not plotted ?

1980 DIAMOND DRILL REPORT

Shannon Creek Property

Claims: Anton 1, 2, 3, 4, 5, 6

Moly 1, 4, 6, 7, 8

Maly 5, North 1, Bobbie 1, Victor 1

Slocan Mining Division

N.T.S. 82-K-3 and 82-K-4

Latitude: 50° 05' N

Longitude: 117° 30' W

Owned by:

Cyprus Anvil Mining Corporation

and

Alex Strebchuk

Shannon Creek Project

L. C. Pigage, Ph.D.

April, 1981

Field Work Completed October 2 - November 8, 1980

TABLE OF CONTENTS

List of Illustrations

List of Tables

INTRODUCTION

The Shannon Creek property is located on Shannon Creek near the northwest corner of Slocan Lake in the Slocan Mining District (figure 1). It is just west of Provincial Highway 6 about 30 kilometers southeast of Nakusp, B.C.

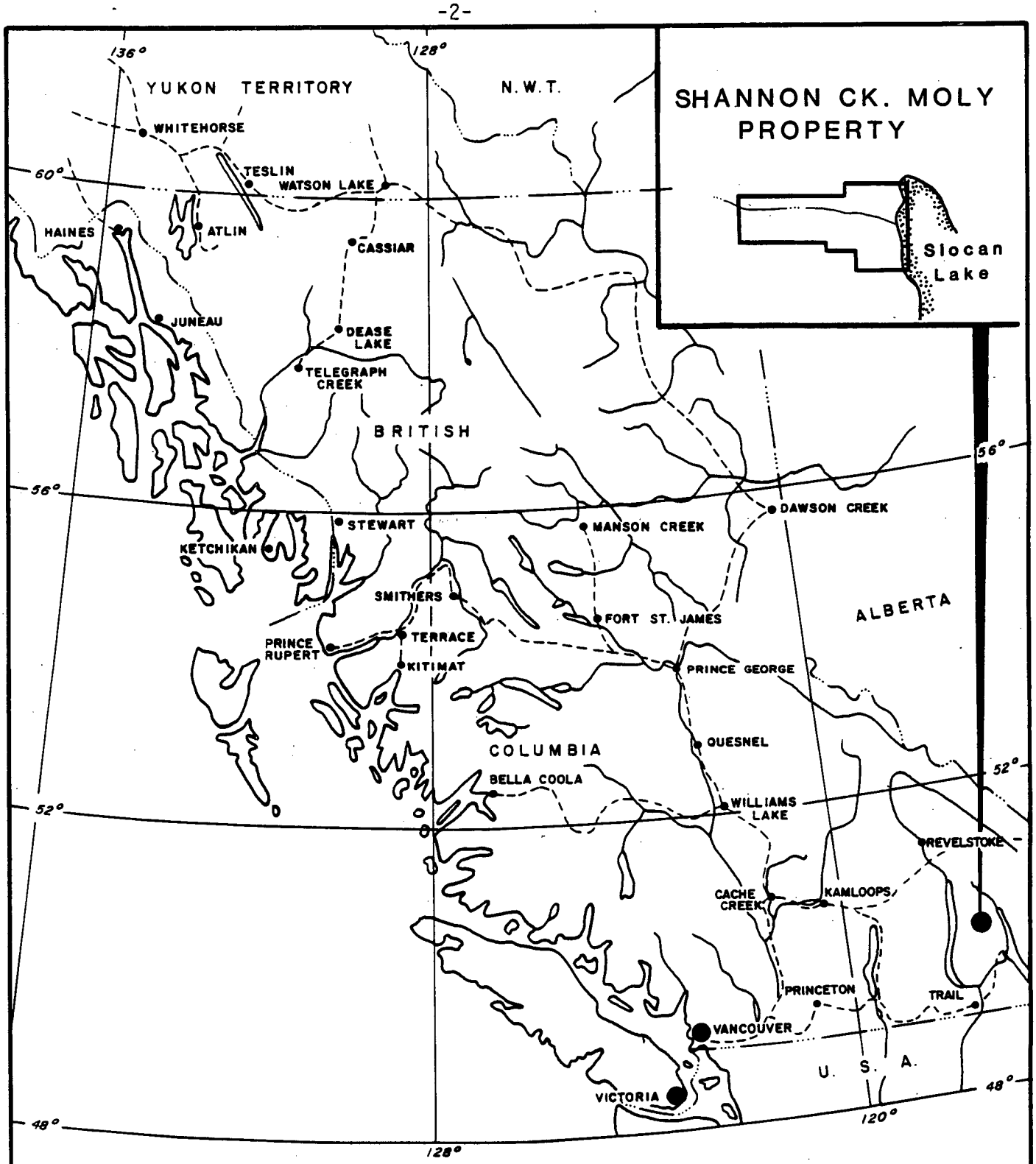
Topography is rugged with total relief from Slocan Lake to nearby peaks being about 1700 meters. Much of the property is covered with mature forest; areas adjacent to Shannon Creek have been extensively logged.

Access to the property is gained by good gravel logging roads along Shannon and Wragge Creeks. Upper slopes can be reached using a few skid roads; these are impassable for vehicles but can be used as foot trails.

Table I contains a summary of information on all of the claims.

1980 DRILLING PROGRAM

Four NQ diamond drill holes totalling 1042 meters were completed on the MOLY #1 (80-SH-01 and 80-SH-02), MALY #5 (80-SH-03), and ANTON #2 (80-SH-04) claims. The first three holes were drilled near surface molybdenite showings to test the extent of mineralization with depth. The fourth drill hole was completed on a small silver showing to test



CYPRUS ANVIL MINING CORPORATION

SHANNON CREEK

PROPERTY LOCATION MAP

BRITISH COLUMBIA

SCALE: 1" = 125 Miles

82-K-3

Figure: 1

TABLE I

CLAIM NO.	NO.OF UNITS	RECORD NO.	RECORDING DATE	DUE DATE	OWNER
ANTON 1	9	934	Sept. 29, 1978	Sept. 29, 1982	A. Strebchuk
2	10	935	Sept. 29, 1978	Sept. 29, 1982	A. Strebchuk
3	8	936	Sept. 29, 1978	Sept. 29, 1980	A. Strebchuk
4	8	937	Sept. 29, 1978	Sept. 29, 1980	A. Strebchuk
5	16	938	Sept. 29, 1978	Sept. 29, 1980	A. Strebchuk
6	20	939	Sept. 29, 1978	Sept. 29, 1980	A. Strebchuk
MOLY 1	2	41	July 4, 1975	July 4, 1981	A. Strebchuk
4	2	225	Sept. 22, 1976	Sept. 22, 1981	A. Strebchuk
6	1	2029	July 7, 1980	July 7, 1983	A. Strebchuk
7	1	2030	July 7, 1980	July 7, 1983	A. Strebchuk
8	1	2031	July 7, 1980	July 7, 1983	A. Strebchuk
MALY 5	9	702	June 27, 1978	June 27, 1981	A. Strebchuk
NORTH 1	6	1947	May 27, 1980	May 27, 1983	A. Strebchuk
BOBBIE 1	12	2032	July 8, 1980	July 8, 1983	A. Strebchuk
VICTOR 1	9	2075	Aug. 5, 1980	Aug. 5, 1981	Cyprus Anvil Mining Co.

the extent of silver mineralization at depth.

Locations of the four drill holes are indicated on figure 4 (pocket). Detailed lithologic logs and the assay results are presented in the appendix. Assays were completed by Bondar-Clegg and Company Ltd. in Vancouver, B.C. Core from these holes is currently stored at the home of Mr. Alex Strebchuk in Hills, B.C. The work on the property was completed between October 2 and November 8, 1980.

GEOLOGY

The Shannon Creek property is located on the north margin of the Late Cretaceous Wragge Creek Intrusive Stock. The stock intrudes low grade metasediments belonging to the Triassic Slocan Group. The following section briefly describes the lithologies of the stratified and igneous units. Distribution of the different units is indicated in figure 4.

Slocan Group

The Triassic Slocan Group is predominantly a dark grey to black, noncalcareous, slightly pyritic phyllite. Typically the phyllite is interbanded with medium grey sandstone layers which are up to 15 centimeters thick. These sandstones are thinly laminated and commonly contain cross-bedding structures.

Locally the thinly laminated sandstone forms the dominant rock type. These sandstones are grey to dark grey with the lighter colored intervals being slightly to moderately calcareous.

Thin grey to dark grey limestone units occur throughout the property area. Locally the limestones form small boudins in the phyllite.

Adjacent to the Wragge Creek Stock the phyllites have been contact metamorphosed to biotite-garnet schists.

Biotite-Garnet Orthogneiss

This unit was encountered only in DDH 80-SH-02; it was not seen in surface outcrop. It consists largely of scattered biotite grains in a quartzose matrix. Garnet occurs as anhedral pale pink grains. The orthogneiss is considered to predate the other major igneous units since it is foliated.

Quartz veins are common throughout the unit. These veins commonly contain reaction selvages with the surrounding orthogneiss. A typical zoning pattern proceeding outward from the core of the quartz vein is as follows:

quartz-pyrrhotite/hornblende-calcite-garnet/biotite depleted orthogneiss/orthogneiss

Wragge Creek Stock

The stock consists of a medium-to coarse-grained, equigranular biotite granodiorite. Black hornblende and/or epidote occur as accessory minerals. Mafic minerals constitute 20-30% of the mode. Locally the intrusive is porphyritic.

Alteration of the Wragge Creek Stock is generally minimal and consists of thin pink K-feldspar selvages along widely spaced fractures. Roadcuts just south of DDH 80-SH-03, however, are extensively fractured and altered. Pink k-feldspar alteration in these highly fractured zones is pervasive. Small shears with slickensides are common in the intensely fractured zones. Along the shears biotite is partly to completely altered to chorite.

One K-Ar date on biotite from the stock gave an age of 74 ± 6 Ma (in Hyndman 1968). This date indicates the stock is late Cretaceous. However, it may represent a cooling date rather than an emplacement date.

Aplite-Pegmatite-Quartz Monzonite

Aplite and pegmatite occur as veins/dykes and irregular bodies crosscutting the Wragge Creek Stock and extending into the Slocan Group metasediments. The dykes form a marginal phase to the Wragge

Creek Stock. Locally this marginal phase is up to 100 meters wide. It is typically not a single unit; instead it consists of multiple dykes within the Slocan Group.

Typically the mode of the aplite/pegmatite is very quartz-rich with muscovite content exceeding biotite content. Garnet and pyrite occur in trace amounts.

Molybdenite Mineralization

The molybdenite showings are associated with the marginal zone pegmatite/aplites. Molybdenite occurs as blebs and rosettes in veins, quartz stringers, and fracture fillings either within the aplites/pegmatites or within the Slocan Group metasediments. Molybdenite mineralization is typically associated with abundant quartz, muscovite, and pyrite.

Silver Mineralization

In the vicinity of the silver showings (DDH 80-SH-04) the Slocan Group consists of black pyritic phyllite interbanded with black pyritic sandstone and minor limestone. Pale green, pyritic, felsic dykes are common. All these units are crosscut by pegmatitic white quartz veins. Locally the quartz veins contain pyrite, galena, and sphalerite. Grab samples indicated that the silver mineralization occurs as Ag-minerals within the quartz veins.

1980 DRILLING RESULTS

DDH 80-SH-01 and 80-SH-02

The site for these two drill holes is located just north of the Wragge Creek Stock. Figure 2 is a N-S vertical cross section illustrating both drill holes.

DDH 80-SH-01 consists largely of Slocan Group metasediments. Pegmatite/aplite dykes comprise only 20% of the metasediment interval. Drilling was terminated in fresh biotite granodiorite of the Wragge Creek Stock. Assay results show that the pegmatite/aplite dykes are not well mineralized although scattered molybdenite is visible in core.

The upper part of DDH 80-SH-02 consists of Slocan Group schists/phyllites and the lower portion consists of a biotite-garnet orthogneiss with small screens of Slocan Group metasediments. The Wragge Creek Stock was not intersected. Pegmatite/aplite dykes and quartz veins comprise only 5% of the drill hole. Assay results again show that these intervals are only sparsely mineralized.

Figure 2 shows that major lithologic units cannot be correlated between the two drill holes. A major gouge zone encountered at a depth of 40 meters in DDH 80-SH-02 has been interpreted as a steeply

dipping fault. This fault would readily account for the lack of correlation between the two drill holes.

DDH 80-SH-03

DDH 80-SH-03 is an inclined drill hole intersecting the north margin of the Wragge Creek Stock. The upper part of the DDH consists of Slocan Group metasediments. The dominant lithologies are finely laminated sandstone interbanded with biotitic schist/phyllite. Minor limestone is also present. The Slocan Group does not contain aplite/pegmatite dykes or quartz veins in this drill hole.

Biotite granodiorite is the dominant lithology of the Wragge Creek Stock encountered in DDH 80-SH-03. The granodiorite is highly fractured and extensively altered. The dominant alteration is the development of pink K-feldspar rimming fractures. In many zones this alteration is extensive enough to be pervasive in drill core.

Zones of intense fracturing in the granodiorite often contain quartz and pink K-feldspar augen (eyes) in a pale green, fine-grained, cataclastic matrix. Biotite near these zones of intense shearing is partly to completely altered to chlorite.

Sulphides are only sparsely present in the intrusive. Pyrite and minor molybdenite locally occur along fractures and/or within

K-feldspar grains. Assay samples were chosen to include all representative rock types within the Wragge Creek Stock.

DDH 80-SH-04

Figure 3 illustrates the surface showings in the immediate vicinity of DDH 80-SH-04. As mentioned earlier, silver mineralization occurs as Ag-minerals in the late cross cutting quartz veins.

DDH 80-SH-04 is an inclined drill hole extending beneath the upper showing. No major quartz veins were intersected in the drill hole. Assay results for representative rock types are presented in the appendix. The mineralized quartz veins apparently pinch out rapidly with depth.

CONCLUSIONS and RECOMMENDATIONS

The 1980 drilling program defined the east and west extent of the molybdenite-bearing dykes. The northern margin of the Wragge Creek Stock between drill holes 80-SH-01 and 80-SH-03 remains untested. Further drilling is recommended for this interval since it contains the most extensive surface exposures of the molybdenite-bearing marginal phase to the stock.

Drilling results from DDH 80-SH-04 indicate silver mineralization is only locally developed. No further work is recommended for this showing.

L. C. Pigage

L. C. Pigage, Ph.D.

Selected References

Hyndman, D. W. 1968. Petrology and Structure of Nakusp map-area, British Columbia. Geological Survey of Canada Bulletin 161, 95 pp.

Cyprus Anvil Mining Corporation

300, 355 Burrard Street
Vancouver, British Columbia
V6C 2G8
Telephone (604) 687-2586

Telex 04508594

APPENDIX I

STATEMENT OF QUALIFICATIONS

I, JOHN GLENN SIMPSON, Geologist, with business address in Vancouver, British Columbia, and residential address in West Vancouver, British Columbia, hereby certify that:

(1) I graduated from the University of London in 1958 with a B.Sc. majoring in Geology and a Ph.D. (Faculty of Science) obtained in 1968.

(2) From 1958 to the present, I have been actively engaged as a geologist in mineral exploration in Africa and North America.

(3) I am a Fellow of the Geological Association of Canada and a Professional Engineer (Geol.) of the Province of British Columbia (1969).

(4) I am personally responsible for the supervision of all work on these properties and have actively participated in the field work.

J. G. Simpson, Ph.D., P.Eng.

STATEMENT OF QUALIFICATIONS

I, Lee Case Pigage, Geologist, with business and residential addresses both in Vancouver, British Columbia, hereby certify that:

1) *I have the following educational background in geology:*

B.Sc. in geology - University of Wyoming, 1970

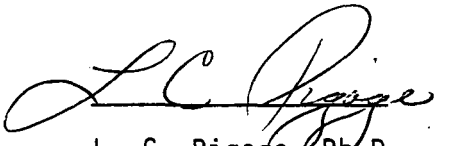
M.Sc. in geology - University of British Columbia, 1973

Ph.D. in geology - University of British Columbia, 1978

2) From 1979 to the present I have been actively employed by Cyprus Anvil Mining Corporation as staff geologist in mineral exploration

3) I am an Associate Fellow of the Geological Association of Canada

4) I was personally responsible for the supervision of all work in this report and actively participated in the field work.



L. C. Pigage, Ph.D.

APPENDIX II

SUMMARY OF COSTS

SUMMARY OF COSTS

Work completed in time interval October 2 - November 8, 1980

Drilling:	
Invoices from J. T. Thomas Drilling for 1042 meters @ overall cost of $101.36/meter	$105,612.80
Assays and Geochemical Analyses:	
41 assays @ $6.00/assay for Mo	$246.00
6 assays @ $7.00/assay for Ag	42.00
	$105,900.80

APPENDIX III

AFFIDAVIT SUPPORTING SUMMARY OF COSTS

Cyprus Anvil Mining Corporation

330, 355 Burrard Street
Vancouver, British Columbia
V6C 2G8
Telephone (604) 687-2586

Telex 04508594

AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, L. C. PIGAGE, Exploration Geologist, Cyprus Anvil Mining Corporation, of Vancouver, British Columbia, do hereby state that, to the best of my knowledge and belief, the Statement of Costs in this report (1980 Diamond Drill Report, Shannon Creek Property) is a true account of expenditures incurred from exploration on these properties.

L. C. Pigage

L. C. Pigage

May 19, 1981
Date

CYPRUS ANVIL

APPENDIX IV

CYPRUS ANVIL MINING CORPORATION

DIAMOND DRILL CORE LOG

Hole Number: 80-SH-01

Project: Shannon Creek

Location: Slocan Lake, B.C.

Claim: Moly #1

Terr. Plane Co-ords.: 5, 547, 025 N

462, 480 E

Grid Co-ords.: 0+10E, 2+15N

Inclination: -60° at 175° azimuth

Elevation: 1375 m

Total Depth: 154.5 m

Fabric Orientation Diagram:

All symmetry determinations looking

_____ with _____ dipping

_____ with dip azimuth _____.

Purpose: _____

Logged by: L. Pigage

Date(s) Logged: Oct. 15 - Oct. 22, 1980

Drilling Contractor: J. T. Thomas

Core:

Size	From	To
NQ	0	154.5

Collar Cased and Capped: _____

Started: Oct. 9, 1980

Completed: Oct. 15, 1980

LITHOLOGIC LOG

DDH 80-SH-01

	Meters	
1.	0.0 - 6.1	Triconed in overburden - no core
2.	6.1 - 8.7	Carbonaceous chlorite-muscovite schist. Porphyroblastic with grains up to 2 mm across; these porphyroblasts now altered to muscovite and/or chlorite. Noncalcareous contains thin sandstone bands. Disseminated fine-grained pyrite weathered as brown spots. At 6.7 m have 5 cm vein of pyrite, aplitic quartz-sericite with minor fine-grained MoS_2. Unit probably originally a biotite schist which has been retrograded to chlorite grade. Structure: at 7.0 m S_1 20^o
3.	8.7 - 16.7	Porphyroblastic biotite-muscovite-chlorite schist. Contains numerous thin, discontinuous sandstone layers ($\sim$1 cm thick). Porphyroblasts now mainly muscovite; they have appearance of fibrolite intergrown with biotite. Schist is noncalcareous, carbonaceous. Locally biotite is totally retrograded to chlorite. Disseminated pyrite weathers as small brown spots. Fractures along S_1 coated with brown pyrite stain. Structure: at 11.0 m S_1 43^o 14.0 m S_1 30^o 16.0 m S_1 45^o
4.	16.7 - 20.3	Poorly foliated to unfoliated feldspar (white)-quartz-biotite-garnet (minor) aplite. Cut by later veins consisting dominantly of clear quartz with minor pyrite-MoS_2-sericite. Pyrite commonly weathers rusty orange-brown and stains intervals of core. Locally biotite is altered to pale green chlorite. Rock has numerous fractures - these contain pyrite and sericite.
5.	20.3 - 22.7	Porphyroblastic biotite-muscovite-($Al_2S:O_5$) $\pm$ chlorite schist. Numerous, thin, discontinuous sandstone bands. Porphyroblasts now are muscovite - appear to be former aluminosilicates. Locally have thin aplitic veins like last Unit #4 (21.2 m and 22.5 m). Structure: at 20.8 m S_1 35^o 21.2 m S_1 0^o 22.1 m S_1 37^o

	Meters	
6.	22.7 - 25.4	Fine to medium-grained quartz-white feldspar-pyrite ± biotite-garnet (minor) aplite. Contains coarse-grained (pegmatitic) sections with quartz-white feldspar-muscovite. Pegmatic sections appear to cross cut the finer grained aplite. Some cross cutting quartz (clear) veins. No MoS_2 visible. Rock unfoliated. Cut by numerous fractures.
7.	25.4 - 30.0	Biotite-muscovite-Al_2SiO_5 schist. Locally retrograded to chlorite zone. Al_2SiO_5 retrograded to muscovite. In places laminated with finer-grained more quartzo-feldspathic biotitic schists. Graded bedding in one set of laminations (27.1 m) shows Tops Down DDH. Minor pyritic quartz veining. Structure: at 25.5 m S_1 25° 29.5 m S_1 50°
8.	30.0 - 37.7	White feldspar-quartz ± biotite ± muscovite-pyrite-garnet (minor) aplite. Similar to Unit #4. Pyrite weathered to form brown stains. Biotite not universally present. Locally forms pegmatitic quartz-feldspar ± muscovite phase. Numerous fractures with pyrite-quartz-muscovite filling fractures. No visible MoS_2 Highly altered with fault gouge in interval 34.1 - 35.6.
9.	37.7 - 44.8	Grey carbonaceous biotite-muscovite-chlorite schist. Locally porphyroblastic with garnet and/or Al_2SiO_5 (andalusite ?). Some sections look retrograded to chlorite grade. Very minor quartz veining (slightly pyritic). Small intervals fractured with minor gouge. Structure: at 39.0 m S_1 35° 41.0 m S_1 47° 43.7 m S_1 45°
10.	44.8 - 46.1	Fine-grained, laminated, muscovite-chlorite ± biotite quartzo-feldspathic schist. Laminations generally >1 mm thick. Grey-green colour with chlorite >biotite. S_1 surface grey-carbonaceous. Noncalcareous. Minor intervals of porphyroblastic biotite-chlorite-muscovite schist. Porphyroblasts are garnet ± Al_2SiO_5 (?). Minor quartz veining. Structure: at 45.0 m S_1 45°
11.	46.1 - 47.3	Massive, fine-grained, grey-green chlorite ± biotite sandstone. No bedding visible. Core is foliated. Noncalcareous. Biotite locally retrograded to chlorite. Interval from 46.5 - 47.1 m contains small streaks (ellipsoids) of chlorite.

	Meters	
12.	47.3 - 47.9	White quartz vein with minor inclusions of chloritic schist. Quartz vein non-pyritic. Schist contains biotite and garnet locally.
13.	47.9 - 50.0	Same as Unit #11. Fine-grained, equigranular biotite-chlorite sandstone. Fine-grained pyrite locally fills fractures. Noncalcareous. Biotite locally retrograded to chlorite. Interval from 48.6 - 48.9 m contains spotted appearance with light grey spots and interstitial greenish matrix. Locally some thin laminations present. Structure: at 48.9 m S_1 45^o
14.	50.0 - 57.8	Similar to Unit #3. Coarse-grained biotite-chlorite schist with thin quartzo-feldspathic interbands. Noncalcareous. Contains minor disseminated pyrite. Locally all biotite retrograded to chlorite. Biotite gives dark purplish-brown colour to core. Locally has quartz veins which may be slightly pyritic. Larger quartz vein from interval 54.4 - 55.0 m. Locally porphyroblastic with garnet and Al_2SiO_5 (?). Structure: at 52.7 m S_1 43^o 56.1 m S_1 17^o 57.8 m S_1 50^o
15.	57.8 - 59.3	Pale green, massive, fine-grained, chloritic quartzite/sandstone. No bedding laminations. Noncalcareous. Locally contains biotite with chlorite to form a mottled purplish to green aspect. Contains thin pyritic white quartz vein subparallel core axis. Pyrite weathers as brown spots. Pyrite as blebs in quartz vein and in small fractures crosscutting both vein and host quartzite. No MoS_2 observed in quartz vein. Minor quartz present. Similar to Unit #11.
16.	59.3 - 61.6	Biotite-muscovite-chlorite-garnet-andalusite porphyroblastic schist. Biotite locally retrograded to chlorite. Contains minor thin quartz-feldspathic, fine-grained sandstone interbands. Locally has pegmatic white quartz veins with minor andalusite. Structure: at 59.3 m S_0/S_1 43^o 61.6 m S_0 15^o

	Meters	
17.	61.6 - 62.7	Biotite-chlorite quartzo-feldspathic, fine-grained schist. Could also be described as massive, fine-grained biotite-chlorite quartzite/sandstone. Same as Unit #11. Biotite locally retrograded to chlorite along fractures.
18.	62.7 - 63.7	Coarse-grained biotite-muscovite-chlorite schist. Thin interbands of sandstone. Locally porphyroblastic with Al_2SiO_5. Structure: at 62.7 m S_o 15^o 63.5 m S_1 8^o
19.	63.7 - 69.0	Pale dull green chlorite >> biotite impure quartzite/sandstone. Similar to Unit #11. Massive. Contains some interbands of coarse grained chlorite ± biotite-muscovite schist. These range in thickness from 5 mm to 200 mm. Locally schist contain Al_2SiO (andalusite?) porphyroblasts. Thin quartz-sericite-pyrite veins locally at acute angle to core axis. No MoS_2 seen in veins. Pyrite and sericite commonly in fractures within the veins and extend into sandstone. Structure: at 66.7 m S_o/S_1 40^o
20.	69.0 - 71.0	Quartz-muscovite vein. Minor brown weathering pyrite. Trace amounts of red-weathering mineral (sulfide or oxide). Muscovite scattered through quartz and also occurs preferentially along fractures. No visisble MoS_2.
21.	71.0 - 85.8	Dull green chlorite>>biotite impure quartzite/sandstone. Like Unit #11. Contains minor thin interbands of coarse grained chlorite schist. Locally have quartz-muscovite veins like Unit #20. Locally extensively fractured with very soft dull white mineral filling fractures. In places fracture pattern develops a thin breccia zone. Interval from 78.3 - 80.7 m is light grey colour - contains small garnet and amphibole (or diopside) scattered throughout - looks like typical calc-silicate mineralogy. Structure: at 83.7 m S_o 10^o 76.6 m S_o 10^o
22.	85.8 - 88.2	Medium-to-fine-grained aplite with quartz > white feldspar. Pyritic with abundant brown-weathering blebs of pyrite. Core also contains desseminated chlorite and muscovite. Abundant fractures filled by chlorite-muscovite-pyrite. Only minor later quartz vein within the aplite. Very minor garnet.

23. 88.2 - 94.6 Dull green, massive, fine-grained, chlorite > biotite impure sandstone/quartzite (like Unit #11) interbanded with coarse-grained greenish-grey chlorite>biotite, porphyroblastic andalusite (?) schist. At 89.7 m there is a very brief interval of calc-silicate mineralogy (garnet + amphibole/diopside). Minor quartz veins. Quartz commonly has pyrite-chlorite-muscovite. Proportion sandstone/schist is roughly 70/30.

Structure: at 89.2 m S_0 15^o
90.5 m S_0 0^o
93.5 m S_0 25^o

24. 94.6 - 97.0 Extensively fractured pegmatite quartz-feldspar with abundant later quartz veins. Chlorite and pyrite both disseminated in pegmatite and along fractures. Sericitic muscovite locally abundant - have minor development of quartz breccia along some of the fractures. Locally rock is not coherent in drill core.

25. 97.0 - 100.1 Dull green, massive chloritic impure sandstone or quartzose schist. Similar to Unit #11 only appears to have slightly more chlorite. Fractured with quartz filling fractures. Thin interbands of coarse-grained porphyroblastic chlorite schist. Minor pyrite.

Structure: at 98.0 m S_0 32^o

26. 100.1 - 103.1 Coarse-grained chlorite >> biotite schist. Locally porphyroblastic (former Al_2SiO_5 ?). Core much broken and fractured. Fine-grained pyrite visible along fractures. S_1 schistosity disturbed by fractures.

27. 103.1 - 104.1 White quartz vein. Quartz contains minor disseminated chlorite-pyrite-garnet-muscovite. One MoS_2 flake noted. Quartz fine-to-coarse grained.

28. 104.1 - 109.8 Coarse chlorite > biotite schist. Locally porphyroblastic-porphyroblasts are retrograded to chlorite. Core extensively fractured and broken. Locally S_1 disturbed by fractures. Pyrite and graphite visible along slickenside planes of fractures.
Interval from 107.2 - 109.1 m contains two quartz veins. Veins are up to 0.9 m thick. Extensively fractured with chlorite-muscovite-minor pyrite disseminated and along fractures.
Interval from 109.1 - 109.8 m schist is dark grey-very carbonaceous appearance.

Structure: at 105.7 m S_1 65^o
109.2 m S_1 60^o

Meters

29. 109.8 - 110.8 Marginal zone of Wragge Creek Intrusive Stock. 109.8 - 109.9 m consists of pale green, massive, fine-grained intrusive (?). Contains small rounded quartz grains. May be highly cooked metasediment (?). 109.9 - 110.8 m is highly chloritic, sheared, coarse-grained intrusive. Now dominantly quartz-chlorite with minor white feldspar grains. Abundant pyrite blebs along fractures. Contains a thin quartz vein with minor chlorite, pyrite at bottom of interval.

Structure: at 109.8 m S_o intrusive contact 60^o

30. 110.8 - 118.4 Altered Wragge Creek Intrusive. Quartz diorite. Primary mineralogy is quartz-white feldspar-biotite. Biotite extensively altered to chlorite. Locally have faint pink hue to feldspar suggesting development of K-feldspar. Abundant small veins of white quartz $\pm$ white feldspar $\pm$ chlorite. Rock locally fractured. Fractures contain pyrite blebs and stringers. Fractures commonly rimmed by chlorite alteration of biotite. Biotite locally unaltered to chlorite. Locally feldspar altered to soft clays.

31. 118.4 - 120.0 Fine to pegmatitic quartz-white feldspar aplite. Minor amounts of chlorite, garnet, pyrite. Aplite crosscut by later clear quartz veins. Some fracturing. No MoS_2 noted.

32. 120.0 - 135.0 Slightly altered quartz diorite. Primary mineralogy quartz-white feldspar-biotite. White feldspar euhedral to subhedral - can often see concentric zoning/growth pattern. Occasionally get large phenocrysts. Quartz and biotite are both interstitial.
Intrusive slightly altered. More extensively altered in areas with numerous fractures. Feldspar becomes cloudy - with extensive alteration it is soft (clays). Biotite + chlorite. Pyrite commonly associated intimately with chlorite. Trace MoS_2 flakes noted in areas with abundant pyrite. Fractures locally filled with soft white mineral. Minor quartz veins throughout.

33. 135.0 - 137.9 Zone of quartz diorite which is locally extensively silicified. Also contains abundant quartz veins. Biotite totally altered to chlorite. Stringers and blebs of pyrite along fractures.

34. 137.9 - 139.3 Altered quartz diorite. Chlorite replacing biotite. Small pyrite grains visible.

Meters

35. 139.3 - 154.5 Biotite quartz diorite (like Unit #32) with local alteration zones. Alteration typically associated with fractures and/or quartz veins. Biotite + chlorite. Minor MoS_2 noted in quartz veins at 141.0 m. Trace MoS_2 in quartz diorite. Minor pyrite or pyrrhotite also present in quartz diorite.

154.5 END OF HOLE

CYPRUS ANVIL MINING CORPORATION

DIAMOND DRILL CORE LOG

Hole Number: 80-SH-02

Fabric Orientation Diagram:

Project: Shannon Creek

Location: Slocan Lake, B.C.

Claim: Moly # 1

Terr. Plane Co-ords.: 5, 547, 025 N

462, 480 E

Grid Co-ords.: 0 + 10E, 2 + 15N

Inclination: -90°

All symmetry determinations looking _____ with _____ dipping _____ with dip azimuth _____.

Elevation: 1375 m

Total Depth: 434.9 m

Purpose: _____

Logged by: L. Pigage

Date(s) Logged: Oct. 26 - Nov. 1, 1980

Drilling Contractor: J. T. Thomas

Core:

Size	From	To
NQ	0	434.9

Collar Cased and Capped: _____

Started: Oct. 16, 1980

Completed: Oct. 25, 1980

LITHOLOGIC LOG

80-SH-02

	Metres	
1.	0.0 - 6.1	Triconed in overburden - no core.
2.	6.1 - 29.7	Dark to medium grey, carbonaceous, noncalcareous, biotite-muscovite-quartz schist. Locally retrograded partly or completely to chlorite. Thin quartzose bands contain disseminated biotite - these bands are discontinuous in S_1. Locally porphyroblastic with development of Al_2SiO_5 prisms (andalusite?). Minor irregular quartz veins and stringers. These commonly contain chlorite, muscovite, minor biotite, minor pyrite. 1 cm vein at 15.7 m contains minor disseminated grey grains (possible MoS_2?)

Structure at			
6.5 m	S_1	22^o	
11.0 m	S_1	22^o	
	S_2 cren.clvge.	26^o	in opposite direction
14.0 m	S_1	14^o	
19.6 m	S_1/S_0	21^o	
26.5 m	S_1/S_0	0^o	
29.5 m	S_1/S_0	22^o	

3.	29.7 - 30.9	White to clear quartz vein. Contains stringers of biotite and/or chlorite. Interval from 30.2 - 30.7 m consists of biotite-muscovite-andalusite porphyroblastic schist. Quartz contains minor pyrite. Also disseminated fine grey grains (possible MoS_2) which give grey hue to the quartz.

Metres

4. 30.9 - 37.8 Biotite-muscovite$^{\pm}$chlorite-quartz schist - similar to Unit #2. Locally porphyroblastic with andalusite (?). Contains thin discontinuous quartzose bands. Also has thicker intervals of biotite quartzose schist. Interval 35.2 - 35.6 m is clear to grey quartz with minor chlorite-pyrite-epidote. Also have thin discontinuous quartz veins scattered through schist.

Structure at 32.6 m S_1/S_0 10^o

36.0 m S_1 20^o

5. 37.8 - 40.8 Biotite-chlorite, quartz-rich schist (psammite or schistose quartzite) with interbands of porphyroblastic biotite schist. Overall color is grey. Biotite only locally noticeable. Thin quartz veins with blebs of pyrite and chlorite. Noncalcareous.

Structure at 38.5 m S_1 40^o

40.0 m S_1 40^o

6. 40.8 - 41.6 Fault breccia. Angular to subangular clasts of porphyroblastic schist and quartzose schist. Clasts have randomly oriented S_1 fltn. All clasts are dark green (chlorite). Matrix consists of soft, noncalcareous, cream to white fine-grained mineral. One quartz vein also present. Fault breccia transects core axis at very shallow angle - indicates a steep fault.

7. 41.6 - 44.9 Dark green, massive, noncalcareous, chlorite-quartzose schist (chlorite psammite). Minor small disseminated pyrite grains weather as brown spots. Contains 1 thin quartz vein at 42.4 m.

Structure at 42.8 m S_1 22^o

8. 44.9 - 46.0 Porphyroblastic biotite-muscovite-chlorite-andalusite schist. Biotite for much of the interval is retrograded to chlorite. Interval from 44.9 - 45.1 m consists of quartz-muscovite vein with minor stringers of chlorite and biotite. Rest of the interval contains small quartz veins (core axis subparallel to quartz veins). Minor pyrite in veins. No MoS_2 noted.

Structure at 45.6 m S_1 21^o

	Metres		
9.	46.0 -	50.9	Biotite-muscovite-andalusite±chlorite porphyroblastic schist. Locally andalusite retrograded to muscovite and biotite retrograded to chlorite. Minor small stringers of pegmatitic white quartz. Schist contains thin discontinuous bands of fine-grained quartzose biotite psammite. Similar to Unit #2. Noncalcareous.
			Structure at 46.9 m S_0/S_1 5^o
			50.4 m S_0 8^o
10.	50.9 -	55.6	Quartz-white feldspar-muscovite±chlorite±biotite±garnet-pyrite pegmatite to aplite. Often see graphic intergrowth of feldspar and quartz. At least 2 generations of quartz-opaque white and clear grey. Muscovite commonly has pale green tint. Clear grey quartz fills fractures in white quartz. Minor randomly oriented biotite in aplite. Core extensively broken and fractured. Pyrite weathers as disseminated brown spots. No MoS_2 noted.
11.	55.6 -	58.5	Dark green, fine-grained, massive, porphyritic metavolcanic. Former plagioclase phenocrysts altered at least partly to calcite. Ground mass also locally calcareous. Locally has mottled chlorite texture indicative of former mafic phenocrysts. Upper part of interval extensively fractured and broken with coarse fibrous calcite filling fractures. Minor amygdules. Phenocrysts form - 20% of rock - up to 2 mm in size. Pyrite occurs as scattered subhedral to euhedral grains in matrix. Rarely pyrite occurs as grains in amygdules. S_1 foliation not readily visible.
12.	58.5 -	60.6	Pegmatite clear and white quartz with graphic intergrowths of white feldspar. Clear quartz forms veins in white quartz. Coarse pegmatitic to fine aplite. Locally have pink garnet and coarse muscovite. MoS_2 forms scattered disseminated grains up to 3 mm in diameter. Minor pyrite.
13.	60.6 -	62.7	Chlorite>biotite-muscovite schist with interbands of chlorite>muscovite psammite. Noncalcareous. Schist locally porphyroblastic with andalusite porphyroblasts. Fractures filled by very soft, noncalcareous, white mineral. Minor amounts of white quartz veining with no visible MoS_2.
			Structure at 61.0 m S_1 38^o
			61.8 m S_1/S_0 39^o

Metres

14. 62.7 - 63.6 Pegmatitic white quartz vein with minor pyrite-muscovite. Fractured-fractures sometimes have open spaces with quartz crystals growing inward. Pyrite and muscovite occur along the fractures. At 63.1 m have a 10 cm interval of chlorite-biotite schist.

Structure at 62.9 m fractures (dominant) 15^{o}

15. 63.6 - 64.7 Biotite-muscovite-chlorite schist. Locally porphyroblastic with andalusite. Some intervals retrograded to chlorite grade. Contains thin psammite bands. Noncalcareous.

Structure at 64.2 m S_1 35^{o}

64.2 M Kink 52^{o} (opposite S_1)

16. 64.7 - 67.1 Coarse-grained white quartz vein containing later veinlets of clear grey quartz. Minor muscovite, garnet, pyrite, MoS_2, chlorite/biotite occur within the quartz as disseminated grains. These accessory minerals associated with both white quartz and the later clear quartz.

17. 67.1 - 72.9 Biotite-muscovite-chlorite schist. Locally retrograded to chlorite. Very small intervals contain andalusite porphyroblasts. Small disseminated pyrite grains present.

Structure at 68.4 m S_1 20^{o}

71.1 m S_1 0^{o}

72.9 m S_1 24^{o}

18. 72.9 - 78.8 Coarse-grained white quartz veins interbanded with biotite-muscovite-chlorite schist. Essentially drilling down contact of vein with schist so get irregular interbanding of both lithologies. Quartz vein like Unit #16. Clear quartz fills fractures and forms irregular stringers. Abundant fine MoS_2 disseminated in white quartz. Schist locally contains andalusite porphyroblasts. Minor pyrite, muscovite, garnet also present in quartz vein.

Structure at 73.4 m S_1 0^{o}

77.1 m S_1 0^{o}

Metres

19. 78.8 - 83.8 Biotite-muscovite-chlorite±andalusite±garnet schist. At 81.3 m have 10 cm section with abundant, fine disseminated pyrite. Interval from 81.3 - 83.8 m extensively broken core and schist retrograded to chlorite-muscovite grade.

Structure at	79.5 m	S_1	0^o
	82.5 m	Kink	35^o

20. 83.8 - 85.8 Coarse-grained white quartz vein with later clear quartz veins cutting across it. Vein contains muscovite, minor garnet, pyrite, MoS_2, minor chlorite. Lower part of interval contains chlorite stringers. Rock quite fractured.

21. 85.8 - 93.6 Chlorite≫biotite fine-grained schist. Minor quartz-muscovite veins. Looks like retrograded biotite schist. Dark green. Noncalcareous. Locally porphyroblastic.

Structure at	89.6 m	S_1	35^o
	93.5 m	S_1	40^o

22. 93.6 - 94.3 Coarse-grained white quartz vein. Minor muscovite-chlorite-pyrite-garnet. Vein extensively fractured. No readily visible MoS_2.

23. 94.3 -100.2 Chlorite≫biotite schist. Dark green noncalcareous schist. Looks to be retrograded biotite schist. Contains dark green chlorite porphyroblasts which may have been former garnet (or biotite). Interval from 94.3 - 95.0 m contorted with abundant fine scale fracturing. One fracture contains quartz crystals growing inward as fine druse. Minor pyrite noted as slicks on slickenside/fracture surfaces.

Structure at	96.0 m	S_1	31^o
	98.7 m	S_1	33^o

24. 100.2 - 100.9 White quartz vein. Minor muscovite, pale pink garnet, chlorite, biotite(?), pyrite disseminated in quartz. Abundant fractures. Fractures often open - contains soft clear mineral growing as tabular crystals (gypsum?). No MoS_2 definitely noted.

Metres

25. 100.9 - 120.7 Biotite-chlorite-muscovite schist interbanded with chlorite-muscovite schist. Biotite-chlorite schist is dark brown. Locally has porphyroblastic texture. Chlorite schist is dark green-grey - it also locally has a porphyroblastic texture. Contacts between the two schists are gradational - chlorite schist looks to be retrograde alterations of the biotite schist. Minor thin quartz veins present. Quartz-muscovite vein in interval 116.3 - 116.4 m. Quartz vein from 119.2 - 119.3 m contains irregular selvages and stringers of pyrite, pyrrhotite, and minor chalcopyrite.

Structure at	104.0 m	S_1	35^o
	110.8 m	S_1	12^o
	113.2 m	S_1	34^o
	120.4 m	S_1/S_0	38^o

26. 120.7 - 122.0 Opaque grey-white, fine-grained quartz vein. Typically has pale pink to brownish hue because of fine-grained biotite(?). Crosscutting fractures filled by soft white mineral, calcite, pyrite, and fine grey mineral (MoS_2?). In some fractured areas pink tint has turned to pale green (biotite→chlorite?).

Structure at	121.7 m	fractures	48^o

27. 122.0 - 137.1 Biotite-muscovite±chlorite±andalusite schist. Locally porphyroblastic. Locally contains thin, discontinuous psammite layers. Noncalcareous. Overall dark grey color because carbonaceous. Like other biotite schists above. Locally retrograded to chlorite. Minor quartz veins as irregular veins and pods. These consistently contain coarse chlorite, biotite, and pyrrhotite. 126.5 - 126.7 m slightly calcareous with calc-silicate type garnet developed. 126.7 m small quartz vein contains coarse calcite with quartz.

Structure at	122.3 m	S_1	0^o
	123.4 m	S_0/S_1	0^o
	126.3 m	S_1	51^o
	127.0 m	S_0	0^o
	129.7 m	S_1	48^o
	132.1 m	S_0	0^o
		S_1	45^o
	134.7 m	S_0	0^o
	136.9 m	S_1	34^o

Metres

28. 137.1 - 143.2 Biotite±chlorite quartzose schist (psammite) interbanded with biotite-chlorite±andalusite schist. Banding on a scale of cm up to about 10 cm. Psammite is pale brown to pale green. Pale green in irregular patches which often follow fractures and quartz veins. Quartz veins are common - often contain biotite and chlorite. Pyrite noted as disseminated grains in psammite. Pyrrhotite occurs as irregular blebs in quartz veins.

Structure at	138.0 m	S_1	50^o
	141.2 m	S_0	37^o
	141.8 m	S_0	25^o
		S_1	0^o

29. 143.2 - 143.9 Dark grey, biotite psammite (sandstone). Fine-grained biotite gives rock a purplish-brown hue. Contains fine disseminated pyrite streaks. Contains calc-silicate bands. Calc-silicate are zoned biotite-diopside-pale pink garnet. Only minor calcite present.

30. 143.9 - 147.3 Medium grey, massive, slightly calcareous sandstone. Quartz veins in sandstone have green calc-silicate(?) mineralogy within them (minor) and as selvages. Interval from 144.3 - 146.1 m consists of dark grey, carbonaceous, noncalcareous biotite-andalusite porphyroblastic schist/phyllite. Schist contains disseminated pyrrhotite. Minor green calc-silicates developed in quartz-rich portions of schist.

Structure at	144.4 m	S_1	54^o
	144.4	S_0	0^o

31. 147.3 - 150.6 Dark grey, carbonaceous, noncalcareous, biotite-muscovite±andalusite schist. Contains minor disseminated pyrrhotite. Schist has thin, discontinuous psammite bands.

Structure at	147.8 m	S_1	18^o
	149.9 m	S_1	22^o

32. 150.6 - 152.3 Dark to medium grey to brown psammite. Contains fine disseminated pyrite and pyrrhotite (po > py). Interval from 150.6 - 150.9 is slightly calcareous sandstone with minor green calc-silicate mineralogy developed. Biotite→chlorite along fractures.

Structure at	151.5 m	S_1	25^o

Metres

33. 152.3 - 165.0 Biotite-muscovite-chlorite±andalusite dark grey carbonaceous, noncalcareous schist. Locally retrograded to chlorite grade - especially along fractures. Fractures commonly filled by soft, white, noncalcareous mineral. Minor fine-grained pyrite - especially along fractures. Only a few thin quartz veins/stringers.

Structure at	153.4 m	S_0	38^o
	156.5 m	S_1	20^o
	160.1 m	S_1	35^o

34. 165.0 - 168.8 Medium to dark grey, carbonaceous, impure sandstone to quartzose phyllite. Noncalcareous. Core extensively fractured and broken. Soft, noncalcareous white mineral fills fractures. Locally fractures concentrated enough to form major part of matrix. Minor pyrite in fractures.

Structure at	165.5 m	S_0	54^o
	167.5 m	S_0	0^o

35. 168.8 - 171.5 Same carbonaceous, impure sandstone as with Unit #34. Not excessively broken and fractured in this interval. Only locally brecciated with minor movement of angular clasts. Contains short intervals with green calc-silicate minerals disseminated in sandstone. Lower part of interval contains minor schist.

Structure at	168.9 m	S_0	43^o
	170.9 m	S_0	5^o

36. 171.5 - 174.8 Carbonaceous grey to brown impure sandstone (brown contains biotite-psammitic) interbanded with biotite-chlorite-muscovite schist. Schist locally porphyroblastic.

Structure at	171.9 m	S_0	15^o
	174.5 m	S_0	43^o

37. 174.8 - 176.0 Pale green, massive, noncalcareous, fine-grained sandstone. In upper part of interval is darker green and locally contains brown biotite patches. Minor quartz veins - in one case quartz vein contains visible MoS_2 flake. Quartz veins are opaque white.

Metres

38. 176.0 - 181.1 Biotite-muscovite-chlorite carbonaceous schist interbanded with grey-green to grey to brown laminated psammite/sandstone. Laminae & layers are on the order of 1 - 10 mm. Schist contains abundant streaks of pyrite and pyrrhotite in the S_1 foliation. Minor quartz veining. Fracture at 178.5 m contains soft, white, noncalcareous mineral.

Structure at	176.3 m	S_0	45^o
	178.0 m	S_0	45^o
	179.4 m	S_0	32^o
		S cren.clvge/kink	40^o (opposite)

39. 181.1 - 184.4 Coarse-grained calc-silicate mineralogy interbanded with dark grey, biotite phyllite and minor limestone. Phyllite typically contains abundant pyrite streaks parallel to S_1. It is noncalcareous. Calc-silicate include garnet and possible K-feldspar in a quartz or calcite matrix. Minor green calc-silicate as well. Limestone is finely laminated light and dark grey. Looks like reaction zone between calcareous metasediments and either intrusive or quartz vein (like a skarn).

Structure at	183.7 m	S_1	48^o

40. 184.4 - 193.6 Light to dark grey recrystallized limestone. Locally contains stylolites. Locally laminated into alternating light and dark layers. Minor calcite-quartz veins. Some pale yellowish pink calc-silicate minerals at 191.2 and 191.9 m.

Structure at	187.4 m	S_0	60^o
	190.2 m	S_1	55^o

41. 193.6 - 194.6 Coarsely crystalline calc-silicate garnet-diopside? calc-silicate mineralogy in a white calcite matrix. Minerals are not oriented.

42. 194.6 - 196.4 Grey to white recrystallized limestone with minor locally developed intervals of pinkish-brown garnet.

Structure at	195.3 m	S_0	28^o
	196.3 m	S_0	0^o

	Metres	
43.	196.4 - 198.1	Coarse grained pale pink garnet & diopside (?) in a calcite matrix. Well developed garnet skarn mineralogy.
44.	198.1 - 200.2	Dark grey carbonaceous phyllite. Thin pyrite streaks in phyllite. Contains numerous slightly disrupted veins of quartz-chlorite. Veins look like highly altered Wragge Creek intrusive. Intrusive is silicified. One quartz vein also present.
45.	200.2 - 204.9	Dark green, noncalcareous, fine-grained, laminated phyllite. Fairly abundant thin quartz veins present.

Structure at 204.1 m S_0 58^o

46.	204.9 - 208.6	Biotite-muscovite-chlorite$\pm$andalusite schist. Minor quartz veining. Bottom part of interval is laminated biotite-chlorite schist/phyllite. Both units noncalcareous. Biotite locally retrograded to chlorite along fractures.

Structure at 207.3 m S_0 63^o

47.	208.6 - 210.4	Grey to white quartz vein. Contains abundant muscovite. Some sections contain dispersed biotite and/or chlorite. Minor pyrite and trace of garnet locally visible. At least 2 generations of quartz present.
48.	210.4 - 247.5	Biotite-muscovite$\pm$chlorite$\pm$andalusite schist. Dark purplish brown to dark green, non-calcareous schist. Locally porphyroblastic. Some intervals look like chlorite is retrograde alteration of biotite. Minor pyrite and pyrrhotite. 219.4 - 220.2 m interval contains small quartz-muscovite veins with large andalusite (pink) porphyroblasts. Another andalusite-quartz-muscovite vein at 232.7 m.

Structure at	210.9 m	S_0	52^o
	216.6 m	S_1	31^o
	220.8 m	S_1	35^o
	225.9 m	S_0	42^o
	231.4 m	S_1/S_0	44^o
	235.6 m	S_0	16^o
		S_1	30^o opposite S_0
	240.6 m	S_1	30^o
	247.2 m	S_1	52^o

Metres

49. 247.5 - 250.2 White quartz vein with small later clear grey quartz veinlets and graphic intergrowths. White quartz contains minor biotite, chlorite, muscovite, garnet, pyrite, pyrrhotite. Minor MoS_2 noted. Locally quartz grey near fractures (possible MoS_2 dust?). Rock only has a few fractures. Locally dispersed biotite retrograded to chlorite. Garnet forms small pink, subhedral to anhedral grains. Pyrite or pyrrhotite as irregular blebs and small stringers.

50. 250.2 - 253.5 Foliated, biotite-quartz-garnet orthogneiss. No readily visible feldspar. Biotite as scattered flakes in fine-grained quartzose matrix. Overall color dark brownish grey. Garnet as poorly formed pale pink grains. Scattered quartz veins every 0.2 - 0.5 m. Veins commonly rimmed by red garnet, then dark green hornblende. Fractures and veins locally cause alteration of biotite to chlorite. Some sericite in fractures. Blebs and stringers of pyrrhotite along fractures. Some groundmass garnets show small white depletion halo.

Structure at 250.4 m S_1 58^o

51. 253.5 - 254.2 Fine to medium grained opaque grey quartz vein. Vein has pale green tint to it. Minor muscovite, chlorite, biotite. Stringers and blebs of pyrite and pyrrhotite along fractures. In one fracture pyrrhotite partly rims pyrite as well as forming its own grains. Grey quartz contains one thin cross-cutting vein of clear grey quartz.

52. 254.2 - 256.8 Same as Unit #50. 254.6 - 256.1 m interval contains extensive fractures and veins with chlorite alteration along fractures and garnet-hornblende-pyrrhotite in quartzose veins. Only very minor matrix garnet.

Structure at 255.2 m S_1 46^o

256.6 m S_1 25^o

53. 256.8 - 277.8 Biotite-muscovite-chlorite$\pm$andalusite schist interbanded with chlorite schist. Similar to earlier biotite schists. Minor thin psammite bands in schist. Chlorite schist looks to be retrograded biotite schist.

Structure at 257.2 m S_1 23^o

262.8 m S_1 45^o

266.5 m S_0 10^o

S_1 24^o

273.0 m S_1 48^o

Metres

54. 277.8 - 278.1 Opaque white quartz vein with garnet, muscovite, minor chlorite.

55. 278.1 - 298.4 Same as Unit #53. Minor thin quartz veins present. These are generally up to 3 cm thick.

Structure at	279.5 m	S_1	32^o
	282.5 m	S_1	35^o
	285.8 m	S_0	0^o
	289.2 m	S_1	50^o
	294.7 m	S_0	18^o
	295.4 m	Vein	55^o

56. 298.4 - 298.8 Grey-green quartz vein. Extensively fractured quartz vein with chlorite along fractures. Abundant pyrite blebs and stringers. Overall texture looks like silicified Wragge Creek type intrusive.

57. 298.8 - 301.7 Fine-grained biotite psammitic schist with crosscutting dyke of Unit #50. Also some quartz veining present. Rock more fractured with soft white mineral filling fractures. Psammitic schist altered to chlorite grade along fractures.

Structure at	300.8 m	S_1	20^o

58. 301.7 - 321.6 Same as Unit #53. No quartz veins present. 315.0 - 315.3 m small interval extensively fractured with soft white mineral filling fractures. Minor pyrrhotite and chalcopyrite in some fractures. Interval 317.4 - 318.4 m contains abundant small euhedral garnets in schist.

Structure at	303.8 m	S_1	20^o
	309.0 m	S_1	37^o
	313.3 m	S_1	35^o
	316.0 m	S_1	32^o
	321.3 m	S_1	50^o

Metres

59. 321.6 - 322.1 Grey opaque quartz vein. Grey from abundant fine dust inclusions (MoS_2?). Minor stringers of pyrrhotite occur at contacts of quartz vein with surrounding rocks. Minor chalcopyrite occurs with pyrrhotite.

60. 322.1 - 348.8 Same as Unit #50. Garnet content varies through core. Biotite content also varies slightly. Abundant fractures and quartz veins. Typically intrusive contains reaction assemblages along fractures and veins. These often show a crude concentric zonation. Typical patterns from core out are:

Quartz-hornblende-pyrrhotite-garnet-calcite with biotite depletion halo
Pyrrhotite/hornblende/biotite depletion halo
Quartz/hornblende-calcite/biotite depletion halo
Pyrrhotite typically occurs as irregular blebs and stringers in fractures

Structure at	322.3 m	S_1	62^o
	328.0 m	S_1	55^o
	331.2 m	S_1	57^o
	334.2 m	S_1	54^o
	340.0 m	S_1	49^o
	348.8 m	S_1	40^o

61. 348.8 - 370.1 Like Unit #53. Contains interbanded dark brown to dark green, fine-grained, massive psammitic schist. In some small intervals get anhedral garnet in schist. Locally have streaks of pyrrhotite in schist - elongate in S_1. Minor quartz and quartz-muscovite veins near bottom of interval. Bottom of interval contains a few thin bands of biotite-garnet gneiss like Unit #50. In one case this band has small quartz eyes and stringer pyrrhotite within crosscutting quartz vein (366.8 m).

Structure at	349.6 m	S_1	43^o
	357.0 m	S_1/S_0	60^o
	364.5 m	S_1	32^o
	366.5 m	S_1/S_0	37^o

	Metres	
62.	370.1 - 373.4	Like Unit #50. Biotite-quartz-garnet gneiss. In this instance core extensively altered - biotite altered to chlorite and interval looks silicified. Numerous fractures with chlorite along fractures. Minor pyrrhotite blebs noted. Also minor fracture/veins with pink garnet and hornblende. Contacts with enclosing rocks crosscut S_0 and S_1.
		Structure at 371.5 m S_1 47^o
63.	373.4 - 375.4	Biotite-muscovite±garnet±andalusite±chlorite schist. Locally retrograded to chlorite. Minor pyrrhotite as elongate blebs and streaks in schist. Core broken and fractured at 374.6 - 375.0 m.
		Structure at 374.0 m S_0/S_1 58^o
64.	375.4 - 376.4	Like Unit #50. Most of this interval has biotite altered to chlorite. Abundant fractures - but not as fractured and altered as Unit #62. Overall appearance is opaque white with scattered green chlorite grains. Core shows excellent S_1 foliation. Minor pyrrhotite in chlorite fractures.
		Structure at 376.0 m S_1 70^o
65.	376.4 - 381.8	Biotite-muscovite±andalusite±chlorite schist interbanded with biotite±chlorite quartzose schist. Porphyroblastic schist commonly contains thin quartzose bands. Quartzose schist is massive with no readily visible layering. Overall color is dark brown. Interval 379.0 - 379.3 m consists of light greenish grey calcareous sandstone. Minor folds S_1(?) in S_0 at 380.5 m and 381.5 m.
		Structure at 378.1 m S_1 33^o
		380.0 m S_1 56^o
		381.4 m S_1 50^o
66.	381.8 - 384.8	Like Unit #50. Biotite-quartz-garnet gneiss. Extensively altered to chlorite. First impression is banded appearance as chlorite-altered zones are white with green specks and unaltered gneiss is brownish grey. Minor quartz veining with garnet-hornblende developed along veins.
		Structure at 384.8 m S_1 65^o

Metres

67. 384.8 - 387.3 Coarse to medium-grained opaque white to grey-white quartz vein. Cross-cut by later grey quartz veins (clear). White quartz contains abundant muscovite, some garnet, chlorite, biotite and minor pyrite. Micas are coarse-to fined-grained and randomly oriented. In places grey cast to quartz looks like fine dust inclusions (possible MoS_2?).

68. 387.3 - 392.8 Biotite-garnet-quartz gneiss. Aspect and alteration same as with Unit #66. At 391.3 m small band of altered zone around fairly flat fracture offset ~ 1cm by fracture running at acute angle to core axis.

Structure at 389.1 m S_1 60^o

392.0 S_1 50^o

69. 392.8 - 393.3 Coarse white quartz vein. Diffuse zones of grey quartz - still the opaque variety. Zone of chlorite?-calcite along margins of quartz vein.

70. 393.3 - 401.4 Like Unit #50. Patchy alteration to chlorite gneiss along fractures. Stringers of pyrrhotite locally in fractures. Portions of this interval are quite fine-grained. Chlorite altered zones appear to be slightly coarser grained. Minor quartz veining.

Structure at 393.6 m S_1 65^o

399.6 m S_1 58^o

71. 401.4 - 402.0 Biotite-quartz±chlorite psammitic schist. Biotite gives interval a dark brown color.

Structure at 401.7 m S_1 30^o

72. 402.0 - 405.8 Like Unit #50. Thin calc-silicate-rich veins. Patchy alteration to white chlorite assemblage.

Structure at 403.6 m S_1 47^o

73. 405.8 - 407.3 Bands and xenoliths of fine-grained biotite-garnet-quartz gneiss (like Unit #50) within light colored calc-silicate type gneiss Calc-silicate contains garnet-chlorite in quartz matrix. Contact is sharp. Calc-silicate gneiss becomes dominant unit in lower part of interval. Alteration more extensive in lower part of interval with more fracturing and more pervasive chlorite. Minor pyrite.

	Metres	
74.	407.3 - 409.9	Dark brown to dark green psammitic biotite or chlorite schist. Upper 0.1 m consists of contact zone with Unit #73. 407.3 - 407.9 m interval extensively fractured and broken. Thin laminations visible in schist.
		Structure at 409.3 m S_0 30°
		S_1 58°
75.	409.9 - 434.5	Like Unit #50. Numerous calc-silicate zoned veins. Extent of alteration varies. Rock has a mottled brown and green-white appearance. Minor stringers and blebs of pyrrhotite.
		Structure at 412.2 m S_1 70°
		416.4 m S_1 65°
		421.3 m S_1 68°
		431.2 S_1 57°
76.	434.5 - 434.9	Dark green-brown chlorite-biotite schist.
	434.9	END OF HOLE

CYPRUS ANVIL MINING CORPORATION

DIAMOND DRILL CORE LOG

Hole Number: 80-SH-03

Project: Shannon Creek

Location: Slocan Lake, B.C.

Claim: Maly # 5

Terr. Plane Co-ords.: 5, 546, 500 N

464, 550 E

Grid Co-ords.: 21E, 6+50N

Inclination: -50° at 210° azimuth

Elevation: 935 m

Total Depth: 328.2 m

Fabric Orientation Diagram:

All symmetry determinations looking

_____ with _____ dipping

_____ with dip azimuth _____.

Purpose: _____

Logged by: L. Pigage Date(s) Logged: Nov. 2 - Nov. 5, 1980

Drilling Contractor: J. T. Thomas

Core:	Size	From	To
	NQ	0	328.2

Collar Cased and Capped: _____

Started: Oct. 27, 1980 Completed: Oct. 31, 1980

LITHOLOGIC LOG

DDH 80-SH-03

	Meters	
1.	0.0 - 6.1	Triconed through overburden - no core.
2.	6.1 - 9.4	Noncalcareous medium to dark grey banded sandstone. Dark grey with light grey bands. Individual bands are 2 - 10 mm thick. Core extensively broken - forms small chips - probably resulting from surface weathering. Minor pyrite weathers as small brown spots.
3.	9.4 - 16.5	Dark grey fine-grained sandstone with numerous medium to light grey/white sandstone bands. Light-coloured bands range from 2 mm to 2 cm in thickness. Locally the bands (mainly light coloured ones) are moderately calcareous. When non-calcareous light grey bands typically have a faint green hue. Abundant fine fractures with calcite, soft white mineral, pyrite filling fractures. Bands are discontinous. Structure: at 9.5 m S_o 25^o 11.8 m S_o 0^o 13.8 m S_o 23^o 16.0 m S_o 28^o Small breccia zone at 16.0 m.
4.	16.5 - 16.9	Small zone of breccia and fault gouge. Same rock type as Unit #3.
5.	16.9 - 23.5	Same as Unit #3. Light bands are locally moderately calcareous. Disseminated pyrrhotite streaks in S_o/S_1 foliation. Pyrite fills fractures. Locally core is broken. Structure: at 19.8 m S_o 0^o 22.6 m S_o 17^o
6.	23.5 - 25.1	Same as Unit #3. Core extensively broken with some breccia and fault gouge. Fractures filled by quartz, soft white mineral, calcite. Structure: at 24.1 m S_o 33^o

	Meters	
7.	25.1 - 27.6	Same as Unit #3. End of interval contains small clear quartz vein. Structure: at 26.4 m S_0 28^0 27.4 m S_0 40^0
8.	27.6 - 28.1	Same as Unit #3. Rock extensively broken and brecciated. Angular clasts have not moved far. Brecciated in fractures. Fractures filled by calcite.
9.	28.1 - 30.0	Same as Unit #3. Pyrite grains in fractures. Light coloured bands are discontinuous. Locally slightly to moderately calcareous. Fine-grained, disseminated pyrrhotite (?) in sandstone. Structure: at 28.3 m S_0 24^0 29.7 m S_0 32^0
10.	30.0 - 30.8	Medium-fine-grained chlorite-feldspar equigranular dyke. Diabasic texture. Medium olive green. Slightly calcareous. Pyrrhotite as disseminated irregular blebs. Pyrite as small grains along fractures. Contents crosscut S_0 layering in surrounding sandstone.
11.	30.8 - 39.2	Same as Unit #3. Dark grey sandstone contains numerous small pyrrhotite streaks. Light grey bands are discontinuous. Structure: at 31.8 m S_0 32^0 35.6 m S_0 26^0 38.6 m S_0 25^0 Pyrite as small grains in fractures.
12.	39.2 - 40.5	Same as Unit #3. Core extensively broken with minor breccia and fault gouge.
13.	40.5 - 42.9	Same as Unit #3. Light coloured bands are moderately calcareous. Structure: at 41.9 m S_0 30^0

14. 42.9 - 43.9 Same as Unit #3. Core highly fractured and broken with minor fault gouge. Pyrite stringers locally in fractures.

15. 43.9 - 45.8 Same as Unit #3. Small pyrite grains along fractures.

Structure: at 44.0 m S_o 31^o
45.4 m S_o 35^o

16. 45.8 - 47.5 Same as Unit #3. Core extensively fractured with minor breccia and fault gouge.

17. 47.5 - 51.4 Same as Unit #3. Minor small pyrite grains along fractures.

Structure: at 48.7 m S_o 37^o
50.8 m S_o 34^o

18. 51.4 - 52.1 Fine-grained, equigranular off-white to very pale green intrusive dyke. Abundant fine-grained disseminated pyrite (pyrrhotite ?) streaks. Slightly calcareous. Pyrite occurs along fractures. Material strongly foliated (sulphide streaks). Foliations consistent with S_o in surrounding sandstones.

19. 52.1 - 54.2 Same as Unit #3. Some thin bands are moderately calcareous.

Structure: at 53.5 m S_o 31^o

20. 54.2 - 68.7 Same as Unit #3. Interval extensively fractured and broken with fault gouge and breccia along fractures. Calcite commonly fills fractures. Interval from 67.3 - 68.7 m is pale brown alternating with very pale green in layers. Pale brown results from first appearance of biotite. Pale green may be calc-silicate. This interval is non-calcareous.

Structure: at 57.0 m S_o 58^o
62.3 m S_o 69^o
64.6 m S_o 23^o
67.4 m S_o 32^o

21. 68.7 - 81.8 Same as Unit #3. Contains thin dark grey limestone bands. Adjacent to limestone get pale green calc-silicate minerals in sandstone bands. Also get green calc-silicates in sandstone next to crosscutting quartz veins. Minor pale brown biotite in more pelitic layers. At 80.5 m have 0.1 m vein of quartz-pink feldspar-pink small garnets.

Structure: at 68.7 m S_o 23^o
75.3 m S_o 27^o
78.3 m S_o 19^o
81.3 m S_o 21^o

22. 81.8 - 105.7 Massive brown biotite schist with thin limestone bands. Schist commonly contains an S_o lamination. Limestone typically rimmed and/or contains green calc-silicate minerals. Brown biotite schist forms dominant part of section. Locally fractured with white calcite filling fractures. Minor pyrrhotite in schist. A few quartz veins - these contain irregular stringers of pyrrhotite.

Structure: at 83.2 m S_o 24^o_o
86.5 m S_o 25
89.0 m S_o 27^o
94.5 m S_o 28^o
99.6 m S_o 19^o
105.6 m S_o 30^o

23. 105.7 - 107.3 Similar to Unit #22 - proportions of different lithologies changes. Thick limestone bands with thin biotite schist intervals. Contact between two lithologies is well-developed calc-silicate zone with pale green, fine-grained mineral. Minor pale pink garnet in calc-silicate zone.

Structure: at 107.0 m S_o 27^o

Meters

24. 107.3 - 124.6 Same as Unit #22. Laminated brown biotite schist with thin limestone bands. Limestone commonly only up to 5 mm thick and contains minor green calc-silicates. Limestone is dark grey. Minor fracturing with quartz and/or calcite filling fractures. Minor pyrite. Some fractures filled by soft white mineral. Have a few thin quartz veins.

Structure:	at		
	107.9 m	S_o	27^o
	111.8 m	S_o	90^o
	114.9 m	S_o	75^o
	117.9 m	S_o	69^o
	119.8 m	S_o	15^o
	121.0 m	S_o	0^o
	122.6 m	S_o	16^o
	124.0 m	S_o	10^o

25. 124.6 - 128.7 Same as Unit #22. Core extensively fractured with mainly white, soft mineral filling fractures. Fracturing becomes more extensive as go down in this interval. Rare quartz veins contains green calc-silicate, minor calcite, minor pyrrhotite. Locally schist has grey colour as it becomes more carbonaceous. Interval 128.2 - 128.7 m is breccia with grey schist and laminated grey sandstone clast in grey schist with one sandstone layer in matrix. Brecciated by abundant fractures.

Structure:	at		
	125.0 m	S_o	53^o
	127.2 m	S_o	90^o
	128.2	fracture	0^o

26. 128.7 - 129.5 Extremely fractured and brecciated pale green sandstone with minor biotite. Biotite gives some layers a pale pink colour. Can see layering between pale green unit and purplish green unit. Contact with overlying unit is crosscutting because of faulting and fracturing. Pyrite occurs as smears along fractures. S_o layering is subparallel to core axis.

Meters

27. 129.5 - 132.7 Dark grey, fine-grained, pelitic sandstone (or quartzose schist) with thin bands of light-grey sandstone. Both types are non-calcareous. Light-grey sandstone forms layers up to 1 cm thick. Dark grey unit contains readily visible mica. Minor fracturing with some thin breccia intervals.

Structure: at 130.1 m S_o 25^o

28. 132.7 - 133.0 Grey pegmatitic quartz-garnet-pyrite-chlorite vein. Garnet as poorly formed pink-red grains up to 2 mm across. Fracture in vein is filled by soft, white mineral.

29. 133.0 - 135.4 Mainly like Unit #27. Dark grey sandstone contains some intervals of pale green to purplish calc-silicate layers (?) - like Unit #26. Lower part of interval extensively fractured with more abundant quartz veins. Crosscutting fractures are filled by soft white mineral.

Structure: at 133.4 m S_o 17^o

30. 135.4 - 138.9 Equigranular, dark green, medium-grained intrusive dyke. Presently chlorite-biotite with minor quartz and pyrite. Can see former ghenocrysts the shape of feldspar and/or pyroxene. Minor quartz as very irregular grains. Fine-grained, light grey sandstone in dyke at interval 138.2 m (70 mm thick). No chill margins visible.

31. 138.9 - 142.4 Interbanded medium grey and light grey sandstone. Both types are non-calcareous. Fine-grained. Light grey has faint green tint - may contain minor amount of calc-silicate. Darker grey locally has pink hue. Very minor pyrrhotite present. Similar to Unit #26.

Structure: at 139.3 m S_o 11^o
141.6 m S_o 0^o

32. 142.4 - 144.0 Same as Unit #31. Core fractured subparallel to core axis. Fracture contains breccia consisting of angular clasts of the same sandstone unit as well as pegmatitic quartz-pink feldspar (K-feldspar). Matrix in fractures locally is calcite. Minor pyrite as small grains fracture.

Structure: at 142.5 m fracture 0^o
143.1 m S_o 0^o

Meters

33. 144.0 - 146.6 Same as Unit #31. Dark sandstone has brown tint from fine-grained biotite. Non-calcareous. Faint green tint probably reflects minor calc-silicate content. Part of sandstone is dark grey.

Structure: at 145.4 m S_o 11^o

34. 146.6 - 147.5 Ivory white, moderately calcareous sandstone. Contains thin white non-calcareous sandstone layers up to 5 mm thick.

35. 147.5 - 148.5 Same as Unit #34 with crosscutting veins of pegmatite. Pegmatite consists of quartz-pink feldspar - minor biotite-garnet-pyrite. Biotite is locally altered to chlorite. Calcite fills fractures in pegmatite.

36. 148.5 - 157.1 Interbanded white slightly to moderately calcareous sandstone (Unit #34) and dark grey, non-calcareous sandstone. Dark sandstone is laminated with layers up to 5 mm thick of slightly lighter grey sandstone. White sandstone commonly has a faint green tint. Rock locally extensively broken with minor breccia. In many cases lithologic contacts cross-cut S_o layering at a very high angle. In some instances thin intervals of breccia are present at these crosscutting contacts. Individual units generally range up to 1.5 m in thickness.

Structure: at 150.0 m S_o 0^o
154.5 m S_o 6^o

37. 157.1 - 161.1 Similar to Unit #36 with thin crosscutting pegmatite veins/dykes. Dykes are up to 0.4 m thick. They consist of pegmatitic grey quartz-pale pink feldspar to white feldspar-minor garnet-minor biotite. Biotite locally altered to chlorite. Graphic intergrowth of feldspar and quartz. Calcite fills fractures. Core extensively fractured with minor displacements noted along fractures. Garnet occurs as poorly formed red grains.

Structure: at 157.6 m S_o 18^o
160.3 m S_o - tectonic 65^o

	Meters	
38.	161.1 - 162.0	Pegmatite. Pale grey quartz with intergrowth of finer-grained white feldspar. Minor garnet and chlorite. Abundantly fractured with quartz eyes in a fine-grained quartz matrix. Pyrite occurs as small blebs in fractures. Structure: at 161.5 m main fracture 65^{o}
39.	162.0 - 168.7	Equigranular Wragge Creek Intrusive - altered. Present mineralogy dominantly quartz-pink feldspar-chlorite with minor pyrite. Feldspar is euhedral to subhedral. Locally have primary biotite although usually biotite partly to completely altered to chlorite. Zones of extensive fracturing - in these regions get quartz (main) and feldspar (minor) eyes in a fine-grained, pale green, quartz-rich mylonitic matrix. Some fractures filled by calcite. Pyrite occurs in irregular blebs - both along fissures and fractures and associated with the mafic minerals. Minor pegmatitic quartz veins - veins contain minor feldspar and garnet. Interval 168.1 - 168.7 consists dominantly of white feldspar rather than pink feldspar. Fractures in quartz eye zones run mainly at a high angle to core axis.
40.	168.7 - 169.5	Pale grey to white with green tint, fine-grained sandstone. Like Unit #26. Extensively fractured with fine green chlorite along fractures.
41.	169.5 - 170.1	Dark grey, fine-grained, non-calcareous sandstone. Core much broken and fractured. Abundant fine pyrite along fractures.
42.	170.1 - 171.4	Intensely sheared and fractured intrusive. Quartz eyes in a fine-grained pale green quartzose deformation mylonitic matrix. Minor scattered chlorite and creamy white feldspar. Minor pyrite as irregular blebs in fine-grained mylonitic matrix. Rock/core has overall crumbly aspect.
43.	171.4 - 173.4	Extremely fractured and locally sheared pegmatite. Quartz-creamy white feldspar-garnet-pyrite. Contains thin bands of intrusive-equigranular quartz-white feldspar-chlorite. Locally have zones with quartz eyes in fine-grained quartz matrix. Minor pyrite as irregular blebs along fractures.

	Meters	
44.	173.4 - 178.7	Wragge Creek equigranular intrusive. Quartz-creamy white to very pale pink feldspar-biotite. Locally in zones of extreme fracturing biotite altered to chlorite. Minor interstitial white calcite present locally. A few thin veins of pegmatite consisting of creamy feldspar-quartz-minor mafics (chlorite and/or biotite) and minor garnet. Pyrite not readily noted in this interval. Core locally extremely fractured with some shearing and development of quartz eyes. Chlorite more prevalent in these zones. Chlorite also forms slicks along the fractures.
45.	178.7 - 179.8	Pegmatite interbanded with equigranular intrusive. Intrusive same as Unit #44. Pegmatite creamy feldspar-quartz-minor garnet-biotite-chlorite. Only minor pyrite noted (small specks).
46.	179.8 - 187.9	Same as Unit #44. No interstitial calcite. Only minor pyrite (trace) noted as small specks. Locally biotite altered to chlorite - especially where fractured and sheared. Feldspar creamy white - tan to very pale pink. Minor pegmatite veins. Same mineralogy as Unit #44.
47.	187.9 - 191.0	Same biotite-quartz-feldspar intrusive. Feldspar in this instance has definite faint pink colour. Biotite locally partly to completely altered to chlorite. No pyrite visible. Minor pegmatite veins.
48.	191.0 - 193.5	Pegmatite interbanded with altered quartz diorite. Feldspars vary from creamy tan to pale pink. Biotite altered to chlorite partly to completely over entire interval. Abundant fractures with chlorite slicks along them. Only minor pyrite as very tiny spots - dominantly within feldspar - these are weathering to a red brown colour.
49.	193.5 - 200.8	Altered quartz-diorite with minor pegmatite veins. Biotite partly to completely altered to chlorite. Feldspars are creamy tan to pale pink. Locally fractured with some shearing. Quartz eyes and chlorite slicks developed in areas with minor shearing. Pyrite not readily noted. Minor calcite in some fractures.
50.	200.8 - 203.1	Altered quartz diorite. Biotite altered totally to chlorite. Feldspar is pale creamy colour. Interstitial calcite. Abundant fractures with chlorite slicks. Abundant disseminated pyrite. Generally pyrite associated with chlorite.

	Meters	
51.	203.1 - 208.6	Same as Unit #49. Feldspar pale tan creamy to pale pink. Biotite partly to completely altered to chlorite. Scattered pegmatite veins. Fracture zones with chlorite slicks.
52.	208.6 - 213.6	Altered quartz diorite. Biotite still present in most cases. Feldspar is faint to strong pink. Thin mylonitic breccia zones - quartz eyes with fine-grained calcareous matrix. Only very minor pyrite noted. Some regions of no alteration - contact with underlying zone is gradational.
53.	213.6 - 218.0	Partly altered quartz diorite with minor pegmatite veins. Fresh biotite quartz diorite with grey to white feldspar altered to pink K-feldspar along fractures. Biotite remains fresh. Only very trace amounts of pyrite associated with biotite. Fractures commonly contain calcite. Feldspar is grey to white in pegmatite veins. Occasional large feldspar phenocryst noted in quartz diorite.
54.	218.0 - 234.9	Altered quartz diorite with numerous pegmatite veins. Biotite locally partly to completely altered to chlorite. Feldspar is pale pink to pink except for a few local intervals of unaltered grey feldspar. Locally have interstitial calcite. Some thin intervals of extreme fracturing with development of quartz eyes in fine mylonite pale green matrix. Pegmatites are K-feldspar-quartz with minor mafics and garnet. Calcite locally fills fractures. Locally fractured - often no minerals filling fractures. Pyrite in trace amounts associated with biotite or chlorite and along fractures. At 232.3 m have 0.1 m interval of mafic xenolith - biotite-plagioclase with biotite partly altered to chlorite. Xenolith has finer grain size than the enclosing quartz diorite.
55.	234.9 - 237.4	Same as Unit #53. Pink feldspar alteration along fractures. Locally have quartz eyes in pale green mylonitic matrix. This mylonite is offset by later fractures. Calcite filling fractures also offset by later fractures. No pyrite noted.
56.	237.4 - 239.3	Similar to Unit #54. Locally have interstitial calcite. No pyrite noted. Chlorite more extensive with interstitial calcite.
57.	239.3 - 240.2	Aplite and pegmatite. Feldspar pale creamy white to faint pink. Minor biotite-chlorite-garnet. Small blebs of pyrite noted.

	Meters	
58.	240.2 - 243.3	Altered quartz diorite. Intensity of alterations decreased as proceed down in this interval. Upper part of interval chlorite-pink feldspar-quartz-interstitial pyrite. Lower part is fresh quartz diorite with alteration to pink feldspar along fractures. Trace pyrite associated with mafics in more altered interval.
59.	243.3 - 243.6	Thin zone of deformed quartz diorite. Quartz diorite augen in fine-grained, chloritic matrix. Overall colour of matrix is pale green. Biotite still partly fresh in augen areas. No pyrite noted. Structure: at 243.5 m S_1 62^o (in opposite direction to S_1) S_2 52^o
60.	243.6 - 248.0	Altered quartz diorite with numerous pegmatite veins. Intermediate degree of alteration. Generally pink to creamy tan feldspar. Biotite only partly altered to chlorite. Locally calcite fills fractures.
61.	248.0 - 250.0	Same as Unit #30. Dark green, fine-grained chlorite dyke. Biotite not readily visible. No phenocrysts apparent. Small pyrite grains disseminated throughout. Minor amounts of dark red mineral (?).
62.	250.0 - 253.2	Altered quartz diorite. Similar to Unit #53. Intervals of pink feldspar chlorite alteration interbanded with fresh biotite quartz diorite. Altered more extensive than fresh (about 80/20).
63.	253.2 - 255.5	Pegmatite with minor interbands of quartz diorite. Intergrowth of quartz with pale cream feldspar. Only minor mafics and garnet present.
64.	255.5 - 261.8	Altered quartz diorite. Biotite partly altered to chlorite. Feldspar is pale pink to creamy tan. Minor pegmatite veins. Occasional pale green chloritic shear zones with some quartz eyes. Trace of pyrite.
65.	261.8 - 263.6	Altered quartz diorite with pegmatite veins. Shear zones with quartz and feldspar augen in fine-grained green chloritic matrix. Some fractures filled by calcite. Shear zones are up to 0.2 m thick. Structure: at 261.9 m foliation in matrix 56^o

	Meters	
66.	263.6 - 282.5	Partly altered quartz diorite with some pegmatite veins. Pink feldspar along fractures. Fresh grey quartz diorite away from fractures. Biotite partly altered to chlorite. Trace pyrite associated with mafics. In one piece - pink feldspar - noted trace specks of disseminated MoS_2 - does not appear associated with fractures and fissures.
67.	282.5 - 283.4	Dark green sheared quartz diorite. Large angular intrusive augen in a poorly foliated matrix containing abundant fine-grained chlorite. Minor pyrite blebs associated with chlorite.
68.	283.4 - 289.9	Similar to Unit #66. Partial alteration to pink feldspar and chlorite. Local patches with blebs of pyrite in fractures. No MoS_2 noted.
69.	289.9 - 293.1	Strongly sheared quartz diorite. Angular to subangular quartz and feldspar eyes in a fine-grained, pale green, gouge matrix. Most of the feldspars are pink - suggesting mylonitization contemporaneous with or post-dates alteration. Matrix is non-calcareous. Discrete pale pegmatite sections affected in same formation. Structure: at 289.9 m contact of mylonite zone 33^{o}
70.	293.1 - 294.8	Silicified quartz diorite. Biotite altered to chlorite. Abundant fractures and pale green gouge zone (thin) like Unit #69. Feldspars have vague outlines.
71.	294.8 - 298.1	Altered quartz diorite. Numerous short intervals of slight shearing with poor foliation (gross) and chlorite slicks developed. Feldspar is creamy tan to pink. Biotite partly altered to chlorite - chlorite extensive in zones of shearing. Trace pyrite associated with chlorite along fractures. Zones are anastomosing and often curved.
72.	298.1 - 299.8	Dominantly fine-grained aplite with some pegmatite and quartz diorite. Feldspar pink to creamy tan. Biotite partly to completely altered to chlorite. Pyrite blebs in fractures in pegmatite.
73.	299.8 - 300.2	Darker phase of intrusive complex. Biotite-feldspar diorite porphyry. Pale cream to very pale pink feldspar phenocrysts in dark, fine-grained biotite matrix. Biotite partly altered to chlorite. Some pale green shear zones. Looks similar to feldspar porphyry noted in outcrop. Minor quartz present.

	Meters	
74.	300.2 - 302.2	Partly altered quartz diorite. Feldspar is pale tan creamy. Biotite partly altered to chlorite. Abundant fractures. Minor shear zones with pale green gouge. Trace pyrite associated with chlorite and fractures. Noted a few specks of MoS_2 also associated with fractures.
75.	302.2 - 304.3	Like Unit #73. Minor pegmatite. Fractures commonly filled by calcite. Fine-grained porphyritic quartz diorite with pink feldspar phenocrysts in biotite matrix. Biotite partly altered to chlorite. Minor chloritic gouge zone along some of the fractures. No pyrite or MoS_2 noted. Minor pegmatite present.
76.	304.3 - 306.9	Pegmatite. Large quartz irregular pods in matrix of quartz and feldspar. Minor chlorite-biotite-pyrite. Feldspar cream to pale pink. Extensively fractured. Calcite fills only a few fractures.
77.	306.9 - 309.8	Partly altered quartz diorite. Overall slightly finer-grained than typical Wragge Creek types. In one brief interval have transitional change to porphyry similar to Unit #75. Extensively fractured. Only trace pyrite noted. Some intervals have fresh grey feldspar - otherwise feldspar is pale pink. Minor chlorite.
78.	309.8 - 312.1	Dominantly pegmatite with only minor quartz diorite. Pegmatite contains minor garnet and pyrite as well as biotite and chlorite.
79.	312.1 - 314.3	Altered quartz diorite and pegmatite. Abundant fracturing with minor shearing along fractures. Lowermost 0.6 m contains diorite and pegmatite clasts in a fine-grained off-white fault gouge matrix. Dominant feldspar is pale pink. Biotite only partly altered to chlorite. Upper part of interval contains trace MoS_2 and pyrite.
80.	314.3 - 316.0	Similar to Unit #79 only without the shear zones. Biotite remains largely unaltered. Feldspar pale pink to tan. Minor pegmatite veins. Trace pyrite. A few chloritic shear zones.
81.	316.0 - 317.2	Pegmatite and aplite. Pyrite and MoS_2 disseminated and along fractures.
82.	317.2 - 326.7	Partly altered quartz diorite. Intervals with fresh grey feldspar. Minor pegmatite. Pink feldspar in regions with more abundant fractures. Trace pyrite associated with mafics. Only minor chlorite.

	Meters	
83.	326.7 - 328.2	Partly altered quartz diorite. Upper part of interval extensively broken - crystals of feldspar and quartz in a chloritic matrix. This section contains abundant MoS_2 rosettes disseminated in the matrix. Darker appearance because of fine chloritic matrix.
	328.2	END OF HOLE

CYPRUS ANVIL MINING CORPORATION

DIAMOND DRILL CORE LOG

Hole Number: 80-SH-04

Fabric Orientation Diagram:

Project: Shannon Creek

Location: Slocan Lake, B.C.

Claim: Anton # 2

Terr. Plane Co-ords.: 5, 547, 510 N

464, 755 E

Grid Co-ords.: 18+20E, 16+70N

Inclination: -60° at 225° azimuth

All symmetry determinations looking _____ with _____ dipping _____ with dip azimuth _____.

Elevation: 960 m

Total Depth: 124.0 m

Purpose: _____

Logged by: L. Pigage Date(s) Logged: Nov. 6, 1980

Drilling Contractor: J. T. Thomas

Core:	Size	From	To	Collar Cased and Capped:
	NQ	0	124.0	

Started: Nov. 2, 1980 Completed: Nov. 4, 1980

LITHOLOGIC LOG

DDH 80-SH-04

	Meters	
1.	0.0 - 3.0	Triconed through overburden - no core.
2.	3.0 - 8.6	Black, pyritic, generally non-calcareous phyllite with interbands of pale green, pyritic calcareous or non-calcareous, fine-grained metavolcanic or dyke ??. Pyrite in phyllite forms recrystallized cubes up to 4 mm across. Locally thin bands contain small brown-weathering calcite porphyroblasts. Some minor calcite - quartz veining. Light green metavolcanic? also contains coarse pyrite cubes. Locally slightly calcareous with brown-weathering calcite diffuse along fractures. It looks like dyke type rock. Occurs in intervals from 1 cm to 10 cm thick. Locally contains calcareous angular clasts. Core much weathered - pyrite partly to completely oxidized to iron oxides. Structure: at 3.6 m S_1 54^o 6.1 m S_1 72^o
3.	8.6 - 8.8	Medium grey, medium-grained, pyritic recrystallized limestone. Fractures parallel core axis with phyllite in fractures.
4.	8.8 - 12.5	Same as Unit #2. Light green metavolcanic forms lenses and boudins in black phyllite. Generally appears to parallel S_0 bands within the phyllite. Structure: at 9.3 m S_0 17^o S_1 67^o same 12.3 m S_0 39^o S_1 69^o same
5.	12.5 - 13.0	Same as Unit #3. Fractures have more abundant pyrite along them. Also have diffuse envelope of pale cream with slight green tint. Envelope is harder and less calcareous than the enclosing limestone.

Meters

6. 13.0 - 25.9 Similar to Unit #2. Black phyllite contains minor bands of medium grey sandstone. Sandstone typically is finely laminated. Both pyrrhotite and pyrite grains in sandstone. In many cases pyrrhotite partly to completely rims pyrite. Large pyrite grains in phyllite rarely has small quartz pressure shadow. Interval from 19.5 - 23.6 m contains no light green dykes - just interbanded phyllite and sandstone. Both pyrrhotite and pyrite in phyllite. Pyrite much more abundant.

Structure: at 18.9 m S_0 0^o
S_1 53^o
21.0 S_0/S_1 55^o
25.9 S_1 53^o

7. 25.9 - 27.3 Interlayered black phyllite and dark grey sandstone. Contains two short intervals ($\sim$2 cm) of opaque white quartz veins. Abundant coarse, recrystallized pyrite in both sandstone and phyllite. Minor quartz pressure shadow around rare pyrite grains.

Structure: at 27.3 m S_1 72^o

8. 27.3 - 33.0 Black phyllite interbanded with lesser amounts of medium grey sandstone and medium to dark grey limestone. Coarse recrystallized pyrite in all units. Limestone and sandstone are finely laminated. Minor calcite veining. A few intervals of opaque white quartz-calcite veins - these are less than 3 cm thick. Locally core much broken.

Structure: at 29.5 m S_1 75^o

9. 33.0 - 36.0 Interbanded black phyllite with minor dark grey limestone and grey sandstone. Core extensively broken through this interval. Same as Unit #8 only core more broken with some fault gouge. Minor pyrrhotite with pyrite.

Structure: at 33.4 m S_1 60^o

	Meters	
10.	36.0 - 48.4	Medium grey, medium-grained limestone with lesser amounts of interbanded black, non-calcareous phyllite. Both phyllite and limestone has diffuse contact into pale grey to very pale green rock which is locally non-calcareous. In places contact definitely envelopes fractures. In other locations it is more pervasive and may represent the pale green dyke material. Generally lighter rock is less calcareous and harder than grey limestone. Minor calcite along fractures. Locally core is extensively broken. Structure: at 38.7 m S_1 64^o 41.7 m S_1 57^o 44.8 m S_1 60^o 48.3 m S_1 65^o
11.	48.4 - 50.9	Non-calcareous, pyritic black phyllite. Typical of black phyllite so far observed in this DDH. Core locally extensively broken. Interbanded with minor dark grey sandstone. Structure: at 49.4 m S_1 85^o
12.	50.9 - 57.0	Dark grey, finely laminated, sandy (?) carbonaceous limestone interbanded with black phyllite. Pyrite common in phyllite; present rarely in limestone. At 54.1 m have 0.1 m interval of dark green biotite-chlorite-plagioclase, fine-grained equigranular intrusive/dyke. Minor calcite in dyke. Core locally much broken. Minor calcite filling fractures. Structure: at 51.0 m S_0 63^o 53.7 m S_1 25^o 55.9 m S_0 43^o 56.9 m S_0 74^o
13.	57.0 - 58.1	Interbanded intrusive dyke and dark grey carbonaceous limestone. Limestone strongly foliated with limestone augen in a micaceous, graphitic matrix. Dyke dark green biotite-chlorite-plagioclase $\pm$ minor calcite. Equigranular. Can see former phenocrysts now replaced by chlorite. Structure: at 57.6 m S_1 45^o

	Meters	
14.	58.1 - 60.3	Black pyritic phyllite interbanded with dark grey to black calcareous sandstone. Pyrite as both fine and coarse grains. Core locally broken. Calcite commonly fills fractures. Structure: at 59.4 m S_1 43^o
15.	60.3 - 62.0	Dark green, fine-grained, equigranular intrusive dyke. Currently biotite-chlorite-minor pyrite-minor calcite. Porphyrytic. Former enhedral phenocrysts (plag or pyroxene ?) now replaced by light-coloured chlorite. No readily visible foliation.
16.	62.0 - 64.3	Dark grey, fine-grained sandstone with minor recrystallized coarse pyrite. Contains abundant tiny specks of disseminated calcite. Calcite fills fractures. 0.1 m thick dark green intrusive at 62.5 m.
17.	64.3 - 69.1	Dark green intrusive dyke. Not strongly porphyritic. Contains pink feldspar as irregular, euhedral grains. Biotite is randomly oriented.
18.	69.1 - 73.4	Dark grey slightly calcareous sandstone interbanded with non-calcareous black phyllite. One thin interval of light grey to greenish grey calcareous sandstone. Both phyllite and sandstone contains disseminated pyrite cubes. Minor pyrrhotite noted in sandstone. Calcite in sandstone occurs as small porphyroblasts. Minor thin quartz veins - quartz vein has partial rim of dolomite. No economic minerals noted in vein. Structure: at 69.7 m S_1 40^o 72.2 m S_1 31^o
19.	73.4 - 75.6	Pale grey, fine-grained, equigranular intrusive dyke. Non-calcareous. No readily visible mineralogy. Abundant euhedral pyrite. Minor euhedral pyrrhotite locally. Can see few local areas with fine-grained metallic grey mineral (possible argentite ?) as streaks. Minor quartz-carbonate veining. Carbonate in pale tan - fizzes only when powdered.

Meters

20. 75.6 - 84.2 Dark grey phyllite - non-calcareous - with thin discontinuous bands of medium to dark grey non-calcareous sandstone. Sandstone typically forms small boudins in phyllite. Core locally broken. Upper part of interval contains extensive fracturing with minor movement along fractures. Fine-grained pyrite typically occurs along fractures. Coarse-grained pyrite and pyrrhotite (with pyrrhotite being more abundant) disseminated in phyllite. Minor quartz-calcite veining - veins are up to 3 cm thick.

Structure: at 79.5 m S_1 32^o
82.6 m S_1 54^o
83.2 m S_1 49^o

21. 84.2 - 85.4 Similar to Unit #20. Black phyllite with thin boudinaged interbands of dark grey sandstone. Major difference - this unit contains extremely abundant disseminated pyrite cubes. Pyrite up to 5% of rock. No pyrrhotite noted.

Structure: at 84.8 m S_1 61^o

-Graded bedding shows Tops Up DDH.

22. 85.4 - 114.9 Dark grey non-calcareous to slightly calcareous sandstone with thin black phyllite interbands. Very minor, thin, opaque white quartz veins. Pyrite occurs in fractures. Minor calcite in many of the fractures. Locally sandstone layers are boudinaged. Locally core extensively broken with minor gouge.

Structure: at 86.8 m S_1 66^o
89.7 m S_1 50^o

Locally have pyrrhotite as well as pyrite. Lower part of interval almost totally sandstone. Upper part contains a bit more phyllite.

91.5 m S_1 75^o
94.0 m S_1 57^o
99.1 m S_o/S_1 56^o
100.7 m S_1 25^o
109.8 m S_1 50^o

	Meters	
23.	114.9 - 124.0	Black phyllite with disseminated pyrite. Totally fault gouge and mud. Poor core recovery. Contains minor dark grey sandstone intervals.
		No structure.
	124.0	END OF HOLE

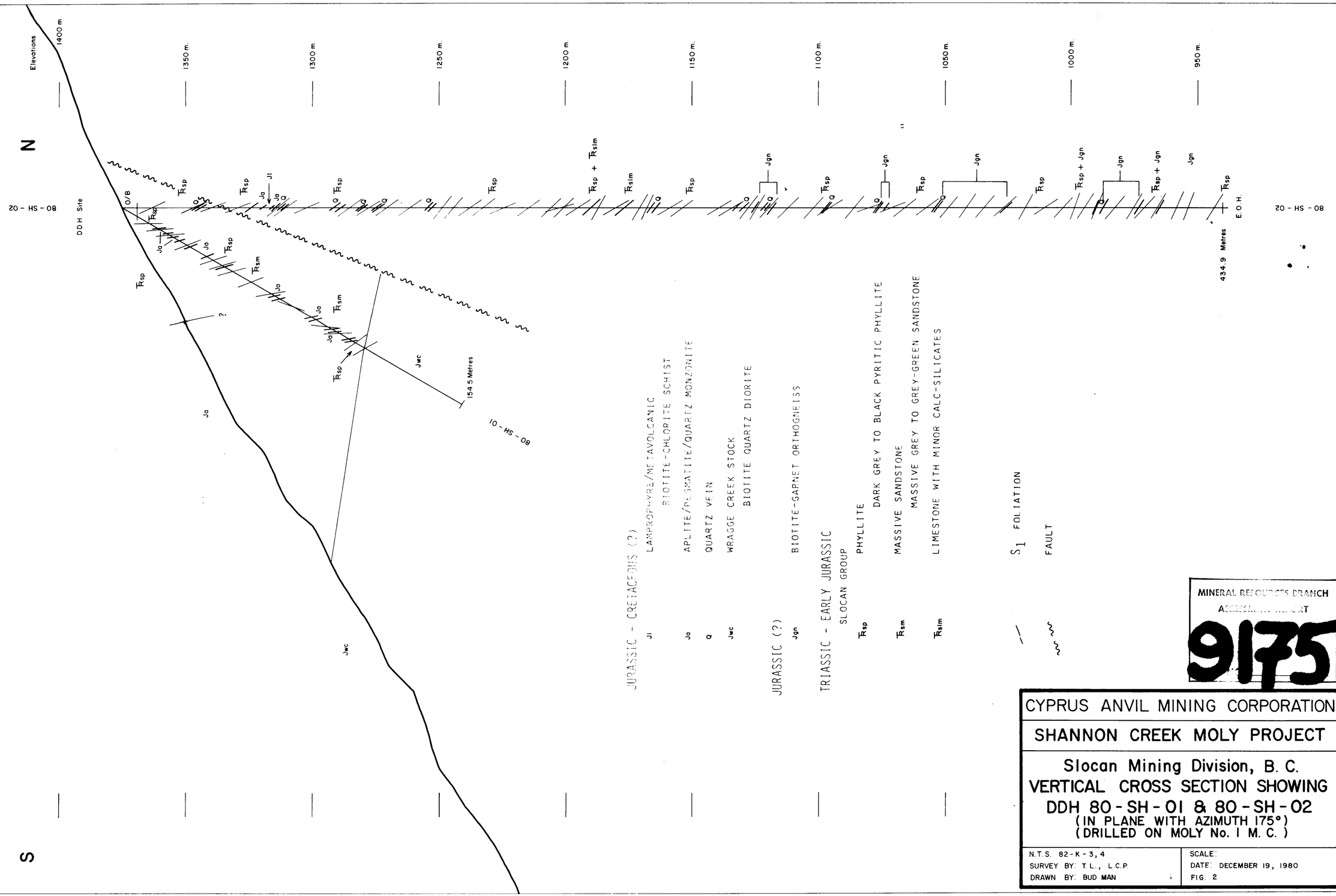
APPENDIX V

GEOCHEMICAL LOG - SHANNON CREEK

DDH	Interval	Sample	Length	Unit	% Mo
80-SH-01	16.7-18.4	10501	1.7	Aplite	0.003
80-SH-01	18.4-20.3	10502	1.9	Aplite	0.005
80-SH-01	22.7-25.4	10503	2.7	Aplite	0.001
80-SH-01	30.0-32.6	10504	2.6	Aplite	0.001
80-SH-01	32.6-35.2	10505	2.6	Aplite	<0.001
80-SH-01	35.2-37.7	10506	2.5	Aplite	<0.001
80-SH-01	69.0-71.0	10507	2.0	Quartz vein	0.001
80-SH-01	85.8-88.2	10508	2.4	Aplite	0.002
80-SH-01	94.6-97.0	10509	2.4	Pegmatite	0.001
80-SH-01	103.1-104.1	10510	1.0	Quartz vein	0.002
80-SH-01	108.0-109.1	10511	1.1	Quartz vein	<0.001
80-SH-01	118.4-120.0	10512	1.6	Aplite	<0.001
80-SH-01	127.1-129.4	10513	2.3	Altered quartz diorite	0.001
80-SH-01	133.2-135.0	10514	1.8	Altered quartz diorite	0.001
80-SH-01	152.0-152.9	10515	0.9	Quartz diorite	<0.001
80-SH-02	50.9- 53.1	10516	2.2	Aplite	0.002
80-SH-02	53.1- 55.4	10517	2.3	Aplite	<0.001
80-SH-02	58.5- 60.6	10518	2.1	Pegmatite	0.058
80-SH-02	62.7- 63.6	10519	0.9	Quartz vein	0.002
80-SH-02	64.7- 67.1	10520	2.4	Quartz vein	0.004
80-SH-02	75.2- 76.8	10521	1.6	Quartz vein	0.032
80-SH-02	77.4- 78.8	10522	1.4	Quartz vein	0.050
80-SH-02	83.8- 85.8	10523	2.0	Quartz vein	0.008
80-SH-02	93.6- 94.3	10524	0.7	Quartz vein	0.002
80-SH-02	100.2-100.9	10525	0.7	Quartz vein	0.001
80-SH-02	120.7-122.0	10526	1.3	Quartz vein	<0.001
80-SH-02	208.6-210.4	10527	1.8	Quartz vein	0.001
80-SH-02	247.5-250.2	10528	2.7	Quartz vein	<0.001
80-SH-02	253.5-254.2	10529	0.7	Quartz vein	< 0.001
80-SH-02	384.8-387.3	10530	2.5	Quartz vein	< 0.001

DDH	Interval	Sample	Length	Unit	% Mo
80-SH-03	164.9-166.8	10531	1.9	Altered quartz diorite	0.001
80-SH-03	182.9-184.9	10532	2.0	" " "	0.001
80-SH-03	200.8-203.1	10533	2.3	" " "	0.007
80-SH-03	213.6-214.6	10534	1.0	" " "	< 0.001
80-SH-03	278.4-280.4	10535	2.0	" " "	0.004
80-SH-03	294.8-297.8	10536	3.0	" " "	< 0.001
80-SH-03	302.2-303.7	10537	1.5	" " "	0.006
80-SH-03	304.3-306.0	10538	1.7	Pegmatite	0.011
80-SH-03	315.9-317.3	10539	1.4	Altered quartz diorite	0.006
80-SH-03	326.7-328.2	10540	1.5	HV-1 (Mo standard) (0.058 % Mo)	0.042

DDH	Interval	Sample	Length	Unit	Ag (oz/ton)
80-SH-04	6.9- 7.6	10541	0.7	Felsic dyke	0.03
80-SH-04	21.0-23.0	10542	2.0	Black phyllite	0.02
80-SH-04	45.9-47.8	10543	1.9	Limestone	0.02
80-SH-04	64.7-67.7	10544	3.0	Lamprophyre	0.02
80-SH-04	73.3-75.6	10545	2.3	Felsic dyke	0.23
80-SH-04	84.2-85.5	10546	1.3	Black phyllite	0.19



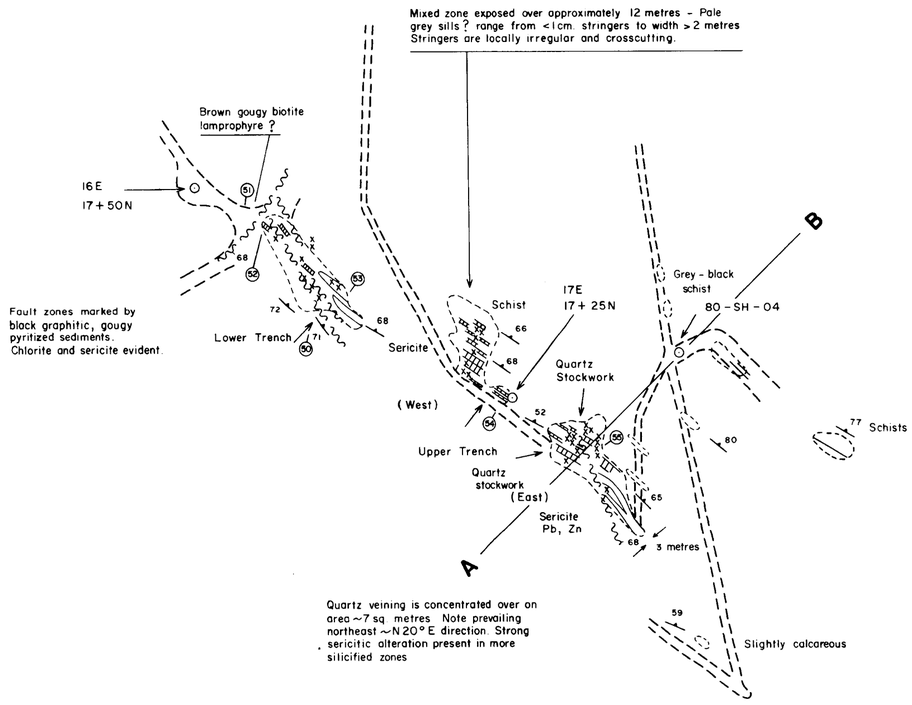
CYPRUS ANVIL MINING CORPORATION

SHANNON CREEK MOLY PROJECT

Slocan Mining Division, B. C.
VERTICAL CROSS SECTION SHOWING
DDH 80 - SH - 01 & 80 - SH - 02
(IN PLANE WITH AZIMUTH 175°)
(DRILLED ON MOLY No. 1 M. C.)

N.T.S. 82 - K - 3, 4	SCALE:
SURVEY BY: T.L., L.C.P.	DATE: DECEMBER 19, 1980
DRAWN BY: BUD MAN	FIG. 2

Geology Area 80 - SH - 04



Scale: 1:1000

0 10 20 30 40 50 METRES

JURASSIC (?)

Jlam	BIOTITE-CHLORITE LAMPROPHYRE
Jf	APHANITIC PALE GREEN PYRITIC FELSIC DYKES
xxx	QUARTZ VEIN

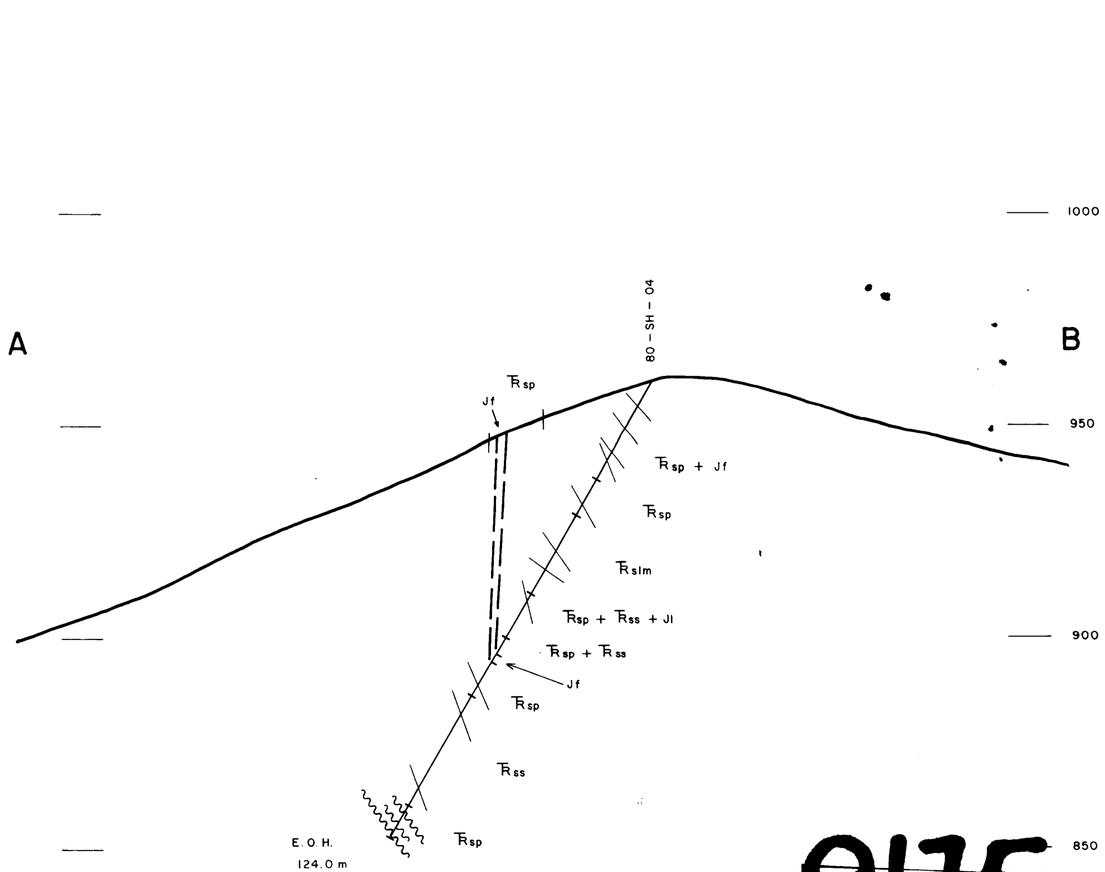
TRIASSIC - EARLY JURASSIC

SLOCAN GROUP

$\mathcal{T}_{Rsu}$	SLOCAN GROUP - UNDIVIDED
$\mathcal{T}_{Rsp}$	BLACK PYRITIC PHYLLITE - LOCALLY CALCAREOUS MINOR LIMESTONE AND SANDSTONE
$\mathcal{T}_{Rss}$	DARK GREY PYRITIC SANDSTONE MINOR PHYLLITE
$\mathcal{T}_{Rslm}$	ARGILLACEOUS LIMESTONE - DARK GREY TO GREY

⊗ Specimen Number

63 / S_1 FOLIATION



Scale: 1:1000

0 10 20 30 40 50 METRES

Cross Section A - B

80 - SH - 04

9175

9175

CYPRUS ANVIL MINING CORPORATION	
SHANNON CREEK MOLY PROJECT	
Slocan Mining Division, B. C. VERTICAL CROSS SECTION A-B & GEOLOGY PLAN NEAR DDH-80-SH-04 ON ANTON No. 2 M. C.	
N.T.S. 82-K-3, 4 SURVEY BY: T.L., L.C.P. DRAWN BY: BUD MAN	SCALE: DATE: DECEMBER 19, 1980 FIG. 3

ANTON 4

MOLY 1

MOLY 4

ANTON 2

MOLY 6

MOLY 7

MOLY 8

ANTON 3

ANTON 5

MALY 5

SHANNON CREEK

WRAGGE CREEK

80 - SH - 01
80 - SH - 02

80 - SH - 03

80 - SH - 04

N

LEGEND

JURASSIC - CRETACEOUS

Ja — APLITE / PEGMATITE / QUARTZ MONZONITE

Jwc — WRAGGE CREEK STOCK
BIOTITE QUARTZ DIORITE

TRIASSIC - EARLY JURASSIC

SLOCAN GROUP

UNDIVIDED

TRs — BLACK PHYLLITE, SANDSTONE, LIMESTONE

⊙ — CLAIM POST - LOCATED

□ — CLAIM POST - UNLOCATED

═══ — ROAD

CYPRUS ANVIL MINING CORPORATION

SHANNON CREEK MOLY PROJECT

SLOCAN MINING DIVISION - B. C.

CLAIM & DIAMOND DRILL HOLE MAP

0 100 200 300 400 500
Scale (1:5,000) Metres

NTS. 82 K/3, 4
SURVEY BY: L.C.P.
DRAWN BY: C.L.C.

DATE: APRIL 10, 1981
FIGURE 4