

IN
FOCUS

ONLINE MONITORING AT

Wastewater Treatment Plants

Online monitoring you can depend on

PO₄ | Total P | NH₃

 Metrohm



Monitoring PO₄ and Total P concentrations in real time

Removing phosphorous compounds from wastewater is important. Having too much phosphorous compounds in the plant effluent causes algal blooms. As consequences of algal blooms, the dissolved oxygen diminish and then animal life is threatened.

By measuring phosphorous compounds in influent and effluent helps wastewater treatment plants to improve their efficiency as well as to make sure that EPA limits are meet.

Learn more about Metrohm online phosphate and total phosphorous compounds analysers by visiting www.metrohm.com.au.

Phosphate in Wastewater

Phosphate concentration from wastewater (effluent and influent) is commonly measured by so-called “molybdenum blue” method. Ammonium molybdate and potassium antimonyl tartrate react in acid medium with orthophosphate to form phosphomolybdic acid, which is reduced to intensely coloured molybdenum blue by ascorbic acid.

Total Phosphorous Compounds

Total phosphorous compounds are measured using thermal digestion to breakdown organic and inorganic phosphate compounds to orthophosphate under the influence of persulfate and sulfuric acid. After digestion added ammonium molybdate and potassium antimonyl tartrate react in acid medium with orthophosphate to form phosphomolybdic acid, which is reduced to intensely coloured molybdenum blue by ascorbic acid.



Monitoring NH₃ concentration in real time

Nitrification of wastewater removes ammonia. In this purification process ammonia eventually get converted into nitrogen gas.

By measuring ammonia in influent and effluent helps wastewater treatment plants to improve their efficiency and as well as to make sure that EPA limits are meet.

Learn more about Metrohm online ammonia analysers by visiting www.metrohm.com.au.

Ammonia in Wastewater

The colorimetric determination of ammonia using nitroprusside is based on the Bertholet method. After addition of reagent A the ammonia reacts quantitatively to monochloramine. The formed monochloramine reacts with the components of reagent B to a quinone monoimine. This quinone monoimine reacts finally with a thymol molecule to the respective indophenol dye, which in an alkaline medium occurs in the blue basic form.

Metrohm Process Analysers are the perfect choice



The ICON Analyser is a dedicated online photometer for near-continuous monitoring of critical parameters in any kind of water.



The 2035 Process Analyzer comes in three basic configurations for potentiometric, photometric, and thermometric measurements. Any of these can be combined with additional measuring techniques such as pH and/or conductivity measurement.

- Automatic acid cleaning prevents algae growth in the system
- Automatic and service-free sample filtration (coarse filtration only to avoid loss of solids)
- Automatic homogenisation of the sample
- Large tubes where the sample flows prevents blockage
- IP 54, IP65 or IP66 rating
- Multiple sample streams in one analyser
- No need for recalibration
- No toxic phenol used
- Possible dilutions to reach higher phosphate values, normally measuring range 0 – 1 mg/L
- Exceptionally accurate measurements thanks to long light path in the cuvette
- Truly low running costs
- Unmatched application support from Metrohm Australia and Metrohm New Zealand engineers

www.metrohm.com.au

 **Metrohm**
Australia

Unit 11, 56 Buffalo Road
Gladesville NSW 2111
Australia
Tel (+61) 02 8899 5200
Fax (+61) 02 8899 5299

 **Metrohm**
New Zealand

Unit E2, 14-22 Triton Drive
Rosedale Auckland 0632
New Zealand
Tel (+64) 09 477 0620
Fax (+64) 09 476 0631