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Petrography and Geochemistry of Metamorphic Rocks from the Logbadjeck Quarries, Littoral Region Cameroon and the Environmental Impact.

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This study was carried out at Logbadjeck Quarries. We studied the petrography and geochemistry of biotite gneisses and amphibolites to evaluate the environmental effects of blasting. Under the Karl-Zeiss microscope biotite gneisses show a granoblastic texture made up of quartz (40-45%), biotite (20-25%), plagioclase (<21%), amphibole (1-2%), and opaque minerals (5%). Amphibolites are granoblastic consisting of amphibole (60-70%), biotite (15%), quartz (~5%), plagioclase (~5%), and opaque minerals (~5%). XRF and ICP-MS techniques were used for the determination of major, trace and REEs. Biotite gneiss is acidic (SiO2: 64-72%), tholeiitic, peraluminous with S-type composition and plots in the igneous protolith. Amphibolite is ultra-basic to basic (SiO2: 39-48%), tholeiitic, metaluminous with I-type composition and also plots in the igneous protolith. Trace multi-element normalized diagrams possess Ba, Nb, Sr, and P anomalies which are characteristics of crustal source. Their REE pattern show negative Eu anomaly which is an indication of LREE enrichment over HREE. Blasting of the aggregates will cause ground vibrations, noise pollution, air pollution, water pollution and flyrock.