

Project title	Design, Installation, and Operation of Treatment plant (0.3 MLD) for UASB effluent to produce potable quality treated water																																						
(Project leader and team members)	Project Leader: Prof. M. M. Ghangrekar Team Members: Prof. B. K. Dubey, S. M. Sathe (Research Scholar), I. Chakraborty (Research Scholar)																																						
Activities / Events /Achievement during the month	<ul style="list-style-type: none"> Plant is being operated and monitored regularly. Evaluation of different tertiary advanced oxidation processes in different dose combinations is being planned statistically. Initial screening test is in progress Plant visit by Mr. Ranbir Gupta on 24th February 2021 (1350 KLD and 300 KLD STP, Picture 1-6) 																																						
Outcomes/Outputs/Achievements during the month	<ul style="list-style-type: none"> The construction of the adjoining laboratory work is in progress. Boundary wall RCC work and building plastering work ongoing. Screening test of advanced oxidation process complete. Continuous operation of treatment plant with full run of tertiary treatment. <p>The performance monitoring of the plant for different parameters are as given below:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th><th>Parameter</th><th>Unit</th><th>Final value</th><th>Removal (%)</th></tr> </thead> <tbody> <tr> <td>1</td><td>COD (total)</td><td>mg/L</td><td>22.49</td><td>76.18</td></tr> <tr> <td>2</td><td>COD (soluble)</td><td>mg/L</td><td>15.33</td><td>73.7</td></tr> <tr> <td>3</td><td>Total nitrogen</td><td>mg/L</td><td>2.2</td><td>85%</td></tr> <tr> <td>4</td><td>Suspended Solids (volatile)</td><td>mg/L</td><td>12.2 (4.66)</td><td>76.5 (69.0)</td></tr> <tr> <td>5</td><td>Anionic surfactants</td><td>mg/L</td><td>0.35</td><td>90%</td></tr> <tr> <td>6</td><td>Disinfection</td><td>MPN/mL</td><td>Less than three</td><td>2-3 log scale reduction</td></tr> </tbody> </table>				Sl. No.	Parameter	Unit	Final value	Removal (%)	1	COD (total)	mg/L	22.49	76.18	2	COD (soluble)	mg/L	15.33	73.7	3	Total nitrogen	mg/L	2.2	85%	4	Suspended Solids (volatile)	mg/L	12.2 (4.66)	76.5 (69.0)	5	Anionic surfactants	mg/L	0.35	90%	6	Disinfection	MPN/mL	Less than three	2-3 log scale reduction
Sl. No.	Parameter	Unit	Final value	Removal (%)																																			
1	COD (total)	mg/L	22.49	76.18																																			
2	COD (soluble)	mg/L	15.33	73.7																																			
3	Total nitrogen	mg/L	2.2	85%																																			
4	Suspended Solids (volatile)	mg/L	12.2 (4.66)	76.5 (69.0)																																			
5	Anionic surfactants	mg/L	0.35	90%																																			
6	Disinfection	MPN/mL	Less than three	2-3 log scale reduction																																			

Activities Planned for next month	<ul style="list-style-type: none"> • Operation of plant at full flow (300 m³/d) • Process optimization for optimum dose of ozone, chlorine and UV retention to be conducted. • Evaluation of disinfection and advanced oxidation of representative recalcitrant compounds.
Expected Outcomes/Outputs/Achievements for the next month	<ul style="list-style-type: none"> • Optimization of tertiary AOP dosage and retention time. • Analysis of treated water parameters for assessing the suitability for different reuse.
Unknowns, risks, uncertainties (list only major ones)	Fund crisis may arise during operational phase as regular chemical analysis using high cost analytical grade chemicals and instrument charges for outside analysis is pre-requisite for understanding the fate of the xenobiotic compounds



Picture 1: Raw water (left most) and stage wise treated water quality