Abstract

Urbanization and industrial development in coastal areas, producing a variety of municipal and industrial wastewater. The wastewater directly or after preliminary treatment in the sea, lakes, wetlands and rivers are draining. In recent years, increasing seawater desalination industry creates high volumes of heavy and salty waste water in the Coastal areas. Discharge the wastewater in the marine environment can be a huge negative impact on the quality of coastal waters and cause environmental area. However, sufficient information is based on experimental data or field measurements for the analysis of these trends is not available to scientific design and utilization of this facility is made difficult. In the present study, surface discharge heavy waste water from progressive coastal chanells through the development of an in vitro model, were studied. The behavior of the flow geometric and Hydrilic mixing in the environments and shallow waters from converge rectangular channels been studied. Four different convergence angles, three different concentrations of sewage flow, three different channel width and different depths of the host environment and their impact on the geometry of mixing waste water flow was studied. Pictures taken by a digital camera recording tests and then digitally transformed using digital data, dimensionless graphs extracted. The figures showed that the depth-to-width ratio of the receptor for the diffusion and dilution than H/X=4 is that the ratios of 6 and 12 showed better results. In conjunction with the channel convergence angles, angles of convergence between 12.5, 25, 45 and 90 channel convergence angle of 12.5 degrees due to accelerating and converging flow turbulence leads sewage to the sewage flow dilution operation it was better. Forecast geometry and mixing process goes on to develop real examples of progressive coastal channels for discharging heavy currents in coastal pollution have an important role

Keywords: rectangular channels converge, jet surface, viscous flow, mixing flow

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Ms.C thesis

Experimental Investigation of Converging Surface Jets in the Shallow Water

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September 2015