

**MODELLING INTERCEPTOR DRAINS FOR
CAPTURING
CANAL SEEPAGE ALONG MAIN CANALS**

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ABSTRACT

The present study was about the investigation of performance and suitability of interceptor drains to capture canal seepage losses using a physical sand tank model. The model was designed and assembled especially for this purpose. The tank was filled with sand of permeability of 12.67 m/d, for the experimentation purpose in the physical sand tank model. The main objectives were to evaluate the effectiveness of the drains in the form of magnitude of steady drain discharges and free surface profiles after the introduction of the interceptor drains in the vicinity of a canal in the physical model. For this purpose, drains of different sizes were introduced at different depths.

To avoid a large number of experiments for the interceptor drains, an existing numerical model was used to compute free surface profiles and drain flows. The results of the numerical model have shown that the free surface at the drain position converges the level of the drain, but the data observed on the physical sand tank model has indicated that this was not true. The numerical model was modified on the basis of the data obtained by the physical sand tank model to compute the drawdown at the drain location. The free surface profiles and drain flows computed by the modified numerical model were compared with the measured free surface profiles and the drain flows of the physical sand tank model for their verification. The free surface profiles and drain flows predicted with the numerical model are found to be in close agreement with that of the physical model.