

 JÄGER Umwelt-Technik	Technical Information	Diffuser Engineering Guide
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<h2>Performance Monitoring</h2>		

For any wastewater treatment plant, aeration is an essential and the most costly single process in terms of energy consumption. Concerning aeration, monitoring of the system should include:

- Air flow rates
- Blockage of diffusers
- Leaks

Continuously record a data log showing the operating conditions for the full operating period. Maintain a hard copy of all electronic logs at short intervals. The data log shall include at least the following: Volume of air used, pressure loss of the system and details of any failures in the air supply system.

The indicators controlled during aeration shall include:

- Air compressor
 - *Energy consumption*
 - *Condition of the filter*
 - *Maintenance*
- Aeration basin
 - *Water temperature*
 - *Oxygen content*
 - *Water quality*
 - *Maintenance*
- Aeration
 - *Uniformity of bubble pattern and size*
 - *Back-pressure*
 - *Air flow rates*
 - *Condition of air supply piping joints and valves*
 - *Supply air temperature*
 - *Outdoor air temperature*
 - *Maintenance*
 - *Downtime*
 - *Quantity and quality of condensed water (check this once a week)*
- Quantity of additives fed into the air piping system and/or aeration tank, respectively.

In order to ensure accurate diffuser operation, maintain and monitor the air compressors properly. Clogged or defective suction filters may block the blower's suction side. Monitoring the compressor energy consumption also indicates the condition of the aeration system and any blockages. Fouling of diffusers will increase back-pressure and energy consumption.

Other factors that affect the performance of the aeration system are temperature and quality of the water in the basin as well as the amount of maintenance carried out. Oxygen depletion, over-aeration or increased energy consumption may be caused by variations in load or the composition of the waste water.

Drain condensed water from the piping on a regular basis. The amount and appearance of the condensed water indicates the condition of the aeration system. Usually condensed water is clear. Increasing amounts of condensed water associated by its soiled appearance are an almost clear sign of a leak in the aeration system.

For additional information contact us at +49-5121-913 8900 or refer to www.jaeger-envirotech.com