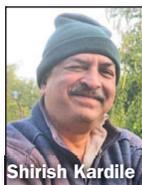


# From the Board

## Town Faces Double Trouble Because of Failed Drainage



Shirish Kardile

I recently visited a town about 280 km from Mumbai that's known for its intricately crafted, hand-woven silk saris. The town's raw water source is an earthen balancing tank with 15–20 days of storage capacity. A canal periodically supplies raw water to the tank from a nearby reservoir. The tank is located above the water treatment plant (WTP), so the raw water is conveyed to the plant by gravity. The pure water is pumped to the town's reservoirs. The conventional WTP has a flash mixer, clariflocculator, and rapid-sand filter beds. Constructed in 2012 by the local municipal council, the plant's capacity is 9 MLD.

The operators (untrained but for a senior plumber) proudly showed me the newly constructed plant. The raw water turbidity was fairly low, with a green tinge (less than 10 ntu). A casual look at the equipment confirmed that none of the agitators or the clarifier's scraper bridge were operating. Moreover, the filter beds' "pipe gallery" was filled with water.

I asked the operator to start the clarifier bridge, and he explained the sludge gets disturbed and "floc" rises up. He further explained the clarifier was half full of sludge. He stopped using alum for the same reason.

When I asked him why the clarifier was filling with sludge, he told me there's "no place for the sludge to go." When draining the clarifier with an underground pipe, the sludge slurry gets accumulated in the *nallab*, a natural drain. Hence sludge from the clarifier accumulates inside. The plant contractor's "scope of work" was only up to the plant boundary. The municipal council was supposed to "deepen" the *nallab* and extend the drainage pipeline to a deeper drain for gravity disposal. However, the municipality had exhausted its funds, and the work was postponed.

The operator explained the risk of the backed-up sludge water entering the pure (filtered) water sump through the overflow pipe, which was at ground level. But he had a solution to the problem. He told me that before monsoon season (a high-turbidity period), he would empty the clarifier and remove the sludge manually.

I also asked about the water filling the filter pipe gallery. Apparently the water percolating through the balancing tank accumulated in the pipe gallery. Because the plant was lower, the water didn't drain naturally. As a result, the soil had become supersaturated with the water. The contractor provided pumps to keep the gallery dry, but of course, over time, the pumps had stopped working.

The council officers had accepted this reality. The district's public health laboratory routinely tested the plant's water, confirming it as "potable." This is just one of many examples of how so many things related to public health are kept quiet at many plants. Unfortunately, it's a classic case of nonaccountability.

***Author's Note:** For municipal water treatment plants in Maharashtra, or for that matter in India, sludge and wash-water (filter waste) disposal treatment isn't provided. Such waste is simply deposited into a natural drain. However, disposal treatment is mandatory for industrial wastewater plants.*

—Shirish Kardile,

AWWAIndia Strategic Board Chair



None of the plant's flash-mix agitators worked.



The plant's clarifier was half full of sludge.



Water percolating through the balancing tank accumulated in the pipe gallery.