

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

PROJECT: Celtic-Billiton JV **DRILLED BY:** Petro Drilling **DATE STARTED:** 12.9.99 **AZIMUTH:** -255° **LOCATION:** 12+00S, 11+00E **HOLE #:** LB 99-02

PROPERTY: Lake Bond **LOGGED BY:** Barry Greene **DATE COMPLETED:** Sept. 15, 1999 **DIP:** -70° **UTM:** 559,613.48E, 5,427,817.30N **SHEET #:** 1

LICENCE: 6147M **CORE SIZE:** NQ **TOTAL DEPTH:** 275m
401m

FROM Au	TO	DESCRIPTION	SAMPLE #	FROM	TO	LENGTH	%REC	Cu	Pb	Zn
0	2.58m	Overburden / casing								
2.58	20.14m	Pillow Basalt Medium olive green, fine grained, epidote chlorite selvages - could possibly be high level (seawater interface) fine grained dyke - 2% hairline brittle fractures with calcite. - somewhat blocky core to 14m 15.70 – 20.15m - well developed hyaloclastic, glassy quench texture... 5% calcite in void spaces. - basal contact at 25 degree TCA. Not chilled.... may be continuous with intrusive below. 20.15 – 24.45 – Medium to dark green, finely plagiophyric (to 2mm plag) - locally bleached to tan colour in places, resembling pillow selvages - clots of dissem. fine grained and euhedral py and locally 2-3mm stringers of py... especially in better bleached areas. Overall 2-4% but up to 6% over 25 cm's - low angle basal intrusive contact at 5 degree TCA								
34.45	55.29m	Gabbro Medium grained salt and pepper texture, equigranular gabbro - 2mm plag and px. - trace py. - good fine grained chilled basal contact @ 45 degrees TCA.								

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55.29	59.18m	Olive Gabbro distinctive plagiophyric gabbroic intrusive. Outsized (4-6mm) plag. phenos and olivine phenos? Trace pyrite. - epidotized phenos at upper contact.
59.18	66.42m	Continuation of unit between 20.15-34.45m after intrusives - medium green fine grained, alternating bleached and unaltered sections with weak pyrite and po mineralization in bleached zones. - pale to tan glossy quenched feather textured areas
66.42	80.23m	Mafic Dykes Dark green mafic dykes with scattered plag laths.. multiple intrusion of slightly different dykes as is typical of this part of property.
80.23	88.83m	Mafic flow Medium to dark green, fine grained breccia. Pillow breccia in part and chloritic quench texture in salvages. - unmineralized, unaltered.
88.83	109.58m	Mafic dyke Dark green, massive mafic dyke with scattered 3-5mm plag. phenos and 2-3mm px phenos. - unmineralized, unaltered
109.58m	275.00m	Mafic flow (continued) Medium to dark green , somewhat variably coloured and locally bleached flow. - in part amygdular (calcite) - fine grained to aphanitic - pillowed in part with locally quenched selvages - 5% calcite-epidote fractures Mafic Dykes at 113.30 - 117.14m 137.62 - 139.59m 140.52 - 142.0m 144.95 - 156.85m - multiple intrusions 161.45 - 162.87m 166.17 - 167.00m

Mafic Dykes – continued

173.28 - 175.57m
 177.96 - 188.51m - coarse plagphyric dyke
 with fineing margins over couple of meters

 188.51 - 211.80m - multiple fine grained mafic (diabase)
 intrusion (sheeted dykes?)

211.80 - 226.10m - multiple coarse grained intrusion..
 phenocrysts up to 10mm comprising up to 15-20% of the
 lithology. fining margins with equiv. dykes

226.10 - 240.79m - multiple fine to medium grained intrusions
 locally quenched textures evident - 237.29 – 240.79m unusual black
 dyke with sparce 1cm euhedral plagioclase (ultramafic)

240.79 - 261.60m - spherulitic pillow lava? or pillowed intrusive
 that breached sea water interface. Good glassy chloritic quench
 textures.

261.60 - 275.00m - long plag phyric late mafic intrusive
 approaching basal contact of dyke @ 275.00m

275.00	275.86	Mafic Intrusive Continuation of medium green, finely plag phyric mafic intrusive. - good chilled, fine grained basal contact over 30 cm. orientation @ 10 degrees TCA - unaltered, unmineralised.
275.86	292.00	Mafic Volc. Dark green, fine grained volcanic containing locally distributed 1-2cm chloritic interflow material? - locally quite siliceous but colour not affected. - minor calcite filled brittle fractures especially from 288 –291m. - not mineralized.
292.00	311.22	Mafic Flow or fine grained intrusive Akin to 275.86 – 292.0m but lacking further interflow Chloritic material.... rather non-descript.

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311.22 316.57m

292 - 296.36m sharp contacts at top and bottom @ 30 degrees TCA of slightly bleached colour indicate mafic intrusive.

Diabase

Dark grey-green diabase with shear at upper contact @ 45 degrees TCA with broken basal contact. (may also be a shear?).

- minor pyritic fractures from 314 – 314.40m,

316.57 401.00

Mineralized Mafic Volcanic

Initially only weakly altered (chl-sil) and locally mineralized with scattered py-po +/- sph stringer.

- Abundant mafic intrusives.
- stringers of alt'n increase down hole

316.57 – 316.72m - Mafic volc? breccia

- cut off by mafic dykes above and below
- contains CA parallel chloritic fractures with minor sph , py and cpy

316.72 – 319.05m - diabase dyke

- 1% very fine dissem. py & po.
- fine intrusive texture.
- sharp basal contact @ 45 degrees TCA

319.05 - 328.85m - Coarse grained gabbro intrusive with up to 1cm white to light green saussureitized plagioclase.

- fine grained chilled margins
- basal contact @ 15 degrees TCA is a shear with fault related breccia and broken core to 329.4m.

329.4 - 337.96m - weakly mineralized, brecciated and sheared medium green mafic volc.

- brecciation of host likely hyaloclastic with dark chlorite filling voids interstitial to breccia frags.
- shearing and healed fault relate to quartz breccia running along core axis @ 5-10 degrees.
- 335.5 - 337.96m - a noticeable increase in bleaching and alteration (chl – sil) microfracturing... also 1-2% interstitial and stringer po, py and tr cpy/sph.
- 336.94 – 336.96m - 2cm stringer of massive po, sph, cp, py.
- sheared basal contact @ 45 degrees TCA

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337.96 – 347.00m - coarse grained gabbro intrusive with large greenish

white epitotized plag akin to interval from 319.05 – 328.85m.
2cm massive po-sph-py band at sheared basal contact – 45 degrees TCA

347.00 – 401.00m main mineralized interval of hole and most continously uninterrupted (by dyking) stringer / altered zone in drilling to date (i.e. LB 99-01 to LB -99-04.

Consists of chloritized and moderately silica flooded altered mafic host. locally Brecciated with silica-epidote altered and py,po mineralised frags in a chloritic matrix. Numerous mm to 2cm po-sph-py-cpy-ga., blebs and stringers at various angles to core axis.

- locally contains 2-3mm, round po, cpy, sph filled amygdules.

365.05 – 365.20m - unconsolidated mineralized (py?) fault gouge of a minor nature... does not displace stratiography.

372.61 - 401.0 – takes on more of a brecciated texture which is generally monolithic and at least in part hyaloclastic.

Note : General impression gained from looking at this core is one of drilling down the geology rather than oblique to it.

Hole shut down in stringer zone to probe with PEM.
PEM confirmation that we have passed off hole anomaly.

END OF HOLE