

Trident® HS Package Treatment Plant Helps the City of Bloomfield, New Mexico Meet Regulatory Compliance

Challenge

When the City of Bloomfield, New Mexico was notified by the New Mexico Environmental Department that they had 18 months to bring their drinking water treatment plant into compliance with the Interim Enhanced Surface Water Treatment Rule (IESWTR), they needed a fast, innovative solution. Under the IESWTR, the city needed to meet regulatory compliance on turbidity levels. During seasonal runoff conditions, the turbidity level can spike to 1,000 nephelometric turbidity units (NTU). Under the prevailing conditions, the existing plant struggled to meet regulatory turbidity compliance of less than 1 NTU.

What's more, the existing plant could only treat about 1.5 million gallons per day (MGD) of water, which was inadequate during summer peak water demand that sometimes exceeded 2.5 MGD. Bloomfield solved their demand problem by renting a temporary Siemens Water Technologies mobile filter treatment system, which proved to be a less costly solution than purchasing water from a nearby municipality.

Solution

The city's engineering firm, CH2M-Hill, evaluated various treatment technologies that could handle rapidly changing turbidity levels. CH2M-Hill ultimately chose the Trident® HS package treatment system from Siemens Water Technologies. Selection was based on the lower overall life-cycle cost, ability to meet regulatory standards, delivery of equipment, installation timeline, ease of operation and maintenance, and the ability to be easily expandable for future water demand. The Trident HS package treatment system uses a multi-barrier approach that can handle seasonal turbidity spikes, while producing high quality water. It operates at higher hydraulic loading rates, resulting in a smaller equipment footprint. Equally important, waste is minimized with the multi-barrier approach where net production of water can be greater than 95%.

Results

In just 13 months, the 3.0-MGD Trident HS surface water treatment plant was fully operational and producing drinking water with a turbidity level of less than 0.1 NTU combined filter effluent, well below the 1.0 NTU regulatory standard. Raw water is chemically conditioned inline through a static mixer, where a coagulant and polymer are introduced. Once chemically conditioned, the water is directed to the Trident HS package treatment system consisting of two-stages of clarification, one stage of filtration, followed by ultraviolet (UV) and chlorine disinfection. The Trident HS has the potential to achieve a log credit removal of 7-log using the multi-barrier approach and chlorine disinfection. To date, the Bloomfield Water Treatment Plant has consistently maintained zero levels of fecal coliform and E. coli.

Since the commissioning of the Bloomfield Water Treatment Plant, the city has received numerous awards. In May 2009, The Large System of the Year Award was presented to John Eckley, Bloomfield Water Treatment Plant Manager, at the 31st Annual New Mexico Water Conference in Albuquerque. Eckley attributes the award to the Trident HS package treatment system and his relationship with employees at Siemens Water Technologies who supported him in getting the plant up and running and in compliance. Siemens congratulates John on this award!



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