

Solutions for Municipal Field

Water Supply and Sewerage

14,000 m³/day Sewage Treatment Plant Salori Allahabad for UPJN^(*1) - Sewage Treatment Plant Commissioned under NMCG^(*2) -

(*1) UPJN: Uttar Pradesh Jal Nigam

(*2) NMCG: National Mission for Clean Ganga

Highlights

We, Toshiba, meet our customer needs with cutting-edge knowledge, experience and expertise

- With proven state-of-the-art SBR^(*3) technology, the 14,000 m³/day sewage treatment plant project in Salori Allahabad produces high quality treated water and discharges the water into the Ganges.
- Our project complies with the latest norms of CPCB^(*4).

(*3) SBR: Sequencing Batch Reactor

(*4) CPCB: Central Pollution Control Board

Project Overview

Client	UPJN, Allahabad with the joint efforts of NMCG
Location	Salori Allahabad, India
Capacity	Sewage treatment: 14,000 m ³ /day
Year of Delivery	November 2014
Plant Description	The World Bank provides assistance to NGRBA ^(*5) as well as technical and financial support to the Government of India, for the 14,000 m ³ /day sewage treatment plant project in Salori Allahabad to abate pollution of the Ganges. DBOM ^(*6) and transfer of sewage treatment plant including main pump station, wastewater pump station, appurtenant structures in Salori Allahabad, Uttar Pradesh.



(*5) NGRBA: National Ganga River Basin Authority

(*6) DBOM: Design Build, Operate and Maintain

Customer Overview

NMCG is an independent body of the Government of India, which has been constituted to take measures for prevention, control and abatement of environmental pollution in the Ganges and to ensure continuous adequate flow of water so as to rejuvenate the Ganges.

Meanwhile, UPJN is the state body in charge of executing the projects related to water and waste water in the state of Uttar Pradesh. Founded in 1975, UPJN enforces and implements the mandate of NMCG to rejuvenate the Ganges as one of its activities with the aims of developing and regulating water supply and sewerage services in the whole state except the cantonment areas.

Current Issues in India

India with the world's second largest population is advancing rapidly. However, a large part of the population does not have access to drinking water and proper sanitation because the vast majority of wastewater is discharged without treatment into water resources, such as rivers, lakes and groundwater. The rejuvenation of the Ganges under the aegis of NMCG is one such platform where joint efforts are made by the central and state governments, urban local bodies and private sectors to create a synergy for the success of the 'Clean India' Initiative. The 14,000m³/day sewerage treatment plant in Salori Allahabad is one of the projects commissioned under this initiative and supported by the World Bank.

Customer Requirements

- Meet UPJN's requirements to design, provide, construct, install and commission the 14,000 m³/day sewage treatment plant with pump station on a turnkey basis using the modern technology on the NMCG platform.
- Satisfy the required treated water quality, BOD^(*7) < 10 mg/L; TSS^(*8) < 10 mg/L; COD^(*9) < 100 mg/L; pH^(*10): 5.5 to 9.
- Discharge high quality treated water into the Ganges.

(*7) BOD: Biochemical Oxygen Demand

(*8) TSS: Total Suspended Solids

(*9) COD: Chemical Oxygen Demand

(*10) pH: Potential of Hydrogen

Proposed Solutions

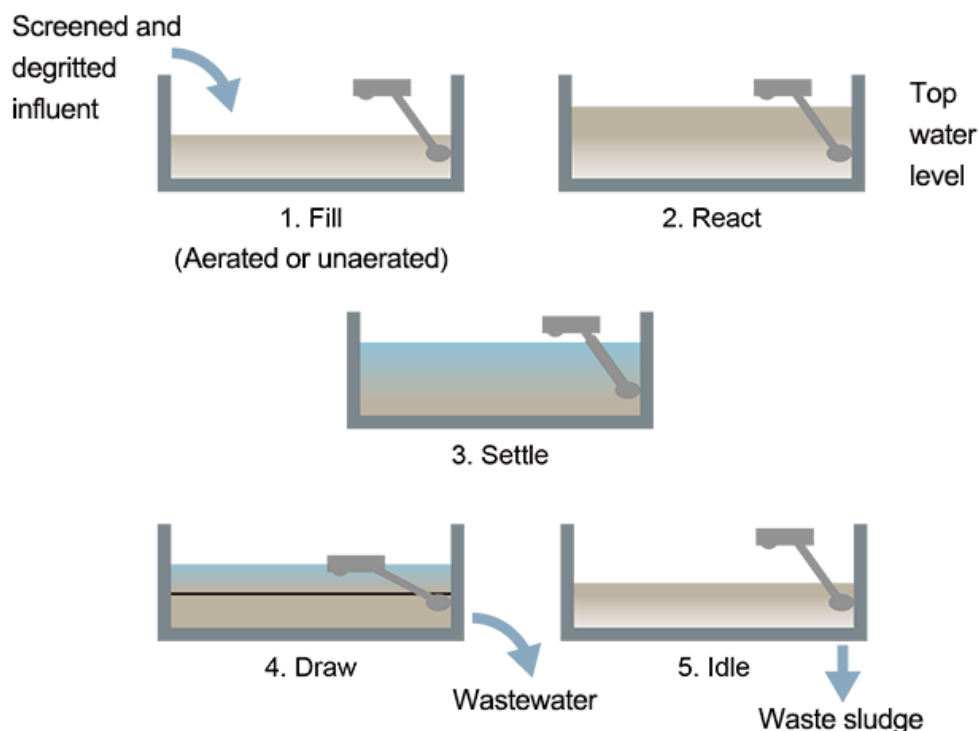
- Execute the 14,000 m³/day sewage treatment plant project on a turnkey basis using the proven modern SBR technology.
- Ensure high quality treated water is discharged into the Ganges as per the latest norms of CPCB.
- Satisfy the treated water quality required by the customer, BOD < 10 mg/L; TSS < 10 mg/L; COD < 100 mg/L; pH: 5.5 to 9.
- Treat sludge generated during the process of sewage treatment by pressing the sludge between two belts to squeeze excess water, to allow dewatered sludge to be used as manure or in landfills.

Solution Contribution

SBR technology

SBR is a variant of the activated sludge process, which operates on the fill and draw principle. The SBR process eliminates the need for primary and secondary clarifiers. The unit processes of fill, react, settle, draw and idle occur sequentially on a cyclic basis. In the fill phase, screened and de-gritted wastewater flows into the basin. In the react phase, the basin is aerated. During the settle phase, aeration is stopped to allow solids to settle to the bottom of the basin. During the draw phase, treated wastewater is decanted. Sludge is wasted during the idle phase.

SBR Fill and Draw Basic Theory



Rejuvenation of the Ganges

High quality treated water is discharged into the Ganges as per the latest norms of CPCB. The treated water quality meets the customers' expectations.

Dewatering and Sludge Treatment

The dewatering and sludge treatment equipment is used to remove 80% of the excess water in the process of sludge treatment.

Photos of the Sewage Treatment Plant



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Toshiba Infrastructure Systems & Solutions Corporation

72-34 Horikawa-cho, Saiwai-ku, Kawasaki-shi, Kanagawa, 212-8585, Japan

Telephone: +81-44-331-0811 Fax: +81-44-548-9569 <http://www.toshiba.co.jp/sis/en/environment/index.htm>

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