Cleaner production for rock quarrying 'Campel Construções e Máquinas Pesadas Ltda'

PONTES, J. C. [a*], SILVA, V. P. [b], LIMA, V. L. A [c], NASCIMENTO, P. H. M. [d]

a. Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Norte, Natal-RN

b. Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Norte, Natal-RN

c. Universidade Federal de Campina Grande, Campina-PB

d. Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Norte, Natal-RN

**Corresponding author, pontesblaster@gmail.com*

Abstract

At this turn of the century, several sectors of Brazilian industry still maintain investments in end-of-pipe control, when it should be in preventions, which would avoid or minimize pollution during the production. In the mineral sector, mainly in the mining operation, it still makes use of end-of-pipe technologies. Regarding the rock blasting operation using explosives, loading and transportation, numerous socio-environmental problems have been occurring as wastage and generation of residue throughout the operation process, affecting workers' quality of life, the well-being of communities and the surrounding environment. In this mineral sector, the environmental problems seems to be related to the fly rock, the vibrations, the wastes generated, the emission of dust and gases after the detonation, the increase of the noises, besides the visual and landscape alteration. Therefore, the present study aimed to propose the application of the cleaner production on the rock blasting in the rock quarry of Campel Construções e Máquinas Pesadas Ltda, located in Taipu-RN, aiming at the reduction of waste and the generation of residues. Proceeding the study, the following methodological procedures were used: survey of references, book reports and field research at the mentioned quarry. A diagnosis was made of the mining operation process, followed by the loading and transport phase of the disassembled material. The results of the study and the diagnosis of the situation in which the quarry is located in relation to the waste that has been generated in the phases of the mining operation. It is concluded that the application of cleaner production techniques: it will imply in optimizing the explosive load ratio in the rock blasting carried out in the quarry object of study, it can provide a greater efficiency in the productive process and decrease of the problems listed above, as well as, quality of life.

Keywords: *Cleaner production. Pollution Prevention. Rock Blasting. Quarry.*