

Investigation of the Velocity and Angle Effects on the Behavior of Brine Discharge by Inclined Jet into the Stationary and Homogenize Ambient

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Abstract

The aim of this study was to find the angle and velocity of discharge of brine sewage into the marine ambient to prevent its environmental hazards. For this purpose, in this paper, a series of tests have been conducted on inclined negative buoyant jets with angles of 30, 45 and 60 degrees and different discharge rates. The main properties of the flow are determined by processing the image obtained from the color detector in the brine sewage. The results show that increasing discharge velocity does not affect the pattern of the distribution of concentration at the highest elevation of the center line, and this profile is independent of the flow velocity, but increasing the discharge velocity increases the path length and increases the dilution. Angle variations, in spite of changes in velocity affect the concentration distribution profile pattern at the highest elevation of the center line and increase the width of the current plume and the most evolution and dilution occurs at the 60° angle.

Keywords: *Desalination, Brine discharge, Negative buoyant jet, Dilution, Outfall.*
