Public Toilet with DEWATS™

for Kalmeshwar Municipal Council, Mowade Layout, Kalmeshwar, Maharashtra

PROJECT BRIEF

Kalmeshwar is a town located 25 km away from Nagpur. It has a population of ~30,000. DEWATS™ has been constructed for a 12-seater public toilet complex at Mowade Layout. The toilet is maintained by Kalmeshwar Municipal Council; and comprises of a urinal, 6 cubicles for men and 6 cubicles for woman.

PROJECT OUTCOMES

- Efficient management of wastewater generated at the public toilet.
- To meet PCB's regulatory norms for wastewater treatment and reuse.
- To protect the environment from direct pollution.

SYSTEM IN BRIEF

Wastewater from domestic sources from the Public Toilet building is conveyed to the treatment unit through a sewer network. The Treatment system consists of 3 modules:

- **Settler:** is a sedimentation tank for retaining articles by settling over a specific time frame.
- **The Anaerobic Baffle Reactor:** ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket.
- **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.

There is also a collection tank, for collection of the treated water.

SALIENT FEATURES

Source: 12-seater public toilet, urinals, washbasin
Design Capacity: 10 m^3/d
No. of users: 480
Peak Flow: 8 hours
Influent quality:
BOD: 1,100 mg/l
COD: 2, 300mg/l
Effluent Quality: After tertiary treatment
BOD: 25 mg/l
COD: 40 mg/l
Efficiency: 95%

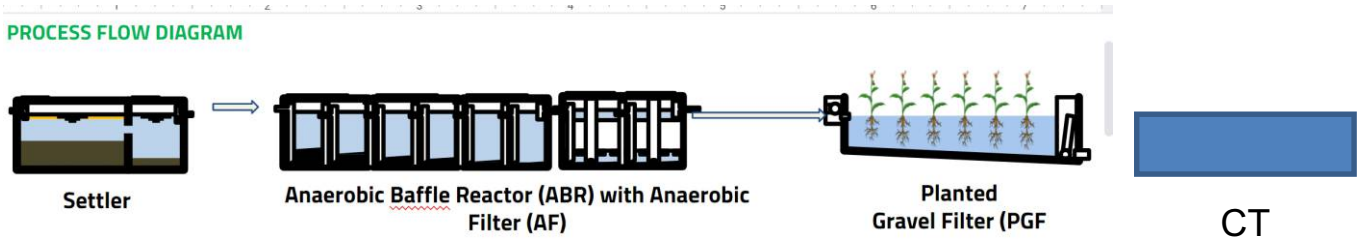
PROJECT SPECIFICATIONS

Funding Agency: Kalmeshwar Municipal Council
Implementing Agency: M/s Rajat Lambat, Nagpur
Construction cost: Rs. 17.09 lakhs
Construction period: 9 months
Start of operation: December 2020
Current status: Commissioned & operational
Area per beneficiary: 0.21 m^2
CapEx per beneficary: Rs. 3,561
OpEx per beneficary: Rs.83

MODULES ADOPTED

Settler - Volume: 14.10 m^3
Area of construction: 9.35 m^2
Anaerobic Baffled reactor - Volume: 18.90 m^3
Area of construction: 11.64 m^2
No. of chambers: 4
Anaerobic Filter - Volume: 12.75 m^3
Area of construction: 9.70 m^2
No. of chambers: 2
Collection Tank – Volume: 9m^3
Area: 15 m^2
Built up area: 104.64 m^2

PROCESS FLOW DIAGRAM



OPERATION AND MAINTENANCE

- The wastewater treatment plant is operated and maintained by the client. OpEx costs are in the range of Rs. 34,000 - 40,000 per year.
- A regular schedule will be followed for maintenance and includes periodic check of all modules, removal of sludge in baffled reactor and other required tanks.
- The filter media in the anaerobic filter will be washed once in five / seven years.

REUSE OPTIONS

- (After Tertiary Treatment), the treated wastewater is being reused for gardening

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