

Monitoring Recycled Water at Otay Water District

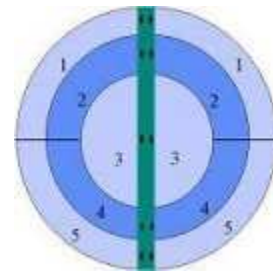
Encompassing 125 square miles of southeastern San Diego California is the Otay Water District. Formed in 1956, the District is a publicly-owned water and sewer agency that is classified as a California Special District. The creation of the District would ultimately allow for the development of the acreage for residential and industrial uses for a land tract that otherwise was considered uninhabitable arid back-country desert. Today the same acreage is a mix of both people and nature. The Special District is a "revenue neutral" public agency which means that end users pay their share of the District's

costs for the purchase of water as well as operation and maintenance of the public water facilities. Potable water is imported by the Metropolitan Water District of Southern California and is acquired through five (5) connections to the San Diego County Water Authority aqueducts. Additionally, Otay's Chapman facility produces up to 1.3 million gallons of high-quality reclaimed water daily and is the largest recycled water distribution system in San Diego County. The recycled water is used to irrigate golf courses, playing fields, public parks, residential and business landscapes, filling of lakes and various other uses. The District's commitment to expand the use of recycled water stems from a desire to minimize the demand of potable water. Recent agreements now have the District receiving additional recycled water from various sources. It is expected that 15% of the District's total water supply will be 15% after the construction of new transmission system facilities currently underway. Due to short upstream and downstream pipe lengths away from the monitoring site not just any flowmeter could accurately capture flow rates in the difficult to instrument application.



Included as part of the District's \$36 million capital improvement project was the inclusion of (4) Multi-Mag Magmeters. According to Randy Klaahsen of the Otay Water District Water Resources Division, the meters were specified by IEC after they had met with Marsh's local sales rep, Matt Hykin of Hykin systems. Due to short pipe runs and restrictive piping at the monitoring sites, Hykin, without hesitation, recommended the Multi-Mag as the meter for the job. The accurate measurement of the recycled water would allow for the determination of system demand as well as a verification of pump capacity.

The Multi-Mag Insertable Magmeter utilizes proven electromagnetic technology. Its uniqueness lies in the meters ability to monitor flow with the use of multiple electrodes that constantly profile the flow for unsurpassed accuracy. An array of sensors are strategically located on the insertable probe that spans the entire pipe diameter. The insertable probe detects and compensates for shifting flow profiles unlike spool-piece magmeters and flowmeters that provide only a single point flow measurement. Unlike traditional magmeters that require long



pipe runs for accurate flow monitoring, the Multi-Mag can accurately monitor flow in some of the most restrictive piping configurations including bends, elbows and short pipe runs.



Klaahsen comments, “We have (3) Multi-Mags installed on our 24” lines and (1) on a 10” line. The meters are tied to our SCADA system called Factory Link.” Concerning installation he adds, “I like the fact that we could get by with very short upstream and downstream distances and still be able to read flow accurately. We take a read every 15 minutes and that data goes into a historical trending file. We can actually grab the data and do flow reports for the month or for the year, whatever we like. The meters have become a standard here for monitoring flow in our recycled system.”

Delighted with the performance of the currently installed Multi-Mag’s, an order for an additional meter is now in the works. The new Multi-Mag will replace a failing mechanical meter at the District’s use area.

The future of the Otay Water District looks very eventful. Their continued respect for the environment as well as servicing the needs of the customers remains in the forefront. While they strive to decrease their customers demand for potable water in applications where recycled water is more appropriate, as their ‘recycled meter standard’ the Multi-Mag will continuously keep an accurate account of recycled water use for many years to come. Their own words about the future say it best – “The Otay Water District is here to stay.” So too are the Multi-Mag’s.

More information on the Otay Water District’s Award Winning Environmental Programs:
<http://www.otaywater.gov/owd/pages/about/environmental.aspx>

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