

CONTINUOUS DO MONITORING IN URBAN WATERWAYS IN CHICAGO

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Biographical Sketch of Authors

Since 1971, Irwin Polls has been employed in the Research and Development Department at the Metropolitan Water Reclamation District of Greater Chicago. He is currently Manager of Water Quality and Aquatic Ecology Monitoring. His research interests include designing water and sediment quality monitoring programs, effects of treated wastewater on urban ecology, use of benthic invertebrates to characterize biological conditions in aquatic ecosystems, biological, chemical, and physical characterization of urban sediments, and chemical elements of combined sewer overflows and storm water. Richard Lanyon is a 39-year career employee with the Metropolitan Water Reclamation District of Greater Chicago. He is presently Director of the Research and Development Department. In his capacity, he manages a department of 350 employees and an annual budget of approximately \$25 million. Major responsibilities of the department are providing analytical laboratory services, regulation of industrial dischargers to sewerage system, environmental monitoring and operations, and applied research.

Abstract

Due to low velocities in Chicago area waterways and the urban pollutant loading, dissolved oxygen (DO) concentrations in the subject waterways have historically been low. During the late 1970s and early 1990s, the Metropolitan Water Reclamation District of Greater Chicago (District) constructed and began operating seven supplemental aeration stations on Chicago area deep-draft waterways. Weekly DO surveys conducted at 75 stations during 1994 through 1996 show that even with supplemental aeration, DO values were still below Illinois DO water quality standards. Accordingly, the District developed a comprehensive DO monitoring program in order to identify reaches in Chicago's deep-draft waterways where the DO concentration is below the instream water quality standard. The continuous DO data will also be used for future TMDLs, UAAs, and water quality standard reviews in the Chicago metropolitan area. Continuous DO monitoring at 31 locations was initiated during the period 1998-2001 and will continue through 2003. DO is measured hourly, 365 days a year, using remote *in-situ* water quality monitors. Specially designed stainless steel housing enclosures are used to protect the monitors in the field. The poster presentation will include (1) history of DO in Chicago waterways; (2) criteria for selecting monitoring stations; (3) features of the continuous monitors; (4) safeguarding monitors in urban waterways; (5) field and laboratory monitoring activities; (6) quality control program; and (7) data management system.