A.R.I.

Aquestia
Directing the Flow

Case Study

Nairobi, Kenya

Almost 20% improvement in efficiency of local water pipeline achieved by replacing old ball air valves with new A.R.I. air valves

Background

In Nairobi, the capital of Kenya, the Nairobi City Water and Sewerage Company supplies 550,000m^3 through several regional water supply systems against a daily demand of 740,000m^3 - a shortfall of 190,000m^3 The Kabete gravity water supply system, which is one of the major supply systems, has two parallel DN450mm steel pipelines of approximately 7km long.

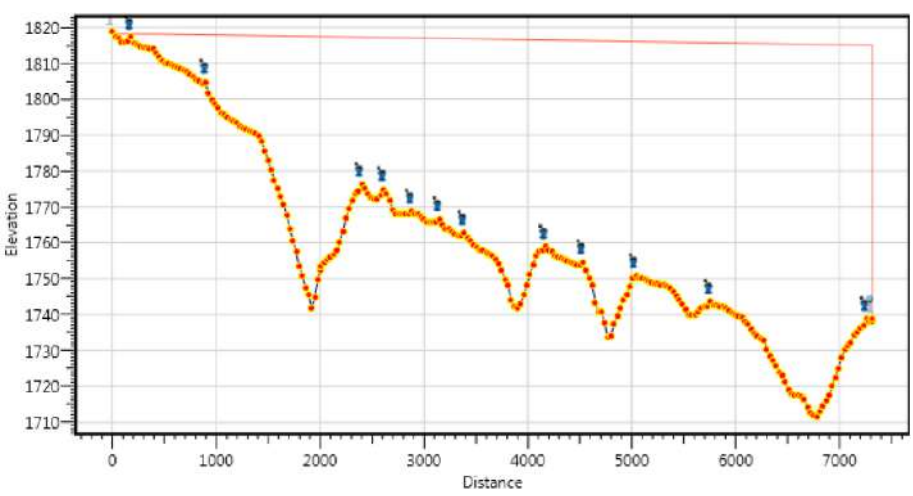
Challenges

The existing old ball air valves in the pipeline were of poor quality. This caused the system to supply 26,000m^3/day which was below the design capacity. The low flow rates were an indication that air in the pipeline was reducing capacity.

Solution

In October 2015, an ARIavCAD analysis was carried out. Following the analysis report (see below), it was recommended to replace the old ball air valves with ARI nominal D-060 high flow model. These high-capacity air valves are not prone to water leaks, ensuring effective air management and water flow rates corresponding to the design.

Profile View With Air Valves



Results

After having installed just 50% of the intended air valves, the flow rate gradually increased from 26,000m^3 to 31,000m^3 per day - an increase of 19%! - despite fluctuating levels at the Kabete Reservoirs.