



How the NBP EMS Program Benefited the City of Chattanooga, Tennessee - Moccasin Bend Wastewater Treatment Plant

The City of Chattanooga, Tennessee, Department of Public Works provides regional wastewater treatment at the **Moccasin Bend Wastewater Treatment Plant (MBWWTP)** for approximately 250,000 customers. The service area not only includes the City of Chattanooga, but also includes nearby satellite cities and unincorporated service areas in both Tennessee and north Georgia. The City of Chattanooga owns and maintains approximately 1249 miles of collection system sewers, which includes 70 miles of combined sewers. Sewers for the satellite areas are owned and maintained by their respective agencies and MBWWTP receives flow and controls quality of the wastewater through regional agreements with these agencies.

MBWWTP uses a high-purity activated sludge process to provide secondary treatment to a peak flow of 140 MGD. An additional process is used to handle in-plant combined sewer flow during periods of heavy rain which is capable of treatment for 80 MGD. This combined flow treatment process is mixed with the secondary plant effluent and the total flow must meet the MBWWTP effluent limits.

After constructing significant solids processing improvements between 2002 and 2005, MBWWTP was able to consistently produce a "nearly Class A" biosolids product and was able to begin targeting future production of all Class A biosolids. Chattanooga began land application of 100% of this material in June 2005 through contract with RECYC LLC for transportation and application. Through this program, MBWWTP became Chattanooga's Number 1 recycler by tonnage. Since that time, over 116 landowners have participated in the biosolids recycling program and 104,480 dry tons of biosolids have been applied on 37,460 acres.



Photo (l to r): Chris Hornback, **NACWA**; Rebecca West, **WEF President**; Jerry Stewart, Director – Chattanooga, TN Waste Resources Division; Alice Canella, Plant Superintendent; and Pete Machno, **NBP** at Chattanooga, TN EMS Celebration held on April 16, 2009 at the Moccasin Bend Wastewater Treatment Plant.

Chattanooga joined the National Biosolids Partnership in August 2005, and committed to the development of an Environmental Management System for the biosolids recycling program. After a long process utilizing existing plant personnel who still had to perform their “regular” duties while developing this program, Chattanooga’s MBWWTP was verified by a Third Party audit in January 2009 and became the 23rd agency to receive NBP certification. Chattanooga also became the 1st agency in the state of Tennessee to receive NBP certification. A celebration was held on April 16 that included representatives from NBP, WEF, and NACWA.



Benefits

The City of Chattanooga has realized, and is continuing to realize, significant benefits to the implementation of its Biosolids Management System including the following:

Improved communications and credibility with interested parties

Through its EMS program, Chattanooga has learned to reach out to landowners, regulatory officials, special interest groups, public and private agencies, and even the media to provide information on the production and beneficial reuse of the MBWWTP biosolids. The establishment of a “Biosolids Sustainability Committee” consisting of individuals from many of the above groups has been an excellent method of informing, seeking input, encouraging involvement, and increasing interest. Participating landowners, who have realized the benefits of land application of MBWWTP biosolids, have become the City’s best advocates, as well. The management staff at MBWWTP looks forward to sharing information about biosolids production and land application with the media and the public, after realizing the advantages of having an EMS program in place.

Increased employee awareness of their roles

Employees at MBWWTP are much more aware of the impact of their work on the quality of the biosolids produced and on the necessity of maintaining that quality to the highest of standards. Knowing that biosolids are being applied on farm land, witnessing the application both at the treatment plant site (approximately 15 acres at MBWWTP received biosolids for hay production), and on private land, and understanding the need for continuous improvement has made employees more conscientious of their work methods and their contribution to quality biosolids, environmental impacts, and public acceptance.

Improved biosolids data management

Chattanooga implemented a centralized electronic data management system (from Material Matters, Inc.) for biosolids data that receives and combines input from various sources such as laboratory analyses, production records, land application site information, truck scale data, and farm and field application rates entered by the City's land application contractor. Additionally, inspection reports and complaints received are tracked in this system. This has greatly improved reporting efficiencies, land application record keeping, and use of personnel time.

Improved document management

Prior to the implementation of the biosolids EMS program, there were few Standard Operating Procedures (SOP's) and there was no document and record control procedures to assure that documents were kept up to date. Each shift of operations personnel had their own way of performing their duties, and there was little preservation of the knowledge of more senior employees. The EMS program has caused our supervisory and operations personnel to get into the habit of creating SOP's which assure consistency in biosolids preparation and handling, and which can be used as training guidelines. Additionally, the MBWWTP Emergency Preparedness and Response Plan was very outdated, and we have begun the process of updating, formalizing, and controlling this plan. Document management is an area where we are still working on improvements.

Development of goals and objectives for MBWWTP

The process of formalizing goals, objectives, and an action plan to assist MBWWTP in continuous improvement in the four (4) key outcome areas has given direction to the program, provides specific targets toward which to concentrate resources, assists with planning and budgeting, and directs future capital improvement projects. While still applying biosolids with a Class B designation, these goals will keep the focus on producing all Class A biosolids in the future, improving interested party relations, and maintaining regulatory compliance.

Keys to Success

Support from Senior Management

Chattanooga has benefited from full support for the NBP EMS program from the Mayor, City Council, Public Works Department, and Waste Resources Division management. These individuals embrace the concepts and benefits of the biosolids EMS program, the importance of partnering relationships with land owners and other interested parties, the cost benefits of biosolids beneficial reuse, and the environmental benefits.

Support from Interested Parties

Chattanooga has received support and encouragement from the Tennessee Department of Environment and Conservation, especially the local field office, from participating land owners, from other regulatory agencies, and from other groups represented at the Biosolids Sustainability Committee. This has been a major reason for the success of Chattanooga's program.

Lessons Learned

The implementation of the EMS program requires much staff time, and because the Chattanooga EMS Coordinator was not a stand-alone position, often times the program development had to be placed on the back burner while other operational duties and crises were taken care of. Chattanooga's EMS program is still in its infancy and continuing to develop, so the effort required will remain.

The Third Party verification audit was an eye-opener and was a learning experience. Even though NBP training and templates had been followed, the real focus during the audit was a holistic approach to the program, rather than element by element. Although it took some time to understand this approach, the benefits were realized, and the integration of all facets of the program is better understood.