

On-Site Wastewater Reuse

Midwest Municipality Saves Enough Potable Water to Supply 7000 Area Homes

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Located along the banks of one of the largest tributaries to the Mississippi River, this 100 MGD (million gallons per day) wastewater treatment plant has a large demand for service water with low suspended solids. Nearly 3 MGD of water are needed for cleaning devices on the bar screens, spray water to keep the belt presses clean and porous, pump seal water, service water at hose bibs and equipment wash stations and water to cool several large engine/generator sets that run off of methane gas produced from sludge digestion. Typically, wastewater treatment plants take this service water from potable water supplies. An automatic self-cleaning screen filtration system was installed recently using effluent from the plant for all of these non-potable needs saving enough potable water each day to supply over 7000 homes in the area.

Figure 1 shows the operating installation. The controls initiate a cleaning cycle when a 7 psi loss across the filtration system is reached due to captured debris. A manually set timer in the control panel can also initiate the cleaning cycle. During the cleaning cycle a “dime-size” area of screen is forcefully cleaned by pulling water backward through the screen at a velocity of over 50 feet per second and then moving that “dime-size” area of cleaning action across every square inch of screen surface. Each filter takes less than 15 seconds to clean without interrupting the filtration process. Simplicity, dependability, performance and the manufacturer’s commitment to customer service drove the selection process by the engineering firm commissioned to design the reuse system.

About the Author: Dr. Marcus Allhands has specialized in water quality for over twenty years with the last twelve years devoted specifically to filtration technologies. For more information contact Dr. Allhands at filters@orival.com, (800) 567-9767 or visit www.orival.com.

About Orival, Inc.: Providing automatic self-cleaning filtration systems for the removal of suspended solids from water is more than a job for Orival – it’s a way of life. Orival filters are installed on cooling towers, chillers, golf course and landscape irrigation systems, membrane systems, water & wastewater treatment systems, heat exchangers, spraying systems and water reuse systems. Municipal applications abound and Orival filters are found in industries such as Petrochemical, Food & Beverage, Steel, Mining, Automotive, Paper, Power Generation, Wastewater Treatment, Supply Water and Ethanol. Special emphasis has been placed recently on pretreatment for all types of membrane treatment systems. www.orival.com



Figure 1. Filtration system: Two Orival OR-12-PS filters with manifold.