

Modeling of flow waters spills and their impacts on the treatment collectors

Discharge and sewerage systems, in bad repair or with discrepancies, generally carry amounts of clear flow waters having various origins the determination of which is proving to be difficult.

According to the literature, the presence or leakage of flow waters at the treatment collectors, poorly-managed, pollutes groundwater and disturbs the treatment plants working. Intrusion or extrusion of these waters with variable flow into the collector, has also a mechanistic impact on the determination of predominant parameters (velocity, pressure head) during a transient flow thus provoked, and often makes their determination difficult.

In the event of an intrusion taken to be uniformly distributed along the collector, our work initially consists in modeling this flow, in an approximate way, and then determining the pressure head–velocity pair based on the Saint Venant equations.

This study of a vital interest is useful not only for the sizing of the treatment collectors but also for the calibration of the structures which are necessary to management such as storm overflows , by-pass weirs, etc.

Key words: clear flow waters; sewerage system; CFW (clear flow waters) intrusion; sewerage system rehabilitation; law of orifice flow.