

# METTLER TOLEDO APPLICATION NOTE

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## Liquid Analyzers In Municipal Wastewater Treatment

### BACKGROUND

Municipal wastewater treatment employs a number of processes designed to clarify, disinfect, and condition raw sewage so that it may be safely released into rivers and other bodies of water. These processes involve both chemical addition and biological action. Chemical concentration control as well as sample monitoring is necessary for efficient operation, to avoid upsets, and to protect certain aspects of the overall process. Figure 1 shows the primary wastewater application.

### THE PROCESS

- Influent: pH and other analyzers are used to detect the presence of off-spec industrial waste and provide warning to avoid major upsets.
- Aeration/Activated Sludge Process: Dissolved oxygen measurement is used to maintain an adequate oxygen supply to the aerobic bacteria that is responsible for treating the sewage.

### INSTRUMENTATION

For the influent application the InPro® 4500 pH Electrode in conjunction with the 2050 pH analyzer is recommended. The InPro 4500 features the patented Xerolyt® solid polymer reference system which allows an open annular junction to prevent fouling or contamination problems and ensure accurate measurements and low sensor maintenance.

For the sludge process the InPro® 6050 Dissolved Oxygen sensor in conjunction with the 4050 Dissolved Oxygen analyzer is recommended. This electrode features a rugged PPS body for long life with low maintenance and a Teflon® membrane which resists fouling to provide reliable oxygen measurements and long calibration intervals.

## PRODUCTS

### 2050 pH Analyzer

- Economically priced, full featured transmitter
- Large, easy-to-read LCD allows quick view of information
- Two relays as limit contacts with delay timer to minimize false alarms and one relay as alarm or wash contact

### InPro<sup>®</sup> 4500 Solid Polymer pH Electrode

- Patented Xerolyt<sup>®</sup> solid polymer reference system maintains a stable potential for accurate and repeatable pH measurement and low maintenance
- Open junction eliminates reference clogging and extends sensor life
- High pressure resistance eliminates requirement for pressurizable housing
- Xerolyt<sup>®</sup> solid polymer is particularly suitable for use in emulsions, suspensions, heavily contaminated or sulfide-containing media, and solutions with a high concentration of suspended solids

### 4050 Dissolved Oxygen Analyzer

- Economically priced, full featured transmitter
- Large, easy-to-read LCD allows quick view of information
- Two relays as limit contacts with delay timer to minimize false alarms and one relay as alarm or wash contact

### InPro<sup>®</sup> 6050 Dissolved Oxygen Sensor

- Rugged, plastic sensor design for long life and low maintenance
- Integrated RTD<sup>®</sup> for automatic temperature compensation
- Unique Teflon<sup>®</sup> coated membrane prevents fouling
- IP66, IP67 and IP68 rated VarioPin connector for quick cable disconnect

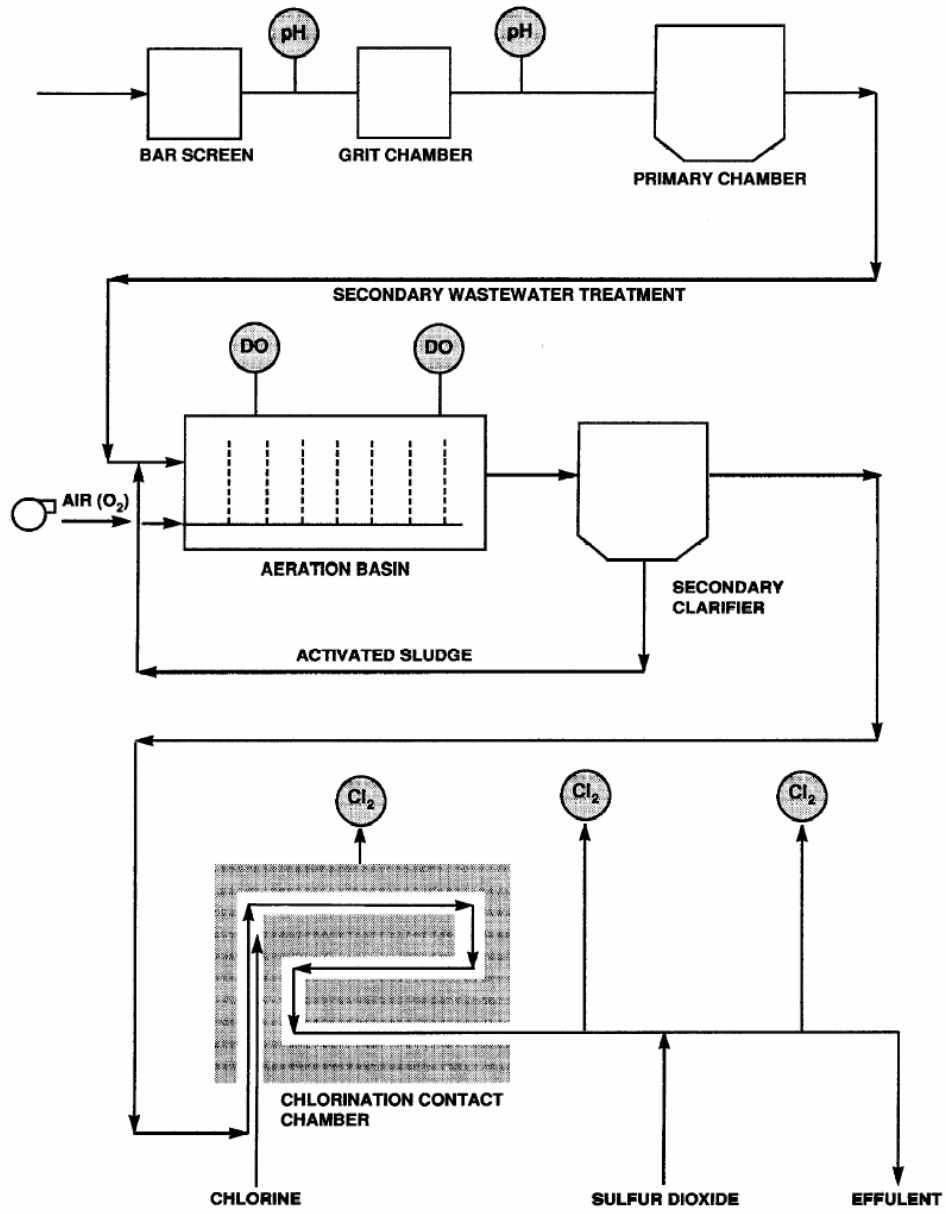


FIGURE 1. Primary Wastewater Application