

Metropolitan Water Reclamation District of Greater Chicago

# How the NBP Biosolids EMS Program Benefited Metropolitan Water Reclamation District of Greater Chicago

#### BIOSOLIDS EMS = Economic, Management Success: Seven Wastewater Treatment Plants, One EMS



The Metropolitan Water Reclamation District of Greater Chicago became involved with the National Biosolids Partnership's (NBP) Environmental Management System (EMS) in 2000 when the program was in its infancy. The District felt that participation in this program would provide increased benefits in key areas such as environmental protection, quality management practices, meeting regulatory requirements and better relationships with interested parties. The District formally began developing its EMS manual in 2004. The program went through Phase 1 of the Third Party Verification Audit in 2005. The lead auditor determined then the District was not ready for Phase 2, and provided the District with a list

of non-conformances and observations. These included the lack of a Biosolids Manager, an EMS Manual needing revisions and implementation of various procedures. After the District EMS Coordinating team resolved the non-implementation observations from the audit report, the EMS Manual was approved by the Chief of Maintenance & Operations on December 28, 2005, thus engaging the District into the implementation phase.



As the 22nd NBP-certified wastewater agency, the District's EMS program of continuous improvement and achievement has been independently verified by NSF International as having an exemplary biosolids environmental management system that extends beyond regulatory requirements. The certificate was verified on August 4, 2008 as conforming to the rigorous NBP standard.

Patricia Young

**Photo:** (I to r, Back Row) **Jim Hanlon** EPA Office of Wastewater Management Director; **Ken Kirk**, NACWA Executive Director: **Dan Collins**, MWRGC EMS Coordinator; **Terry O'Brien**, President MWRGC Board of Commissioners; **Tim Williams**, WEF Government Affairs Managing Director; **Bill Bertera**, WEF Executive Director; **Dick Lanyon**, MWRGC General Superintendent and NBP Chair

Front Row ( to r): District Commissioners - Barbara McGowan, Debra Shore, Patricia Young, Patricia Horton, Kathleen Therese Meany, Gloria Allitto Majewski, Frank Avila

The District held a celebration of its NBP EMS certification on September 18, 2008 that was attended by representatives of NBP, WEF, NACWA, and EPA.



Photo: (I to r): Jim Hanlon, EPA Office of Wastewater Management Director; Osoth Jamjun, MWRGC Chief of Maintenance and Operations; Dick Lanyon: General Superintendent and NBP Chair; Ken Kirk, NACWA Executive Director:; Dan Collins, MWRGC EMS Coordinator; Bill Bertera, WEF Executive Director; Terry O'Brien, President MWRGC Board of Commissioners; Tim Williams, WEF Government Affairs Managing Director; and Eugene DeMichele, NBP Program Director.

### Background

The Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) is a government agency created in 1889 to protect the water quality of Lake Michigan, the major drinking water supply for the Chicago, Illinois area. Originally established as the Sanitary District of Chicago, the MWRDGC has played a vital role in the history and health of the city. The District's territory covers approximately 91% of land area and 98% of the valuation of <u>Cook County</u>, Illinois. It serves an area of 883 square miles which covers the City of Chicago and 125 suburban communities. The District's 554 miles of intercepting sewer mains are linked to approximately 10,000 local connections.

The District operates one of the largest <u>wastewater treatment</u> plants in the world, the Stickney Water Reclamation Plant in <u>Stickney</u>, <u>Illinois</u>, in addition to six other plants and 23 pumping stations. The District treats an average 1.4 billion gallons of wastewater each day, producing 200,000 dry tons of solids each year. Forty-three percent of the solids are land applied; 23% are processed further and used for horticulture; 22% are used for land fill surface cover or co-disposal; and the balance attributed to beneficial uses, such as, development of athletic fields and golf courses, top dressing for turf maintenance, etc. during the reporting year (2007). The District oversees one of the largest civil engineering projects ever undertaken - the <u>Tunnel and Reservoir Plan</u>, better known as the "Deep Tunnel Project." It includes over one hundred miles of tunnels, 9 to 33 feet in diameter each part of an extensive flood mitigation and pollution control project. Since 2005 the District has been responsible for stormwater management for all of Cook County and some areas outside of the District's boundaries.

## **Struggles**

As the District implemented the EMS, challenges arose such as staff changes, varied ideas on what to include from the plants and complete management "buy-in". These were compounded by the sheer enormity of the organization: 2,000 employees at seven wastewater treatment plants spread across 883 square miles. This created inconsistencies in critical control point (CCP) tables and in related standard operating procedures (SOP's). In addition, experienced employees responsible for operating processes had a difficult time creating SOP's. Procedures were often "in our heads" and not on paper. Information and reports identified in the CCP tables were not readily

accessible. The success of the Biosolids EMS began by involving upper management in quarterly meetings and by appointing a Biosolids Manager.

### **EMS Benefits**

Procedures at the processing sites have been streamlined and made consistent where possible resulting in a reduction in the hours required to dry biosolids, lowering air emissions and costs, (up to 15%). Contracts for similar work have been combined thus reducing the number of contracts written and related administrative costs. Each plant operations manager now serves as an EMS Field Representative improving communications throughout the District. The EMS has greatly improved our indexing of important documentation such as SOP's, recordkeeping and much more through the use of a binder system. All important information are now readily accessible. In addition, public acceptance of biosolids use has risen and new opportunities have been presented for biosolids use.

The EMS for Biosolids for the MWRDGC required significant effort from many staff members from many divisions. However, the effort will reap continuing benefits over time for the District, taxpayers and the environment.