

Vadodara Municipal Corporation Installs IMS I-BOX® Biological Odor Control System at City's Largest Plant, Protecting Protesting Citizens

With an expanding city population in the city of Vadodara, India, the Vadodara Municipal Corporation (VMC) approved construction of the city's largest sewage treatment plant in 2016. The Rajivnagar STP, which has a capacity of 78 million liters per day (MLD), was completed in 2018 by Rajkamal Builders Infrastructure Pvt. Ltd. The plant treats sewage to

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levels of biological oxygen demand, chemical oxygen demand, and total suspended solids that will be suitable for a crocodile park that will be built on the bank of Vishwamitri River, which passes through the city.

Because the plant was constructed in a densely populated area, odor control was a crucial aspect of the project. In fact, before construction even began, local residents expressed concern, asking for the plant to be located somewhere else. Given the community outrage, local agent EUROTEK Environmental Pvt. Ltd approached the builders to introduce a state-of the art solution to address residents' complaints. The I-BOX® 7000 biological odor control system from Integrity Municipal Systems

(IMS) was an excellent match for the needs of the community.

Working closely with the Rajkamal Builders Pvt. contractor, IMS designed an advanced two-stage biological system that provides point-source odor control. The system uses a biological reaction phase for the removal of H₂S in the first stage with an inert inorganic media widely used for biological treatment. The adsorption phase in the second stage polishes residual H₂S and organic odors from the airstream with a carbon-based media. The airflow capacity of the systems was designed at 1500 m³/h with inlet H₂S concentration of 50 ppm average and

100 ppm peak. The H₂S removal efficiency is 99% with an estimated 10-year life of the biological media. The biological system was installed at the raw sewage pumping station treating the odors from the wet well chambers.

Prior to the Rajivnagar STP inauguration – before the I-BOX® odor control system was installed - a few residents displayed their concerns about odor from the plant leading to health issues by ransacking the office of the plant, even breaking the window panes. VMC had already foreseen this issue and enforced the installation of the odor control system during construction of the plant. Within a week after the system installation, IMS personnel were at the site for the start-up of the odor control system. The bad odors caused by H₂S were eliminated the same day the system was started up. Within two weeks, acclimation of the biological bed was achieved and the system delivered “zero” odors at a low operation cost.

Pratik Patel, head of operations and maintenance for the 78 MLD STP Vadodara site, Rajkamal Builders Infrastructure Pvt. Ltd, commented, “Uncontrolled foul odors could easily drift into public spaces and residential areas located around the plant. The residential community wanted the odors gone and we wanted the complaints to stop. Because of the I-BOX® odor control system, we had a substantial reduction in hazardous air emissions, helping us resolve all the odor-related complaints from the nearby communities instantaneously. We have had no technical issues with the I-BOX® and I can say without a doubt that we at RBIPL are quite happy with the product.”



IMS I-BOX® 7000 at Rajivnagar STP