

LATITUDE 6242N
 DEPARTURE 4845E
 ELEVATION 1000 M
 DIP AT COLLAR -55
 BEARING 100°
 TOTAL DEPTH 338.4 CORE SIZE BQ
 REMARKS Retained shift 8M and 10M of block.

NORANDA EXPLORATION COMPANY LIMITED
 DIAMOND DRILL CORE LOG

Test Depth	Dip	Magnetic Bearing	Corrected Bearing
<u>133.9</u>	<u>55°</u>	<u>118°</u>	<u>99°</u>
<u>331.7</u>	<u>48°</u>	<u>124°</u>	<u>99°</u>
<u>Note: some porphyry variability</u>			

Project No. 4730 Hole No. LB-92-2
 Property Lake Board, Hammond
 NTS. 12H/1 Grid Name Lake Board
 Date started August 28/92 completed Sept 3/92
 Contractor River Valley Drilling Co. Ltd.
 Logged by Chris Collins

Depth & Lithology	Description	Alteration	Mineralization	Remarks
0-3.7 Congl.	Overburden			
3.7-42.8 Mafic Flow "Red Basalt"	around the unit is deep red to maroon color as a result of pervasive ferritization; generally has a fine grained massive to granular texture but see local zones over 5-10 cm with vesicular texture with mm scale calcite, aragonite. @ 22.3 m, also see local zones associated with a iron breccia texture with 85-96% siliceous. 3 cm sized fragments of mafic clasts in a very fine grained calcareous silica/carbonate matrix. @ 25.3-26.6 m, see several narrow very fine grained massive textured grey mafic (basaltic) dikes cutting the unit at 14.6-14.8 m and at 10° to C.R. (dike margin) and at 24.4-24.8 m with sharp upper. Lower chilled contact at 25° to C.R.	strong pervasive ferritization of the entire unit. 2% silica + carbonate as thin wispy contacted but generally calc. cutting mass.		

NORANDA EXPLORATION COMPANY LIMITED
DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 2 of 15

Property Lake Bond Advanced

Hole No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	see a weakly well developed penetrative fabric or foliation in the unit from 34.4 to the lower contact at approx 45° to C.R. Note the orientation is preferred by units over the intervals, the lower contact is affected by the underlying dls.			
42.8-57.2 Mafic (Diorite) Dike.	overall a dark grey color; fto to medium crystalline with fg medium drilled marginally grading into a medium crystalline weakly foliated porphyritic core; see a well developed diagenetic texture from 49.9-55.8 m. upper contact is sharp at 25° to core and with a 1-1.5 m medium fg drill. see a fracture from 55.8- the sharp drilled lower contact at 57.2. see a remnant of mafic flow "Red Basalt" from 49.2-49.9 exactly as over, undisturbed units.			
57.2-89.7 Mafic Flow "Red Basalt"	(very much like the unit from 3.7-42.8 m) overall a deep red to maroon color as a result of strong to locally intense pervasive hematization; overall see a fg medium to granular texture except	strong to locally intense pervasive hematization		

NORANDA EXPLORATION COMPANY LIMITED
DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 3 of 15

Property Lake Bond Advanced

Hole No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	note more extensive zones of vein bre texture than in upper units with 12-15% silica >> carbonate veins as narrow submm-cm sized often banding, locally fractured, folded, crosscutting veins. The veins generally have a preferred orientation concordant with a penetrative fabric at 60-65° to C.R. locally fabric, veins are as low as 0-10° to C.R. as the result of tight to isoclinal folding "see later attitudes with changes at 74.1-77.1 Note local porphyritic banding at 55-60° to C.R. " at 73.6-73.7 Note local intervals with well preserved vesicular texture with up to 15% submm to mm sized quartz omphacite " at 86.3-86.4 & at 89.2-89.3 see several narrow intercalations of more terratized "green basalt" between 83.1-89.7 meters. The lower contact is defined by the underlying gills.	silica + much base carbonate alt. as submm - 1 cm sized locally deformed veins, up to 12-15%.		
89.7-93.0 11gic Dior (Basalt/Dior)	overall a dark grey color, very fine grained with a weakly porphyritic texture with locally up to 2% 1-2 mm sized submmal feldspar lath in			

NORANDA EXPLORATION COMPANY LIMITED
DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 4 of 5
Property Lake Bond, Ontario
Hole No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	very fine grained to aphanitic granular; see a very sharp upper contact at 50° to C.R. with a massive glassy textured chilled margin. The lower contact is sharp at 85° to C.R. no chill. see a parallel of the wall rock "red basalt" 90.3-91.1 meters			
93.0-104.1 Mafic Flow "Red Basalt"	color + texture steady to interval from 57.2-89.7 except see vesicular texture throughout with sections of 20-30 cm with 15% 1-3 mm sized carbonate angulites "101.3-101.5" see 10% vesing, silica with lower carbonate - minor epidote; the veins are subhor. 2 cm in size, banding + dyking, + generally cross-cutting see a penetrative fabric at 50-60° to C.R. but locally more steep. not marking is often concordant with fabric; the contacts are defined by dyking above + below interval.	strong to locally intense permineralization. 10% silica with lower carbonate as veins, minor epidote conc. to silica used.		
104.1-109.2 Mafic Dike (Basalt)	dark grey color, very fine grained with a massive homogeneous equigranular texture; sharp upper contact with an aphanitic glassy chill margin at 10° to Core axis. lower			

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 5 of 15
Property Le Lac, Bond, Roussard
Hole No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	contact is the same at 70° to core axis. Note staining in mafic flows immediately below the lower contact.			
109.2-113.4 Mafic Flow	overall a dark gray to black color; generally very fine grained and micaceous textured except where not weathering; see 10-12% euhedral up to 2mm wide generally cross-cutting silica + lesser carbonate inclusions. see potash epidote associated with larger silica inclusions. note local sections of vesicular texture with up to 5% 1-3mm sized quartz angulites. at 113.2-113.3 the weathering is commonly laminar, + fractured but has a general preferred orientation concordant with a weak preferred fabric at $\pm 40-45^\circ$ to the core axis. the lower contact is defined by the underlying intrusion.	weak to moderate pervasive chlorite alt. silica with lesser carbonate + lesser epidote alt associated with weathering.		
113.4-148.4 Diorite	overall the unit is a light gray color, medium crystalline, with a well developed porphyritic texture with 10-15% 2-7mm sized subhedral feldspar prisms in a fine crystalline mafic groundmass. see broad chilled margins			

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 6 of 15
Property Lake Borden Diamond
Hole No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	in from both the upper & lower contacts; sharp upper contact at 50° to C.F. with a wfy glassy texture drill to 148.8 m, from 148-147.3 the unit is texturally homogeneous as described above. sharp lower contact at 15° to C.F. with a wfy glassy drill from 147.3-148.4. Note - the lower contact is with another unit which may define the angle.			
148.4 - 150.9 Mafic Dike (Basalt/Diorite)	(usually as the variety more from 89.7 130 M) small a dark grey color with a weakly porphyritic texture with 2% 2-3 mm sized subhedral to euhedral feldspar porphyroclasts in a very fine to aphanitic matrix to glassy textured mafic groundmass. Rather local isolated silicic anhydrites. < 1% - more concentrated. the upper & lower contacts are both quite sharp at 15° angles to ore axis, as no chilled margins, the dike retained its texture right to contact margins. the dike appears to intrude the upper & lower units.			
150.9 - 157.7 Mafic Flow	small the unit is a dark grey to black color with local murren colored interbeds as a result of patchy ferritization	patchy weak to moderate ferritization		

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 7 of 15
Property Lake Bond, Labrador
Hole No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	generally very fine grained + massive textured but see local micaceous intervals with 5-7% 3-5 mm sized quartz anguloblastic over 10-15 mm " at 156.7-156.8 M. - see 10-15% silica and associated epidote with up to several mm wide as an anastomosing texture. see a mafic dike at 148.4-150.9 cutting the unit at 155.5-156.1 with sharp upper + lower contacts at 80° to C.R. the lower contact to the unit is defined by adjacent mafic dike.	local weak pervasive chlorite alt. silica + epidote alt. related to unroofing epidote is much prominent adjacent to lower dike contact.		
157.7-163.8 Mafic Dike (Basalt/Diorite)	(usually as the variety occurs at 89.7-99.0 + 148.4-150.9) dark gray color, very fine grained + generally massive to weakly porphyritic textured with 1-2% 1-2 mm sized subhedral to subradial plagioclase phenocrysts in very fine grained to finely ophanitic + glassy textured mafic groundmass. see a very sharp upper Contact at 30° angle to the ore zone with a glassy textured chilled margin over 20 cm; the sharp lower contact is at 30-35° to C.R. with a glassy chilled margin over 10-20 cm.			
163.8-169.1 Mafic Flow "Red Basalt"	overall the unit is a deep red to maroon color resulting from strong pervasive hematization although	strong pervasive hematization.		

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 8 of 15

Property Lake Bond Advanced

Hole No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	the alt. is cont. to weather from upper contact to 169.9 mbs; the unit is generally very fine grained and massive textured with a well developed penetrative fabric (foliation) from 169.8-169.0 at a consistent 25-30° angle to Core axis. The unit is a local transitional laminations parallel the attitude * at 167.6-167.8. From 168.0 to the lower contact at 169.1 the attitude flattens 50-55° angle to the core axis as seen in fabric uniting + laminar, as a very sharp lower contact at 55-60° to the core axis.	see 3-5% silica with some associated epidote uniting as submicron to micron cross-textured with associated to foliation.		
169.1-173.9 Imbricated Chertical (paper) + Silicified Chertic Sediments	above the unit consists of discrete intervals of compact to massive colored paper, and gray white to pinkish white to quartz strongly silicified chertic sediments; the paper beds are generally very fine grained to aphanitic and massive to locally parallel laminated textured the paper beds occur at the following intervals 173.9 - 174.5 laminated at 60° to C.R. 174.6 - 175.1 laminated at 55° to C.R. 175.7 - 175.8 laminated at 65° to C.R. and	strong to locally intense partial silicification of the chertic beds as silica + epidote uniting over the unit from 169.1 to 172.9		

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 9 of 15
Property Lake Bond Advanced
Note No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	from the upper contact to 172.9 see a mottled texture from silicification + local epidote showing on relief bedding at 45° to C.R. at 171.9. from this point down the dark beds generally extend well preserved laminar + bedding texture at angles between 50-70° to C.R. note local paper chert embedded in chert intervals. where grains are noted or coarse enough to be marked, they appear to consist predominantly of green mafic volcanoclastic material in thinning from upper C to 172.9 + at 189.7-189.8 see internal silicification exhibiting internal laminar texture of dark beds from 186.6 - 191.4. locally see silica spatterly creating a vesicular leaching texture within the zone is at 186.8-187.4 mts. ; see a mafic dike of the (89.7-93.0, 148.4-160.9, + 157.7-165.8 variety) at 172.9-173.9 with sharp upper + lower + contact at 70° to C.R. note a narrow sill on lower C.	local internal silicification of siliceous dark beds from 185.6-191.4.		

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DIAMOND DRILL CORE LOG

Project No. 4790 Sheet No. 10 of 15
Property Lake Bonanza Resources
Hole No. 1B-89-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	note local paper cleats included in the unit. 176.5 - 176.7 massive texture with sharp bedded contacts at 50° to C.R. 177.7 - 177.9 massive bedded with sharp bedded contacts at 55° to C.R. 178.7 - 178.9 massive with sharp contacts at 50° 181.2 - 181.5 massive with sharp contacts at 90° 194.2 - 195.4 laminated at 45° to C.R. 201 - 201.9 massive textured with sharp contacts at 55° to C.R. 201.7 - 202.1 massive to locally laminated with sharp bedding contacts; laminated at $55-60^{\circ}$ to C.R. 203.2 - 203.9 laminated at 80° to C.R. the cleatic intervals are strongly to locally intensely pervasively silicified with the silicification locally reflecting the bedded texture. Locally obliterating all primary textures, the cleatic locally are laminated with more or less purple to red paper laminated within the gray-green laminated cleatic portions.			

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 11 of 15
Property Lake Brook Harbour
Hole No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
203.9-205.8 Mafic Dike (Diorite)	dark grey color, fine crystalline with a massive very homogeneous texture; see inf-thru, core scale, glassy textured chilled margins at both sharp upper. lower contacts which are both at 80-85° to core axis.			
205.8-215.4 Mafic Flow "Red Basalt"	overall the unit is a deep red to maroon color and texturally is generally fine grained and massive except with local vesicular texture over 10-15 mm with 3-5% 2-5 mm sized quartz amorphous; Note a weak fabric or foliation developed locally over the unit at 60° angle to core axis, the lower contact is not lithological as such but marks the onset of interbedded unmetamorphosed intervals with the "Red Basalt".	strong pervasive, perthitization; see 3-5% quartz veins as mm scale cross-cutting intense often parallel to weak fabric.		
215.4-235.8 Mafic Flow Interbedded "Red and Green Basalt"	overall the color varies from a deep red, maroon color to a dark grey to pale green color where the unit is not metamorphosed. The boundaries between the red metamorphosed & green unmetamorphosed intervals are generally quite sharp and average	locally strong pervasive perthitization in the red intervals see 5% quartz carbonate? epidote		

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. 12 of 15
Property Lake Bond Advanced
Core No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	interior 50-65° to core axis. overall the unit has a well developed vesicular texture with 20-30cm intervals showing 3-5% suberite up to 1cm sized quartz + calcite, amorphous in both "red and green" intervals. locally see flattened amorphous indicative of some deformation. Note a local weak foliation or fabric generally at a 55-65° angle to core axis. the sharp lower contact is at a 70-75° angle to the core axis + marked distorted texture, alteration, mineralization change in the rock.	mining as suberite up to 3 cm wide generally cross cutting + fabric parallel cross-cutting veins but locally anastomosing.		
235.8 - 240.9 Stannite altered + mineralogical Mafic Volcanics	overall the unit is a beige color to yellow-grey as a result of strong pervasive silicification; the unit has a clastic texture with 30-40% total sulphide, mostly pyrite as fine to medium grained 1cm - 20cm sized masses. anastomosing stringers, the relic mafic portions are strongly pervasively silicified + exhibit a local vesicular texture with 5% pyrite filled amorphous.	strong pervasive silicification of the relic mafic components. see bright green celestine spotting as 3-4% thin wavy plates into	overall see 30-40% total sulphide as fine to medium grained anastomosing stringers + veins up to 20cm wide 30-38% Pyrite 1-2% radiolar brown opatrite as patchy discontinuous within the pyrite stringers traces of Cpy.	

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Property

Lake Bond Advanced

Hole No.

LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	see 3-4% silica inverting as thin irregular wavy units; note a zone of strong chlorite alt as a patchy to stockwork textured feature from 236.6-237.4 with diffuse margins. very sharp lower contact at 50° to core end.	see strong patchy to stockwork textured chlorite alt at 236.6-237.4.		
240.9-271.1 Stockwork altered + mineralized Mafic Volcanic	Undoubtedly the unit may be no different than above except it is dominated by chlorite alt. as opposed to silica (like the interval from 236.6-237.4 in above zone) overall the unit is a dark grey to black color, very fine grained + dominated by a stockwork alteration texture with 25-30% black chlorite as anastomosing 1-5 cm veins and massed patches, also see 7-10% total sulphides as fine grained stringed + patchy disseminations. the rest mafic fragments or fragments are a grey green color of + massed textured see diffuse or rounded contacts between alt stockwork + host lithology. the lower contact is quite sharp at 75°	strong to locally intense stockwork textured + pervasive chlorite alt. see 3-4% white opacitic silica used as thin wavy often mass cutting but locally patchy +/or anastomosing with black chlorite, locally used. see weak remnant of pyrite used cutting opacite near + in from upper contact.	overall extensive 5-8% total sulphides with yellow-grey pyrite as medium grained locally euhedral textured stringed + patchy disseminations associated with black chlorite; + reddish brown sphalerite as fine grained often not well textured stringed + disseminations associated mostly with silica used; locally see stringed + 255.6-255.7	

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Property

Lake Bonor, Aruana

Hole No.

LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	angle to the ore ore and marks a distinct lateral change into the underlying intrusive unit. (this unit is mostly as described in LB-92-1)		following is a list of mineralization concentrations 240.9-245.2 2-3% total 2 py; 1-1 qpr 245.2-249.7 5-7% total 4-6 py 1-3% qpr 249.7-253.1 6% total 5% py 3% qpr 253.1-261.5 8-10% total 5-7% py 3-5% qpr 261.5-271.1 5-7% total 4-5% py 2-3% qpr	
271.1-284.5 Altered Diorite Dike	(unmistakable as altered intrusive unit seen in LB-92-1) overall the unit is a dark grey quartz diorite; medium to locally coarse grained with a marked to granular texture. see a very sharp upper contact at 75° angle to C.R. with no chert, the unit is texturally homogeneous right to the contact, the lower contact is somewhat more diffuse, overprinted by chlorite alt but seems to be at approx 35-45° to C.R. + does mark a definite lateral change into underlying mafic volcanic.	the unit is overprinted by strong potash ex. locally abundant textured chlorite alt. as local green over 10-20cm wide strong pyroxene crystals as mosaic mass with dyfused magnetite at 278.3-278.4. see moderate epidote alt. as irregular patches + see 1% calc. sigs. cross-cutting quartz veins.	overall see 3% total sulphides with 2% pyrites + 1% apatite as local first to medium grained cross-cutting stringers unusually associated with chlorite alt.	

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DIAMOND DRILL CORE LOG

Project No. 4730Sheet No. 15 of 5Property Lake Bond HarbourCore No. LB-92-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
284.5-313.4 Gabbro and mineralized Mafic Volcanics.	(very much the same unit as above altered diorite) overall the unit is a dark gray green to black color, with a very well developed structure texture with massive textured very fine grained mafic volcanic fragments or components overprinted by patches - streaks of black chlorite with associated siliceous, sulphide. The relic mafic ore also pervasively chloritized, all well preserved mafic with later oxidized siliceous to 290.5, from 290.5 - lower contact primary features are completely obliterated by chlorite alt. generally an diffuse or restricted mineralization between alteration & protolith. The sharp lower contact is defined by the underlying dike.	strong to locally intense chlorite alt 3-5 mm wide massive black mass + patches to pervasive chlorite in relic fragments of the protolith. ca 4-6% silica mostly as apatite thin generally cross-cutting work	overall ca 5-7% total sulphides with 3-4% yellow gray fine grained pyrite; 3-4% reddish brown pyrite as siliceous - cross-cutting; locally not well textured stringers, predominantly associated with chlorite alt but locally with siliceous veins. 284.5 - 290.5 - 2% py, 2 ap 290.5 - 295.1 4% py 4 ap 295.1 - 299.9 1-2% py 1-2 ap 299.9 - 305.4 4-6% ap 3% py 305.4 - 313.4 3% py 1-3% ap	
313.4-318.6 Mafic Dike	(mostly the same unit as above at 289.7-295.2, 148.4-150.9 + 157.7-158) dark gray color, very fine grained and generally massive textured with 1-2% + 2 mm sized subhedral to subequia olivine in a very fine grained locally of olivine to glassy textured groundmass the upper & lower contacts are sharp at 50° angles			

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DIAMOND DRILL CORE LOG

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Property Lake Bond, Advanced
Note No. LB-98-2

Depth & Lithology	Description	Alteration	Mineralization	Remarks
	to the one also with no chills thereby propagating to the sharp contacts			
318.6-338.4 Mafic Volcanic Flow	overall a pale grey to green color, fine grained with mottled texture with locally moderate crystalline mafic fragments in weak stockwork chert texture or on local silicification of the mafic. E.O.H. at 338.4 Core stored at Tally Pond Camp.	no moderate chlorite as a patchy - locally stockwork texture alt. see 2-3% siliceous mining - note patchy apatite alt the alt is like above but considerably weaker & much less extensive	see 1-2% total sulfides as pyrite + trace sphalerite as local medium grained cross-cutting stringers.	