COMINCO LTD.

EXPLORATION WESTERN DISTRICT

DIAMOND DRILLING REPORT

CLAIR 21 CLAIM

Fort Steele Mining Division

St. Mary Lake Area

N.T.S. 82F/9

Lat: 49° 41' 35" Long: 116° 11' 19"

OWNER

Cominco Ltd.

Kootenay Exploration
1051 Industrial Road No. 2
Cranbrook, B.C.
V1C 4K7

Work Performed during October to December, 1983

Report by:

P. Klewchuk
Geologist

Under the Supervision of:

D. Anderson
Project Geologist

TABLE OF CONTENTS

COMINCO LTD.

EXPLORATION WESTERN DISTRICT

DIAMOND DRILLING REPORT

CLAIR 21 MINERAL CLAIM

Fort Steele Mining Division

1.00 GENERAL STATEMENT

This report outlines the results of a diamond drill hole on the Clair 21 mineral claim.

The work was performed between October 7, 1984 and December 20 1984.

Total expenditures related to the diamond drilling program amounted to $120,114.28.

2.00 INTRODUCTION

2.10 Status of Ownership

The Clair 21 mineral claim is 100% Cominco owned.

2.20 Location and Access

The Clair 21 mineral claim is located 15 kilometers west of Kimberley, B.C. Access to the drill site is via the St. Mary Lake road, a logging road along Matthew Creek and a 2 kilometer bulldozer road south up a tributary to Matthew Creek.

The collar of DDH C-83-1 is located on Clair 21 mineral claim at latitude 49° 41' 35" and longitude 116° 11' 19", at an elevation of 1735 m.

2.30 General Character of the Area

The topography on the Clair 21 mineral claim is moderate adjacent to Matthew Creek and rugged elsewhere. Elevations range from 1500 m to 2200 m. Part of the mineral claim near Matthew Creek has been recently logged. Elsewhere the timber consists predominantly of balsam fir, hemlock, spruce, pine and larch.

3.00 DIAMOND DRILLING

One hole, DDH C-83-1 was drilled to a depth of 850.0 m from surface. Core size is HQ to 617.1 m and NQ from 617.1 m to

850.0 m. Rocks intersected by the drilling are fine grained siliceous metasediments of the Helikian Aldridge Formation and intrusive gabbroic masses interpreted to be sills. Aldridge Formation lithologies present in the core are quartzitic wacke, quartz wacke, quartz arenite and wacke. The sediments are predominantly thin to medium bedded but range from laminated to thick bedded. A metamorphic alteration is present throughout the core and is usually manifested as a biotitic overprint. Narrow zones of tourmalinite occur lower in the hole. Minor sulfides are present; both pyrite and pyrrhotite occur in very minor quantities as disseminations and narrow veinlets. Sphalerite and galena are present in larger fractures at a depth of 120-125 m. No sulphides of any economic importance were intersected by the drill hole.

The drill program was under the direction of P. Klewchuk and supervised by D. Anderson.

Nine Sperry Sun Single Shot orientation survey tests were taken at various depths in the hole. Details are included in the diamond drill log. The core is stored at Sullivan Mine, Kimberley, B.C.

4.00 CONCLUSIONS

DDH C-83-1, drilled on the Clair 21 mineral claim intersected metasedimentary rocks of the Aldridge Formation as well as intrusive gabbro. No sulphide mineralization of any economic significance was cored.

EXHIBIT "A"

STATEMENT OF EXPENDITURES

DIAMOND DRILLING - CLAIR 21 CLAIM

FORT STEELE MINING DIVISION

Salaries	
P. Klewchuk - Geologist, Field, planning, supervision & core logging - 24 days @ $210/day	$ 5,040.00
P. Klewchuk - Geologist, Report & Map Preparation 2 days @ $210/day	420.00
Mob/Demob	
Cominco Ltd. - Kimberley - Hiab	2,170.61
Road Access	
Cominco Ltd. - Kimberley - Bulldozer	677.40
W. Barker Contracting Ltd., Kimberley, B.C.	5,965.50
Other	
Supplies - Core boxes, mud etc.	10,296.13
Transportation - 4x4 truck - 24 days @ $40/day	960.00
Direct	
Longyear Canada Inc., 721 Aldford Avenue Annacis Island, New Westminster, B.C. V3M 5P5	94,584.64
Total Cost =	$120,114.28

P. Klewchuk

P. KLEWCHUK
Geologist

IN THE MATTER OF THE

B.C. MINERAL ACT

AND

IN THE MATTER OF A DIAMOND DRILL PROGRAMME

CARRIED OUT ON THE CLAIR 21 MINERAL CLAIM

ST. MARY LAKE AREA

in the Fort Steele Mining Division of
the Province of British Columbia

More Particularly N.T.S. 82F/9

A F F I D A V I T

I, P. Klewchuk, of the City of Kimberley, in the Province of British Columbia, make Oath and say:

1. That I am employed as a Geologist by Cominco Ltd. and as such, have a personal knowledge of the facts to which I hereinafter depose:

2. That annexed hereto and marked as Exhibit "A" to this my Affidavit is a true copy of expenditures incurred on a Diamond Drill programme, on the Clair 21 Mineral Claim.

3. That the said expenditures were incurred between the 7th day of October, 1983 and the 20th day of December, 1983, for the purpose of mineral exploration on the above noted claim.

P. Klewchuk

P. KLEWCHUK
Geologist

COMINCO LTD.

EXPLORATION WESTERN DISTRICT

AUTHOR'S QUALIFICATIONS

As author of this report I, Peter Klewchuk certify that:

I am employed by Cominco Ltd. as a geologist active in minerals exploration.

I am a graduate of the University of British Columbia with a degree of Bachelor of Science and a graduate of the University of Calgary with a degree of Master of Science.

I have been continuously engaged in geology and mineral exploration for 12 years.

I am a member of the Geological Association of Canada.

P. Klewchuk

P. KLEWCHUK
Geologist

Report by: P. Klewchuk
P. KLEWCHUK
Geologist

Endorsed by: D. Anderson
D. ANDERSON, P.Eng.
Project Geologist

Approved by: John Hamilton
J.M. HAMILTON, P.Eng.
Chief Geologist
Kimberley

Approved for
Release by:
G. HARDEN, Manager
Exploration
Western District
Vancouver

xc: Mining Recorder (2 copies)✓
Western District, Exploration
Kootenay Exploration

Scale

Colour Plot & Dips

Drill Hole Record

Cominco

Property	CLAIR	District	Hole No.	C-83-1	
Commenced	Oct. 10, 1983	Location	Tests at	See Page 29	Hor. Comp.
Completed	Dec. 20, 1983	Core Size HQ - NQ	Corr. Dip	Collar Dip -90°	Vert. Comp.
Co-ordinates			True Brg.		Logged by P. Klewchuk
Objective	Stratigraphic Test		% Recov.	>99%	Date December 1983

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To	Description	Sample No.	Length	Analysis
		Lithologic abbreviations used in log: SW - Subwacke			
		W - Wacke			
		QcW - Quartzitic Wacke			
		QW - Quartz Wacke			
		QAr - Quartz Arenite			
	Meters				
0 -	7.3	Overburden			
7.3 -	10.0	Triconed bedrock; no core; casing to 10.0 m.			
		ALDRIDGE FORMATION			
10.0 -	25.5	QcW, minor W.			
		Medium bedded, few thick beds. 15% is thin bedded to laminated. Dark blue-gray color			
		with strong alteration evident. Locally porphyroblastic development of sericite, biotite			
		and po is evident.			
		Narrow quartz veins 5 mm - 1 cm wide occur through the interval; typically rusty from			
		surface weathering of py and po, both of which are present. Core is quite broken			
		through much of the zone.			
		16.0 - 16.2 m altered zone of quartz, po/py and chlorite.			
		24.5 - 25.5 m thin bedded to laminated with local disruption - folding and numerous			
		ragged rip-up clasts. Narrow zones contain soft sediment deformation			
		features, probably due to minor slumping. Grains of aspy to 4 mm			
		diameter are developed preferentially along bedding planes or laminae.			

311

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 2

Property		District	Hole No.	C-83-1	
Commenced		Location	Tests at		Hor. Comp.
Completed		Core Size	Corr. Dip		Vert. Comp.
Co-ordinates			True Brg.		Logged by
Objective			% Recov.		Date

Claim | T Brg. | Collar Dip | Elev. | Length

Footage From	To	Description	Sample No.	Length	Analysis
	Meters				
10.0 -	25.5	Cont'd Bedding angle 10.4 m -35°; 13.7 m -40°; 17.7 m -37°; 21.6 m -45°,			
		25.0 m -50°.			
25.5 -	69.2	QW & QAr, minor QcW, W.			
		Medium to thick bedded, approximately 5% thin bedded - laminated wacke. Quartzites			
		are typically light gray colored - more argillaceous, wacke-rich sediments are a darker			
		blue-gray color. A moderately strong alteration is evident throughout the interval;			
		coarse quartzites are typically slightly mottled in character with a reticulate network			
		of veinlet-like concentrations of mafic minerals. Some thick quartzites are faintly			
		internally laminated. Load features - convoluted bedding and flame structures are			
		present at some quartzite-wacke contacts. Upper wacke portions of quartzite beds			
		typically contain elongate rip-up clasts and lenses of silt or argillite.			
		26.4 m A 0.5 cm quartz-py vein contains a few grains of galena.			
		34.1 - 34.8 m Biotitic laminated zone - narrow graded beds.			
		49.1 m 10 cm wide zone of laminated wacke which is disrupted; individual			
		laminations are broken and folded. Minor po is present.			
		Below 53.0 m Zones of thin bedded-laminated W and QcW are more common (15-20%).			
		Bedding within these zones is typically irregular with lenses of more			
		sandy or more argillaceous material common.			
		65.0 - 66.2 m Some folding present here indicated by low bedding angles to core axis.			
		Bedding angle: 27.4 m -50°; 34.0 m -60°; 38.4 m -60°; 44.2 m -20°; 47.3 m -35°;			

311-84

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 3

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
25.5	69.2	cont'd 50.3 m -45°; 53.0 m -55°; 56.4 m -45°; 58.8 m -35°; 61.6 m - 50°; 63.7 m -35°; 65.0 m -20°; 67.0 m -35°; 69.2 m -50°.			
69.2	75.6	WACKE minor QcW, Subwacke Thin bedded-laminated, few medium beds. Greenish-grey to dark bluish-gray color; strongly altered with local development of small porphyroblasts of chlorite. Individual laminations and thin beds range from <1mm thick to about 2 cm max. thickness with 2-5 mm most common. Small scale ripple cross laminations are locally evident. Much of the zone has a non-planar character with individual laminations displaying some thickening or thinning across the core, changing lithologic (and color) character, or lensing out altogether. A few local irregular patches of pyrrhotite-biotite concretionary - like features are present. Bedding angle: 71.3 m -55°; 73.2 m -50°; 75.6 m -55°.			
75.6	83.5	QW & QAr ∿ 10% QcW & W Bedding varies from thick bedded quartzites to laminated wacke. Medium gray to medium blue-gray color. Quartzites generally have a massive, slightly mottled texture with slight mafic segregations along internal laminations - locally more irregularly developed to form a reticulate network. QcW & W are only present below 80.8 m where they comprise about 20% of the remaining interval. Laminated wacke & QcW zones up to 20 cm thick are interbedded with blue-gray quartzites. A few rounded lenticular clasts are present within the laminated wacke zones. Load features occur at the base of some quartzite units. Bedding angle: 82.0 m -55°.			

211-0437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 4

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
83.5	117.0	QcW and W minor QW Thin bedded, laminated and medium bedded, with a few thick beds in upper part of interval. Color varies from light gray to dark blue gray with some brown biotitic wacke laminations. Characteristically this interval is comprised of alternating thin or medium beds of QcW or QW and zones of thin bedded to laminated wacke and QcW. Commonly the thinner-bedded/laminated zones display some irregular bedding with lenses and rip-up clasts present. Alteration is quite strong with bleaching evident along numerous fractures and local development of porphyroblasts of feldspar within some beds and biotite in others. Minor pyrrhotite and/or pyrite are present along a few fractures. Bedding angle: 84.8 m -65°; 88.7 m -55°; 92.4 m -61°; 99.0 m -60°; 101.8 m -55°; 104.6 m -55°; 107.0 m -50°; 111.3 m -55°; 114.3 m -55°.			
117.0	150.8	QW, minor QAr 15% QcW and W Medium-thick bedded with QcW & W zones medium-thin bedded and laminated. Quartzites are light-medium gray varying to dark bluish-gray. Some wacke-rich zones are brownish colored due to presence of biotite. Character of quartzites and laminated wacke zones is similar to overlying intervals with mottled-weakly laminated quartzites and irregularly bedded, locally with slump breccia wacke zones. At 119.8 m and 124.4 m, ZnS, PbS and Po in narrow veinlets. 124.7 - 125.9 m Sulfides present along fractures - ZnS, PbS and pyrrhotite, fractures are quite irregular, some have quartz and chlorite also - range from few mm thick to 2 cm thick (mostly quartz and chlorite) Est 2.5% Pb + Zn over 1.2 m.			

211-0437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 5

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
117.0	- 150.8	cont'd Bedding angle: 118.3 m -60°; 118.9 m -50°; 126.5 -50°; 131.1 m -50°; 135.7 m -60°; 142.7 m -60°; 149.4 m -65°.			
150.8	- 165.5	QcW and W minor QW Medium bedded; wacke zones are typically laminated and strongly altered biotitic; bleaching and silicification are common in siliceous zones. Considerable small-scale disruption of bedding is evident in the laminated wacke zones with lenses, rip-up clasts, minor folding common. Small concretions (2x3 cm) which are siliceous, felsic and biotitic, are locally present. Minor po occurs as veinlets and small blebs. Bedding angle: 153.4 m -50°; 158.2 m -60°; 160.4 m -45°; 164.6 m -65°.			
165.5	- 166.6	GABBRO Fine grained, dark green, quite mafic-rich. Numerous chloritic veinlets at different attitudes - from 0° to 85° to core axis. Contact at 165.5 m is // to bedding at 60° to core axis; contact at 166.6 m, is sharp and distinct but slightly irregular, at 70° to c.a. No bedding is recognizable in immediately underlying meta sediments.			
166.6	- 168.1	META SEDIMENTS Very strongly altered sediments. Dark gray-brown color with bleaching along numerous veinlets. Original lithology unrecognizable but narrow laminated zones indicate it was probably similar to 150.8 - 165.5 m interval. Bedding angles are somewhat vague due to alteration but occur at 25-30° to core axis.			

211-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 6

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
168.1	- 316.6	GABBRO 168.1 - 170.0 m Dark green, fine-grained, locally medium grained, chloritic and biotitic. Dark gray quartz (and feldspar ?) are difficult to distinguish from mafic minerals and the rock appears much more mafic in character than it actually is. Quartz ± chlorite ± calcite stringers are present. 170.0 - 170.4 m Dark green to gray-green, fine-medium grained. Moderately strongly foliated at 50° to core axis. Chloritic and biotitic. Some local irregularity in the foliation - this may be a flow structure but chlorite development and local quartz-calcite veining parallel to foliation indicate some tectonic movement. 170.4 - 205.5 m Dark green, medium-coarse grained. Dark gray quartz and white feldspar locally provide a speckled texture. Narrow stringers of quartz ± chlorite ± calcite ± feldspar are present; most are 1-2 mm wide, rarely to 5 mm, and occur at various orientations. At 174 m a 1.5 cm wide chloritic zone cuts the core at 25°. At 179.4 m a 10 cm wide foliated chloritic zone at 45° contains minor po. Biotite and pyrrhotite are common adjacent to this foliated zone and minor cpy is present. Typically the gabbro is hornblendic (with hornblende altering to chlorite) with minor biotite and only very minor po. At 181.1 a 2 cm wide quartz-fp vein at 15° contains biotite and minor cpy. At 183.8 m a 5-7 cm wide quartz vein occurs at 20° and contains minor po, cpy and white feldspar. Margins of the vein are chloritic. At 185.4 m quartz-calcite vein 3 cm wide at 55°. At 189.3 m a 5 cm wide foliated			

211-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 7

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
168.1	316.6	170.4 - 205.5 m chloritic, biotitic zone occurs at 45°. Po and minor cpy are present. At			
cont'd		cont'd 194.8 m a 7-8 cm wide foliated zone (probably a minor shear) contains discontinuous quartz veining with chlorite and biotite. Biotite is abundant within the gabbro immediately adjacent to the shearing but is only a minor constituent within the gabbro elsewhere. At 200.0 m foliated zone about 6 cm wide with po and minor cpy. At 200.6 m quartz-feldspar - minor calcite veins up to 4 cm wide over 15 cm of core with minor po. By 201.2 m gabbro is quite uniform in texture: medium-coarse grained, 3-5 mm xtals with 30% white feldspar. At 204.1 m 12 cm wide foliated zone at 55° is ribboned with quartz- chlorite-biotite veinlets containing minor po. At 204.9 m 10 cm wide foliated zone contains chlorite, feldspar, biotite, minor po and very minor cpy.			
		205.5 - 208.5 m More mottled character - fractured and foliated throughout but healed. Local quartz veining at high angle (50°-80°) contains minor po. Fairly prominant foliation at 176.8 m occurs at 25°.			
		208.5 - 229.4 m Dark green with white feldspar speckles. Typical coarse grained, granular texture 1-4 cm xtals. At 212.6 m 12 cm wide zone is foliated at 75° with quartz-chlorite development and minor po with very minor cpy. At 223.8 m 1 cm wide quartz-calcite vein, minor po at 50°.			
		229.4 - 231.0 m Foliated, chloritic zone with 25-30% quartz veining. Minor biotite, po & cpy are present. Foliation occurs most prominantly at 60°.			

211-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 8

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
168.1	316.6	231.0 - 243.1 m Granular textured, dark green-white gabbro medium-coarse grained. At 236.1 m			
Cont'd		10 cm wide foliated quartz-chlorite zone with biotite, minor po. Foliated from 239.8 m to 240.2 m with quartz-feldspar veining, chlorite, minor po and cpy.			
		243.1 - 244.7 m Mottled, more fine-grained (medium grained) with chlorite common. Weak foliation at 60°, quartz vein at 242.4 m 10 cm wide with ~ 15% po.			
		244.7 - 246.3 m Dark green, medium-coarse grained granular texture. Few very narrow quartz and quartz-calcite stringers.			
		246.3 - 247.4 m Biotitic, weakly foliated with quartz stringers parallel to foliation at 50°.			
		247.4 - 286.3 m Dark green to dark greenish gray medium-coarse grained, granular texture. Numerous very narrow quartz stringers, at high angles to core axis (>40°), locally with minor po and very minor cpy. At 264.6 m 8 cm wide zone of healed brecciation with quartz-feldspar veining. At 267.1 m 30 cm zone of foliated and brecciated (healed) gabbro with minor quartz-feldspar veining. Minor po occurs along quartz veins. Foliation occurs at about 45°. At 268.6 m 3 cm wide quartz-feldspar vein at 35°; feldspar is light pink in color. Minor po is present. Near 272.9 m 50 cm of core is biotitic with associated apparently irregular masses of quartz development - one of these patches is 12 cm across. Minor po & very minor cpy are associated with some narrow quartz veins within this interval. Concentration of sulphides is est. <<1%.			

211-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 9

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To	Description	Sample No.	Length	Analysis
168.1	316.6	288.3 - 288.1 m Mixed zone of dark green, weakly foliated gabbro varying to a mottled texture			
cont'd		with very large hornblende xtal development - some are 1.5 cm long. Foliation			
		varies from 35° to 60°.			
		288.1 - 312.3 m Generally granular textured, medium-coarse grained with dark green hornblende,			
		white feldspar and dark gray quartz. Locally more coarse grained, more			
		mafic, biotite rich, or foliated. Lighter green chlorite is usually			
		associated with healed fractures. Minor po and very minor cpy are locally			
		present. At 295.7 m 15 cm of healed foliated gabbro; chloritic with folded			
		and sheared inclusions of bluish-gray fine-grained rock which may be of			
		sedimentary origin. Nebulous elongate masses of quartz are present.			
		312.3 - 316.6 m Mafic-rich, dark green gabbro, locally up to 40% quartz and feldspar.			
		Few 3 cm wide quartz veins at 40° to core axis.			
316.6	318.0	META SEDIMENTS Gray to gray-green, medium-coarse grained, siliceous and generally lacking			
		in hornblende; hornblendic near 318.0 m. Granular texture with a weak			
		foliation present at about 35° to core axis.			
318.0	318.4	QUARTZ-FELDSPAR VEIN			
		Coarse grained biotite occurs along seams or veins few mm wide at 75° to core axis			
		7 cm wide band of 75% medium-coarse grained pyrite occurs at upper contact of quartz			
		vein, at 318.0 m core is broken in this interval.			

211-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 10

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To	Description	Sample No.	Length	Analysis
318.4	321.5	META SEDIMENTS			
		Grey, siliceous, granular, medium-coarse grained. Some hornblende present near quartz			
		vein at 318.4 m otherwise hornblende-free. A weak to moderate foliation exists at 45°			
		to 60° to core axis. Some variation in character exists with a vague banding at 60°			
		to core axis but no distinctive bedding features are present.			
321.5	392.1	GABBRO			
		321.5 - 322.6 m Gray-green, granular, medium-coarse grained, feldspar about 30%. Numerous			
		very narrow quartz veinlets.			
		322.6 - 340.2 m Dark gray-green granular, medium-coarse grained, feldspar content variable			
		but low est 10%, locally as high as 30%. Generally more mafic in appearance.			
		Very narrow quartz veinlets are common, few quartz veins of 3-4 cm are			
		present - these usually carry minor or very minor po and very minor cpy.			
		Attitude of veins and veinlets is most commonly about 60° to core axis.			
		Minor healed shears are locally present - usually only 2-3 cm wide,			
		chloritic, occasionally with minor po and cpy. At 335.4 m 30 cm core			
		is moderately foliated at 85° to core axis, light-medium gray green in			
		color. A 3 cm wide quartz vein at 85° to core axis is present.			
		340.2 - 345.7 m Similar gabbro with slightly increased feldspar content - est 25% local			
		small scale variations in texture are present. At 340.9 m 10 cm of			
		chloritic, foliated zone with 40% quartz veining, minor po and cpy,			
		at 50° to core axis.			

211-8437

Drill Hole Record

Cominco Page 11

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To	Description	Sample No.	Length	Analysis
321.5	392.1	345.7 - 392.1 m Similar gabbro with decreased feldspar content est. 5-10% locally as much as 30%. Dark gray-green color. At 346.6 m 15 cm of quartz veining with minor chloritic foliation at 50° to core axis. 349.1 m 4 cm wide quartz vein at 35° to core axis. Locally more biotitic near 349.7 m. At 362.5 m 10 cm wide quartz vein at 50° to core axis, minor po and cpy. At 367.5 m 7 mm wide quartz vein at 15° to core axis - looks like a prominant fracture. At 376.5 to 376.8 m Foliated chloritic zone - 45° to core axis. Minor po, cpy and a greyish mineral, possibly aspy.			
cont'd					
392.1	393.9	POSSIBLE META SEDIMENTS Medium gray-green color, non-hornblendic, siliceous, chloritic. If these are metasediments they are intensely altered. Moderate foliation is present at upper and lower contacts at 35-55° to core axis. Locally miner po and cpy are associated with narrow quartz veins in chloritic foliated zones.			
393.9	425.5	GABBRO 393.9 - 423.0 m Dark gray-green granular, medium-coarse grained. Feldspar content variable but low-averages about 15-20%. At 398.9 m minor foliation with quartz veining at 50° to core axis. At 407.9 m 15 cm of moderately foliated gabbro with minor quartz veining (to 1 cm wide) at 40° to core axis. At 416.0 m 6 mm wide quartz vein at 20° to core axis. At 416.6 m 6 cm wide foliated chloritic zone at 50° to core axis with minor quartz veining. Very minor po in quartz veins.			

211-0437

Drill Hole Record

Cominco Page 12

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To	Description	Sample No.	Length	Analysis
393.9	425.5	423.0 - 425.5 m Medium-dark gray color granular, medium-coarse grained, quite massive. Feldspar content is very low est <5% a weak foliation is present through much of the core, at 40° to core axis.			
Cont'd					
425.5	427.1	BIOTITE-RICH ZONE, POSSIBLE META SEDIMENTS Dark black color medium-coarse grained est. 75% biotite 20% quartz, 5% Feldspar minor irregular quartz veining is present at 80° to core axis. Contact with gabbro appears gradational.			
427.1	428.4	META SEDIMENTS Gray to gray-green and brownish-gray, medium-grained, granular texture. Hornblende is rare; biotite common. Needle-like grains of black tourmaline occur near 427.1 m - 1-2% concentration with no apparent preferred orientation. Rock is siliceous, chloritic and biotitic, strongly altered. A vague compositional banding, possibly relict bedding, occurs at 65-70° to core axis. Narrow veinlets are fairly common, with a prominant attitude at a high angle ~ 75° to core axis			
428.4	486.9	GABBRO 428.4 - 429.9 m Medium-dark gray comparatively low feldspar content - est. 5% medium-coarse grained, granular texture. Numerous very narrow quartz veinlets and zones of chloritic alteration occur at high angles to core axis ~ 65-70°.			

211-0437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 13

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To	Description	Sample No.	Length	Analysis
428.4	486.9	429.9 - 465.7 m Dark gray-green medium-coarse grained, locally very coarse grained granular			
Cont'd		texture. Feldspar content varies but averages about 25%. Narrow veinlets			
		of quartz are common; these occur at various attitudes but most commonly			
		at fairly high angles to core axis 60-70°. From 434.8 - 436.3 m irregular			
		patches of very coarse grained amphibole and feldspar development - xtals			
		to 1.5 cm long. At 447.0 m narrow (2-3 mm wide) quartz-feldspar veinlet			
		at 35° to core axis with minor po & cpy. At 449.4 m 3-4 cm wide chloritic			
		foliated/sheared zone with minor quartz veining. Notable increase in			
		biotite content adjacent to this shearing, at 50° to core axis. From			
		451.7 - 452.1 m shear zone chloritic, locally biotitic; minor quartz			
		veining. Foliation occurs at 45° to core axis with minor drag folding evident.			
		465.7 - 467.4 m Foliated zone-more biotitic and less hornblendic than adjacent gabbro; may			
		be very strongly altered meta sediments. Upper and lower contacts are both			
		quite sharp; upper one at 80°, lower one at 65°. Contacts represent a distinct			
		change from hornblendic, feldspar-bearing gabbro to biotitic material without			
		granular feldspar. Textures are similar; medium-coarse grained, granular			
		5 quartz veins occur near center of this zone 1-6 cm wide; they occur at			
		40° to 90° to core axis and have coarse grained biotite and minor po associated			
		with them. Other narrow veinlets and chloritic zones are also oriented at			
		high angles to core axis. At 466.8m, a 4 cm wide quartz vein is strongly			
		sheared with biotite (?) and po smeared along fracture planes - quartz			
		"augea" are developed in a matrix of soft black or brown fault gouge.			

811-0437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 14

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
428.4	486.9	465.7 - 467.4 m Where slickensides are developed this gouge has a graphitic appearance but			
Cont'd		Cont'd may be just sheared biotite.			
		467.4 - 478.8 m Dark gray-green medium-coarse grained, granular texture. Feldspar content			
		variable but fairly low - est. 15-20%. A number of quartz veinlets and			
		narrow chloritic zones are present, most commonly at about 60° to core axis.			
		478.8 - 485.4 m Dark gray-green - change to finer grain size (medium grained) and very low			
		feldspar content - est 5% veinlets and chloritic alteration zones common,			
		at 60-80° to core axis. At 480.2 m, 3-6 mm wide quartz vein, chloritic			
		margins, at 20° to core axis. At 482.3 m, isolated rectangular shaped			
		'pod' of po and cpy 5 mm x 1 cm in cross sections. Disseminated po and			
		cpy occurs around the fringes of this pod. No associated quartz veining			
		sits isolated within mafic gabbro.			
		485.4 - 486.9 m Contact zone. Fine-medium grained biotitic gabbro minor disseminated			
		po is present. Narrow quartz veinlets and healed "alteration fractures"			
		are common, and occur most prominently at 75-80° to core axis. Core is			
		a bit broken with narrow chloritic shears present.			
486.9	490.9	META SEDIMENTS			
		Gray to dark greenish-gray, siliceous, biotitic, locally chloritic; strongly altered			

811-0437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 15

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length

Footage From	To	Description	Sample No.	Length	Analysis
486.9	- 490.9	cont'd heterogeneous contact zone. 5-10% is quartz veining - some as nebulous masses, typically with associated coarse grained biotite, locally with coarse amphibole. Other than composition, no sedimentary features are recognizable. Top 45 cm is siliceous annealed breccia. Core is more broken than in gabbro, particularly in uppermost 60 cm. Minor po & very minor cpy are locally associated with quartz veining.			
490.9	- 496.3	META SEDIMENTS Moderately strongly altered. Predominantly QcW, minor QW and W. Thin bedded, few medium and thick beds. About 30% is comprised of "couplets" of wacke and QW/QcW - 2-3 cm wide bands. Much of this unit is made up of irregular lens-like beds with pinchouts and scour structures evident. Locally small cross-cutting irregular "fractures" are present. Disseminated po and py are common over 10 cm of core at 492.4 m - est 4% by volume. Elsewhere po and py are localized along small fractures and locally po is disseminated in the sediments. Bedding attitude: 490.9 m -60°; 492.7 m - 40°; 493.0 m -50°, 493.9 m -50°. At 496.0 m minor shearing is present with foliation at 30° to core axis. Lower contact is in broken core but appears to be a fracture contact with an attitude of 25° to core axis.			
496.3	- 567.5	GABBRO 496.3 - 498.2 m Medium-dark gray, fine grained gabbro, quite homogeneous. Many very narrow healed fractures/veinlets, most commonly at ~ 25° to core axis. 1-4 cm			

811-0437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 16

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
496.3	- 567.5	496.3 - 498.2 m wide quartz vein at 497.9 m is at 30° to core axis, margins of this vein			
cont'd		cont'd are chloritic.			
		498.2 - 501.8 m Dark green-gray, medium grained, granular texture. Low feldspar content - est 5% or less. Narrow veinlets vary in attitude from 20° to 70° to core axis, with no preferred attitude apparent.			
		501.8 - 567.5 m Variable color from gray green to dark green. Medium-coarse grain with numerous local coarse-grained, feldspar-rich (to 30%) irregular patches. Overall more of a medium grain granular texture than the gabbro above 486.9 m which was coarser grained. From 507.0 - 507.3 m sheared chloritic zone with minor quartz veining parallel to foliation which is at 40° to core axis; minor pyrite is present. At 509.1 m, narrow shear zone with dark gray fault gouge, minor quartz veining; at 20° to core axis. From 518.0 - 518.6 m, 4 cm wide fracture at 5-10° to core axis. Dark gray fault gouge, quartz veining and about 3% by volume py are present. Narrow, 2-3 mm wide quartz veins with chloritic margins are scattered through the interval, typically at 40-60° to core axis.			
567.5	- 569.5	ALTERED SEDIMENTS Contact with gabbro at 567.5 m is sheared over 6 cm with chlorite development, minor fault gouge. Seds here are strongly altered - largely annealled breccia with silica forming a matrix to breccia fragments. Color is dark gray to dark blue gray.			

811-0437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 17

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
567.5	- 569.5	Minor quartz veining is present, locally with minor pyrrhotite. Pyrrhotite is also			
cont'd		locally disseminated within the siliceous seds, especially near 569.1 m. Seds are			
		now quite siliceous - original lithology was probably QcW or QW.			
		ALDRIDGE FORMATION			
569.5	- 573.6	QcW and W			
		Thin bedded to laminated; QcW and W are interbedded (sand-shale couplets?) with the			
		bedding being typically irregular on a local scale with lenses, rip-up clasts, small			
		folds and small zones of small ragged clasts developed. Some large scale folding is			
		present also; 575.3 - 573.2 m bedding defines a fold with attitude ranging from 45°			
		through to 0° and back to 40°. Bedding is also quite flat from 569.5 to 570.4 m about			
		20-25°.			
573.6	- 575.9	QW			
		Thick bedded, dark blue-gray to medium blue-gray colored. Only 4 beds recognized with			
		narrow QcW or W tops. Alteration is strong with bleaching evident along veinlets.			
		Bedding angle 574.1 m -45°; 575.6 m -55°.			
575.9	- 579.6	QcW and W			
		Thin bedded to laminated; few medium thick beds. Medium blue-gray color with brown			
		wacke-rich zones (biotite alteration). Disrupted or irregular bedding is common with			
		lensing and small elongate rip-up clasts throughout. Bedding angle is at 60° to ~ 578.7 m			
		-65° to 579.6 m.			

211-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 18

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
579.6	- 580.5	LAMPROPHYRE			
		Dark brown, fine-grained, biotitic, feldspar porphyroclasts from <1 mm to 3 cm across.			
		Elongate porphyroclasts are aligned sub parallel to contacts. Upper and lower contacts			
		occur at 85-90° to bedding attitude -10°-15° to core axis with bedding attitude ~70°.			
580.5	- 597.6	QcW, W minor QW			
		Thin bedded to laminated, few medium thick beds. Light gray to medium blue-gray color;			
		brown in laminated wacke zones from biotite. The zone is comprised of thin beds of QcW			
		alternating with laminated wacke zones which contain lense of QcW. The laminated wacke			
		zones typically contain abundant lensing of sandy and shaley units along with rip-up			
		clasts. Minor scour feactures and local small scale ripple cross laminations are present.			
		Alteration is strong with QcW and QW zones being spotted or mottled by small (1-4 mm			
		diam) clots of po, biotite or both, and wacke-rich laminated zones contain abundant			
		biotite. Minor quartz veining is present with minor fracture pyrrhotite and very minor			
		cpy. At 593.9 m massive po vein 1-1.5 cm wide with very minor cpy. Rounded grained			
		aggregates of quartz occur within the po and small irregular clots of biotite are also			
		present. Po vein occurs at 40° to core axis and cuts bedding at a shallow angle.			
		From 594.2 - 595.4 m, zone of predominantly laminated wacke with minor thin beds of QcW.			
		Bedding angle: 581.1 m -75°; 584.5 m -60°; 588.4 m -65°; 594.8 m -60°; 597.3 m -60°.			

211-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 19

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length

Footage From	To meters	Description	Sample No.	Length	Analysis
597.6	603.2	QW, QcW, minor W			
		Medium bedded, few thick beds; thin bedded-laminated wacke zones. Sandy beds here are thicker and more siliceous than in overlying interval. Laminated to thin bedded wacke zones (with minor QcW) which occur between the sandy beds are similar. Bedding angle: 598.2 m -65°; 601.2 m -60°.			
603.2	617.1	QcW & W, minor QW			
		Medium bedded and thin bedded to laminated. Thin beds of QcW or QW alternate with zones of thin bedded to laminated wacke and minor QcW. Many bedding plane contacts are planar but much of the laminated zones is irregular with lensing, rip-up clasts, small scale slump folding. Disseminated po is common in many of the QcW and QW beds and po is also present in a few scattered narrow quartz veins. From 615.5 - 617.1 m, disseminated po occurs concentrated in 3 narrow zones, each about 1.5 cm wide. These may originally have been po laminations which have become discontinuous due to alteration. Considerable biotite alteration is present throughout the interval. Bedding angle: 605.2 m -60°; 608.2 m -65°; 612.8 m -60°; 616.8 m -65°.			
		NOTE: Drilling interrupted at 617.1 m on Oct. 25, 1983 (End of Oct. 24, 1983 night shift). Drilling re-commenced Nov. 25, 1983 after reducing to NQ. (Some cave experienced at bottom of HQ hole at 617.1 m on reducing to NQ: Part of H hole had caved.)			

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 20

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
617.1	634.5	W and QcW			
		Thin bedded to laminated, very few medium beds. Bedding style becoming increasingly planar with depth; less irregularity present; narrow light gray argillaceous (wacke) beds more common. Biotite alteration still strong. At 619.8 m a 2 cm wide zone parallel to bedding contains est. 20% disseminated po, similar to zones from 615.5 to 617.1 m. Minor small quartz veins with po along veins are scattered through the interval. 634.2 - 634.5 m, W with chloritic alteration and ~5% irregular blebs of po. Bedding angle: 619.5 m -70°; 622.9 m -65°; 628.0 m -65°; 631.1 m -60°; 634.2 m -65°.			
634.5	634.6	LAMPROPHYRE (?)			
		10 cm length of core is biotitic, chloritic, with ~ 10% disseminated irregular blebs of po. Small light blue-gray elongate crystals of secondary chlorite (?) are randomly developed within the zone. These also occur a short distance into adjacent altered sediments both above and below the "lamprophyre".			
634.6	637.8	W - QcW			
		Fairly massive with internal laminations - not distinctively bedded. Medium-dark blue-gray. Minor po is common. Est. 2% in the interval - as disseminated irregular blebs and small veinlets along fractures. 5 cm wide quartz vein cuts across core at 25° to core axis at 637.8 m. Bedding angle 635.7 m -65°; 637.2 m -65°.			

211-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 21

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
637.8	- 650.3	W and QcW			
		Thin bedded to laminated. Interval is characterized by bed couplets consisting of 1)			
		Light gray, argillaceous or wacke bands (bed tops?) varying from few mm to few cm thick			
		and 2) more siliceous - QcW, possibly W zones, blue-gray in color, commonly with some			
		internal lamination, locally with small cross lamination and with moderate to strong			
		biotitic alteration throughout. These more siliceous zones vary in thickness from			
		<1 cm to about 15 cm max. thickness. From 638.7 - 639.0 m, 2 en echelon quartz veins			
		1 cm to 3 cm wide, at 20° to core axis. At 639.5 m, 1.5 cm wide biotite-rich band with			
		est. 10% dissem. po occuring as irregular blebs. Minor po occurs throughout the			
		interval as fine disseminations and as veinlets along fractures. Bedding angle:			
		638.4 m -70°; 643.3 m -55°; 647.9 m -50°; 650.0 m -50°.			
650.3	- 654.0	QW and QcW, minor W			
		Medium to thin bedded. Quartzite units show strong alteration with small irregular			
		clots of biotite and possibly graphite developed along a preferred attitude parallel			
		to bedding. Narrow wacke or subwacke bands are soft, slightly green, locally with			
		chlorite. Lowermost 40 cm of this interval is of a dull gray-green color but of			
		QcW composition. Bedding angle 50-55° throughout.			
654.0	- 655.2	QcW and W with Graphite			
		Laminated and thin bedded QcW and W. Graphite occurs through all of the interval but			
		in variable concentration. A very narrow (<½ mm) stylolitic band is present at 654.0 m			

811-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 22

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
654.0	- 655.2	and is the uppermost graphite recognized. Within the interval graphite occurs 1) as			
cont'd		narrow (½ - 1 mm thick) bands, usually associated with biotite-rich zones. 2) as			
		narrow lenticular laminations parallel and sub-parallel to bedding (conductivity extends			
		across bedding planes for short distances), and 3) as irregular veins to 1 cm width			
		cutting the bedding at low angles, where minor shears are developed			
		in this interval, shear surfaces contain slicken sided graphite. Bedding angle 65°			
		throughout.			
655.2	- 665.5	QcW and W			
		Thin and medium bedded, medium-dark blue-gray color. Dense, fine-grained, siliceous -			
		quite strongly altered. Biotite alteration common. A number of narrow zones contain up			
		to 10% disseminated irregular blebs of po, usually with biotite. From 664.9 - 665.5 m			
		alteration is of a tan-gray, slightly greenish color, somewhat similar to the narrow			
		zone immediately overlying the 654.0 - 655.2 m graphitic zone. Bedding angle: 655.5 m			
		-60°; 658.5 m -65°; 663.1 m -60°; 665.2 m -70°.			
665.5	- 665.9	W and QcW with Graphite			
		Graphite occurs in a narrow zone of laminated W and QcW, as thin laminations, locally			
		with a stylolitic character, and in narrow more massive zones, parallel to bedding and			
		in association with calcite veining. Core is broken where graphite is more massive and			
		this graphite may not be bedded. Bedding angle is 75°.			

811-8437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 23

Property		District	Hole No. C-83-1	
Commenced		Location	Tests at	Hor. Comp.
Completed		Core Size	Corr. Dip	Vert. Comp.
Co-ordinates			True Brg.	Logged by
Objective			% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
665.9	- 668.3	QcW, minor W			
		Thin bedded, becoming increasingly silicified, brecciated, and lithologically homogeneous in character as contact with gabbro at 668.3 m is approached. Bleaching along narrow veinlets in lower part of interval is common. Bedding angle is 75-80° in upper part of zone.			
668.3	- 686.6	GABBRO			
		Upper contact at 70° to core axis.			
		668.3 - 676.5 m Fine-medium grained, quite massive in character, dull gray-green color. Numerous quartz and quartz-calcite veins and veinlets cut the gabbro at various attitudes but preferentially at relatively high angles (70-80°) and at relatively low angles (5-10°) to core axis. Minor po and very minor cpy are locally associated with quartz veining.			
		676.5 - 686.6 m Darker green somewhat brownish-colored from presence of biotite. Weak to moderately strong layering is developed at 75°-80° to core axis. Few quartz veins with minor calcite are present. Minor po and very minor cpy locally present. Lower contact at 686.6 m is at ~75° to core axis with layering in gabbro parallel or closely sub parallel to underlying bedding.			

211-6457

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 24

Property		District	Hole No. C-83-1	
Commenced		Location	Tests at	Hor. Comp.
Completed		Core Size	Corr. Dip	Vert. Comp.
Co-ordinates			True Brg.	Logged by
Objective			% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
		ALDRIDGE FORMATION			
686.6	- 690.5	QcW and W			
		Thin bedded to laminated, few medium thick beds. Quite strongly altered-silicified. Minor annealled brecciation adjacent to gabbro. Locally strongly bleached. Minor po present along some fractures. Bedding angles 688.1 m -65°; 689.0 m -75°.			
690.5	- 691.5	LAMPROPHYRE			
		A 6 cm wide coarse grained quartz vein at 80° to core axis occurs at 690.5 m. Lamprophyre is dark brown to black, greenish and chloritic at upper contact at 690.6 m (adjacent to quartz vein). Fine-medium grained, strongly biotitic with a few felsic porphyroclasts included. A foliated fabric at 10-15° to core axis is evident. Parts of this zone are broken with chloritic slickensides on fracture surfaces.			
691.5	- 765.5	QcW and W			
		Thin bedded to laminated, a few medium thick beds. Alteration is variable from moderate to weak with silicification and development of biotite common. Bleaching is usually present with silicification. Beds characteristically display internal laminations with light grey argillaceous or subwacke bands common throughout, varying from a few mm to a few cm in thickness. At 696.5 m, 3 cm band with 10-15% irregular patchy po and minor cpy. 3 cm wide quartz vein with aspy below po and cpy. At 696.8 m, 4 cm wide band with 15-20% irregular patchy po and more laminated pyrite, with minor cpy. At 700.6 m, 5 cm wide zone with irregular patchy po - est. 10% by volume. Py is common along fractures near 699.1 m.			

211-6457

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 25

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
691.5	- 765.5	Minor fracture po is fairly common throughout much of the interval. 723.6 m, 15 cm length			
cont'd		of core contains ∿ 7% po as ragged patches, mainly associated with minor quartz vein			
		development. At 730.5 m, 20 cm of broken core; fractured blue-gray quartz vein.			
		From 740.2 - 740.6 m, healed fracture ∿ // to core axis with minor (∿ 5 cm) offset			
		of beds. From 749.4 - 752.7 m, some cross laminations developed in thin beds.			
		Bedding angle: 697.3 m -80°; 701.2 m -55°; 705.8 m -70°; 711.9 m -65°; 716.5 m -70°;			
		722.6 m -75°; 728.7 m -70°; 736.0 m -80°; 740.9 m -75°; 747.0 m -80°; 751.5 m -80°;			
		754.6 m -80°; 759.1 m -80°; 764.9 m -80°.			
765.5	- 782.2	QcW, minor QW and W			
		Medium bedded, few thin beds. Generally a medium blue-gray color, locally brown.			
		Considerably altered with bleaching and silicification evident. Some of the brownish			
		colored patches are very hard and may be weakly tourmalinized. Cross laminations are			
		present in narrow bands scattered through the interval-locally these are brownish			
		(possibly tourmalinite) - one such occurrance at 772.3 m sampled for thin section.			
		From 772.6 -772.9 m core is a mottled pink - brown color from alteration. Minor po			
		occurs as disseminations along laminations (locally cross-laminations) and as small			
		fracture veinlets, often associated with small quartz veins. At 770.4 m core is			
		broken over 30-45 cm, to quite small fragments. Possible fault or shattered zone.			
		At 776.2 m, pyrite encrusts fractures associated with quartz veining. At 780.8 m			
		6 cm length of core with est. 10% po as irregular blebs associated with biotite.			

811-6437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 26

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length

Footage From	To meters	Description	Sample No.	Length	Analysis
765.5	- 782.2	Narrow tourmalinite zones at 772.3 m and 781.4 m. Bedding angle:			
cont'd		765.9 m -85°; 769.2 m -75°; 772.0 m -75°; 775.3 m -75°; 779.3 m -90°.			
782.2	- 790.2	W and QcW			
		Thin bedded to laminated, light gray to dark blue-gray color; alternating ligther gray			
		W or SW bands and darker blue-gray, often internally laminated, QcW bands. Disseminated			
		po is common, usually slightly concentrated along laminae - also occurs as small fracture			
		fillings. 785.8 - 786.4 m, few xtals of light gray arsenopyrite are present, locally			
		concentrated along laminae. Biotitic alteration common throughout. Core angle:			
		782.6 m -85°; 786.0 m -85°; 789.9 m -85°.			
790.2	- 792.4	TOURMALINITE AND TOURMALINIZED METASEDIMENTS, QcW AND W			
		Medium-thin bedded where bedding planes are recognizable: much of the tourmalinite			
		is finely laminated without distinct bedding planes. Generally dark blue-gray color,			
		aphanitic and quite dense in appearance. Degree of tourmalinization appears variable			
		with tourmaline apparently restricted (locally) to narrow zones parallel to bedding;			
		these do not appear as distinct beds. From 791.2 -792.2 m is all tourmalinite, dark			
		blue-gray and finely laminated. Lowermost 12 cm of core is light bluish-gray, mottled			
		and appears to be a fine-grained quartzite which is partly and irregularly			
		tourmalinized. Locally small irregular whitish porphyroblasts (?) are developed - may			
		be feldspar. Bedding angle is 85°-90° throughout. Thin sections: 791.0 m, 791.5 m,			
		792.1 m.			

811-64

Scale

Colour Plot & Dips

Drill Hole Record

Cominco Page 27

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To	Description	Sample No.	Length	Analysis
792.4	796.8	MASSIVE BIOTITIC WACKE			
		Quite homogeneous in appearance, little internal fabric with some laminations evident in the top and bottom 20 cm, with a few vague internal laminations. Medium blue-gray color with ubiquitous biotite speckling. Disseminated po also occurs throughout. May be a massive to weakly laminated wacke which has been altered to produce fine-medium grained biotite throughout. From 793.0 - 793.3 m, 1 cm wide po veinlet at 10° to core axis contains a few grains of light gray arsenopyrite and minor cpy. Thin section at 794.4 m.			
796.8	798.8	TOURMALINITE AND TOURMALINIZED SEDIMENTS			
		Very fine grained, dense, faintly laminated to banded, medium gray to dark blue-gray color, locally blackish with a brown hue. Tourmaline content appears to vary with some narrow zones being very hard. Biotite and biotite-pyrrhotite spotting are common - individual "spots" are irregular in outline and about 1-3 mm diam. A few elongate whitish flakey crystals, probably muscovite, are locally associated with the biotite spotting. Core is broken from 798.2 - 798.8 m but parts of the fragments contain very hard bands believed to be tourmalinite. Po occurs as irregular blebs and small veinlets near 798.2 m. Bedding angle 85° throughout.			
798.8	802.4	QcW, minor W			
		Medium and thin bedded, medium-dark blue-gray color. A few thin (1 cm) bands from 798.8 - 800.0 m are quite hard and may contain tourmaline. Minor disseminated po is locally present. Core is broken from 798.8 to 799.5 m (> 50% core loss here).			

811-8437

Colour Plot & Dips

Drill Hole Record

Cominco Page 28

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To	Description	Sample No.	Length	Analysis
798.8	802.4	Bedding angle is 85-90°.			
Cont'd					
802.4	804.9	W and QcW			
		Thin bedded - some beds are internally laminated. Light gray to dark blue-gray in color. Disseminated po is common, aspy grains occur near 802.9 - 803.4 m, locally concentrated along laminations. A few veinlets of po with minor cpy are present. Biotite alteration is common. Bedding angle is 85-90° throughout.			
804.9	809.1	QcW and QW, minor W			
		Medium bedded, a few thin and thick beds. Medium-dark blue-gray in color with considerable siliceous alteration and local bleaching. A number of quartz veins are present with associated po, biotite and minor pyrite. At 808.8 m over 10 cm of core irregularly disseminated clots of pyrrhotite comprise 10-15% by volume - a few aspy grains occur here too. Bedding angle is 80-85°.			
809.1	850.0	W, minor QcW			
		Thin bedded to laminated, few medium thick beds. Little variation is present with a banded light gray to medium blue-gray color throughout. A few cross-laminations, scour features and load structures are scattered through the interval. Disseminated po is present but fairly rare; po does occur along small veinlets, often with quartz.			

811-8437

Drill Hole Record

Property	District	Hole No. C-83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet

Footage From	To meters	Description	Sample No.	Length	Analysis
809.1	- 850.0	Biotite alteration is common with it developed to a spotted character locally.			
cont'd		From 808.2 - 809.5 m is predominantly medium bedded QcW. A narrow zone (concretionary?)			
		of whitish irregularly shaped small (1-2 mm diam) porphyroblasts of feldspar (?) and white			
		mica occur near 849.1 m over 20 cm of core. Bedding angle: 809.5 m -75°; 814.9 m -85°;			
		820.1 m -85°; 824.7 m -85°; 829.3 m -90°; 833.8 m -80°; 838.4 m -80°; 843.0 m -85°;			
		846.0 m -85°; 849.4 m -85°.			
850.0		END OF HOLE			
		CORE STORED AT SULLIVAN MINE, KIMBERLEY.			
		Sperry-Sun down-hole directional surveys			
		Hole depth Azimuth Dip			
		15.2 m 151° -89.4°			
		101.2 m 157° -87.5°			
		159.8 m 126° -87.0°			
		250.0 m 131° -86.4°			
		391.5 m 149° -86.6°			
		476.2 m 138° -87.1°			
		556.4 m 147° -86.8°			
		696.0 m 190° -85.2°			
		823.2 m 221° -82.2°			

211-8437

P. Klewchuk

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,126