

## Encina Wastewater Authority (EWA) - Benefits of NBP EMS Implementation



The Encina Wastewater Authority (EWA), located in Carlsbad, CA, provides safe, reliable wastewater treatment services for more than 300,000 residents in North San Diego County. EWA operates a secondary wastewater treatment facility with a permitted discharge flow of 36 million gallons per day (MGD). As a result of EWA's commitment to recycling, 100% of biosolids generated from the treatment process are beneficially reused through land application.

**Photo (l to r):** Tish Berge (EWA EMS Coordinator), Marlaigne Dumaine (CASA), Jim Clark (WEF/Black & Veatch), Jim Donley (General Manager, Ag Tech LLC), Mike Hogan (EWA General Manager), Deirdre Bingham (NACWA/OCSD), Layne Baroldi (NACWA/OCSD), and Pete Machno (NBP).



**Photo (l to r):** Mike Hogan, Peter Machno, and Tish Berge.

The EWA was one of the initial 27 charter agencies participating in the National Biosolids Partnership (NBP) Environmental Management System (EMS) for biosolids demonstration program. Although effective biosolids management practices were in place when EWA committed to participate, various processes needed to be documented and several practices developed to conform to the NBP EMS Program. Program implementation took approximately four years prior to undergoing an extensive internal audit. EWA received NBP EMS program certification following a 3<sup>rd</sup> party verification audit on August 10, 2005.

Costs associated with program implementation and the first internal audit totaled \$46,250 for outside assistance and approximately \$75,000 for staff time. Verification costs included \$23,500 for the 3<sup>rd</sup> party auditor and roughly \$8,000 for staff time. EWA estimates annual EMS maintenance costs to be \$17,500 for outside services, including 3<sup>rd</sup> party audits, \$5,000 for outreach, and \$23,000 for staff time. For reference, EWA's FY2006 annual operating budget is \$9.4 million.

### Benefits

Like the other certified agencies, EWA has recognized several benefits as a result of implementing a Biosolids EMS. Many of these benefits stem from an increase in communication and processes streamlining.



EMS implementation provided the framework for consolidating specific practices and procedures into an integrated program with assigned responsibilities and oversight. This integrated program is supported by the recognition of biosolids management as a priority core business area. By managing performance in the four outcome areas, EWA also established a method to benchmark biosolids operations performance.

Through this new management structure and focus, implementation of the EMS created an organizational culture where each individual has responsibility and commitment to protecting the environment through continuous improvement. This new culture has fostered improved communication between departments and with our land application contractor. Commitment to continuous improvement and environmental performance is supported by EWA's Mission and Vision.

The 3<sup>rd</sup> party verification audit reinforces EWA's commitment to the EMS program. This process provided the team with the opportunity to demonstrate the 17 elements and their integration into biosolids value chain management. The auditors provided valuable outside views which helped EWA identify areas for improvement. Additionally, the 3<sup>rd</sup> party verification further emphasized the priority of biosolids as a core business area.



**Photo (l to r):** Mike Hogan, Jim Donley (General Manager, Ag Tech LLC), and Tish Berge.

**The EMS has resulted in numerous other positive outcomes since it was implemented in 2000:**

### **Quality Biosolids Practices**

- Sub-surface liquid injection practices used by Ag Tech for land applying biosolids are highly regarded by regulators and have successfully eliminated all odor complaints, creating a reliable land application alternative.
- Enhanced operational performance to ensure reliability of the cogeneration plant has enabled EWA to continue generating approximately 80% of its own electric needs saving \$1MM per year in reduced utility costs.
- Implementation of the Biosolids Strategic Plan resulted in design of a heat dryer system that will cost-effectively produce Class A biosolids.

### **Environmental Performance**

- Surface water drains at the treatment plant have been connected to the plant headworks to eliminate dry weather storm water runoff, thus reducing the pollutant loading on local waterways.



- Optimization of the chemically enhanced primary treatment system resulted in assured plant capacity, increasing methane gas production and reducing energy costs by 45% for a net savings of \$330K per year.

### ***Regulatory Compliance***

- NPDES permit violations have been eliminated in the past two years, providing for cost reductions and improved public perception.
- Since Arizona was granted primacy in 2004, regulators have expressed confidence in Ag Tech and EWA's land application practices, allowing for beneficial reuse of 100% of biosolids generated.

### ***Relations with Interested Parties***

- A public outreach and education program has reduced instances of pollutant slugs entering the plant, enabling more stable operations.
- Methods described above in other outcome areas have also helped in reducing odor complaints received by EWA generating increased public acceptance.

More information about EWA's Biosolids EMS may be found at:  
<http://www.encinajpa.com/EMS-Live/BiosolidsEMS/emshome.html>.

