

## Sensor Technology for Water Quality Monitoring

The main objective of this project is to demonstrate that the technology of on line monitoring of waterborne metals by X-ray Fluorescence (XRF) at part per billion (ppb) and sub-ppb levels, which has been successfully applied in the power industry for several years, can be applied to water and wastewater treatment plants.

A specially designed on line XRF monitor was assembled, tested in the laboratory, and used at the City of Alliance, Ohio Wastewater and Water Treatment Plants from July 2002 until March 2004. At various times through this project, the metals monitored included iron, copper, chromium, nickel, zinc, manganese, arsenic, cadmium, mercury and lead.

The results indicate that XRF on line monitoring of waterborne metals at trace levels is feasible for the influent and effluent of water treatment plants, and the effluent of wastewater treatment plants.



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