

Phelps Dodge Corporation of Canada

DIAMOND DRILL LOG

PROPERTY: Mary March (294)
HOLE No.: MM294-1
Collar Eastings: 535948.00
Collar Northings: 5409862.00
Collar Elevation: 0.00
Grid:

Collar Inclination: -45.00
Grid Bearing: 130.00
Final Depth: 300.23 metres

Logged by: J.G. Thurlow
Date: December, 1998
Down-hole Survey:

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	WIDTH	ASSAYS				
							Au	Ag	Cu	Pb	Zn
0	2.3	Overburden									
2.3	52.5	Basaltic volcanics, dark green to weakly reddish, unaltered on top, then weakly altered/mineralized.									
2.3	28.1	Weakly hematitic, essentially unmineralized pillow lava and pillow breccia, abundant calcite amygdules. Weakly developed hematitic alteration, especially in matrix of breccias. Rare speck py or chalcopryrite in amygdule. At 25.3m, minor silica veinlet contains small splashes chalcopryrite-pyrite and has weak associated bleaching alteration. Some bands of amygdules in pillows. Breccia clasts locally have leucocratic rims. Incipient sericitic alteration throughout. Blocky drilling down to 11m, reasonable thereafter. Basal contact gradational.									
28.1	42.0	Non-hematitic, greener, weakly to moderately pyritized basaltic volcanics. Core is moderately broken, "blocky drilling" again. Local greenish sericitic alteration along early fractures. Overall, weak alteration. Common minor disseminations of pyrite and minor pyrite in silica-calcite fracture-fills. More abundant (1% pyrite) from 35m-42m with local traces chalcopryrite or more rarely galena or light-coloured sphalerite. Mineralization in veinlets and dis-									

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FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	WIDTH	ASSAYS				
							Au	Ag	Cu	Pb	Zn
		seminated in altered matrix of breccias.									
	42.0 52.5	Less mineralized and altered, more broken pillow lava with common minor gouge zones. Some interpillow jasper. Only minor disseminated pyrite.									
52.5	89.9	Medium greenish, moderately altered and pyritized hyaloclastic breccia. Intermediate-felsic protolith. Distinctive, tight-packed, angular hyaloclastic breccia, variably altered and mineralized. No phenocrysts, no amygdules. Melanocratic, tightly-packed, angular fragments in more leucocratic matrix. Local pseudofragmental textures. Locally minor disaggregation, elsewhere complete disaggregation into fragments. Common fine leucoxene dust, especially visible in darker fragments. No amygdules. Moderate silica-sericite alteration (this is the most altered section in the entire hole). Localized strong alteration over 20-30cm. 1% disseminated pyrite on average, locally 3%-5%. Rare trace of chalcopyrite-sphalerite. Rare purplish fragment containing elongate silica-filled voids. Shearing, silica-calcite veining, broken and lost core at basal contact.									
89.9	122.5	Weakly to moderately altered mafic volcanics.	508125	105.80	107.30	1.50	N.A.	N.A.	N.A.	N.A.	N.A.
	89.9 107.5	Dark grey-green, massive basaltic volcanic rock. Less altered and mineralized than unit above. Overall									

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FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	WIDTH	ASSAYS				
							Au	Ag	Cu	Pb	Zn
		weak alteration and 0.5% pyrite as disseminations and fracture fillings. Local small amygdules and rare outsized larger amygdule. Moderately broken core. Generally weakly silicified, sericitized and chloritized with common cc aa. Localized weak bleaching alteration. Trace chalcopryite in amygdules; locally more abundant fine fracture-fills and disseminated chalcopryite (hundreds of ppm Cu) (e.g., 105.5-107.0m).									
		107.5 114.8 More altered coarse mafic volcanoclastic. Overall moderate alteration with 1% disseminated pyrite. Rare speck chalcopryite. Moderately broken core.									
		114.8 122.5 Massive, weakly silicified mafic volcanic, as 89.9-107.55m. Minor small amygdules. 0.5% disseminated pyrite. Moderately broken core. Lower contact is moderately broken core but no significant shearing.									
122.5	300.2	Intermediate/felsic intrusive/flow complex. k = 0.01-0.02 throughout.									
		122.5 175.5 Medium grey-green, massive dacitic volcanic rock with locally brecciated sections. Resembles massive sections higher in the hole. This unit may be synvolcanic intrusive into the basaltic unit above. Weakly sericitized and chloritized. No amygdules, common fine leucoxene dust. Rare small, irregular silica-filled voids. Weak bleaching alteration locally highlights greenish sericitic plagioclase									

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FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	WIDTH	ASSAYS				
							Au	Ag	Cu	Pb	Zn
		laths which are otherwise invisible. Anomalous disseminated pyrite (0.25%-0.5% on average). Moderately broken core with minor brittle and ductile shears. Locally quite broken. Local nodular texture with nodules centred on small silica-filled vesicles. Basal contact is gradational and arbitrary.									
	175.5 300.2	Hyaloclastic breccia facies of the subunit above, angular, fragment-supported. Melanocratic fragments in more leucocratic matrix. Texturally similar to 52.5m-89.9m, but much less altered and pyritized. Abundant fine leucoxene. Incipient to weak silica-sericite alteration. Local alteration along well-developed perlitic cracks and quench fractures. Anomalous disseminated pyrite locally 0.5% to 1%. Some irregular and diffuse silica-filled voids; some very elongate, aligned voids. Minor massive sections. Overall, lithologically homogeneous. From 218m-232m a few fractures running subparallel to core have distinctive graphitic coating; should produce EM response.									
		Lithogeochemical samples:									
	MM-294-63.2m	Felsic hyaloclastic breccia, weakly-moderately silicified and sericitized. 1% disseminated pyrite.									
	MM-294-300.2m	Felsic hyaloclastic breccia. Darker fragments in lighter matrix. Fairly hard and siliceous. Common fine leucocratic specks (leucoxene?). Minor disseminated pyrite.									

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FROM	TD	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	WIDTH	ASSAYS				
							Au	Ag	Cu	Pb	Zn

80 core trays

Casing pulled (extensive caving would prevent re-entry)

Hole Started: December, 1998

Hole Completed: December, 1998

No trapari testing

NO core

Hole was not lined with plastic pipe.

UTM Coordinates are Zone 21, NAD 27

DOWN-HOLE SURVEY DATA

DEPTH	INCLINATION	BEARING
300.23	-45.00	130.00

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