BIODEGRADABILITY AND ADAPTABILITY STUDIES OF GEOTHERMAL WASTEWATER

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Abstract

The purpose of this study was to identify the optimal conditions for the operation of biological treatment plant by carrying out biodegradability tests for geothermal wastewaters with high salt content. The biodegradation tests for geothermal wastewaters were carried out in a discontinuous flow bioreactor. The phases of the biodegradation process were: adaptation of the biological sludge, control of the biological treatment process, experiments in the BATCH bioreactors.

The results of the biodegradability tests revealed that geothermal waters with high salt content influence the treatment process. The dilution of these waters with domestic water up to chlorine concentrations below 800 mg L^{-1}, makes the purification process to have a good biodegradation yields for CCO-Cr (about 75%) and CBO-5 (about 72%). If these geothermal wastewaters are not diluted to concentrations lower than 800 mg L^{-1}, the biological sludge after 6 days is mineralized, which makes the use of biological treatment plant to be impossible.

Keywords: *biodegradation, geothermal waters, mineral salts, wastewater*