ENVIROGEN TECHNOLOGIES

A Lifecycle Performance Company

Case Study

City of Pomona, California

The City of Pomona, the fifth largest city in Los Angeles County, covers nearly 23 square miles (60 km^2) and serves a population of approximately 156,000 people. In addition to treating surface water supplies from the Mt. Baldy Watershed, the City's utility services department also draws water from three groundwater aquifers: the Chino Basin, the Six Basins, and the Spadra Basin. Pomona has 37 groundwater wells in operation, with three more planned to go online in the future.

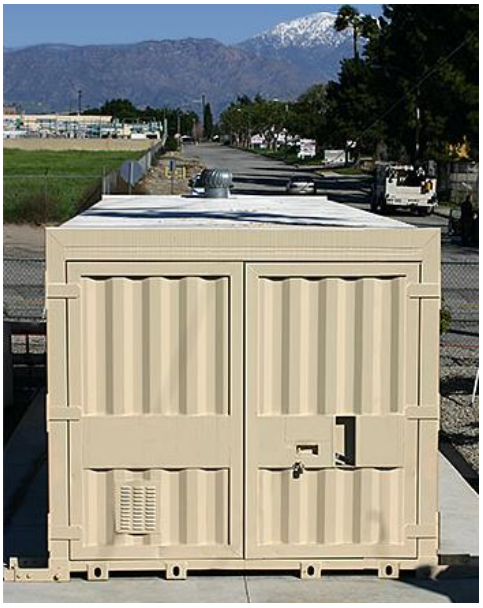
Challenge

In southern California, water is a scarce commodity; the region's reservoir levels are at less than 70% of capacity. Combine this with substantial growth and the rising cost of imported water, and water agencies are forced to consider their local groundwater resources as the most reliable source of water for the communities they serve.

In 1992, the City of Pomona opened a facility that was, at the time, the world's largest nitrate removal plant, based on ion exchange (IX) technology. Served by 12 wells from a centralized location, the treatment facility produces 15 million gallons per day (57 ML/d) of drinking water.

Solution

The familiarity of the Pomona Utility Services Department's operations staff with ion exchange treatment increased the comfort levels enough to consider the use of Envirogen's next-generation ion exchange technology. Our compact, wellhead-based treatment system was viewed as a way to bring remote wells into compliance and help ensure a reliable, economical, local source of drinking water for the City.



Envirogen's 1,000-GPM Nitrate Removal System

The Envirogen system was permitted and fully operational for the treatment of nitrates at Well 19. The effort successfully brought the well back into compliance for potable domestic uses, producing roughly 500,000 gpd (1.9 ML/d) of drinking water.

Despite decades of water quality data showing nitrates as the only constituent of concern, six weeks after the Well 19 facility started treating water, a plume of volatile organic compounds had migrated to the well. The utility services department promptly returned Well 19 to industrial use and considered its options.

Fortunately, the Envirogen system was transportable, and it was loaded onto a flatbed truck and moved nearly three miles to Well 29. Well 29 had been impacted by nitrate, thus Envirogen's ion exchange system was a perfect fit. If a conventional ion exchange facility had been constructed, the City's investment would have been stranded. Prior to the move, Envirogen technicians upgraded various components to further enhance the system's performance and efficiency. All operating conditions are supervisory control and data acquisition-monitored by City staff, and water treatment plant operators spend minimal time and effort checking, testing and recording the plant's operations.

Our operators have been using IX technology to treat well water since 1992. One of the major operating expenses has been for residuals management. The Envirogen nitrate removal system creates over 90% less brine waste than our conventional IX treatment plant. This means a significant savings to the City of Pomona and will help to keep our water rates reasonable, which makes our customers happy!"

- Jim Taylor
Water/Wastewater Operations Manager

Results

- Under Envirogen's contract, City personnel are no longer involved in pumping, handling or disposing of brine waste. Brine use is optimized to achieve maximum efficiency, thereby reducing salt requirements and greatly lowering the volume of brine waste, allowing for off-site disposal under a contract with a waste hauling company.
- The cost savings for the City - and its residents - is significant: offering the prospect of savings of $150 or more per acre-foot compared to importing water.
- Pomona is saving money and helping to keep water rates down while maintaining customer satisfaction.