

**Billiton Exploration Canada Ltd.
Diamond Drill Log**

PROJECT: Celtic-Billiton JV	DRILLED BY: Petro Drilling	DATE STARTED: 15.9.99	AZIMUTH: -50	LOCATION: 10+00S, 10+50E	HOLE #: LB -99 - 03
PROPERTY: Lake Bond	LOGGED BY: Barry Greene	DATE COMPLETED: Sept. 19, 1999	DIP: -50	UTM: 559495.07E, 5427958.54N	SHEET #: 1
LICENCE: 6147M	CORE SIZE: NQ		TOTAL DEPTH: 232.6m		

FROM Au	TO	DESCRIPTION	SAMPLE #	FROM	TO	LENGTH	%REC	Cu	Pb	Zn
0	13.70m	overburden / casing								
13.70	79.64m	Pillow lava Dark green, fine grained flow with epidote rich selvages. - local tiny (<1mm) white leucoxene specks - calcite – epidote fractures to 5% throughout - possible bedded interpillow sediment @ 12.14m cut at low angle to core – 20 degrees TCA - pillow salvages and local strong fabric also cut at 10-15 degrees TCA 19.89 - 24.85m late fine grained diabase sharp contacts at 60-70 degrees TCA 24.85- 79.64m - variegated dark green and epidote green pillowed basa epidote amygdulcs in pillow centers to 2mm's approaching 6mm's towards margins - clots and veins of white calcite to 5cm at random orientation but often cut at low angle to core. -From 77.20 – 79.64m – strong fabric at 10-15 degrees TCA and minor folding locally developed sub-parallel to shear fabric?								
79.64	108.94m	Multiple Mafic Intrusion Upper contact orientated at 15 degrees TCA marked by wispy lime green epidote – chlorite altered shear. 79.64 – 85.73m – dark green lithology is fine grained and contains 5-10%, 1-2mm flecks of creamy white leucoxene or clay mineral - trace local pyrite grain - fine black chlorite specks after px. - chilled to nondescript texture over last 25cm								

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85.73 – 86.11m - large plag phyric intrusive with 15% plag laths up to 6mm long.. appears to be intruding the 79.64 – 85.73m lithology.

86.11 - 86.48m - finer grained mafic intrusive with more common mafic opaque minerals to 30% approx. Upper contact at 30 degrees TCA, basal contact nebulous.

86.48 - 86.65m - mafic intrusive akin to 85.73 – 86.11m

86.65 - 91.15m - mafic intrusive akin to 86.11 – 86.48m.

91.15 - 94.13m - fine grained, dark green mafic flow or intrusive?
Sharp upper contact at 80 degrees TCA, sharp basal contact at 20 degrees TCA

94.13 - 97.85m - large plag phyric mafic intr. akin to 85.73 – 86.11m.
Sharp basal contact at 20 degrees TCA.

97.85 - 108.94m - fine to medium grained mafic intrusive with equigranular plag and px. to 2mm. Wide chill margin at top for 2 meters. Unchilled at base, where intruded by another mafic intr.

110.05 - 110.13m - light green fault pug / mud seam.

110.13 - 114.80m - light green, strongly sheared deformed and sericitic zone of possible mafic origin. Preferred orientation of shear fabric at 15-20 degrees Tca. Cataclastic deformation.

- abundant fine white specks of leucoxene
- 113.3m isolated knockers of black chlorite with minor cpy to 4cm's - likely from mineralized zone below.
- badly broken core to 111.15m

114.80 128.97m

Mineralized Mafic volcanic
Dark green to black, strongly chloritic altered zone.
- irregular 1cm to 4cm epidote blotches / fragments throughout.

115.15 and 116.44m – small fracture fills and clots of brown sphalerite, cpy, po... insignificant concentration volumetrically (<0.5%)
- fine buckshot py. unevenly distributed from <1% to 10% in 1-2 cm clots.

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128.97 139.17m Synvolcanic dyke
 Dark green, fine to medium grained diabase.
 - irregular fracture fill dilatant zones of massive py and black chlorite to 3-4cm .. locally minor pyrrhotite
 - host rock not uniformly altered or mineralized, restricted to dilatant fracture zones.

139.17 165.12m Mineralized Mafic Volcanic
 Dark green to black with good chlorite alteration and good cpy, py, po - to 144.0m, contains distinctive epidote - silica alteration patches with a chloritic matrix.

144.0 - 156.47m - best mineralized and altered interval of borehole. Disseminated, fracture fill and stringer po, py, cpy and local sph.
 - interval is not true thickens as frequent core angles on stringers orientated at 10-15 degrees TCA
 - mineralization overall 10% of interval with 1-1.5% cpy overall and minor (0.5%) sph.
 - good chloritic host to mineralization
 - frequent 30-50cm sections of blocky and badly broken core... overall recovery of mineralized zone is 85%
 - some missing core in better mineralized zone from 150.70 - 152.10m

156.47 - 158.67m - bleached dyke. Sharpchilled upper contact at 70 degrees TCA, sheared / faulted basal contact over 53cm at 10 degrees TCA with half of core mineralized chloritic volc and half bleached dyke

158.67 - 165.12m - weaker mineralized portion of zone after above dyke / fault. More fractured to sheared and blotchy to streaky light green silica-chlorite alteration especially from 160.89 - 165.12m. Also contains local specks and veinlets of sph, po, cpy to <0.5% combined.
 Low angle shear from 161.65 - 162.0m ending in badly broken core to 162.50m

Bleached to dark green, fine to medium grained mafic dykes and possible intercalated flows.
 - numerous intrusive chilled contacts, locally calcite-epidote-silica filled amygdules.
 - locally finely plagiophytic to 1.2mm laths
 - early bleached intrusives (diabase?) contain 1-2% very fine disseminated py to 192.31m.
 - dozens of contacts every 50cm to few meters between similar dark green intrusives at various core angles.
 - local 1mm to 5mm clots of py, po and local 2.3mm py euhedra

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211.75 - 217.43m - siliceous, plag phyric intr.

- trace py. spy to good fault zone at bottom of hole
- ground caving badly at bottom of hole

END OF HOLE AT 232.6m