CASE STUDY

SANTA MARGARITA WATER DISTRICT

Southern California Water District Reduces Polymer Usage 30% with Polyblend® Polymer Activation System

OVERVIEW

Santa Margarita Water District (SMWD), located in Southern California's Orange County, between Los Angeles and San Diego, provides drinking water and wastewater services to over 165,000 residents and businesses. The District was originally formed in 1964 by a group of ranchers who wanted to create a reliable source of water for their cattle in the arid Southern California climate where rain is scarce. The population of this area of southern Orange County grew rapidly from the late 1960's through the 1990's. The District grew with the burgeoning population and now SMWD monitors and maintains more than 1,200 miles of water and sewer lines across the District's 62,674-acre service area to ensure customers receive the water and sewer services they need.

All potable water in Santa Margarita Water District's service area is purchased from the Metropolitan Water District of Southern California. This water originates in the Colorado River Aqueduct, which brings water from the Colorado River, and the California State Water Project, which brings water from Northern California. Recent severe droughts throughout the region have forced districts that rely on imported water to diversify their water supply sources. Santa Margarita, like many districts in the area, has begun to undertake numerous water recycling conversion projects in an effort to augment the District's overall supplies. By using more recycled water for outdoor irrigation, the District will preserve imported drinking water for household consumption.

SITUATION

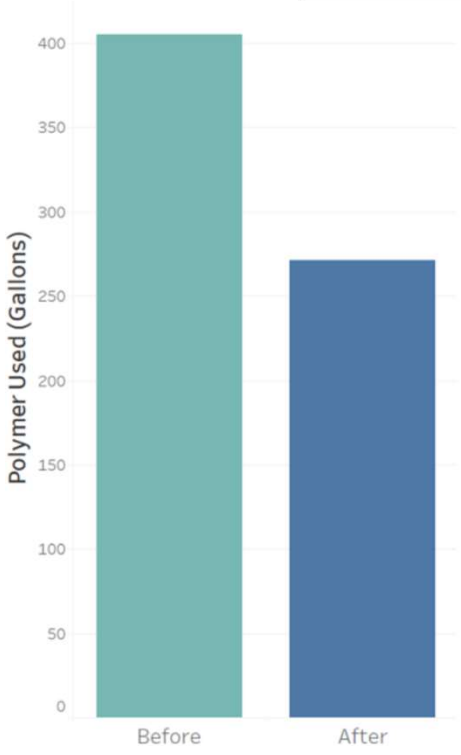
The Santa Margarita Water District distributes over 7 billion gallons of drinking water each year to its customers

As the District has begun to develop water recycling projects, the issue of optimizing wastewater processes has increased in importance. The emphasis has turned to obtaining greater rates of efficiency for the polymer used in the thickening and dewatering processes. SMWD uses a centrifuge for liquid/solids separation as part of the dewatering process. Centrifuges generally use more polymer than other equipment, therefore optimizing polymer activation is critical to maximizing efficiency of polymer use. Another key objective was to obtain a drier cake to reduce hauling and disposal costs. Most importantly, it left SMWD with cleaner effluent to use in its recycled water projects.

APPROACH

SMWD approached UGSI Solutions about a Polyblend® polymer activation system trial at the District's 3A Water Reclamation Plant. The Polyblend® system includes the new Magnum mix chamber, designed to ensure two-stage polymer activation, with high-shear mixing at the moment-of-initial wetting (MOIW) to achieve maximum hydration (high viscosity) of the polymer particles in the shortest time, and low-shear mixing to inhibit the breakup of the polymer chains, once activated. The demo unit was installed in late June of 2016 and the trial began shortly thereafter. Operators observed the following immediate results with the Polyblend® polymer activation system:

	Before Trial (June 21 – July 1)	During Trial (July 6-16)	Difference
Polymer Used	405 gal	271.56 gal	133.44 gal (32% reduction)
Treated Total Sludge	425,536 gal	446,956 gal	21,420 gal (20% increase)



RESULTS

30% REDUCTION
In Overall Polymer Usage

20% INCREASE
In Treated Sludge

- The investment in Polyblend® system allowed SMWD to reduce polymer usage by just over 30%.
- The Polyblend® system was also capable of producing 20% more treated sludge when compared to their previous system, based off the demo results.
- The Polyblend® system was also able to achieve these results in just over a week as well, further proving its efficiency prowess over SMWD's old system.

CONCLUSION

The Santa Margarita Water District was extremely pleased with the performance of the Polyblend® system during its demo and were more than willing to fully purchase it afterwards. The results were immediately visible and translated into operational cost savings by obtaining better results from the polymer. For SMWD, the immediate polymer savings made the decision to purchase the Polyblend® polymer activation system an easy one and it has purchased a second Polyblend® system.

"We are very happy with the Polyblend® system and decided to purchase it after our demo."
- Ron Johnson, Chief Plant Operator

To view diagrams of our processes, visit https://cleanwater1.com/technical-content

To access our full assortment of case studies, data sheets, brochures and more, visit our document library at https://documents.cleanwater1.com or scan the QR code.