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Stilling Basin Performance Analysis by ADV SOBHAN ALEYASIN, University of Manitoba, NIMA FATHI, PETER VOROBIEFF, University of New Mexico — The outlet flow from dams, channels, and pipes, as well as the river flow, can cause damage to the bed of the river or channel and cause scouring of structures such as the saddles of bridges, because of the huge amount of the kinetic energy carried by the flow. One of the ways to dissipate this energy is via the use of stilling basins, which are structures that calm the flow. Here we present a study of one type of stilling basins for pipe outlets based on a widely used standard1. During the study, splitters and cellular baffles were placed in the stilling basin, and their locations were changed to assess their effect on the flow dissipation. Velocity at several locations in the basin was measured via acoustic Doppler velocimetry (ADV) for different Froude numbers to investigate the effect of flow rate and inlet velocity. Based on the findings of the experiments, we make several suggestions regarding the efficiency and geometry of stilling basins.

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