


Project for efficient industrial wastewater treatment at industrial park in Indonesia by using aerator

Project developer

EMATEC

- EMATEC (Environmental Management and Technology Center) is a foundation for environmental monitoring in Osaka which is established by Osaka prefectural government.
- EMATEC is a representative of the consortium and in charge of environmental monitoring.



MURC

- MURC (Mitsubishi UFJ Research & Consulting Co., Ltd.) is a consulting company in Tokyo and a major member of Mitsubishi UFJ Financial Group.
- In the team, position of MURC is a project coordinator and in charge of CO₂ reduction.



SUZUKI

- SUZUKI (Suzuki Industry Co., Ltd.) is an environmental research and manufacturing company in Kyoto.
- Role of SUZUKI is to analyze situation in each treatment facility and to provide detailed aerator installation plan. Also, aerator is provided by SUZUKI.



Background

The target facility, wastewater treatment facility of UPT KULIT Magetan, collects industrial wastewater from around 100 leather processing factories and aerobically treats wastewater by conventional diffuser. Now, since leather production in each factory is increasing, amount of wastewater from factories are also increasing and reaching almost maximum capacity of wastewater treatment facility.



Current condition of UPT KULIT

Project Outline

Therefore, DISPERINDAG (Dinas Perindustrian Dan Perdagangan) Provinsi Jawa Timur and MOEJ (Ministry of the Environment of Japan) team agreed to substitute existing diffuser in UPT KULIT by aerator and increase wastewater treatment capacity without expanding aeration tank because there is no space for further new tanks.

Location

UPT KULIT Magetan (Kabupaten Magetan, East Jawa province)

Outline of Technology

- Aerator increases concentration of dissolved oxygen (DO) in aeration tank by forming strong vertical wastewater and air circulation. By this function, BOD, COD and TN concentration in wastewater will be decreased compared with diffuser.
- Since pressure loss of aerator is much smaller than diffuser, aerator can reduce electricity consumption at blower by 30 to 50%.
- Since aerator needs no maintenance (e.g., regular change of diffuser), aerator can reduce maintenance cost compared with diffuser.
- In this project, semi-continuous operation of blower will be applied since aerator has enough aeration capacity for meeting wastewater regulation and 24 hour-operation is not necessary. This means aerator can reduce electricity consumption at blower, cost for electricity and CO₂ emissions from electricity use.



Aerator R1 by SUZUKI



Installation of aerator

Expected output

- Following special features of the aerator R1 by SUZUKI will be demonstrated at UPT KULIT Magetan during 2016 – 2018FY and relevant data will be monitored through the project.

- ✓ Reduction of organic pollutants such as BOD, COD and TN in effluent wastewater
- ✓ Increase of wastewater treatment capacity (reduction of retention time for aeration)
- ✓ 30–50% Reduction of electricity consumption (electricity cost and CO₂ reduction)