C. abrupt @ 80° to C.A.	22.12	23.00	4877
27.05	30.50		**BIOTITE FELDSPAR GNEISS/SKARN:** Intercalated sequence of biotite-feldspar gneiss, recrystallized marble and variably altered (skarned) calcsilicate rock. Into this mix are several pegmatite dikes/sweats. - The biotite gneiss has a purplish/brown colour and well defined gneissasity @ 65-70° to C.A. - The altered calasilicate rocks are med green coloured and weakly foliated to massive The' skarned' calcsilicates are composed of a fine grained mixture of qtz, diopside, pale brown garnet? + sulphides. +/- calcite. - Up to 2-3% diss py +/- po - Fractures within this section of rock are commonly limonite-stained. - Toward the lower contact start seeing small sections of coarse recrystallized M1 marble separated by pegmatitic dikes/sweats. - L.C. placed where predominately M1 marble starts, ? is marked by another pegmatititc dike. Contact with pegmatite @ 25° to C.A.			
30.50	52.12		**M1 MARBLE:** - Coarse → med grained pale grey → white marble composed of calcite, qtz and diopside - Calcite crystals to 3mm x 3mm - Overall graphite grade <0.4% with locally higher sections as identified further. - <0.5% diss py +/-po. 1. (Note: 30.50 – 32.45 – strong limonite development along and peripheral to low angle fxs. Locally marble pervasively limonitized.) 2. (Note: Numerous small pegmatitic sweats/dikes occur throughout the unit	30.50 32.00 34.00 36.00	32.00 34.00 36.00 38.00	4878 4879 4880 4881

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0004** **Page** **4** **of** **4**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			M1 MARBLE CONT:			
			- These pegmtites appear to have a skarning effect on the marble – very noticeable at contacts where the marble is recrystallized into a very coarse grained marble with come changes in mineralogy. If graphite was present it seems to be destroyed or mobilized elsewhere. Often get some actinolite development and green garnet? At the contacts. - A good example is @ pegmatite dike btw. 37.23 → 37.59 - These pegmatitic sweats are frequently limonitically stained along fxs, patches, plus occasionally see rusted out ? cavities.			
			Model composition of M1 marble is somewhat variable but a typical composition would be as follows: Calcite: 75% Qtz: 15-20% Diopside: <5% Graphite: <0.5% Py+/-: <0.5% *Qtz. Can occur as aggregates or 'clots' to 1cm x 1cm * Graphite occurs as dissem. Individual crystals <0.5mm x 0.5mm	38.00	40.00	4882
				40.00	42.00	4883
				42.00	44.00	4884
				44.00	46.00	4885
				46.00	48.00	4886
				48.00	50.00	4887
			This rock reacts vigorously to dilute 10% HCI	50.00	52.12	4888
			Texture: Variable from massive generally to weakly foliated with graphite metacrysts describing a lepidoblastic texture. 3. (Note: Limonite stained fxs persist to bottom of hole. - Also several areas of pervasive limonite development such as - Btw: 42.53 → 43.33 43.69 → 43.79 44.19 → 44.79 *These appear to be related to pegmatitic intrusions /sweats which must increase primary permeability.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0005** **Page** 1 **of** 4

SURVEY DATA											DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1413.21
Collar			-54° 40'		39°	30'						APPROX. EASTING (m)	766.41
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1638.46
		51.82	-53	-53	016.0	034.50						DATE DRILLING STARTED	NOV. 15/2000
												DATE DRILLING ENDED	NOV. 16/2000
													(ft.) (m)
												TOTAL DEPTH	200 60.96
												CASING DEPTH	12 3.66
												CASING	
												STEEL IN HOLE	NO Ft.
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	DEC. 8,15 /2000

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	3.66		**OVERBURDEN:** - soil, boulder, silt, till. Weathered bedrock			
3.66	6.70	P	**FELDSPAR – QTZ – BIOTITE PEGATITE VEIN:** - Coarse grained limonitically stained pegmatite - Massive with locally weak fabric developed by biotite - Feldspar phenocrysts to 2cm x 1cm with a beige to pale green colour. - Limonite developed along fxs – oxidation of biotite? - No visible sulphides - No graphite L.C. sharp @ to C.A.			
6.70	9.83	CS1	**CALC SILICATE GNEISS1:** - Calcite – Qtz – Diopside – Graphite – Py +/- Po Gneiss. - Fine grained foliated rock with a med grey → pale grey → grey/green colour - 2-3% graphite - 1-1.5% diss py +/- po	6.70 8.00	8.00 9.83	4889 4890

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
		CS1	CS1 CONTINUED: - reacts strongly to cool dilute. HCl (Notes: 1. 7.58 – 8.01- small sections of coarse grained M1 marble with minor diopside, <1.5 % graphite – this section has gradational contacts with rest of CS1. 2. 9.14 – 9.57 – small section of slightly coarser grained CS1 which has been weakened by a pervasive limonite 'wash'.) L.C. sharp @ to C.A.			
9.83	12.80	GD	GRANODIANITE GNEISS: (Quartz Monzonite) - Leucocratic biotite granodiarite gneiss - 5-7% biotite defining a gneissic foliation @ 50° to C.A. - includes some minor pegmatitic sweats - No graphite.			
12.80	13.04	P	FELDSPAR – QTZ – PEGMATITE ?: - Course grained leurocratic pegmatites sweat/dike - U.C. @ 55 ° to C.A. - L.C. @ 85° to C.A.			
13.04	13.76		BIOTITE – FELDSPAR GNEISS: - Fine → med grained biotite feldspar gneiss - 2-3% diss py - No graphite; fxs limonite coated - Minor calc-silicate bands - Also includes 15cm section of med grained qtz-feldspar (qtz-syenitic sweat) L.C. appears conformable but abrupt @ 60° to C.A.			
13.76	20.82	CS1	CALCSILICATE GNEISS 1: (somewhat different looking than typical CS1 with less calcite and less graphite) - Pale green, well foliated fine→med grained rock with a sucrosic texture - 1-1.5% diss graphite - 1-2%diss py. - Well-developed gneissic foliation manifested by lepidoblastic texture of graphite @ 70° to C.A. - Also includes <0.3% pale brown fine-grained mineral – poss garnet? or scapolite? - Reacts weakly to HCl (dilute. 14.56 – 16.15 - Feldspar – Qtz – Biotite +/- garnet +/- po Pegmatite. Coarse-grained leucocratic pegmatite.	13.76 14.56 16.15 18.03 18.61 20.17	14.56 16.15 18.03 18.61 20.17 20.82	4891 4892 4893 4894 4895 4896

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			18.03 – 18.61 – Feldspar – Qtz – Biotite +/- garnet +/- po Pegmatite - medium grained leucocratic pegmatitic probably qtz-syenite in composition - <0.5% diss po - ~1% pale reddish brown → brown 1mm garnets - where unweathered has a pale green colour which is the colour of the predominant feldspars - ½ of interval pervasively limonitized without weakening rock.			
			20.17 – 20.82 – Qtz. Syenite. (Pegmatite) - medium grained, pale green coloured igneous/metamorphic sweat - <0.3% diss graphite → includes rare rosettes of graphite to 2mm diameter - 3-4% brown biotite - / < 0.5% diss po. U.C. sharp @ 70° to C.A. L.C. sharp @ 60° to C.A.			
		M1	**M1 MARBLE:**	20.82	22.00	4897
20.82	33.95		Pale grey, granoblastic, massive/non-foliated med → coarse grained marble - Contains variable proportions of qtz, diopide, calcite, and graphite - Overall less then 1% graphite with locally higher sections - Reacts strongly to cool dilute (10%) HCl - Moderate f.c. limonite throughout with locally weak pervasive limonite - <0.3% diss py +/- po throughout - minor small pegmatitc sweats overall except @ lower contact area	22.00	24.00	4898
				24.00	26.00	4899
				26.00	28.00	4900
				28.00	30.00	4901
				30.00	32.00	4902
			33.60 – 33.95 – Qtz – Feldspar Pegmatitic Sweat.	32.00	33.95	4903
33.95	46.22	IZ	**INTERCALATED CALCSILICATE/MARBLE/BIOTITE GNEISS:** This is a distinctive intercalated sequence of med green/grey calcsilicate with coarse grained white marble with distinctive green garnet? metacrysts	33.95	35.00	4904
				35.00	37.00	4905
				37.00	39.00	4906
			- Less commonly seen brown biotite-rich bonds. - Overall graphite grade very low, <0.3% although locally see some well-developed coarse graphite - Compositional banding @ 70-80° to C.A. - 1-1.5% diss py throughout	39.00	41.00	4907

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0005** **Page** **4** **of** **4**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
		IZ	INTERCALATED CALCSILICATE/MARBLE/BIOTITE GNEISS CONTINUED: Several pegmatitic sweats throughout sequence usually 10-30 cm. A larger one marks the lower contact. 45.33 – 46.22 Feldspar – Qtz – Biotite - Pegmatite			
46.22	60.96	BFgn	**BIOTITE - FELDSPAR GNEISS:** Distinctive brown bonded rock composed of predominately biotite rich bands intercalated with white feldspar-rich bands - Interspersed within this unit are the ubiquitous feldspar-qtz-biotite pegmatitic sweats - Also see some pale green calcsilicate lenses - *Possible disseminated sulphides with biotite – rick bands, hard to tell* - When core split you can see pyrrhotite +/- pyrite as foliation parallel stringers → < 1% overall - No graphite. Gneissic foliation @ 75-85° to C.A.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT

Geological Log Hole-ID: BC0006 **Page** 1 **of** 4

SURVEY DATA												DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE	
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1253.30	
Collar			-53° 00'		45°	20'						APPROX. EASTING (m)	573.88	
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1564.88	
		30.48	-52	-52	027.0	045.50						DATE DRILLING STARTED	NOV.16/2000	
		60.96	-52	-52	021.0	039.50						DATE DRILLING ENDED	NOV.19/2000	
													(ft.)	(m)
												TOTAL DEPTH	209	63.70
												CASING DEPTH	3	0.92
												CASING		
												STEEL IN HOLE	NO	Ft.
												LOGGED BY	B. AUGSTEN	
												LOGGING DATE	DEC.18/2000	

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
0	0.92		CASING			
0.97	24.80	GD	**GRANODIORITE:** (Quartz Monzonite) - Mesocratic medium grained equigranular to weakly porphyritic foliated biotite granodiorite: - - rare feldspar-megacrysts to 1.5 x 1cm - Weak to med. Foliation @ 50° to C.A. - Rock is non magnetic (Note: possibly more alkalic – kspar vs. plag. ((thin section shows this to be the case ie qtz monzonite)) 3.39 – 4.08: xenolith of coarse – grained M1 marble and small 14 cm section of green coarse-grained feldspar? calcite, actinolite, skarn rock (this occurs at contact.) - M2 marble contains minor graphite (<0.3%) 4.08 – 5.08 : coarse grained green feldspar / qtz rock – skarn? / altered pegmatite? - no graphite			

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			GRANODIORITE CONTINUED:	3.39	5.32	49.08
				5.32	7.41	4909
			5.35 --> 7.41 CS1 small band of CS1 caught up in granodiorite – variably recrystallized, (xenolith) 2-3% diss. Graphite L.C. @ 75° to C.A. (contact may not mean much)			
			L.C. of granodiorite placed @ 24.80m, but there are small segments of granodiorite in the next few metres.			
			CONTACT ZONE:			
24.80	28.99		- For lack of a better term, this interval is called a contact zone which is a zone that appears to mark a transition from the granodiorite to the M1 marble. - The zone is marked by 'screens' of hornfelsed and variably skarned metasediments, segments of grandionite and one large pegmatite dike and several small ones. 26.17 – 26.70 – coarse grained feldspar qtz – biotite pegmatite Note: pyrrhotite +/- py seen within the skarned/altered metasediments, Overall <1% L.C. of 'contact zone' @ 70° to C.A.			
28.99	43.28	M1	**M1 MARBLE:** - Pale grey to pale greenish grey, medium → coarse grained. massive to locally wkly foliated qtz-diopside – calcite +/- graphite marble - Granoblastic - 1-2% diss. Py +/- po - Overall graphite grade 0.5 – 1.0% Within this M1 marble there are several sections of finer grained foliated material more closely resembling CS1 although the diopside content seems lower. These are @ 1. 36.58 to 37.30 2. 39.40 to 40.85 *these have a medium grey colour and graphite content appears higher (1-2%) - Foliation @ 75° to C.A.	28.99	31.00	4910
				31.00	33.00	4911
				33.00	35.00	4912
				35.00	37.00	4913
				37.00	39.00	4914
				39.00	41.00	4915
				41.00	42.00	4916
				42.00	43.28	4917

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
		M1	**M1 MARBLE CONTINUED:** 41.31 – 41.63 – Medium grained qtz – syenite dike U.C. @ 75° to C.A. L.C. @ to C.A. U contact marked by a 2-3mm wide zone with heavy pyrrhotite. In addition, the marble has been recrystallized for about 21 cm above upper contact into a coarse- grained calcite + green garnet? rock. v. distinctive and seen elsewhere. L.C. of M1 marble @ 15° to C.A.			
43.28	58.54	LD	**LAMPROPHYRE DIKE:** - Medium grained equigranular, massive, biotite-rich lamprophyre, dark brown colour - Unusual rock not seen elsewhere - Contains minor diss calcite)<0.3%) -<0.5% F.C, calcite - ~1% diss py - Tr. F.C. cpy. - Non-magnetic - Includes some sections of alt'd marble 54.86 → 57.10 – section of intense low angle faulting @ 5-10° to C.A. associated with intrusion of qtz-feldspar pegmatite fault surfaces strongly chloritized 57.10 → 58.54 – from fault to L.C. rock becomes more massive and finer grained with distinctive irregular med. green 'blotches' of chlorite?/actinolite- rich material. L.C. sharp @ 55° to C.A.	43.28	45.00	4918
58.54	59.81	SK	**SKARN:** - Variably skarned and hornfelsed qtz-rich metasediments - Overall colour medium green - 1-2% F.C. and diss po +/-py - fine grained - includes narrow section of coarse recrystallized marble L.C. @ 80° to C.A.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0006** **Page** **4** **of** **4**

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
59.81	60.58	P	**QTZ SYENITE/PEGMATITE:** Medium → coarse – grained fsp + qtz +/- po rock 90% pale green → beige fsp 8% qtz (pinkish) <1%po. L.C. @ 75° to C.A.			
60.58	63.70	GD	**GRANODIORITE:** (Quartz Monzonite) Medium grained biotite granodiorite 62.92 → 63.47 – 'qtz' rich segment – looks like qtz vein with minor biotite 63.58 – 63.70 – qtz/fsp pegmatite.			
	E.O.H.					

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT

Geological Log Hole-ID: BC0007 **Page** 1 **of** 3

SURVEY DATA											
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID			
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)
Collar			-90°								
Down Hole	(ft.)	(m)	Read	True	Read	True					
		46.63	-89	-89	236?	254.5?					

DRILLING DATA		
GRID SYSTEM	MINE	
APPROX. NORTHING (m)	1251.93	
APPROX. EASTING (m)	572.61	
APPROX. ELEVATION (m)	1564.98	
DATE DRILLING STARTED	NOV.19/2000	
DATE DRILLING ENDED	NOV. 20/2000	
	(ft.)	(m)
TOTAL DEPTH	163	49.68
CASING DEPTH	7	2.13
CASING	NO	
STEEL IN HOLE	NO	/ Ft.
LOGGED BY	B. AUGSTEN	
LOGGING DATE	DEC. 19/ 2000	

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
2.13	3.61	GD	**GRANODIORITE** : (Quartz Monzonite) - Strongly foliated leuocratic granodiorite - Gneissic foliation@ 65° to C.A. - Foliation manifested by both biotite +/- phlogopite and qtz metacrysts - Tr. Diss py. - No graphite - Overall colour light → med. Grey L.C. @ 70% to C.A. and marked by oxidation of biotite +/- sulphates			
3.61	10.45	CSI	**CALCSILICATE GNEISS 1**: - Calcite – qtz – diopside – graphite gneiss - Pale greenish/grey colour. Overall well foliated (gneissosity) - Fine grained 3.61 – 5.86 - poorly foliated medium grained with minor graphite. <0.1% diss graphite 5.86 – 10.45 - well foliated, finer grained. 1-2% diss graphite <1% diss py. (1. Note; pertaining to 3.61 – 5.86 – well – defined compositional banding defined by segregated qtz-rich bands to 1cm wide	3.61	5.86	4919
				5.86	7.00	4920
				7.00	9.00	4921
				9.00	10.45	4922

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			CS1 CONTINUED: occurring subparallel to C.A. - this section is also somewhat more diopside rich. 2. (Note: pertaining to 5.85 – 10.45 – Model Composition: Qtz - 40-50% Calsite 20% Diopside 20% Graph. 1-2% Py+/- 1% - this section also includes two narrow purplish-coloured qtz- rich fine- grained sections with no graphite at **9.89 – 10.01** and **10.06 – 10.15** which also contain 3% diss py. - Minor limoite stained fxs. L.C. @ 45° to C.A. marked by a 1cm zone of marked grainsize reduction.			
10.45	20.45	GD	**GRANODIOROTE : (Quartz Monzonite)** Leucocratic medium- grained biotite granodiorite gneiss? - variable gneissic foliation from poor to well – developed - non- mt; 1-1.5% diss py 16.48 – 17.13 – xenolith of CS1 18.80 – 19.70 – feldspar alf'd to a pale green weak sericity?? L.C. @ 60° to C.A.			
20.45	26.25	CZ	**CONTACT ZONE:** This is somewhat of a hybridized zone consisting of dikes of granodiorite and screens of variably contact metamorphosed meta-sediments. Also includes several small feldspar-qtz +/- biotite pegmatite sweats/dikes. - No graphite - Can be thought of as a intrusive contact with digested metasediments - <1% po overall but variable in amount and location L.C. placed where the marble starts to predominate L.C. @ 60° to C.A.			

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
26.25	49.68	M1	M1 MARBLE:	26.25	28.00	4923
			- Med→ coarse grained granoblastic? Qtz-diopside +/- graphite marble.	28.00	30.00	4924
			- Cut by several small 5-20cm pegmatitic sweats of qtz-feldspar +/- biotite.	30.00	32.00	4925
			- Massive to locally weakly foliated.	32.00	34.00	4926
			- Pale grey to ~ pale greenish grey colour	34.00	36.00	4927
			- Weak foliation @ 60-65° to C.A.	36.00	38.00	4928
			Model composition:	38.00	40.00	4929
			- Qtz 20%	40.00	42.00	4930
			- Calcite: 70%	42.00	44.00	4931
			- Graphite <0.5% - 1.0%	44.00	46.00	4932
			- Py +/- Po ~1%	46.00	48.00	4933
			- Diopside 7%	48.00	49.68	4934
			45.10 – 45.80– finer grained more foliated calcsilicate			
			- with 2-3% disseminated po, <0.7% graphite			
			(Note: locally see accumulation of light→med brown glassy mineral – garnet, e.g. @ 42.90m.			
			47.08 – 47.42 - med→coarse grained fsp-qtz actinolite +/- gt +/- p			
			- probably qtz- syenite in composition			
			47.64 – 4822 - similar to above – more medium grained.			
			49.14 – 49.54 - coarse grained fsp-qtz biotite qtz syenite → pegmatite			
			49.53 – 49.68 - foliated fn.gr. qtz-fsp – biotite gneiss.			
			E.O.H. @ 49.68			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0008** **Page** 1 **of** 4

SURVEY DATA											DRILLING DATA	
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1139.45
Collar			-57° 40°		42°	15	-					APPROX. EASTING (m)	572.97
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1569.29
		36.58	-55	-55	021.5	040.0						DATE DRILLING STARTED	Nov. 20 /2000
		76.20	-55	-55	021.5	040.0						DATE DRILLING ENDED	Nov. 22 /2000
													(ft.) (m)
												TOTAL DEPTH	260 79.25
												CASING DEPTH	10 3.05
												CASING	
												STEEL IN HOLE	No Ft.
												LOGGED BY	B. Augsten
												LOGGING DATE	Dec. 20, 29 /2000

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	3.05		**CASING**			
3.05	7.86	CS2	**CALCSILICATE GNEISS 2:** –	3.05	4.75	4935
			3.05 – 4.75 - In this interval not your typical CS2, due to higher graphite content, and apparent lack of spinel/			
			- Rock has a black colour overall due to high graphite content.			
			- 1-2% diss. Py +/- po.			
			- strongly foliated @ 75-80% C.A			
			- Model Composition Qtz –15-20%			
			Calcite - 45%			
			Graphite 10-12%			
			Py – 1-2%			
			Diopside 7-10%			
			- Unfortunately interval not pure CS2			
			- 3.05 – 3.33 – Qtz-feldspar-biotite-actinolite? Garnet Pegmatite			
			- 3.08 - 4.20 light to medium green course grained feldspar? +/- biotite? +/- graphite rock?? <0.3% diss graphite			
			-			
			4.75 – 7.86 - More typical CS2, - distinctive med→dark green foliated spinel – bearing calcsilicate gneiss	4.75	6.00	4936
			- will foliated @ 70° to C.A.	6.00	7.86	4937
			- contains 3-5% diss graphite < 1mm in diameter	7.86	8.5	4938

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS2 cont' - 4.75-5.15 – 40 cm section of coarse-grained beige to pale yellow M1 marble (impure) with <0.5% diss. Graphite - M1 marble contains qtz diopside - Non-foliated - 6.36-6.70 – M1 marble w/ half being skarned to a fine grained qtz/actinolite? diospide rk. - Note: within this unit several narrow zones <10cm of oxidation manifested by limonite development at expense of sulphides and/or possible biotite. - @ 7.6m. – foliation appears to curve around a qtz sweat. Foliation at this location @ 50° to C.A. -L.C. with pegmatite @ 67° to C.A. Note: Pegmatite has a contact effect on the CS2 for about 20 cm above pegmatite.			
7.86	8.5	P	**PEGMATITE:** Quartz-Feldspar – Biotite Pegmatite with minor po, graphite L.C. @ 55° to C.A.			
8.50	26.23	CS1	**CALCSILICATE GNEISS 1:** -variably foliated graphite-bearing calc-silicate gneiss - pale grey to pale greenish/grey - Gneiss composed of qtz, calcite, diopside, graphite and pyrite. - Overall graphite grade 2-3% - Within this unit certain amount of variability in textures - Overall graphite size <0.5mm in diameter (but variable) - 8.50 – 11.86 - more typical CS1 unit is intercalated with bands of M1 marble and compositionally banded M1- type marble with scapolite-rich bands - Also within this interval several narrow pegmatitic sweats - Overall graphite grade in the interval < 1% - 20.5 –20.98 - Granodiorite Dike - U.C. @ 45° to C.A. - L.C. @ 55° to C.A.	8.50	10.00	4939
				10.00	11.86	4940
				11.86	13.00	4941
				13.00	15.00	4942
				15.00	17.00	4943
				17.00	19.00	4944
				19.00	21.00	4945
				21.00	23.00	4946
				23.00	25.00	4947
				25.00	26.23	4948
				26.23	28.00	4949

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 cont'			
			L.C. @ 26.23 but CS1 is hornfelsed for ~ 30 cm above contact to a fine grained purplish biotite-phlogopite –pyrite-qtz rock			
26.23	47.16	Q	**QTZ GNEISS?:** - Intercalated sequence of pegmatitic sweats/dikes biotite gneiss, qtz 'vein' (ie. recrystallized and qtz flooded Marble and granodiorite dikes - contains diss. graphite in places suggesting qtz-flooded calcsilicate?? or marble - 26.23 – 27.89 – medium→coarse grained pegmatite dike. - **Note:** much of the rest of this intersection is a pale→medium grey qtz-rich – medium-grained rock – possibly recrystalliezed quartzite? In places contains appreciable calcite (+25%) – there it looks like a recrystallized marble. -interspersed within this are narrow 5-20 cm bands of biotite fsp-qtz rich gneiss? with 3-5% diss py plus trace chalcopyrite plus trace graphite. - Where calcite rich, the rock has a pale→med.grey colour w/ a white speckled appearance - Interval is dominated by this qtz-rich material and/or qtz-calcite material. - Note: @ 40.67, 41.07 and 41.50 patches of bright reddish, orange, garnet accompanied by po +/- py (3%) - L.C. gradational and marked by granodiorite dike.			
47.16	78.35	M1	**M1 MARBLE:** - Variably- textured med→coarse grained impure marble with variable graphite, qtz, diopside +/- sulphide Content - Overall colour is a pale grey to v. pale greenish grey - Overall graphite grade <0.5% diss. (typical graphite metacrysts? tend to be larger in M1 material) - Massive→locally weakly banded.	47.16	49.00	4950
				49.00	51.77	4951
				51.77	53.49	4952
				53.49	55.00	4953
				55.00	57.00	4954
			- 47.16 – 48.26 - med. grey qtz-rich marble similar to bands in unit above. - <0.5% diss. Py - <0.3% diss. Graphite			
			- 48.26 – 49.95 - predominantly a fine grained qtz- calcite diopside med. grey rock w/ narrow 1-2 mm bands of graphite - overall graphite <0.3% plus intercalated bands of coarsely crystalline M1 marble - locally heavy po in narrow zones within fine grained diopside rich rock.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0008** **Page** **4** **of** **4**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			M1 MARBLE con't			
			- 51.77 – 53-49 – **Qtz Syenite?** (Fsp-qtz-pegmatite-Dike)			
			- U.C. @ 70° to C.A.			
			- L.C. @ 70° to C.A.			
			- Note: @ L.C. marble recrystallized to a v. coarse calcite marble with conspicuous green garnet? metacrysts. this sort of recrystallization / contact effect is seen frequently where these pegmatite sweats/dikes intrude M1 type marble			
			- what distinguishes the M1 marble from the CS1 And CS2 units is primarily a lack of foliation and grain size	57.00	59.00	4955
			- The overall modal mineral composition is probably in places not that much different consisting of varying proportions of calcite, qtz, diopside, graphite and py +/-po	59.00	61.00	4956
			- The M1 tends to be a massive unit. However, within and conformable to it are relatively narrow sections of material v. similar in appearance to CS1	61.00	63.00	4957
			- The M1 tends to med→coarse grained versus fine→med grained CS1 and CS2 units. CS2 of course is dintinguished by the presences of distinctive spinel metacrysts	63.00	65.00	4958
			- Weak foliation @70° to C.A.	65.00	67.00	4959
				67.00	69.00	4960
			- 64.85 – 66.10 - weakly foliated fine→ med. grained calcsilicate gneiss similar to CS1 unit.	69.00	71.00	4961
			- contains 2-2.5% diss. Pyrite	71.00	73.00	4962
				73.00	75.00	4963
			- 67.80 –70.70 - well developed limonite on fxs.	75.00	77.00	4964
			- 73.15 – 74.93 - weakly foliated med. grained qtz-calcite +/- diopside + graphite marble ~ 2% disseminated graphite.	77.00	78.35	4965
78.35	79.25		QUARTZ SYENITE GNEISS:	78.35	79.25	4966
			- Leucocratic foliated qtz syenite with 3% chloritized mafics, <0.7% diss. Py			
			- Tr. Disseminated, metallic, fine-grained, grey mineral			
			- U.C. @ 60° to C.A.			
	E.O.H.					

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT

Geological Log Hole-ID: BC0009 **Page** 1 **of** 3

SURVEY DATA												DRILLING DATA	
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1138.23
Collar			-90°									APPROX. EASTING (m)	571.82
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1569.34
		34.44	-88	-88	151.0	169.50						DATE DRILLING STARTED	NOV.22/2000
												DATE DRILLING ENDED	NOV. 23/2000
													(ft.) (m)
												TOTAL DEPTH	123 37.49
												CASING DEPTH	14 4.27
												CASING	
												STEEL IN HOLE	NO Ft.
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	JAN 2/2001

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	*SAMPLE LOG*		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	4.27		CASING			
4.27	5.21	IZ	INTERCALATED ZONE: - biotite – feldspar gneiss/schist with skarn M1 marble and coarse- grained diopside and graphite- bearing marble. All this has been intruded by feldspar-qtz pegmatitic sweats. - Overall graphite grade <0.2% with locally higher intervals within marble bands	4.27	5.21	4967
5.21	9.80	CS2	CALCSILICATE GNEISS 2: - Qtz-calcite diopside – graphite spinel gneiss - <0.5% diss bright green spinel - 5-7% diss graphite - overall colour of this unit dark grey to black - well foliated @ 60-65% to C.A. 5.61 5.77 feldspar-qtz-biotite pegmatite 5.77 – 6.03 – normal dark grey CS2 'converted' to a brownish qtz-fsp- phlogopite +/- muscovite +/- brown qt? + graphite +3-5% diss py. 6.03 – 6.20 – normaily textured CS2 with more sulphides (3%) plus no visible spinel. (Note: Spinel seems to get wiped out at	5.21 7.0 8.00	7.01 8.00 9.80	4968 4969 4970

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0009** **Page** **2** **of** **3**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			contact zones.	9.80	11.00	4971
			6.20 – 7.01 – predominantly a med green massive dark of qtz. + diopside?	11.00	13.00	4972
			- Possibly 'skarned' marble	13.00	15.00	4973
			- Within this interval is a 30cm white + green mottled → speckled unit of fsp + diopside + chlorite? + graphite. <0.5% diss graph	15.00	17.00	4974
			- this section contains a low angle, chloritized fault @ 5° to C.A,	17.00	19.00	4975
				19.00	21.00	4976
			*Overall graphite grade is low	21.00	23.00	4977
				23.00	25.00	4978
			7.14 – 7.30 – coarse grained M1 marble with <0.1% graphite.	25.00	27.00	4979
			contacts conformable	27.00	28.90	4980
			8.48 – 8.67 – coarse grained M1 marble with <0.3% diss graphite.			
			L.C. clear and conformable @ 50° to C.A.			
9.8	28.9	CS1	**CALCSILICATE GNEISS 1:**			
			- Medium grey→pale greenish -grey, fine→med. grained, massive to weakly foliated gneiss composed of qtz-calcite-Diopside-graphite-pyrite +/- po. Distinctive from CS1 by its lighter colour, lower graphite content and lack of bright green spinel			
			- As seen elsewhere, this unit interrupted by several variably-sized pegmatitic sweats and dikes			
			- Overall graphite grade is 1.5%-2.5% as disseminated fine grained metacrysts.			
			10.06 – 10.44 – feldspar –qtz – biotite +/- gt pegmatite.			
			12.60 – 13.01 – med. Green, massive 'skarn' rock composed of qtz+diopside?			
			Note: Foliation or compositional banding variable through unit 50° to 78° but averaging 60°.			
			L.C. marked by grain size increases, recrystallization and loss of graphite.			
			L.C. is an irregular contact with pegmatitic dikes/sweats.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC009** **Page** **3** **of** **3**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
28.90	37.49	Q	**QTZ 'VEIN' GNEISS:** - Recrystallized qtz 'vein' with weak gneissic foliation manifested by biotite - Some feldspar - From 28.90→34.00 moderate → strong pervasive limonite 33.02 – 33.43 – distinctive looking thinly laminated qtz-fsp biotite +/- gt +py schist. - laminations @ 50° to C.A. – but display tight contortions - strongly chloritized joint surfaces 34.00 – 37.49 – rock is a med. grey to faint purplish grey qtz with occasional bands of qtz – fsp – biotite gneiss and toward E.O.H. calcite shows up as white spots – aggregates to 2-3 mm. This may represent a quartz-flooded/replaced marble. E.O.H. @ 37.49	28.90	30.00	4981
				30.00	32.00	4982

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0010** **Page** 1 **of** 3

SURVEY DATA											
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID			
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)
Collar			-70°		42	15		GPS			
Down Hole	(ft.)	(m)	Read	True	Read	True					

DRILLING DATA		
GRID SYSTEM	MINE	
NORTHING (m)	1138.93	
EASTING (m)	572.51	
ELEVATION (m)	1569.30	
DATE DRILLING STARTED	Nov. 23 /2000	
DATE DRILLING ENDED	Nov. 23 /2000	
	(ft.)	(m)
TOTAL DEPTH	72	21.95
CASING DEPTH	9	2.74
CASING		
STEEL IN HOLE	No	Ft.
LOGGED BY	B. Augsten	
LOGGING DATE	Nov. 24 /2000	

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
2.74	8.89	CS2	**CALCSILICATE GNEISS 2:**			

			- Qtz – Diopside – Calcite – Graphite – Gneiss
			  - Qtz: 35%
			  - Diopside: 5-7%
			  - Calcite: 40%
			  - Graphite: Var (1-5%)
			  - Pyrrhotite? +/- pyrite <1% diss.
			  - Spinel: <0.3%
			  • Effervesces vigorously in cold 10% HCl
			- variably textured calcsilicate gneiss. Typically has a weakly to moderately foliated texture; fine grained with a distinct sucrosic texture.
			- Colour varies from a light → dark grey which may be a function graphite content
			- Foliation/banding is a function of alignment of graphite metacrysts and possible weak compositional segregation of qtz, calcite and diopside.
			- This unit is not homogeneous in texture. There are intercalations of more coarse grained 'true' marble and diopside rich calcsilicates.			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS2 con't:			
			- Notable btw: 5.26 → 5.61 – pale yellow-grey coarse-grained marble with calcite crystals to 1.5mmx1.5mm with correspondingly larger graphite crystals - several other smaller < 5cm bands of similar material occur.			
			In addition to the different intercalated lenses of metasediments , there are several intervals of coarse grained pegmatitc 'sweats' of variable texture but typically containing quartz, feldspar and and biotite with accessory pyrrhotite?			
			They occur @ 3.34 – 3.66m (.32) 4.03 – 4.36m (.33) 8.16 – 8.23m (.07) 8.47 – 8.70m (.23)			
			• As seen in outcrop these tend to be discontinuous lenses and boudinaged bodies			
			- the gneissic foliation in this unit is at 70° to C.A. - The other noteworthy feature is the presence of limonite staining as an alteration peripheral to fractures in several locations. This likely represents oxidation of iron minerals such as pyrrhotite/biotite by oxygenated meteoric waters. - Lower contact relationship somewhat obscured by the presence of a pegmatitic sweat.			
8.89	12.23	CS1	**CALCSILICATE GNEISS 1:**			
			- Coarser grained pale yellow-grey calcsilicate gneiss with locally a distinct compositional banding . - Qtz-calcite metacrysts to 4mm x 2mm and granular looking - This unit doesn't have the sucrosic texture of CS2 and the graphite grade is much lower. - <0.5% graphite overall - minor narrow coarse-grained qtz-feldspar +/-pyrrhotite +/-biotite pegmatitic sweats - compositional/gneissic banding at 65 - 80° to C.A. - Lower contact marked by pegmatitic sweat.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0010** **Page** **3** **of** **3**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
12.23	21.95		**CALCSILICATE GNEISS 1:** - Qtz – calcite –diopside – graphite –gneiss: - Med grained, medium grey – coloured, massively – textured, to locally weakly foliated calcsilicate gneiss. - 1-3% diss flake graphite - <1% po +/- py - tr cpy - large irregularly shape qtz metacrysts to 1cmx4mm but typically smaller several narrow zones of limonite staining peripheral to fxs.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID: BC0011** **Page 1 of 4**

SURVEY DATA											
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID			
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)
Collar			-54° 10'		42°	00'					
Down Hole	(ft.)	(m)	Read	True	Read	True					
		36.58	-55	-55	328.5?	347?					

DRILLING DATA		
GRID SYSTEM	MINE	
NORTHING (m)	1103.67	
EASTING (m)	568.31	
ELEVATION (m)	1569.04	
DATE DRILLING STARTED	NOV.24/2000	
DATE DRILLING ENDED	NOV. 42/2000	
	(ft.)	(m)
TOTAL DEPTH	130	39.62
CASING DEPTH	6	1.83
CASING		
STEEL IN HOLE	NO	Ft.
LOGGED BY	B . AUGSTEN	
LOGGING DATE	JAN. 2-3 /2001	

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
0	1.83		CASING			
1.83	8.92	CS1	**CALCSILICATE GNEISS:** - Pale grey to pale green/grey weakly foliated (or weak compositionally banded gneiss composed of variable ?portions of calcite,qtz,diopside,pyrite, and graphite with possible minor scapolite. - rock is fine→med. Grained - ~ 1% diss py +/- po - 2-2.5% crystalline graphite typically < 0.5mm in size - @3.00m compositional banding/foliation @ 68° to C.A. - rock reacts strongly to dilute 10% HCl - @ 8.70m compositional banding/foliation @ 63° to C.A. (Note: Compositional banding/foliation manifested by varying concentration principally of graphite and diopside to qtz + calcite ratio resulting in either darker grey bonds in the case of an increased concentration of graphite or stronger green bands in the case of greater diopside content of the expense lot qtz and /or calcite.) This section/interval is not entirely homogeneous for several reasons: 1. Within the calcsilicate gneiss are intercalated lenses/beds of coarser grained qtz-diopside marble containing less graphite.			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			CS1 CONTINUED: and typically more massive in texture. These lenses are conformable and commonly are 10-20cm long. 2. In addition, there are several small and not so small intervals of pegmatitic sweats/dikes. These typically are feldspar and qtz- rich with minor biotite and rarely contain graphite. They can have the appearance of qtz veins. Usually they are 5-10cm but two larger ones occur as follows: *These will have the overall effect of reducing the net graphite content! 6.15 – 6.72 - Partially limonitically – stained fsp-qtz-biotite, medium to coarse-grained pegmatitic sweat / dike. 6.87 – 7.13 - similar to the above. (Note: the wall rock between these two pegmatites is strongly skarned to a qtz-diopside rock with diss po. 8.06 – 8.59 – fsp-qtz – biotite pegmatite - See zones of pervasive limonitization peripheral to fxs in two areas. The extent of the limonite would suggest that there is more than ~1% sulphides. Possible oxidation of biotite present?? - The lower contact is a conformable contact marked by rapid change in graphite grade and mineralogical changes – See Below.			
8.92	17.10	CS2	**CALCSILICATE GNEISS 2:** Med→ dark grey, fine med. grained, moderately foliated/compositionally banded calcsilicate gneiss composed of variable properties of calcite, qtz, diopside, graphite, py+/-po and spinel - Usually I place the contact where I first see the distinctive spinel metacrysts – which heretofore has coincided with the 'richer' dark grey calcsilicate. In this case we don't see the spinel until ~ 11.00m. Otherwise the rock is a typical CS1. Of note, overall spinel content is lower than other CS1 units. - ~<0.2% diss spinel - 3-5% diss graphite throughout (except intrusions) - 1-1.5 % diss py +/- po - foliation/compositional banding @ 75-80° to C.A. This interval is not homogeneous due to intercalations of both coarse grained marble (M1) and minor lenses of CS1. In addition, as elsewhere there are several intrusive? Pegmatite → qtz syenite dikes. The larger ones are as follows: 12.17 – 12.38 12.63 – 13.18 (Note: below the latter dike there is a 15cm med green massive "skarned" rk. with no graphite.)	8.92	11.00	4987
				11.00	13.00	4988
				13.00	15.00	4989
				15.00	17.10	4990

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
		CS2	**CS2 CONTINUED:** The other noteworthy feature of this unit is the occurrence of locally much higher grade zones. These are usually small <10cm. Of note, is one between 14.94→15.49 (.55m). This is a black fine grained gneiss with +10% (visually graphite), also contains more spinel (1-2%) and higher sulphide content. (2-3%) Q:1 – What does (if it exists) the correlation between spinel, py and graphite mean? Q:2 – Spinel is resistant H=8, S.G? – Can you explore for this with the pan – as an indicator of high grade graphite zones? L.C. irregular and marked by a small qtz-fsp pegmatitic sweat.			
17.10	18.61		**SKARN ROCK:** Light→medium green coloured, massive, compact rock composed of qtz, diopside, minor calcite and minor brown garret? - also see minor coarse grained marble with calcite crystals to 1cm x 1cm with med→ dark green garnet metacrysts - minor sulphides - pegmatitic material noted at either end with 17cm marking ? contact. - No graphite - ** Regarding above – Protolith probably calcsilicate gneiss L.C. somewhat irregular with a 3cm contact aureole @ 45° to C.A.	17.10	18.61	4991
18.61	33.34	CS1	**CALCSILICATE GNEISS 1:** Medium to pale greenish/grey, fine →medium grained, weakly→well-foliated/ and /or compositionally banded calcsilicate gneiss. - Composed of variable proportions of calcite, qtz, diopside, graphite and pyrite (and locally scapolite) - 2-3% diss graphite overall - 1-1.5% diss py throughout (+/- po) - foliation/ compositional. banding relatively uniform @ 70-75° to C.A. - Overall relatively homogeneous unit with the exception of the following. 1. 19.71 – 20.65 – medium beige/grey to yellowish strongly compositionally banded medium- grained calcsilicate gneiss. Distinctive by the prominent 2 -5mm wide yellowish bonds probably scapolite-rich material. Graphite grade within this is ~1-1.5%	18.61	20.00	4992
				20.00	22.00	4993
				22.00	24.00	4994
				24.00	26.00	4995
				26.00	28.00	4996
				28.00	30.00	4997
				30.00	32.00	4998
				32.00	33.34	4999

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			CALC SILICATE GNEISS 1 CONTINUED:			
			- this unit appears conformable to the rest of the calcsilicate unit.			
			2. Several small pegamatite and granite sweats/dikes occur throughout the unit.			
			Two larger ones occur @			
			- 22.33 – 22.70			
			- 26.18 – 25.56			
			(Note: the latter one is more of a foliated granodiorite/quartz syenite.			
			- Start seeing skarning in the last metre of unit with patches of med. green massive qtz.-diopside rock.			
			L.C. marked by 15cm of coarse crystalline marble with graphite crystals to 2mm			
			L.C. relatively sharp @85° to C.A.			
33.34	39.62	Q	QUARTZ 'VEIN' (GNEISS)	33.34	35.00	5000
			Medium grey, medium→coarse grained qtz 'vein'. Contains diss graphite <0.5% suggesting that this is either a recrystallized Qtz – rich sediment or a possible qtz replacement of a calcsilicate.	35.00	37.60	5001
			- <0.5% diss po with heavier concentrations locally, notable near upper contact where po+/- py 5% over 15cm	37.00	37.93	5002
			- qtz has a granular recrystallized appearance to it.			
			- Overprinted in places by a weak pervasive limonite.			
			L.C. somewhat undulating but sharp @ ~ 85° to C.A.			
37.93	39.62		QTZ-FSP-BIO-GNEISS:	37.93	39.62	5003
			- Well-foliated gneiss with intercalations of qtz gneiss (as above)			
			- 2-4% py +/- po along foliation planes. Tr. diss cpy			
			- locally ~1% graphite – overall <0.3%			
			39.31 – 39.62 – strong chlorite development along fxs			
			E.O.H. @3962m			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT

Geological Log Hole-ID: BC0012 **Page** 1 **of** 4

SURVEY DATA											DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1070.16
Collar			-54° 40'		043°	10'						APPROX. EASTING (m)	574.54
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1570.23
		45.72	-55	-55	020.0	038.50						DATE DRILLING STARTED	NOV.25/2000
												DATE DRILLING ENDED	NOV.26/2000
													(ft.) (m)
												TOTAL DEPTH	157 47.85
												CASING DEPTH	6 1.83
												CASING	
												STEEL IN HOLE	NO Ft.
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	JAN 4/ 2000

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	1.83		**CASING**			
1.83	2.08	Bfgn	**BIOTITE-GNEISS:** Biotite –qtz – fsp gneiss: Fine – grained, somewhat mottled textured rock with 2-3% diss pyrite. No graphite – dark brown colour L.C. not clear.	1.83	2.08	5004
2.08	38.77	CS1	**CALCSILICATE GNEISS 1:** - Fine →medium grained pale→med. grey to pale green/grey rock, weakly to well-foliated and/or compositionally banded. - Rock is composed of somewhat variable proportions of qtz, calcite, diopside, py +/- po and graphite. 1-2% diss py +/- po overall - Overall graphite grade 1.5 – 2.5% as foliation parallel or disseminated metacrysts typically 0.5mm in diameter or less. - Compositional banding and/or foliation @ 65-75° - predominately 65° to C.A. - Compositional banding not everywhere, but where it occurs as at 3.25m. for example, it is manifested by a preferred segregation of diopside rich material at the expense of qtz and calcite into 0.5cm wide bands of light green material. In addition one sees a preferred accumulation of graphite in darker narrow bands. The overall effect is a banded	2.08	4.00	5005
				4.00	6.00	5006
				6.00	7.35	5007

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			appearance which should not be mistaken for bedding. This is a metamorphic fabric.			
			- This unit is not homogenous due to the presence of intercalations of marble and other calcsilicate lenses and to the presence of numerous small and several relatively large pegmatitic sweats and dikes.			
			(Note: The pegmatitic dikes are or can be a large percentage of the rock unit. For example between 2.08 and 7.37m pegmatites total 1.71m. for 32% of the rock. Overall the number of dikes is less but the larger ones are noted. Because these usually have no graphite in them they can significantly bring down the average grade.)			
			Some of the larger pegmatites occur at:			
			FROM TO LENGTH			
			5.21 5.73 .52			
			12.70 13.73 1.03			
			14.58 15.34 .76			
			*16.78 17.31 .53			
			18.79 19.15 .36			
			19.84 20.42 .58			
			20.57 20.87 .30			
			22.72 223.04 .32			
			More notes on Pegmatites:			
			These pegmatites are typically coarse grained containing feldspar + qtz + biotite +/- po. They are usually limonitically stained in a patchy manner with the limonite forming alteration rims around biotite and/or pyrrhotite +/- py patches. Occasionally these recessively oxidize forming miarolitic cavitites.			
				7.35	8.20	5008
		CS2	7.35 – 8.20 – intercalated lens of CS2 material – distinguished by higher graphite content, dark grey to black colour and presence of bright green spinel. Well foliated @ 65° to C.A.	8.20	10.00	5009
			- ~4% graphite (Note: last 10cm, 8.10 – 8.20, v.black with 10% graphite)	10.00	12.00	5010
			- Usually we see this unit as a relatively large 5-10m distinguishable unit – in this hole it occurs as small intercalations	12.00	14.00	5011
			- Contacts are conformable	14.00	16.00	5012
				16.00	17.60	5013
				17.60	18.47	5014

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
		CS2	17.60 - 18.47 – another intercalated lens of CS2 with 3.5 –4.0% diss graphite - distinguished by dark grey → black colour + green spinel - contacts appear conformable to metamorphic foliation. (Note: @ 21.06m a 10cm section of CS2 @ 21.70m a 5cm section of CS2			
		CS1	(Note: From 18.47 – 25.55 difficult to distinguish the hosting rock (CS1) because it has been cut by numerous pegmatite sweats/dikes in addition to being intercalated with minor lenses of CS2 (as noted) and more of a compositionally banded M1 marble) - Overall graphite grade will be low in this interval. - The larger of the pegmatites are noted on Pg.2. In addition to the larger dikes there are several small ones (5-10 cm) dispersed in this interval. - Between them the CS1 unit is often 'skarned" to a green massive skarn with no or little graphite.	18.47	20.00	5015
				20.00	22.00	5016
				22.00	24.00	5017
				24.00	25.55	5018
			23.10 – 25.55 – pale yellow /grey compositionally banded coarse grained qtz-diopside +/- marble scapolite - <0.5% diss graphite throughout - variably recrystallized by pegmatitic sweats - compositional banding @ ~70° to C.A.			
			26.97 – 27.73 – Granodionite? Dike: - Foliated biotite grenodionite composed of biotite, white feldspar and qtz. - U.C. @ 60° to C.A. - L.C. @ 55° to C.A. * No graphite.			
		CS1	28.35 – 29.25 – distinct compositionally banded med→coarse grained gneiss/marble with pale yellowish (scapolite -?) band interbanded with grey →flesh coloured qtz-rich bands and pale grey → whitish calcite-rich bands in addition to black narrow 1-2 mm graphite rich bands. - conpositional banding @ 65 – 70° to C.A. - Overall graphite <0.7% disseminated and focused in discrete bands. (Note: @ 32.59 – discrete metacrysts (1-2%) of spinel within CS1 unit.	25.55	27.00	5019
				27.00	29.00	5020
				29.00	31.00	5021
				31.00	33.00	5022
				33.00	35.00	5023
			36.64 – 37.52 – CS1 becomes finer grained,darker and somewhat silicified with a very sucrosic texture. - graphite still present at 1-5 – 2% diss - this texture is a function of proximity to lower contact?	35.00	37.00	5024
				37.00	38.77	5025

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0012** **Page** 4 **of** 4

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED:			
			38.14 – 38.56 – rock is skarned and interjected with qtz / pegmatitic sweats. - no graphite. - L.C. somewhat irregular and diffuse and marked by a pegmatite dike.			
			38.56 – 38.77 – Pegmatite dike. L.C. @ 40°			
38.77	47.85		QTZ 'GNEISS': - Recrystallized limonitically stained qtz 'vein' – pegmatite - Has a coarse 'granular' texture with occasional 'schlieren" of biotite gneiss. - Minor diss biotite throughout - Locally heavy pyrrohotite associated with biotite schlieren - No graphite.	38.77	40.00	5026

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT Geological Log Hole-ID: BC0013 Page 1 of 5

SURVEY DATA											DRILLING DATA	
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1068.86
Collar			-90°									APPROX. EASTING (m)	573.38
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1570.18
		46.63	-88	-88	116.0	134.5						DATE DRILLING STARTED	NOV 26/2000
												DATE DRILLING ENDED	NOV 28 / 2000
													(ft.) (m)
												TOTAL DEPTH	173 52.73
												CASING DEPTH	7 2.13
												CASING	
												STEEL IN HOLE	NO FL
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	JAN. 5/2001

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	2.13		CASING			
2.13	14.48	CS1	CALCSILICATE GNEISS 1:	2.13	4.00	5027
			- pale grey → greenish grey to darker grey/green, fine→med grained rock, weakly to well foliated and/or compositionally banded rock.	4.00	5.00	5028
			- Rock is composed of variable proportions of calcite, quartz, diopside, graphite and pyrite +/- po with accessory scapolite, poss. Phlogopite			
			- Colour variations seen in the rock are due to variations, principally in the amounts of graphite, diopside and to a lesser extent qtz + calcite. The graphite content controls the grey colouration – the darker grey the higher the graphite content.			
			- The diopside content controls the green colouration			
			- Overall graphite content is 1.75-2.5 % with local variations off this			
			- Sulphide content predominantly py with lesser po @ 1-2% dissem.			
			- Graphite occurs as discrete metacrysts – small disc like crystals sometimes disseminated where rock isn't foliated well and where foliation noticeable the graphite is aligned parallel to the foliation. Crystal size is typically <0.5mm x 0.5mm in the two larger dimensions, but locally see larger metacrysts to + 1mm ? The crystal size appears to be a function of the overall grain size of the rock, ie. Coarser grained rock has coarser graphite crystals. This holds true in all the drill holes.			
			- Foliation or gneissic banding is variable but where easily seen it averages about 55° to C.A. e.g.@ 7.8m.			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
		CS1	**CS1 CONTINUED:** - This calcsilicate unit is not homogeneous due to the presence primarily of leucocratic pegmatitic sweats/dikes. These are variable in size from <5cm to +1m. The larger ones are noted below. They tend to be coarse-grained and composed primarily of Kspar with lesser qtz and minor biotite +/- po +/- py. They often have a contact affect on the surrounding calcsilicate gneiss, commonly producing a green skarn or a coarsely crystalline marble. The pegmatites usually do not have any graphite – thus while they would have to be mined they contribute nothing to the overall grade, - rather they reduce the overall grade substantially plus they change the mining characteristics of the rock ie. They are much harder.	5.00	6.22	5029
				6.22	8.00	5030
			5.00 – 6.22 – pegmatite dike as described above – patchy limonite staining (probably oxidation of sulphides) – also contains 2-3% spotty chloritized mafics.			
			One further note on the texture of this unit (CS1) In this hole as in others this unit as well as (CS2) have a distinctly "sucrosic" texture – produced by the granular nature of the quartz. This has led previous workers (1997) drilling to describe these rocks as "limy sandstones" By virtue of their metamorphic grade they cannot be sandstones. This sucrosic texture is a function of the grain size and qtz content – more noticeable in the finer grained and more qtz rich sections – although the qtz content doesn't seem to vary that much – usually 20 – 30 % (also may be a function of scapolite content which as seen in thin section is appreciable).	8.00	10.00	5031
				10.00	11.58	5032
			11.58 – 13.71 – majority of the rock is a massive, med. grained diopside, qtz graphite marble, <0.5% diopside. - no foliation - <0.3% diss graph. - Med→pale grey/beige colour - This interval includes some (50cm of CS1) as well as one small 15cm pegmatitic sweat - Contacts are somewhat gradational and conformable	11.58	13.71	5033
				13.71	14.48	5034
			At the lower contact there is a 10 cm pegmatitic sweat that marks the transition from CS1 to CS2.			
14.48	22.80	CS2	**CALCSILICATE GNEISS 2:** (Note: this interval is a good type section for CS2) Dark grey → black, fine grained, well foliated and /or compositionally banded rock. - rock is composed of calcite, qtz, diopside, graphite, pyrite +/- po and spinel - Three things usually distinguish this unit: - 1. High graphite content – typically 3-5% with locally (10-15cm) 7-10% - 2. Presence of ~0.5 – 0.7% distinct **bright emerald–green spinel** metacrysts 0.5 – 1.0mm in diameter. - 3.We almost always see at least one section within CS2 that has a distinctive texture produced by whitish, lenticuair to ovoid clots, 5mm x 3mm to +10mm x 3-4mm, composed of calcite qtz +/- diopside (probably also kspar +/- scapolite), aligned parallel to foliation against a backdrop of dark grey → black fine grained graphitic calcsilicate gneiss. Where the texture is best defined these clots make up 7-10% of the rock e g @ 15 90m	14.48	16.59	5035

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CALCSILICATE GNEISS 2 CONTINUED:			
			(Note: This texture is only seen in this unit.)			
			Foliation / compositional banding variable from 35 to 50° to C.A.			
			16.59 – 18.57 – *Leucocratic coarse-grained, weakly gneissic qtz syenite*	16.59	18.57	5036
			- <2% biotite	18.57	20.93	5037
			- <1% po			
			- contains small amounts <0.1% graphite as individual crystals			
			- Overall graphite grade in this interval may be relatively high due to the inclusion of a 43cm xenolith of CS2			
			-			
			(Note: @ 18.57 in underlying CS2 unit there is a 2cm zone of heavy graphite and decrease in grain size right up against contact with qtz syenite dike.			
			- Sulphide content within CS2 unit is a mixture of py + po as disseminated fine grains totaling 1-2%, locallling to 3-4%	20.93	22.51	5038
			19.35 – 20.20 – section of intercalated CS1 with 1-2% diss graphite	22.51	22.80	5039
			20.93 – 22.51 - Qtz Syenite Dike – similar to one @ 16.59			
			U.C. @ to C.A.			
			L.C. @ to C.A.			
			- *a 10 cm qtz syenite sweat marks the lower contact.*			
22.80	52.73	CS1	**CALCSILICATE GNEISS 1:** - Mineralogically very similar to CS1 at top of the hole. The difference in this section is the grain size This is a pale grey → green/grey, med→ coarse, grained rock, very weakly foliated overall with locally good foliation and excellent compositional banding.	22.80	25.00	5040
			- rock is composed of qtz, calcite, diopside, graphite + po +/- py.	25.00	26.65	5041
			(Note: From 22.80 – 26.65- within this subinterval textures vary greatly because of contact effects and recrystallization caused by the presence of several qtz syenite and pegmatitic sweats and dikes. One notable large intrusion @ 24.35 – 25.83 – it includes several xenoliths of country rock.)			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
		CS1	**CS1 CONTINUED:**			
			25.82 – 27.00 – well -developed compositional banding comprised of blackish graphite rich bands (1-3mm), yellowish scapolite – rich bands 3-5mm, and beige→grey qtz calcite rich	26.65	28.00	5042
			- compositional banding @ 65° to C.A.	28.00	30.00	5043
			- this CS1 unit has more of a granular look (granoblastic) with conspicuous qtz clots up to 1cm x 1cm with v. irregular edges	30.00	32.00	5044
			- this unit continues to end of hole interrupted only by numerous dikes and sweats of qtz syenite and/or felsic kspar–qtz-pegmatites These in turn have variably altered the CS1 unit.	32.00	34.00	5045
			The larger of the dikes are located as follows:			
			From (m) To (m) Length (m)			
			35.45 36.15 0.70			
			36.56 37.49 0.93			
			41.86 42.65 0.79			
			44.89 45.18 0.29			
			46.02 47.18 1.16			
			50.88 52.73 1.88			
			TOTAL: 5.75m			
			*these dikes tend to recrystallize (coarsen) and skarn the peripheral host rock.			
			**Between 35.45 and 52.73 felsic pegmatites/qtz syenite dikes comprise at least 33% of rock			
			39.35 – 43.42 - With the exception of a couple of qtz syenite dikes (notably at 41.86 – 42.65) this is a higher grade section visually similar to CS2 material except for the lack of the emerald green spinel	34.00	36.15	5046
			- dark grey → black mottled to well-foliated rock	36.15	38.00	5047
			- 3-5% diss graphite	38.00	40.00	5048
			- 2-3% diss po.	40.00	41.86	5049
			- Foliation and/or compositional banding @ 70° to C.A.	41.86	42.65	5050
			47.18 – 49.86 – darker, finer grained locally mottled texture	42.65	44.00	5051
			- overall 3% diss po	44.00	46.00	5052
			- 2-3% graphite	46.00	47.18	5053
			- last 50 cm of this section becoming browner due to appearance of phlogopile? 5-7%	47.18	49.00	5054
				49.00	49.86	5055

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED: -	49.86	50.88	5056
				50.88	52.73	5057
			50.86 -- 52.63 - Qtz Syenite Dike			
			- 2-3% biotite			
			- ~ 1-2% po overall with locally 3-5% f.c. po with tr. Sph, cpy. @ 52.33			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0014** **Page** **1** **of** **3**

SURVEY DATA												DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE	
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1242.77	
Collar			-54° 10'		46°	50						APPROX. EASTING (m)	521.36	
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1543.66	
		46.02	-54	-54	021.5	040.0						DATE DRILLING STARTED	NOV. 30 /2000	
												DATE DRILLING ENDED	Dec 1 /2000	
													(ft.)	(m)
												TOTAL DEPTH	174	53.04
												CASING DEPTH	10	3.05
												CASING		
												STEEL IN HOLE	NO	Ft.
												LOGGED BY	B. AUGSTEN	
												LOGGING DATE	JAN 7/ 2001	

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	3.05		CASING			
3.05	4.55	P	PEGMATITE: - Coarse grained feldspar – qtz pegmatite with limonitic miarolitic? spots centered on fracture controlled pyrrhotite (po) - Also includes 20 cm section of coarse grained qtz syenite dike? L.C. sharp @ 70 ° to C.A.			
4.55	9.79	CS1	CALCSILICATE GNEISS 1: - Fine → med grained weakly to well foliated pale →med grey to pale → med greenish/grey (where unalt'd) - Composed of variable proportions of calcite, qtz, diopside, graphite + pyrrhotite +/- pyrite. (1-2% po) - Foliation variable from 57→67° to C.A. - Overall <1.5% diss graphite but where unalt'd 2-2.5% diss graphite - Limonitically stained fxs and joints with minor pervasive limonite peripheral to joints only locally. Unit is not homogenous due principally to the presence of several small pegmatitic dikes and one larger pegmatitic → qtz syentic dike @ 6.91 to 7.78 In addition, the unit is alt'd at lower contact from 8.89 to 9.79 This alteration appears to be contact effect from the underlying qtz.	4.55 6.00 8.00	6.00 8.00 9.79	5058 5059 5060

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED: body. The alteration has converted the normally greenish rock into a dark grey to black rock. There appears to be a grain size reduction to a fine grained rock with increase in sulphides to 3-3.5% diss po + appearance of fine grained brown mineral ~3% - possible fine grained biotite. In essence this is a hornfelsing effect. L.C. marked by a 10cm pegmatitic sweat. L.C. @ 48° but v. irregular (Note: At the contact there is a 3-5 mm thermal effect manifested by med → dark green alteration (chlorite +/- actinolite) and increase in pyrrhotite)			
9.79	11.90	Q	**QUARTZ:** - Med grey to limonitically stained coarse grained, recrystallized qtz - ~1% F.C. pyrrhotite (po) - possible trace sphalerite (sph) - strongly fractured L.C. sharp @ 80° to C.A.			
11.90	20.50	GD	**GRANODIORITE: (Quartz Monzonite)** - Medium grained, leucocratic, biotite granodiorite comprised of qtz (med grey→flesh coloured), feldspars (white) biotite (black) - Variable texture from massive to wkly foliated - Model Composition: QTz: 20% Feldspar: 75% (plag vs kspar?) Note: all feldspars white Biotite: 3-5% Sulphides: Tr. Good type Example – get thin Section from here. L.C. Sharp @ 57° to C.A., although the granodiorite has been intruded by apophyses of the underlying pegmatite? Qtz syenite.			
20.50	28.30	P	**PEGMATITE:** This is somewhat of a heterogeneous zone consisting primarily of a pegmatite dike "swarm". Between pegmatites are small sections of recrystallized M1 marble and biotite gneiss. - Pegmatites are feldspar, qtz, +/- biotite +/- pyrrhotite?? L.C. sharp @ 50° to C.A., but may not mean much due to variability.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0014** **Page** **3** **of** **3**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
28.30	48.80	M1	MARBLE: M1: - Pale → med grey, med → coarse grained qtz +/- diopside +/- graphite marble - Minor diss. and remobilized pyrrhotite throughout. 31.00 – 31.00 – pegmatite dike. 33.13 – 34.53 – Biotite Grandionite (fine-grained) intruded by a Pegmatite Dike - Hydrid zone. (Note: @ 36.1m strongly limontized joint with some obvious dissolution of marble – this probably represents a water channel. Occasionally these are seen in both marble and calcsilicate units.) - Overall graphite grade <0.5% as disseminated euhedral metacrysts. Locally the graphite content both much lower to <0.1% and somewhat higher. Better sections sampled. The colour of the marble is a good clue to the graphite content. The darker grey sections are higher grade. (Note: 39.50 m a 3cm pegmatite sweat/dike with a distinctive white sericite alt'n rim including some apple green sericite – possible fuchsite/ mariposite.) - Commonly, the M1 is massive but locally you can see a weak foliation and/or compositional banding. This is usually manifested by alignment of graphite metacrysts and sometimes qtz-rich vs. calcite rich bands. (Lepidoblastic texture). - Also locally see occurrence of phlogopite manifesting a similar foliation - (Note @ 42.05 – see distinctive bright orange – spessartine garnets to 2mm diam - @ 45.00 – compositional banding @ 68° to C.A. L.C. sharp @ 57° to C.A. and marked by a gradational 10 cm zone of increase 'skarn' toward contact. Rock becomes progressively finer grained and darker green.	37.00	39.00	5061
				39.00	41.00	5062
				41.00	43.00	5063
				43.00	45.00	5064
				45.00	47.00	5065
				47.00	48.80	5066
48.80	53.04	HZ	HYBRID ZONE: Interval of strong pegmatitic to qtz syenitic intrusions resulting in strongly hornfelsed and skarned rocks. - includes some sections of biotite feldspar gneiss. - Overall 1-3% disseminated and fracture-controlled pyrrhotite. - No Graphite - Prominent limonite development on fractures.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0015** **Page** **1** **of** **4**

SURVEY DATA											DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1198.46
Collar			-54° 10'		42°	30						APPROX. EASTING (m)	533.14
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1548.55
		64.01	-53	-53	014.5	033?						DATE DRILLING STARTED	DEC 1/2000
												DATE DRILLING ENDED	DEC 2/2000
													(ft.) (m)
												TOTAL DEPTH	220 67.60
												CASING DEPTH	8 2.14
												CASING	
												STEEL IN HOLE	NO Ft.
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	JAN 8/2001

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	2.44	8	CASING			
2.44	12.60	CS1	CALCSILICATE GNEISS 1:			
			- Pale→ grey → locally dark grey –weak/ pale greenish/grey fine→medium grained rock with a variable fabric ranging from massive granoblastic to weakly foliated to moderately foliate.	2.44	4.00	5067
			- The rock is composed of variable proportions of calcite, quartz, diopside graphite pyrrohotite +/- py plus accessory scapolite?	4.00	6.00	5068
			- Overall graphite grade 1.5 – 2.2 % "as disseminated" metacrysts to <0.5mm in diameter.	6.00	8.00	5069
			- <1% diss pyrrhotite overall except where noted below			
			- rock has a distinctive 'grainy' feel on broken surfance – sucrosic texture which is characteristic of both CS1 and CS2 units.			
			- Also see distinctive anhedral clots of med grey quartz?(scapolite/kspar)– these typically have very irregular boundaries and are up to 1cm x 0.5 cm with some much large accumulations. Typically 2-4mm x 2-4mm.(			
			- Foliation and /or weak compositional banding @ 65-70° to C.A.	8.00	9.70	5070
			- This interval is not completely homogeneous. The rock is intruded by several pegmatite dikes/sweats, usually <10cm. One larger one noted below. In addition, approaching to lower contact rock has been somewhat altered – perhaps hornfelsed. (See description below)	9.70	11.00	5071
				11.00	12.60	5072

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED:			
			3.91 – 4.45 – alt'd zone due to smallish (15cm) pegmatite dike between 3.96 – 4.11 – atl'd surrounding the dike ia a med green coarse grained rock with qtz + fsp + diopside with unusually large graphite metacrysts to 2mm x 2mm			
			9.70 – 12.60 – calcsilicate has become dark grey to almost black, finer grained perhaps more siliceous. And better foliated. - also 2-3% diss po - 3-4% diss graphite @ 12.40 tr. Cpy, aspy? And gn? Associated with coarse pyrrohotite within a qtz sweat/irregular veinlet < 1cm wide. (Note: Locally see well developed phlogopite within coarsely crystalline calcite rich intercalation e.g. @ 11.44m			
			L.C. sharp @ 70° to C.A. and marked by coarsening and recrystallization of the upper calcsilicate.			
12.60	17.50	Q	Quartz: - Med grey to limonitically stained, coarse grained recrystallized qtz. - Weakly foliated - < 1% diss biotite - < 0.5% diss po+/- py - Strong F.C. and pervasive limonite in patches - Interval includes minor pegmatitic diking/ and small intercalations of bi-qtz-po-gneiss.	12.60	14.00	5073
			L.C. placed somewhat arbitrarily – where for the most part the limonite-stained qtz disappears and biotite-fsp-qtz gneiss bands start to predominate.			
			L.C. @ 70° to C.A.			
17.50	34.30		**BIOTITE – FSP – GNEISS/QZ/P/M:** - Intercalated sequence of biotite-feldspar-qtz gneiss with med grey qtz, pegmatite and qtz syenite, granodiorite gneiss and skarned marble. - This is a difficult interval to put a label on because of the rapidly changing lithologies. I've seen this sequence elsewhere. I've placed the lower contact of the point which the last band of biotite – fsp gneiss occurs. - Rocks in this zone include biotite – fsp- qtz gneiss which is a black → dark brown with whitish patches/lenses, well foliated. - Qtz unit is a med grey, often spotted unit with whitish calcite spots and minor diss. Dark green chloritized ma?? Spots. This unit may be a qtz – flooded/recrystallized marble.			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
		Bfgn	**BFGN CONTINUED:** The sequence is intruded frequently by qtz-fsp pegmatitc sweats/dikes and intrusions of qtz syenite – (they are probably genetically related) @ 25.80 we first start seeing intercalations of dark green skarned rock now composed of massive qtz/diopside/garnet +/- po rock. These become more frequent toward lower contact. (Skarned M1 marble). 30.97 – 31.79 – Dike of biotite granodiorite – mod. Foliated U.C. @ 77° to C.A. L.C. @ 78° to C.A. L.C. 80° to C.A.			
34.30	66.47	M1	**MARBLE M1 :** - Pale grey → med grey → pale grey / greenish grey med to coarse grained marble - Impure marble due to presence of significant amounts of qtz and lesser diopside (var.) plus phlogopite (locally) po+/-py + graphite. - This unit is usually massive with small sections of somewhat finer grained intervals displaying either a weak → med. foliation or weak→ med. compositional bonding. - Overall graphite grade <0.5% as diss metacrysts usually <0.5mm in ? but up to 1mm in ?? in coarser grained sections. 34.30 – 35.05 - med→ dark green massive fine grained skarned marble consisting of qtz-diopside-gt? - <1%po. (no graphite). 35.05 – 37.95 – well foliated fine grained qtz – diopside-graphite –po marble/calcsilicate, <1% diss graphite pale greenish colour. Foliation @ 72° to C.A. 37.95 – 54.80 – med→ coarse grained qtz +/- diopside marble. Note: peripheral to pegmatitic dikes/dikelets see a substantial recrystallization and coarsening in grain size; <0.5% diss graphite overall. 54.80 – 55.20 – foliated fine grained qtz-diopside +/- gt – graphite – po marble – (calcsilicate) - 2% diss po; tr cpy. - <1% graphite. 55.20 – 66.47 – predominately med → coarse grained qtz-diopside marble with <0.5% diss graphite thoughout. <0.5% diss po.	34.30	36.00	5074
				36.00	38.00	5075
				38.00	40.00	5076
				40.00	42.00	5077
				42.00	44.00	5078
				44.00	46.00	5079
				46.00	48.00	5080
				48.00	50.00	5081
				50.00	52.00	5082
				52.00	54.00	5083
				54.00	56.00	5084
				56.00	58.00	5085
				58.00	60.00	5086
				60.00	62.00	5087
				62.00	64.00	5088

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			M1 MARBLE CONTINUED:	64.00	65.00	5089
			Note: Within this marble unit, pegmatitic sweats/dikes comprise a cumulative total of approximately 12% of the core length. Note: all contacts between subsections above are gradational. L.C.@ 20° to C.A.	65.00	66.47	5090
66.47	67.06		**GRANODIONITE / BIOTITE GNEISS:** Low angle contact with biotite gneiss and leurocratic granodiorite. Not enough core to see what really is happening. Probably getting into another one of those zones of rapidly changing lithologies as above the M1 Marble.			
	E.O.H.					

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT

Geological Log Hole-ID: BC0016 **Page** 1 **of** 3

SURVEY DATA											
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID			
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)
Collar			-55° 50'		45	00'					
Down Hole	(ft.)	(m)	Read	True	Read	True					
		32.92	-55	-55	022.0	040.50					

DRILLING DATA		
GRID SYSTEM	MINE	
APPROX. NORTHING (m)	1000.22	
APPROX. EASTING (m)	601.18	
APPROX. ELEVATION (m)	1572.20	
DATE DRILLING STARTED	DEC 2/2000	
DATE DRILLING ENDED	DEC 3/2000	
	(ft.)	(m)
TOTAL DEPTH	118	35.97
CASING DEPTH	9	2.74
CASING		
STEEL IN HOLE	NO	Ft.
LOGGED BY	B, AUGSTEN	
LOGGING DATE	JAN. 9/2001	

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
2.74	24.41	CS1	**CALCSILICATE GNEISS 1:**			
			- Pale → med grey, to dark grey to black (where alt'd), to pale greenish grey,generally finer grained rock, with a variable texture from almost massive granoblastic to well – foliated.			
			- The rock is composed of variable proportions of calcite,qtz, diopside, pyrrhotite, +/-pyrite, and graphite			
			- Overall graphite grade in interval <0.7% due to the preponderance of intrusive pegmatitic dikes/sweats and other felsic intrusions as will be described below. Overall graphite grade within the CS1 unit itself is 1.5 → 2.5 % as fine disseminated grains ranging in size from ~ 1mm → 0.25mm in diameter, probably averaging <0.5mm			
			- Pyrrhotite occurs as fine disseminated grains within the CS1 unit to 1-2% with locally higher concentrations.			
			- The interval is not a homogenous one due to the number of and frequency of predominately pegmatatic dike/sweats. These pegmatites are primarily feldspar – qtz - +/- biotite +/- pyrrhotite. They tend to be white → pale green in colour with limontic overprinting.	2.74	4.00	5091
				4.00	6.00	5092
				6.00	8.00	5093
			- Total core interval of pegmatitic dike within this interval is 4.74 m. Note: this is a cumulative total. This amounts to ~ 22% of interval.	8.00	10.00	5094
			- This interval of CS1 is particularily hard hit with dikes such that , at , first glance you would not see this as a cohesive unit from 2.74→24.41. I interpret the section to be a calcsilicate gneiss intruded by a dike swarm. The intensity of the diking may be indicative of the proximity to an intrusive?? The larger dikes are identified below.	10.00	12.00	5095
				12.00	14.00	5096
				14.00	16.00	5097
			-	16.00	18.00	5098
				18.00	20.00	5099

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED:	18.00	20.00	5099
				20.00	22.00	5100
			2.91 - 4.10	22.00	24.41	5101
			4.67 - 5.70			
			8.10 - 8.55			
			10.08 -10.75 (This is a somewhat unusual pegmatitic with pale purplish almost amethyst-like qtz and strong fine-grained white → pale green muscovite development at the expense the felspar (kspar). The feldspars are soemwaht chalky in appearance.)			
			18.84 - 19.45			
			Note: In addition to lowering the overall grade merely by their presence these intrusions also have a thermal effect producing weak→mod. skarning + hornfelsing in some cases seemingly driving off the graphite Note: In addition to lowering the overall grade merely by their presence,these intrusions also have a thermal effect producing weak→mod. skarning + hornfelsing which in some cases seemingly drives off the graphite			
			13.05 - 14.28 **BIOTITE - FSPAR - QTZ - GNEISS:** intercalated lens of biotite fsp/qtz gneiss; fine-grained, dark brown with white patches; strongly foliated; more than half of interval is strongly pervasively limonitized.			
			Throughout the unit(CS1) see the occurrence of narrow zones of strong limonite development which is a maifestation of the oxidation of the contained sulphides. These limonitized zones tend to accentuate the foliation if present.			
			(Note: @ 4.6 m. foliation @ 65° to C.A.)			
			22.64 – 23.79 – **Granodiorite Gneiss** – weakly foliated, slightly feldspar – porphyritic, biotite grandiorite gneiss; med grained U.C. @ 30° to C.A. L.C. obscured - small (2-3cm) shear zone (fault) @22.88m with shearing @ 18-20° to C.A.			
24.41	35.97	Q	**Quartz:** - Medium grey to limonitically stained med → coarse grained recrystallized qtz containing <1% fine grained biotite 1-2% F.C, pyrrhotite +/- pyrite and locally even coarse grained graphite - The presence of graphite suggests that this may be a quartz-flooded marble and /or calcsilicate unit?? - This interval also includes several pegmatite sweats and dikes including one large one @ 31.24 → 32.81 - It also includes several small and not so small lenses of biotite – qtz – fsp gneiss.			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
		Q	**QUARTZ CONTINUED:** 33.19 – 33.87 – Biotite – Fsp – Q gneiss containg 1-2% pyrrhotite and 1-1.5% graphite @ 34.80 – coarsely crystalline graphite with recrystallized qtz. Graphite metacrysts to 4mm x 3mm (Note: In sampling this hole because of the rapid lithological changes throughout the interval of interest, oscillating between pegmatite and CS1, I didn't break down the samples on lithology breaks. Rightly or wrongly, I divided into 2m intervals. If this will be mined we will have to take the entire interval – no individual section of CS1 was big enough to mine? - The overall grade in this hole will be too low regardless.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** BC0017 **Page** 1 **of** 4

SURVEY DATA											DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	1178.17
Collar			-58° 15'		45°	20'						APPROX. EASTING (m)	834.45
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	1693.86
		42.67	-59	-59	022.5	041.0						DATE DRILLING STARTED	December 3, 2000
												DATE DRILLING ENDED	December 4, 2000
													(ft.) (m)
												TOTAL DEPTH	150 45.72
												CASING DEPTH	24 7.32
												CASING	
												STEEL IN HOLE	NO Ft.
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	JAN 10/2001

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	7.32		**CASING**			
7.32	8.00	MI	**MARBLE:** - pale grey → beige, medium → coarse- grained marble with <0.5% diss graphite. - badly broken core with poor recovery - part of interval skarned marble to a medium green massive rock L.C. obscured by rubble			
8.00	9.09	P	**PEGMATITE:** - strongly limonitically stained coarse grained feldspar – qtz +/- biotite _/- pyrrhotite pegmatite. L.C. obscured by broken core			
9.09	31.15	CS1	**CALCSILICATE GNEISS 1:** - pale to dark grey → pale greenish grey fine → med. grained, very weakly foliated to almost massive granoblastic to well foliated and /or locally compositionally banded - rock is composed of variable proportions of calcite, qtz, diopside, graphite and pyrrhotite +/- pyrite +/- phlogopite locally +/- scapotite.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0017** **Page** **2** **of** **4**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
		CS1	**CS1 CONTINUED:**	9.09	12.72	5102
			The rock /interval is not completely homogenous due to	12.72	14.10	5103
			1. various textural changes down section	14.10	16.09	5104
			2. intrusion of pegmatitic dikes/sweats			
			3. alteration effects of intrusions or country rock			
			4. presence of several intercalations of spinel-bearing CS2			
			5. alteration due to meteoric waters ie. oxidation/production of limonite			
			- @9.69- good example of well-developed compositional banding manifested by yellowish-beige bands (scapolite-rich) to 0.5cm interbanded with graphite-rich bands (dark grey →black)			
			- banding @ 80° to C.A.			
			-10.63 – 11.14 (CS2?)– dark grey, graphite –rich segment with distinctive texture of dark green pods 1cm x 4mm or less, possible spinel although not quite as green as normal; this may be due to strong oxidation.			
			- sample is strong limonitized			
			- contacts aren't clear due to broken core.			
			-@11.62- rock reduced to a limonitic, graphitic sand.			
			-12.72 – 14.10 – Pegmatite – limonitically stained fsp-qtz biotite pegmatite with coarse fzp-qtz and fn gr. Biotite.			
			- <0.5% pyrrhotite.			
		CS2	-14.98 – 15.34: - dark grey to black, fine grained rock with a mottled texture created by whitish lenticular pods up to 1cm x 2mm. This texture is seen in CS2 unit frequently	16.09	16.55	5105
			- in this case no visible spinel	16.55	17.39	5106
			- very siliceous rock although still appreciable calcite			
			- 2-4% diss po; 3-5% diss fine grained graphite <0.3 mm diam			
		SK	-15.34 – 16.09 – skarned calcsilicate producing a med. green, massive, sometimes mottled rock, now mostly qtz,+diopside with coarse actinolite visible in calcite veinlet.			
		P	-16.09 – 16.55 - Pegmatite – pale green → beige pegmatitic type sweat/dike fsp-qtz +/- biotite U.C. @ 52° to C.A. L.C. @ 55° to C.A.			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED:			
			-16.09 – 16.55 – recrystallized ; weakly skarned clacsilicate –now- a med →coarse grained qtz marble with patchy accumulations of distinctive orange spessertine garnet; <0.3% diss graphite.	17.39	18.46	5107
			-17.39 – 18.46 – CS2 – dark grey → black, well – foliated, spinel – bearing calcsilicate gneiss, fine grained, sucrosic – textured - <1% diss spinel - 1-2% diss po - ~3% diss graphite - oxidized along narronw zones, producing strong limonite - foliation @ 60° to C.A.	18.46	20.85	5108
				20.85	21.45	5109
				21.45	23.00	5110
				23.00	25.00	5111
				25.00	27.00	5112
				27.00	29.00	5113
			@ 18.90 – good compositional banding @ 55° to C.A.	29.00	30.15	5114
				30.15	32.00	5115
			-20.85 – 21.45 – Qtz fsp pegmatitic sweat.			
			-26.82- 27.21 – CS2 - intercalated band of dark grey, spinel- bearing CS2 - 3-4% diss graphite - 1-2% diss po - well foliated @ 66° to C.A.			
			-27.30 – 28.10 – dark grey to black fine- grained well foliated, qtz – rich gneiss – looks like CS2 unit without the distinctive spinel. - 4-5% diss graphite - 2+ % po - foliation @ 75° to C.A. – - contacts gradational L.C. marked by recrystalliaztion, creating a coarse calcite – qtz marble for ~10 cm above contact plus increase in sulphide content @ contact (3-5%po). L.C. @ 81° to C.A.			
31.15	39.47	Q	**QUARTZ:** - Med. grey to purplish grey to limonitically stained orange qtz. Can't quite call this a qtz vein – it really isn't. It has the appearance more of a replacement zone and /or qtz flooded zone. - In places it appears the qtz has replaced a marble – there are white remnant interstitial calcite - In other places it appears to replace a foliated gneiss - As elsewhere this qtz is intruded by several small pegmatitic dikes/sweats			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** BC0017 **Page** 4 **of** 4

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			QUARTZ CONTINUED: - ~1% F.C. po - Tr. Graphite (this must have been part of the metasediment prior to replacement by qtz.)			
39.47	42.30	P	**PEGMATITE:** - Intercalated sequence of Qtz-Fsp pegmatite and Biotite – FSp – Gneiss. - Predominately pegmatitc with several screens of biotite – fsp – qtz gneiss - ~1% po within pegmatites - 2-3% po within gneiss Pegmatite comprises 64% of interval L.C. @ 67° to C.A.			
42.30	44.52	SK	**SKARN:** - Med green → pale yellowish green, foliated to compositionally- banded skarned clacsilicate gneiss. - fine → med grained - rock is now converted to compact qtz + diopside +/- calcite +/- po - Compositional banding @ 75° to C.A. - Includes several small 10-20cm intervals of pegmatite L.C. gradational			
44.52	45.72	M1	**MARBLE (M1):** Med → coarse grained, pale grey qtz +/- diopside marble - <0.3% diss graphite throughout - massive texture E.O.H			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** BC0018 **Page** 1 **of** 4

SURVEY DATA											
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID			
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)
Collar			-54° 35'		47°	40'					
Down Hole	(ft.)	(m)	Read	True	Read	True					
		48.77	-55	-55	021.0	039.50					

DRILLING DATA		
GRID SYSTEM	MINE	
APPROX. NORTHING (m)	1138.57	
APPROX. EASTING (m)	691.63	
APPROX. ELEVATION (m)	1619.28	
DATE DRILLING STARTED	DEC 5 /2000	
DATE DRILLING ENDED	DEC 6 / 2000	
	(ft.)	(m)
TOTAL DEPTH	170	51.82
CASING DEPTH	15	4.57
CASING		
STEEL IN HOLE	NO	Ft.
LOGGED BY	B. AUGSTEN	
LOGGING DATE	JAN 11/2001	

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
0	4.57		CASING			
4.57	8.65	CS2	CALCSILICATE GNEISS 2:	4.57	6.00	5116
			- Fine → med grained dark grey to black (where fresh), well – foliated calcsilicate gneiss.	6.00	6.85	5117
			- Gneiss composed of calcite, qtz diopside, graphite, pyrrhotite +/- scapolite +/- spinel	6.85	8.65	5118
			- 1-2% diss po; <0.5% diss spinel thourghout			
			- 3-5% diss graphite with metacrysts usually <0.5mm in diameter			
			- Interval is strongly weathered down to 6.85m, weakening the rock (this is manifested by strong pervasive limonite.			
			- Foliation @ 70° to C.A.			
			4.57 – 5-11 – rock is badly broken, limonitized and somewhat different composition - med → coarse grained qtz-rich material with <0.5% diss graphite			
			- may be a boudin within CS2			

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			CS2 CONTINUED:			
			- Gneiss cut by two small 10-15cm qtz-fsp pegmatitic dikes.			
			- These dikes have a definite thermal effect on the host. For example, the small dike @ 8.00 – 8.10 immediately above this dike is some coarse recrystallized CS2 – now a marble with distinct bright orange spessartine garnets.			
			- The lower contact is with another pegmatitic dike and here we see a 3cm zone consisting of actinolite +/- po pegmatite grading into a v. fn. gr. 1cm black zone of strong graphite + po + actinolite + diopside + qtz.			
			L.C. @ 65 ° to C.A. but undulatory			
8.65	30.87	CS1	CALCSILICATE GNEISS 1:			
			- Fine → med grained pale → med grey to pale→ med greenish/grey			
			- Generally weakly → mod. Foliated and/or compositionally banded.			
			- Rock is composed of variable proportions of qtz, calcite, diopside, graphite, pyrrhotite +/- scapolite.			
			- Typically:			
			Calcite 60 –70%			
			Qtz 20-25%			
			Diopside 5-10%			
			Graphite 1-3%			
			Pyrrhotite 1-2%			
			Scapolite < 0.5%			
			The interval is not homogeneous due to various textural changes and due to the presence of several pegmatitc dikes and sweats – the larger of which are described.			
			8.65 – 9.71 – zone of strongly alt'd rock including two pegmatitic zones – which are probably responsible for the alteration	8.65	9.71	5119
			- the pegmatites are coarse-grained fsp-qtz with no biotite – the alt'd rock varies from coarsely crystalline marble to massive med green qtz-rich rock.	9.71	11.78	5120
			- No graphite.	11.78	12.69	5121
			9.71 – 11.78 – pale grey to yellowish grey, compositionally banded. Med→ coarse grained, qtz – calcite diopside scapolite gneiss/marble			
			- <1% graphite concentrated in discrete narrow zones or bands usually 1mm → 1cm producing greyer bands			
			- compositional banding @ 65° to C.A.			
			- this interval includes a 20cm pegmatite			

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
			CS1 CONTINUED:			
			11.78 – 12.69 – Pegmatite: Coarse grained, pale green, feldspar – qtz – biotite – py+/- po pegmatite - includes a 7cm screen of CS1 - No Graphite U.C @ 76° to C.A. L.C. @ 68° to C.A.			
			(Note: 2cm thermal aureole at L.C. producing a dark green fn. gr. actinolite/ chlorite / pyrrhotite qtz rock.) (Note: throughout section see narrow zones of oxidation manifested by presence of limonite. Usually seem fracture – controlled and probably represent pathways of oxygenated meteoric water.	12.69	14.00	5122
				14.00	16.00	5123
				16.00	18.00	5124
			28.00 – 29.05 - dark grey → blk, fn, gr, foliated gneiss similar to CS2 without the spinel - foliation @ 77° to C.A. - contacts gradational over 10cm - includes a 12 cm qtz vein (sweat) - 2-3% graphite - 2% pyrrhotite	18.00	20.00	5125
				20.00	22.00	5126
				22.00	24.00	5127
				24.00	26.00	5128
				26.00	28.00	5129
			(Note: In general from 28.00 → 30.87 (lower contact) this gneiss is darker grey to black in places, reflecting generally finer grain size, more graphite and perhaps higher sulphide content.	28.00	29.00	5130
				29.00	30.87	5131
			L.C. sharp @ 70° and marked by 3cm thermal aureole of fine grained qtz – diopside +/- actinolite + pyrrhotite			
30.87	44.04	Q	**Quartz:** Med grey to mottled grey to orange limonitically -stained qtz. This unit should not be thought of as a qtz vein per se, but more of a qtz – flooded zone. The interval is quite heterogeneous, including med → coarse grained recrystallized qtz, often limonitically stained, qtz – flooded biotite – fsp gneiss bands, qtz – flooded calcsilicate gneisses (probably CS1 & CS2). - The common feature is the qtz – flooding - Also see some pegmatitic diking of the fsp – qtz variety - 1-2% fracture-controlled pyrrhotite. - locally see same coarse grained graphite	30.87	32.00	5132
			42.97 – 44.04 – Qtz syenite – fine → med grained qtz syenite dike with xenoliths of skarned calcsilicate			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0018** **Page** 4 **of** 4

GEOLOGICAL INTERVAL		LITH O CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From	To (m)	
44.04	45.46	CS1	**CALCSILICATE 1:** Weakly skarned foliated qtz – diopside calcite – graphite calcsilicate; med greenish/ beige - <0.5% diss graphite - foliation @ 30° to C.A. - L.C. with underlying pegmatite dike @ 65° to C.A. - Contact marked by develpopment of chlorite?, pyrrhotite, brown garnet and qtz.			
45.46	51.82	M1	**M1 MARBLE :** Med → coarse grained, massive, pale → med grey → mottled, qtz +/- diopside marble - Interval cut by numerous small and large pegmatites as listed below. - Overall graphite grade <0.2% Within marble itself <0.5% 1. 45.46 – 45.78 (.32) 2. 46.90 – 47.65 (.75) 3. 48.07 – 48.30 (.23) 4. 50.87 – 51.63 (.76) 2.06m (32%) Marble recyrstallized to v. coarse grained calcite rock, including green garnet? / orange/ brown garnet.			
	E.O.H.					

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0019** **Page** 1 **of** 4

SURVEY DATA											
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID			
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)
Collar			- 56° 05'		43°	55'					
Down Hole	(ft.)	(m)	Read	True	Read	True					
		39.62	-56	-56	005.5°?	024.0°?					

DRILLING DATA		
GRID SYSTEM	MINE	
APPROX. NORTHING (m)	1044.20	
APPROX. EASTING (m)	678.36	
APPROX. ELEVATION (m)	1609.88	
DATE DRILLING STARTED	DEC 6/2000	
DATE DRILLING ENDED	DEC 7 2000	
	(ft.)	(m)
TOTAL DEPTH	140	42.67
CASING DEPTH	12	3.66
CASING		
STEEL IN HOLE	NO	Ft.
LOGGED BY	B. AUGSTEN	
LOGGING DATE	JAN 12/2001	

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	3.66		CASING			
3.66	10.74	CS1	CALCSILICATE GNEISS1:			
			- Med green→ dark grey foliated gneiss comprised of calcite, diopside, qtz, p + po + graphite			
			- Interval intruded by several small & large pegmatite dikes as described below.			
			- Graphite grade of CS1 is 1-2% locally → 2-5%			
			- Po 1-2% throughout			
			- Locally see strong oxidation over 5-10cm which has the dual effect of accentuating the foliation and weakening the rock . These zones are strongly limonite stained / alt'd.			
			@ 4.00m foliation @ 43° to C.A.			
			@ 4.77m foliation @ 74° to C.A.	3.66	4.86	5133
			This unit is not very homogeneous due to	4.86	6.17	5134
			1. weathering	6.17	7.10	5135
			2. preponderance of pegmatite dikes	7.10	8.70	5136
			3. skarning peripheral to dikes	8.70	10.74	5137

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED:			
			- This interval and indeed this entire hole is cut by numerous pegmatite dikes -- perhaps more so than many. The largest ones in this interval are as follows:			
			1. 6.17 – 7.10 - Med → coarse ground fsp –qtz – diotite pegmatite (felsic intrusion). The biotite is not coarse grained.			
			2. 8.70 – 10.74 - pale green → limonite stained coarse grained fsp – qtz +/- po +/- biotite pegmatite			
			- the pegmatite comprise a minimum of 42% of interval			
			(Note: @ 7.51 → 8.10 – intercalated lens of biotite – fsp – qtz gneiss (fn.gr.)			
			- No graphite			
10.74	30.85	CS2	**CALCSILICATE GNEISS 2:**	10.74	11.74	5138
			- Dark grey→ black fine grained → med grained foliated rock composed of calcite, diopside qtz, graphite, pyrrhotite and spinel.			
			- Really distinguished by presence of <0.5% dissem. bright green spinel metacrysts typically <0.5mm x 0.5mm in diameter			
			- Overall graphite grade 2-3% with locally +4% within the CS2 unit. This grade is diluted somewhat by presence of numerous small and larger pegmatites dikes as identified below.			
			- @ 11.60 foliation @ 74° to C.A.			
			Pegmatites:	11.74	12.94	5139
			1. 11.74 – 12.94 - Med grained fsp – qtz pegmatite with minor biotite + pyrrhotite limonitically stained	12.94	13.65	5140
			U.C. @ 20° to C.A.	13.65	15.00	5141
			L.C. @ 55° to C.A. (but undulatory).	15.00	17.40	5142
			(Note: For 8cm below L.C. CS2 recrystallized / coarsened including coarsening of graphite to metacrysts up to 2mm x 1.5 mm	17.40	18.82	5143
			2. 13.30 - 13.65 - Similar to above	18.82	20.00	5144
			3. 14.77 – 14.93 – coarse grained pegmatite	20.00	22.00	5145
				22.00	24.00	5146
				24.00	26.00	5147
			17.4 – 18.82 - Pale → med grey → limontized, med. grained massive rock composed of fsp + qtz + biotite with <0.2% diss graphite, <0.5% diss po.	26.00	27.43	5148
			- near L.C. it looks like a pegmatite - elsewhere more of a altered metasediment.			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS2 CONTINUED:			
			21.40 – 21.85 – coarse grained qtz – fsp pegmatite			
			22.07 – 22.24 – similar pegmatite sweat to above			
			22.65 – 23.00 - coarse grained fsp – qtz pegmatite			
			(Note: the rock between these pegmatites is a well-folitated – high graphite-bearing CS2			
			@ 23.50m CS2 well-foliated @ 66° to C.A.			
			27.43 – 29.54 - Pegmatite – Fsp – Qtz +/- biotite +po +/- py pegmatite with xenoliths of strongly alt'd CS2 – some graphite, <0.2% overall	27.43	29.54	5149
			- <1% po	29.54	30.85	5150
			- <1% py			
			29.76 – 30.35 - Pegmatite L.C. @ 10° to C.A.			
			30.35 – 30.85 – Granodiorite Gneiss: Fine → med grained, well foliated biotite granodiorite gneiss			
			- Foliation @ 20° to C.A.			
			- L.C. @ 52° to C.A.			
30.85	42.67	CS1	**CALCSILICATE GNEISS1:**	30.85	33.00	5151
			- Well foliated fine→med grained, med → dark grey→ greenish grey calcsilicate composed of variable proportions of calcite, qtz, diopside, graphite, pyrrhotite +/- minor scapolite			
			1.5 – 2.5 % diss graphite thourhgout: well developed sucrosic texture.			
			- 1.2% diss po.			
			- Not homogenous due to several small pegmatite dikes and intercalating of coarse grained qtz – diopside +/- gt marble (see notes below)			
			- Well-developed limonite on fxs and joints and as pervasive alt'd peripheral to fxs (oxidating po +/- py presumably) These limonite joints /fxs. probably represent channelways for oxygenated meteoric waters.			
			@ 33.50 foliation @ 62° to C.A.	33.00	34.47	5152
				34.47	35.55	5153

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0019** **Page** **4** **of** **4**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			CS1 CONTINUED:	35.55	37.00	5154
				37.00	38.69	5155
			34.47 – 35.55 - M1 Marble: - coarse grained calcite + qtz +/- diopside +/- phlogopite + graphite	38.69	39.34	5156
			- <0.2% graphite as diss. coarse grained metacrysts to 1mm x 1mm			
			- both upper and lower contacts gradational			
			36.45 – 37.00 - "intrusion' of v. fine grained purplish/brown biotite – qtz – fsp rock with a 0.4cm chill margin surrounding CS1 Contact @ 10° to C.A.			
			Variable foliation/compositional banding attitudes 1. @ 37.55 @ 45° to C.A.			
			2. @ 37.75 @ 55° to C.A.			
			38.08 – 38.69 – M1 Marble – v. coarse grained calcite +/- qtz +/- diopside + graphite + phlogopite marble < 0.3% graphite			
			U.C. abrupt @ 50° to C.A.			
			L. C. sharp @ 32° to C.A.			
			38.69 – 39.34 – Pegmatite:			
			- interval includes pegmatite and strongly alt'd CS1			
			- No graphite			
			- L.C. @ 50 ° to C.A.			
				39.34	41.00	5157
			39.34 – 42.67 (E.O.H.)	41.00	42.67	5158
			- Med grained CS1 with intercalated lenses of coarse – grained CS1 and M1, in addition to dark green 'skarned' lenses			
			- Overall graphite < 1%			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0020** **Page** 1 **of** 2

SURVEY DATA											DRILLING DATA	
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	Not done
Collar			-90					GPS	5513878.847	444252.131	1385.077	APPROX. EASTING (m)	Not done
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	Est. 1385
		48.77	-88	-88	095.0	113.50						DATE DRILLING STARTED	DEC7/2000
												DATE DRILLING ENDED	DEC 8/2000
													(ft.) (m)
												TOTAL DEPTH	170 51.82
												CASING DEPTH	30 9.14
												CASING	
												STEEL IN HOLE	NO Ft.
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	JAN. 13/2001

- This hole didn't get surveyed – due to time/instrument limitations
- Location tie/in via differentially corrected GPS
- Hole located on Hoder Creek Road

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	9.14		CASING – Roadbed/ Till/ weathered bedrock?			
9.14	36.20		BIOTITE – FSP –QTZ GNEISS: - Well-foliated fine→med grained dark brown/white banded gneiss - Foliation variable from 45 – 70° to C.A. - Minor pegmatite dikes through hole - 2-5% disseminated to foliation parallel po +/- py (probable cause of IP anomaly). - Locally v. small amounts of graphite (0.1%) – overall much less. 13.40 – 13.90 - Pegmatite: coarse – grained fsp – qtz +/- biotite pegmatite U.C. irregular @ - 40° to C.A. L.C. @ 38° to C.A. - Some qtz – flooding/ silicification peripheral to U/LC. For 10 cm - @ 29.37 trace cpy. L.C. sharp @ 60° to C.A.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0020** **Page** **2** **of** **2**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
36.20	41.87	Gdgn	**GRANODIORITE GNEISS:** - Fine → medium grained, leucocratic → mesocratic, foliated biotite granodiorite - 5-10% biotite - 1-2% diss po +/- py - Foliation @ 50-55° to C.A. - L.C. Sharp @ 45° to C.A.			
41.87	57.82	CS1	**CALCSILICATE GNEISS 1:** - Well foliated med green → grey, fine→med grained gneiss consisting of variable amounts of calcite, qtz, diopside, graphite + po. - This interval is strongly altered in many sections due to proximity to intrusions 41.87 – 44.10 - - although foliated this is a hard dense rock. - moderately skarned CS2 with well developed quartz and diopside? - in approaching lower contact see increased biotite hornfels - @ lower contact recrystallization with coarse biotite + graphite - Overall graphite <0.5% - 1-3% po overall - foliation well – developed @ to C.A. 44.10 – 45.43 - Pegmatite – leucocratic qtz – fsp pegmatite - From 46.63 to 51.82 the CS1 is varibly skarned and silicified with general reduction in graphite. Includes several small fsp – qtz pegmatite dikes - Overall graphite <1%	41.87	44.10	5159
				44.10	45.43	5160
				45.43	46.63	5161
				46.63	48.00	5162
				48.00	50.00	5163
				50.00	51.82	5164

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0021** **Page** **1** **of** **3**

SURVEY DATA											DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			G7S GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	
Collar			-90°					GPS	5513728.238	444170.866	1381.307	APPROX. EASTING (m)	
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	Est. 1381
		48.77	-89	-89	228	246.50						DATE DRILLING STARTED	DEC 3 /2000
												DATE DRILLING ENDED	DEC 9 /2000
													(ft.) (m)
												TOTAL DEPTH	170 51.82
												CASING DEPTH	63 19.20
												CASING	
												STEEL IN HOLE	NO FL
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	JAN. 15 /2001

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	19.20		**CASING** – roadbed, till weathered rock ?			
19.20	20.59		**GRANODIORITE GNEISS:** - Fine→ med grained will-foliated botite fsp (fsp ?? gneiss) - Foliation @ ?? to C.A.			
20.59	24.57		**BIOTITE-FELDSPAR PORPHYRY GNEISS:** - Medium to dark grey qtz-flooded rock with distinct lepidoblastic texture manifested by 3-4% biotite and a porphyritic texture manifested by ghostlike subhedral to anhedral fsp phenocrysts. - Locally weakly foliated - <0.3% diss/f.c. pyrite last two may be good I.P. anomaly - <0.2% diss graphite 23.46 – 23.92 – FSp – qtz Pegmatite 23.92 – 24.27 – dark brown, well foliated biotite-graphite gneiss - 1-2% py - ~1-1.5% graphite			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0021** **Page** **2** **of** **3**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
24.27	28.89		**GRANODIORITE GNEISS:**			
			- Fine→ medium grained weakly → mod. foliated leucocratic biotite granodiorite gneiss			
			- Tr py +/- po throughout			
			- Includes several small fsp –qtz pegmatite dikes	26.25	27.35	5165
			26.25 – 27.35 - Dark brown → dark grey, well-foliated, fine grained biotite fsp gneiss			
			- 2-3% py +/- po			
			- 1-1.5% graphite (fn.gr.) – good chargeability anomaly			
			- Well – foliated @ 46° to C.A.			
28.89	45.86		**BIOTITE – FSP – QZ – GNEISS:**			
			- Dark brown fine → medium grained well-foliated gneiss composed primarily of biotite with fsp+qtz- rich sections as bands on large accumulations			
			- 1-3% py +/- po along foliation planes and associated with qtz/fsp- rich schlieren			
			- locally < 0.5 – 1.5% diss graphite			
			- **Chargeability Anomaly on the above			
			29.50 – 32.22 - Qtz flooded zone converting rock into a siliceous medium grey to brownish grey to greenish rock			
			- 1-2% py			
			- Tr. Cpy			
			- Tr. Graphite			
			32.22 – 32.97 - Granodiorite Gneiss → Qtz Syenite Dike	32.97	35.00	5166
			U.C. @ 40 ° to C.A.	35.00	37.33	5167
			L.C. @ 55 to C.A. (but undulatory)			
			35.00 – 37.33 - Qtz – flooded zone similar to zxone @ 29.50→32.20			
			- <1% py thoroughout			
			- Tr. Cpy			
			- U.C. gradational			
			- L.C. abrupt @ 30 ° to C.A. x-cutting foliation	37.33	39.31	5168
			38.93 – 39.31 – Fsp – QTZ – Pegmatite	39.31	41.00	5169
				41.00	43.00	5170

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** BC0021 **Page** 3 **of** 3

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			BIOTITE FSP Q GNEISS CONTINUED:	43.00	44.00	5171
			From 39.31 to 45.86 the biotite gneiss contains variable graphite up to 1.5% along foliation planes – difficult to estimate against shiny brown biotite	44.00	45.86	5172
			- the coarse-grained fsp-rich sections don't contain much graphite.			
			- Foliation @ 45° to C.A.			
45.86	51.82		**GRANODIORITE GNEISS:**			
			- Well foliated leucocratic biotite granodiorite gneiss			
			- 3-5% biotite			
			- Tr. Py.			
			- Foliation @ 45° to C.A.			

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0022** **Page** **1** **of** **3**

SURVEY DATA											DRILLING DATA		
SURVEY	DEPTH		DIP		TRUE AZIMUTH			GRID				GRID SYSTEM	MINE
	(ft.)	(m)	True		Degrees	Minutes	Seconds	SYSTEM	NORTHING (m)	EASTING (m)	ELEVATION (m)	APPROX. NORTHING (m)	Not done
Collar			-90°					GPS	5513578.011	444100.885	1376.643	APPROX. EASTING (m)	Not done
Down Hole	(ft.)	(m)	Read	True	Read	True						APPROX. ELEVATION (m)	Est 1376
		48.77	-86	-86	322.5	341.0						DATE DRILLING STARTED	DEC 10/2000
												DATE DRILLING ENDED	DEC 10/ 2000
													(ft.) (m)
												TOTAL DEPTH	140 42.67
												CASING DEPTH	72 21.95
												CASING	
												STEEL IN HOLE	NO Ft.
												LOGGED BY	B. AUGSTEN
												LOGGING DATE	JAN. 16/2001

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
0	21.95		CASING			
21.95	42.67		BIOTITE – FSP – QZ – GNEISS:			
			- well – foliated to banded dark brown to banded brown/white			
			- Fine→ medium grained			
			- Contains variable sulphides 0.5→ 3% po +/- py			
			- Up to 2% graphite in biotite – rich sections (ie. Dark brown bands usually associated with higher sulphide contents. Overall including Qz – Fsp rich sections <0.1% graphite			
			These two above features account for chargeability anomaly			
			- Foliation and/or banding @ 65° to C.A			
			- Well – developed limonite to ~27m on fxs			
			- Interval not homogeneous due to presence of a number of small and larger pegmatite dikes/sweats – the larger ones described below.			
			** These are all similar pegmatites consisting of predominantly Fsp + qtz with lesser biotite. They are med. → coarse grained with tr.→ <0.3% po. – Contacts can be sharp often see injected contacts – active contacts where host is altered or broken up / partially digested..			

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			BIOTITE – FSP – QZ – GNEISS CONTINUED:			
			1. 22.71 – 24.94 Fsp – qz +/- biotite Pegmatite – minor pink garnet (2.23) - coarse gr. - No graphite.			
			2. 25.95 – 26.40: Pegmatite : Similar to the above (.45)			
			3. 28.62 – 29.71 Pegmatite: (1.09)			
			4. 31.17 – 32.05 Pegmatite: (.88)			
			5. 34.02 – 34.93 (.31) Pegmatite			
			6. 34.47 – 34.90 (.43) Pegmatite			
			7. 37.76 – 38.06 (.30) Pegmatite			
			8. 40.15 – 41.06 (.91) Pegmatite			
			9. 41.65 – 42.67 (1.02) Pegmatite			
			TOTAL = 7.62m of Pegmatite Minimum. = 37% of interval			
				26.40	28.62	5173
			26.40 – 28.62 - well-developed graphite within biotite-rich sections of gneiss ? browner sections - ~2% graphite with 1-3% po +/-py - Tr. Cpy within qtz vein/sweat.	28.62	29.71	5174
				29.71	31.17	5175

CRYSTAL GRAPHITE CORP. BLACK CRYSTAL PROJECT **Geological Log Hole-ID:** **BC0022** **Page** **3** **of** **3**

GEOLOGICAL INTERVAL		LITHO CODE	LITHOLOGICAL DESCRIPTION	SAMPLE LOG		
				SAMPLE INTERVAL		SAMPLE NUMBER
From (m)	To (m)			From (m)	To (m)	
			BIOTITE – FSP – QZ – GNEISS CONTINUED:			
			29-71 – 31.17 - <0.5% graphite overall with biotite – rich sections of gneiss - ~ 1-2% po +/- py			
			34.90 – 36.49 - dark brown / green -- mixture of biotite and chlorite – No graphite - minor qtz - <1% po +/-py - moderately magnetic due to pyrrhotite.			
			38.47 – 40.08 – dark brown/green – predominantly biotite with chlorite(chloritized biotite) - No graphite - ~1% po – weakly→mod. Magnetic. - #			
			(Note: Hole ends in pegmatite			