

DEWATS for Warkhed Villages (under MDP), Amravati - Maharashtra

PROJECT BRIEF

Villages under the Mozari Development Plan (MDP) in Amravati District, Maharashtra, have been guided by Rastrasant Tukdoji Maharaj on the importance of sanitation, liquid & solid waste treatment & cleanliness of villages, in "GramGita". Even today, sanitation facilities are still largely neglected in most of the villages.

4 of the 6 villages included in the MDP, located along Surya Ganga River, are polluting the river by discharging their wastewater directly into the river and affecting downstream users.

To fulfill RastraSant's dream of clean villages, the Government has undertaken the initiative to start a liquid waste treatment project in 6 villages included under MDP.

PROJECT OUTCOMES

- To meet wastewater treatment and reuse regulatory norms of the Pollution Control Board
- To protect the Surya Ganga river from direct pollution
- To treat and reuse the wastewater for non-human contact purposes

SYSTEM IN BRIEF

The wastewater is conveyed to treatment unit through open drains. Treatment system consists of 4 modules:

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.
4. **Planted Gravel Filter:** is used as tertiary treatment unit where aerobic and facultative degradation of dissolved organic occurs.

SALIENT FEATURES

Source: Domestic sources from Warkhed Village

Design Capacity: 70 m³/day

Peak Flow: 10 hours

Influent Quality: BOD: 300 mg/l
COD: 600 mg/l

Effluent Quality: BOD : <30 mg/l
COD : <60 mg/l

Efficiency: BOD - 90%
COD-90%

Kind of Project: DEWATS for domestic wastewater

Funding Agency: Divisional Commissioner,
Amravati GoM

Executed By: Sainath Infra land Pvt. Ltd. Amravati

Supporting Agency: CDD Regional Office, Nagpur

Construction Period: 11 Months

Construction start date: January 2015

Construction end date : November 2015

Current status: Commissioned & operational

Construction Cost: Rs. 30.41 Lakhs

Operation Cost: Rs. 25,000 p.a.

MODULES ADOPTED

Settler & Screen Chamber

Volume: 43.2 m³, 6 m³

Area of Construction: 29.25 m², 5.39 m²

Anaerobic Baffled Reactor + Anaerobic Filter

Volume: 103.5 m³

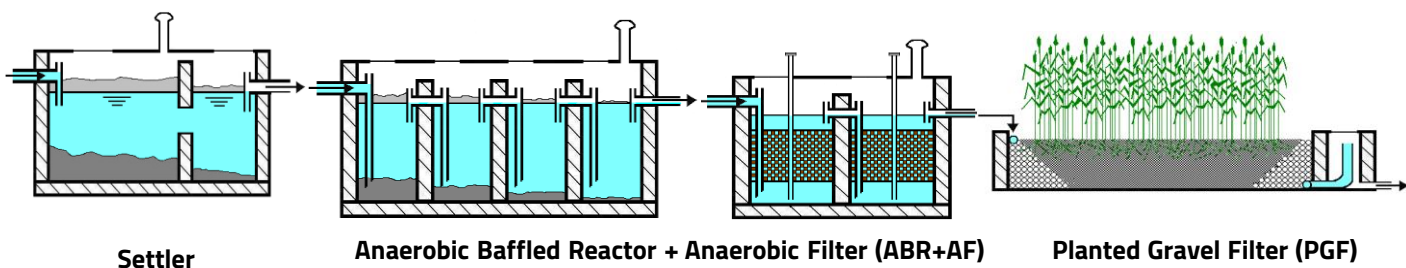
Area of Construction: 89.54 m²

Planted Gravel Filter (20 m³)

Volume: 40.5 m³

Area of Construction: 72.25 m²

PROCESS FLOW DIAGRAM



OPERATION AND MAINTENANCE

The wastewater treatment plant is operated and maintained at the village level by the Gram Panchayat.

A regular schedule is followed for maintenance - periodic checking and removal of sludge in the baffle reactor.

Regular harvesting of plants is done in the Planted Gravel Filter. The filter media is washed once every 4-5 years.

REUSE OPTIONS

Treated wastewater is safely disposed off in a nearby natural stream.

LEARNINGS

- Successful implementation of decentralized project at village level need to be integrated with Social interventions.
- DEWATS is very effective treatment technology for treating grey water at village level.
- Effective coordination with multiple Govt. agencies for successful implementation of project.

PERFORMANCE OF DEWATS™

Sample points	COD mg/l	BOD mg/l
Date of sampling: 27/04/2017		
ABR+AF Outlet	80	41
PGF Outlet	79	39