



2010 Annual Report

"Together, we are a model of excellence and innovation"

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From the General Manager

Thank you for taking a moment to read the Encina Wastewater Authority's 2010 Annual Report. Perhaps no year during the partnership's first half century presented as many different challenges as we experienced in 2010. We proved again that together, we are a model of excellence and innovation.

EWA remains an environmental leader. But for an extraordinary effort by EWA and Member Agency staff that began on October 7th and lasted nearly fourteen days, what started out as an interesting but modest burp from a manhole just outside the EWPCF would have become an environmental catastrophe. Instead, because of a well-coordinated and round-the-clock effort, the west influent pipeline collapse re-defined EWA's excellence and innovation.

Our accomplishments demonstrate that EWA's commitment to providing sustainable and fiscally responsible wastewater treatment is stronger than ever. During 2010, all EWA facilities maintained full compliance with their respective regulatory permits. In addition, over 90% of all the biosolids produced at the EWPCF in 2010 were sold for use as renewable fuel. The financial results: EWPCF operating expenditures were down 9.8%.

In 2010, our efforts to use alternative and renewable resources ranked EWA among the nation's elite. In fact, the EWPCF produces a higher proportion of its total electrical demand on-site than any other member of the EPA's Green Power Partnership – a partnership that includes over 1,300 public and private organizations.

We are extremely proud to operate, maintain, and administer the \$221 million environmental protection investment that the citizens of North San Diego County entrust to our stewardship. Please join me in thanking EWA's employees and Board of Directors for a job well-done in 2010.

Kevin M. Hardy



Financial Highlights

At EWA, our stewardship responsibilities go beyond the rigorous technical aspects of cleaning water; we must also operate cost effectively for the benefit of our ratepayers. We are proud to report that in 2010 EWA completed its 19th consecutive year under budget. EWA also received for the fourth consecutive year the Government Finance Officers Association of the United States (GFOA) Certificate of Achievement for Excellence in Financial Reporting for its Comprehensive Annual Financial Report (CAFR). The GFOA Certificate is the highest form of recognition in the area of governmental accounting and financial reporting and demonstrates that EWA consistently exceeds the minimum requirements for accounting principals and audits for special districts established by the Controller of the State of California. A copy of the CAFR can be viewed on EWA's website.

Encina Wastewater Authority Board of Directors

- Ann Kulchin, Chair
- Judy Ritter, Vice Chair
- Elaine Sullivan
- Allan Juliussen
- Maggie Houlihan
- Darrell Gentry
- Keith Blackburn
- Jim Poltl
- Kristin Gaspar
- Steve Gronke

EWA Recognition

The California Water Environment Association (CWEA) recognizes outstanding wastewater professionals and agencies through local and statewide annual awards. EWA was recognized as the CWEA San Diego Section "Plant of the Year" and EWA Operations Supervisor, Alan Manges, as "Supervisor of the Year" for 2010. EWA was also ranked on the EPA's Top 20 onsite generation list and was recognized as a member of the Green Power Leadership Club for generating over 50% of its total electricity demand. In addition, EWA received a NACWA Gold Award for achieving 100% compliance with its ocean discharge permit.



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Protecting the Pacific Ocean

The Science of Clean Water



Source Control Program

EWA operates a Source Control Program as required by the Federal Clean Water Act. The purpose of this program is to control the discharge of pollutants from industries in order to: prevent interference in treatment plant operations; protect the collection system; ensure compliance with EWA's ocean discharge permit; protect the health and safety of the public, collection system and plant personnel; and ensure wastewater solids and plant effluent can be recycled. The discharge of industrial wastewater into the sewer systems is controlled through issuing discharge permits, performing industry inspections, and monitoring industrial discharges. During 2010, 64 industries held full permits and 532 commercial businesses participated in EWA's Best Management Practices Program. EWA's record of perfect compliance with its ocean discharge permit demonstrates the effectiveness of the Source Control Program.

Laboratory Testing

EWA's laboratory, which is certified by the State of California's Environmental Laboratory Accreditation Program, analyzed over 27,000 samples in 2010 that included process control, plant influent and effluent, biosolids, ocean water, storm water, and drinking water. A portion of the analyses was completed under contract for EWA's member agencies, which generated \$166,648 in revenue during the year. Laboratory monitoring demonstrates that pollutant levels in EWA's effluent and biosolids are consistently safe for reuse or release to the ocean.

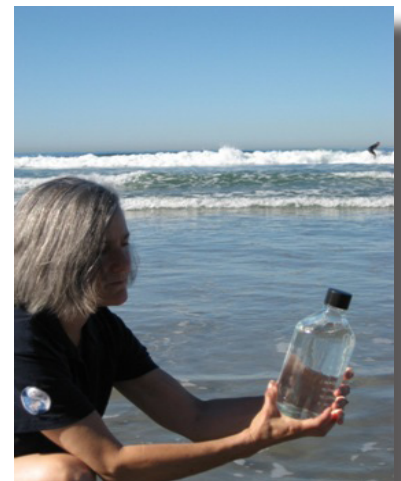
Ocean Monitoring

EWA's ocean discharge permit (National Pollutant Discharge Elimination System – NPDES - permit), issued by the San Diego Regional Water Quality Control Board, establishes discharge limits and monitoring requirements to ensure protection of the ocean environment. EWA's laboratory analyzes more than 2,000 ocean samples per year. To assess bacteriological conditions in areas used for body contact activities, samples are collected weekly at five stations along the shoreline and are tested for three indicator bacteria (total coliform, fecal coliform and enterococcus). During 2010, EWA also conducted intensive ocean monitoring including testing of sediments, demersal fish, and macro-invertebrates near the ocean outfall which extends approximately 1.5 miles

offshore. Testing results demonstrate that effluent from the EWPCF meets regulatory standards and is not negatively impacting local water quality.

Wastewater Treatment

The EWPCF utilizes an activated sludge secondary treatment process. The plant has a design capacity of 40.5 million gallons per day (MGD) of wastewater and treated an average of 23.6 MGD in 2010. While EWA's ocean discharge permit requires 85% removal of total suspended solids and biochemical oxygen demand, the EWPCF achieved 97% removal for both constituents during the year.



By the Numbers in 2010

8.493 billion gallons of wastewater treated at the EWPCF
443 million gallons of wastewater recycled at the Carlsbad WRF
64 staff members employed by EWA

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Biogas to Energy

EWA operates a cogeneration plant that utilizes internal combustion engines and generators to produce electricity and usable heat in a single operation.

The cogeneration engines are fueled by a renewable resource called biogas (methane), which is produced from the reduction of wastewater solids in digesters. This treatment process, known as anaerobic digestion, converts volatile organic solids to carbon dioxide and methane. The conversion occurs in a digester tank that is maintained at a temperature of 98°F. Gas produced by the anaerobic digestion process is a mixture of 65% methane and 35% carbon dioxide. As the gas leaves the digesters, it is cooled, which releases moisture. The gas is then filtered to remove particulates. The conditioned gas is then pressurized and sent to the cogeneration engine generators. During the EWPCF Phase V plant upgrade, four new Caterpillar G3516 engine generator sets were installed. These sixteen-cylinder, turbo-charged, low-emission engines are capable of generating 750 kilowatts of electricity and can be fueled by either purchased natural gas or biogas. Waste heat from the engines' coolant and exhaust is also utilized to heat the plant's digesters, thereby increasing overall system efficiency.



Dedicated to Resource Recovery

Water Recycling

Due to limited supplies, it has become increasingly more important for municipalities to conserve fresh water. Producing recycled water is one way that EWA and its members are achieving this goal. There are three water reclamation plants in EWA's service area, which have the capacity to recycle 10 million gallons of wastewater per day. In addition, another million is recycled by the EWPCF for use onsite. This represents almost one-half of the wastewater produced in the service area.

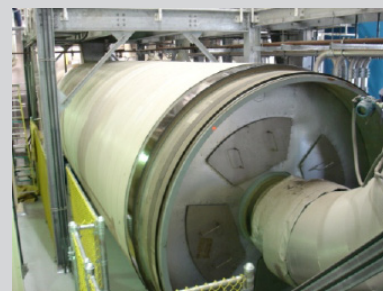
Biosolids Heat-Drying

Solids generated from the wastewater treatment process are dewatered using centrifuges and a dryer. This converts the material into stable dry pellets that can be used as a biofuel or fertilizer product. Implementation of the dryer technology has reduced EWA's costs for biosolids reuse by about \$2 million per year. Currently more than 90% is used as a biofuel while the rest is applied to agricultural land.



Biofuel Supply Agreement

EWA has an agreement with CEMEX for use of its biosolids pellets. CEMEX is a global building materials company that expresses strong commitment to health and safety, strategic innovation, and the use of alternative fuels. Under the current agreement, EWA is compensated based on the price of coal adjusted for the biosolids energy value of, and biosolids market demand. Revenue from CEMEX ranges from \$6 to \$8 per ton. CEMEX uses the pellets as an alternative fuel at their Portland cement manufacturing facility in Victorville, California.



Biosolids EMS Recertification

EWA maintains a Biosolids Environmental Management System (EMS) Program that is certified by the National Biosolids Partnership (NBP). In September, EWA underwent an intensive five-day third party audit of its Biosolids Program. Based on the results of the audit, EWA received recertification from the NBP. This program continues to improve EWA's biosolids management practices and relations with interested parties, including potential users of EWA's biosolids pellets.

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Our Commitment to Fiscal Responsibility

Energy & Emission Strategic Planning - Energy Independence as a Goal

EWA is striving to reach energy independence by generating 90% of the power needed to operate its facilities using alternative and renewable fuel sources. In 2009, a contract was awarded to Kennedy Jenks Consultants to facilitate the development of an Energy and Emissions Strategic Plan. This Plan ensures return on investment from the Phase V cogeneration facilities that are designed to use the biogas produced in the wastewater treatment process as a renewable fuel. Energy independence is a key issue for EWA's Board of Directors and the plan will guide future investment in energy efficiency, energy production, and energy use, by evaluating alternative technologies to see which best leverage current investments in three dimensions: energy potential, fiscal impact, and environmental responsibility. Through careful planning and execution aimed at capitalizing on the unique opportunities presented in emerging power production and financing markets, EWA can simultaneously enhance operational efficiency and enhance the value it delivers to our community.

Asset Management

Since 1964, EWA has constructed facilities valued at more than \$220 million. The task of repairing, replacing and monitoring the condition of these assets is the responsibility of the General Services Department. This is achieved through the application of EWA's Comprehensive Asset Management Plan (CAMP). EWA has developed a CAMP for EWPCF facilities (E-CAMP) that is updated annually and one for remote reclamation and pumping facilities (R-CAMP) which is updated biennially.

Emergency Pipeline Repair

On October 7, 2010 a 54" pipeline entering the west side of the EWPCF collapsed, causing sewage to overflow from manholes on Avenida Encinas. Collections crews from EWA's member agencies coordinated to build a berm across the street, directing the flow of sewage into the plant where it could continue to be treated. Recovery operations began immediately as crews used pumps to extract water from the creek. Contractors were called in to perform emergency repairs to the damaged pipeline. To facilitate this effort, bypass pumps were utilized to direct sewage flows from manholes in Avenida Encinas around damaged facilities and on to treatment. Crews worked around the clock and completed the repairs on October 20th. A biological assessment conducted by Merkel & Associates identified no detectable environmental impacts associated with the spill. This was a major accomplishment considering that over 200 million gallons of sewage was received during re-construction, which could have caused an environmental disaster. EWA credits the successful response to the annual emergency drills conducted with its member agencies to prepare for such events.

Investment in Safety

In 2010 EWA staff focused on improving an already comprehensive safety program, dedicating over \$75,000 to safety training, medical services and the purchase of safety equipment. \$195,000 was budgeted for safety-related capital improvements. EWA hosted more than eighteen onsite staff training events. In addition to this required training EWA staff worked with the Carlsbad Fire Department to complete Incident Command System (ICS) training. In October EWA staff demonstrated their understanding of the ICS while responding to the unexpected failure of the west interceptor line. The staff's immediate actions undoubtedly reduced the overall environmental impact of this event. During 2010 EWA also established a Safety Leadership Team. This eleven member team is responsible for conducting regular safety inspections of EWA facilities. Safety inspections have proven to be one of the most effective ways to recognize potential hazard in the workplace, making this process a critical component of any successful safety program.

