
SESSION 239**G07.03 - Sustainability related to geomorphological processes and resources****THURSDAY, August 26, 2004 - 9:00****Room: 11**

Conveners:

Cavallin Angelo, Cendrero Uceda Antonio

239-4 Poster Gonçalves, Luis**WASTE MUD CHARACTERIZATION. A CONTRIBUTION TO QUARRIES ENVIRONMENTAL IMPACT MITIGATION AND TO A SUSTAINABLE USE OF A NATURAL RESOURCE**GONÇALVES Luis¹, OLIVEIRA Alvaro², CAETANO ALVES Isabel¹¹ - Earth Sciences Centre, University of Minho, Portugal² - Geological and Mining Institute, Portugal

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In the northeast Portugal region (Trás-os-Montes), fluvial Cenozoic deposits are an important source of raw materials used in the construction industry. These deposits are mainly composed by gravel and sandy to muddy-gravel bodies, with some muddy-sand and clay bodies. These deposits are preserved in hilltops due to topographic inversion. The deposits are quarried for the extraction of sand and gravel. This coarse fraction is separated from the silt-clay matrix (mud) by wet sieving. The mud matrix consists on about 20-60% of the extracted material. After the wet sieving process, the mud is located in settling tanks, usually placed in abandon areas of the quarries, or in a neighbor area. Because almost all the quarries are placed on hilltops, these tanks are usually found there or in the slopes of the hills. There are some environmental impacts associated to this extractive industry. Landscape degradation due to the decreasing of the topographic level, associated with the visual impact of the quarries and mud tanks. The instability of some mud tanks is another hazard, due to the potential occurrence of mass movements. The mud also reduces the soil development and the vegetation growth. Therefore, soil recovery is a difficult process constituting a negative effect on land populations. To know the main characteristics of these waste muds, compositional studies and technological tests were performed. The results indicate suitability for application in ceramic construction industry (manufacture of bricks, tiles and other related materials). The compositional and technological characterization of these waste muds indicate their potential as a useful sub-product. The use of the waste muds in the ceramic construction industry will increment the economic value of these deposits as a natural resource. This procedure will also contribute to the mitigation of the environmental impact caused by this extractive industry. This approach can be implemented in other quarries contributing to the sustainable use of this natural resource.