

Deep Mill Level Zone (DMLZ) of Ertsberg East Skarn System, Papua; Correlation between Structure and Mineralization to Determined Characteristic Orebody of DMLZ Mine

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Abstract : The Ertsberg East Skarn System (EESS) is located in the Ertsberg Mining District, Papua, Indonesia. EESS is a sub-vertical zone of copper-gold mineralization hosted in both diorite (vein-style mineralization) and skarn (disseminated and vein style mineralization). Deep Mill Level Zone (DMLZ) is a mining zone in the lower part of East Ertsberg Skarn System (EESS) that product copper and gold. The Deep Mill Level Zone deposit is located below the Deep Ore Zone deposit between the 3125m to 2590m elevation, measures roughly 1,200m in length and is between 350 and 500m in width. DMLZ planned start mined on Q2-2015, being mined at an ore extraction rate about 60,000 tpd by the block cave mine method (the block cave contain 516 Mt). Mineralization and associated hydrothermal alteration in the DMLZ is hosted and enclosed by a large stock (The Main Ertsberg Intrusion) that is barren on all sides and above the DMLZ. Late porphyry dikes that cut through the Main Ertsberg Intrusion are spatially associated with the center of the DMLZ hydrothermal system. DMLZ orebody hosted in diorite and skarn, both dominantly by vein style mineralization. Percentage Material Mined at DMLZ compare with current Reserves are diorite 46% (with 0.46% Cu; 0.56 ppm Au; and 0.83% EqCu); Skarn is 39% (with 1.4% Cu; 0.95 ppm Au; and 2.05% EqCu); Hornfels is 8% (with 0.84% Cu; 0.82 ppm Au; and 1.39% EqCu); and Marble 7 % possible mined waste. Correlation between Ertsberg intrusion, major structure, and vein style mineralization is important to determine characteristic orebody in DMLZ Mine. Generally Deep Mill Level Zone has 2 type of vein filling mineralization from both hosted (diorite and skarn), in diorite hosted the vein system filled by chalcopyrite-bornite-quartz and pyrite, in skarn hosted the vein filled by chalcopyrite-bornite-pyrite and magnetite without quartz. Based on orientation the stockwork vein at diorite hosted and shallow vein in skarn hosted was generally NW-SE trending and NE-SW trending with shallow-moderate dipping. Deep Mill Level Zone control by two main major faults, geologist founded and verified local structure between major structure with NW-SE trending and NE-SW trending with characteristics slickenside, shearing, gauge, water-gas channel, and some has been re-healed.

Keywords : copper-gold, DMLZ, skarn, structure

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