

METHODOLOGY TO RECOVER SOILS DEGRADED BY THE MINING INDUSTRY OF NON METALIC MATERIALS

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ABSTRACT The mud from domestic and industrial water treatment plants is placed in the sanitary deposits or other areas that usually are not appropriate, and therefore, new solutions are required. The soils that receive these wastes lose their capacity and fertility. At the same time in the soil are generated contaminated products, such as lixiviated, gases and epidemic focus with higher organic and inorganic concentration and heavy metals. Simultaneously, some areas have been submitted to intense mining process to obtain non metallic materials used in the civil construction around cities, that involves removal of the soil, causing severe alteration of the ecosystem. These areas could be restored through the introduction of the residual of these plants. This paper presents a methodology to identified the potentiality of the utilisation of the domestic and industrial wastes from the water treatment plant, in the laboratory scale, and combines techniques to be used in the recuperation of soils applying plant species as bioindicators. The technical and economic viability of this methodology also is analysed. The parameters utilised in the laboratory tests are basically as follows: The characteristics and development of the vegetal species used as indicator of the soil behaviour under the effect of wastewater; the alteration of physical, chemical and biological proprieties of the soil by application of the wastes to the soil; Track the lee-washing by analyses of the variation of the toxic level with time by the assimilation of some components by the soils. The aim of this work is to give the basic information for further study on the alternative systems to be applied in industrial scale in wastewater disposal generated by the water treatment plants as in case of the San Fernando Plant located at the Medellin city in Colombia.