

Executive Summary

A major problem in urbanized areas is the collection, treatment and disposal of domestic wastes. Because large volume of sewage is generated in many cities/ towns and the waste is not treated adequately and disposed off in the open drains which flows downstream and mixes in water bodies. The intensive use of ground water and the large quantity of wastewater generation in modern society often pose a threat to ground water quality. Therefore it is very much essential to treat the domestic wastewater in proper manner by installation of adequate capacity sewage treatment plants (STPs) to prevent the contamination of ground water & surface water bodies etc.

Madhya Pradesh and Rajasthan state governments have 78 no. of operational/non-operational/under construction/proposed STPs. *As on today, there is no municipal installed Sewage Treatment Plant (STPs) exist in Chhattisgarh state.*

In Madhyapradesh State, under various schemes like National River Conservation Plan (NRCP), Bhoj wet land project, Betwa river conservation project STPs in 9 cities were constructed. In Capital City **Bhopal** there are 07 operational STPs of 80.18MLD total treatment capacity. Most of them are based on Waste Stabilization Pond/oxidation pond treatment technology, its treated wastewater got discharged in local drains which finally meets river Betwa. In **Indore** city, 02 STPs based on Upflow Aerobic Sludge Blanket (UASB) technology of total 90MLD capacity are in operation. There are 02 STPs in **Ujjain** of total 105MLD capacity However, only one STP of 53MLD capacity established at Sadaval village, Ujjain based on Kernal technology was operational. In **Vidisha** city, Kernal technology based 7.2MLD STP is in operation. At, Laltipara, **Gwalior** STP of 50MLD capacity based on Waste Stabilization Technology is in operation. Highly agglomerated city, **Jabalpur** has only one STP of 0.15MLD on Gwarighat.

The organic load i.e. BOD removal efficiency was found maximum upto 85% at Oxidation Pond technology based STP of 16.7MLD capacity at Badwai, Bhopal. Whereas, poorest organic load removal percentage was upto 1.5% which was at Gondarmau, Bhopal oxidation pond based STP. Other than, Gondarmau STP all STPs of Madhyapradesh state are complying the discharge standards.

In Rajasthan State, under Rajasthan Urban Infrastructure Development Project (RUIDP) funded by the Asian Development Bank (ADB) total **61 STPs** in 30 cities/towns of **842 MLD** capacity are proposed. Out of which, 14 STPs of six major cities i.e. Jaipur, Jodhpur,

Udaipur, Bikaner, SawaiMadhopur and Bhilwara are included. Along with this, 02 STPs at Kota & Rajasamand are ready to commission soon.

There are 08 operational STPs in capital city, **Jaipur** of 235MLD capacity based on Activated Sludge Process (ASP) & Moving Bed Bio Reactor (MBBR) treatment technology. In **Jodhpur** city, two STPs are in operation at Salawas (50MLD capacity of ASP technology) & Nandari (20MLD capacity of Oxidation ponds) and one more 50MLD STP is proposed at Salawas. In Kewara village, **Bhilwara** 10MLD (5.5+4.5MLD) Sequential Batch Reactor (SBR) technology based STP is in operation. One STP each based on waste stabilization ponds (WSPs) and oxidation ponds (OPs) are operational at **SawaiMadhopur** (10MLD) & **Bikaner** (20MLD) respectively. There is one 20MLD MBBR technology based STP is in operation at Eklingapura, **Udaipur**.

The organic load i.e. BOD removal efficiency was found maximum upto 97% at Moving Bed Bio Reactor (MBBR) treatment technology based STP of 1MLD capacity at Jawahar Circle, Jaipur. Whereas, lowest organic load removal percentage was upto 80-82% which was at Delawas-I & Delawas-II ASP technology based STP along with STP of Amer road. Other than, Delawas-I & Delawas-II and Amer road STP, all STPs of Rajasthan state are complying the discharge standards.

Majorly it was observed that, cities have no proper sewerage network to collect entire sewage. Due to inadequate collection system major part of untreated sewage discharged directly/indirectly in open drains which lead to surface water bodies. The partly collected wastewater has been treated in STPs and the majority of STPs are operating without obtaining consent to operate under Water (Prevention & Control of Pollution) Act, 1974 from respective SPCBs. All the STPs have by-pass arrangement. The oxidation ponds and waste stabilization ponds were in operation with a high retention time and lot of sludge deposited in it but these ponds were not cleaned regularly. These ponds do not have proper path/approach road and surrounding are covered with grass/ bushes. The overall maintenance of oxidation ponds & waste stabilization ponds was observed to be very poor. Proper records are not being maintained for the operation of STPs like inlet flow, outlet flow, sludge generation etc by the STP operators. It was observed that reuse/ recycling of treated wastewater is not planned yet. The treated sewage is being discharged in the nearest wastewater drain. Chlorination is not being done at outlet of any of the STP for control of Total/Feacal Coliforms.