

DEWATS FOR JAIN TEMPLE, TALEGAON DISTRICT, WARDHA

PROJECT BRIEF

Jain Temple is located 100 kms from Nagpur on the Nagpur-Amravati National Highway (NH4). Spread over 3 acres, it is situated in the midst of a lush green forest, with mountains on two sides.

The owner of the temple - Shri P. Virendramal Jain Mahattara Manohar Srijji Smiriti Trust, Chennai selected DEWATS as it is a low-cost option.

There will be a constant flow of 11,000 liters on most days; and excess load i.e., 33,000 liters during few days of the annual gathering. Hence DEWATS primary unit has been proposed for the maximum flow (i.e. in order to bear the extreme load); and secondary and tertiary DEWAT units have been designed for normal flow.

PROJECT OUTCOMES

- Efficient management of wastewater generated at the temple
- To meet the regulatory norms of PCB of wastewater treatment and reuse.
- To protect the environment from direct pollution
- To treat and reuse the treated wastewater for non-human contact purpose

SYSTEM IN BRIEF

Wastewater from the kitchen, washbasins, toilets and bathrooms in the guesthouse and dormitory is conveyed to last manhole near the project location. Wastewater from the manhole flows into treatment system consists of;

1. **Settler** - a sedimentation tank for retaining articles by settling, over a specific time frame
2. **The Anaerobic Baffle Reactor** - ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket
3. **The Anaerobic Filter** - comprises of filter bed for treatment of dissolved organic matter. Wastewater comes in contact with active bacterial mass which grows on filter material.

SALIENT FEATURES

Source: Domestic wastewater from the temple premises (i.e. from the Kitchen, Wash Basin, Toilets and Bathrooms in Guesthouse and Dormitory)

Design capacity: 11 m³ up to Secondary; and 33 m³ upto Primary Treatment

No of users: 50

Peak flow: 6 hrs

Influent quality: BOD: 350 mg/l/
COD: 700 mg/l

Effluent Quality: BOD: 25 mg/l /
COD: 70 mg/l

Efficiency: BOD: 92.8% (Expected)
COD: 90.0% (Expected)

PROJECT SPECIFICATIONS:

Funding Agency: P. Virendramal Jain Mahattara Manohar Srijji Smiriti Trust, Chennai

Implementing Agency: Shri Mahattara Manohar Srijji Smiriti Trust Talegaon

Supporting Agency: CDD Regional Office, Nagpur

Construction Period: 10 months

Construction start date: April 2017

Construction end date: January 2018

Current status: Construction completed, not commissioned

Construction Cost: Rs. 12.55 lacs

Operation Cost: Rs. 60,000 p.a.

MODULES ADOPTED

Settler (Settler is for 33 m³)

Volume: 61.505 m³

Area of construction: 17.931 m²

Anaerobic Baffle Reactor

Volume: 59.99 m³

Area of construction: 17.492 m²

No. of chambers: 4

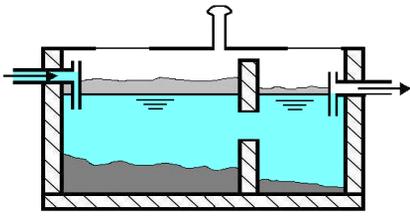
Anaerobic Filter

Volume: 45.93 m³

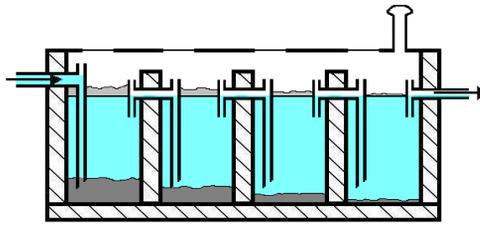
Area of construction: 13.39 m²

No. of chambers: 2

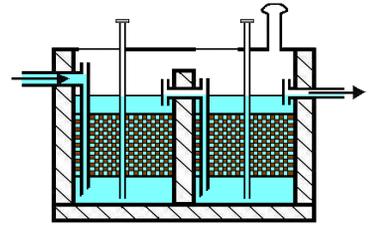
PROCESS FLOW DIAGRAM



Settler



Anaerobic Baffle Reactor (ABR)



Anaerobic Filter (AF)

OPERATION AND MAINTENANCE

- O&M cost is Rs. 60,000 per year including salary of part-time caretaker.
- The Pump will be used only for 4-5 days in a year during large festival gathering.
- The Wastewater Treatment Plant is operated and Maintained by Jain Temple trust through trained maintenance staff.
- A regular schedule is followed for maintenance like periodic check, removal of sludge from settler and baffle reactor.
- The filter media in the Anaerobic Filter will be washed once in 5-7 years.

REUSE OPTIONS

The treated water, after Secondary treatment (ABR+AF), will be safely disposed into the natural water body (*Nallah*).

LEARNINGS

DEWATS is customized to perform in the high fluctuations in flow.

