

# EID at Work—Meeting the Regs for Treating Wastewater



The Deer Creek wastewater treatment plant is one of four in the district. This facility treats 2.6 million gallons of flow per day.

Wastewater treatment is a complex and expensive proposition affected by population, geography, and especially by local, state, and federal regulations. In El Dorado County, EID's sanitary sewer system serves about 62,000 residents across 77 square miles of erratic terrain. Some 550 miles of pipeline—assisted by 64 sewage lift (or pumping) stations to overcome topographical challenges—carry effluent to 4 plants for treatment.

In a nutshell, here's what it takes to properly treat and discharge wastewater: an extensive system of collection pipelines and lift stations, as well as sophisticated plant facilities, highly trained operators, and a constant eye on ever-changing regulations.

The treatment process begins with **preliminary treatment**, which consists of using mechanical raked bar screens at wastewater holding at the plants to remove objects like rags, plastic, grit, and even pieces of wood that could damage plant equipment and hinder the treatment process.

“What our customers flush down the toilet ends up at one of our plants,” says EID wastewater treatment plant operator Steven Boren. “The largest volume of material, outside of sand and gravel, that must be screened from the flow includes sanitary products and so-called ‘disposable’ cleaning cloths and the like. It costs us extra time and money to remove and properly transport these objects to a landfill.”

The next step, **primary treatment**, moves wastewater into primary clarifiers, or sedimentation basins, where about 60 percent of suspended and floating materials are removed. Then it's time for **secondary treatment**, normally a two-step process to get at the dissolved and organic materials not removed in primary treatment. The district relies on a process that activates the growth of bacteria and other microorganisms, which break down organic materials. In turn, the materials—now sludge—settle out of suspension or are converted to nitrogen gas, a common element in the atmosphere.

Secondary treatment is a sensitive biological process, which can be negatively affected by the introduction of inappropriate products and toxic wastes into the sewer system. “Fats, oils, and grease should never go down your drains or your toilets,” cautions Boren. “These substances clog and damage your plumbing, and they mean even more time and money for us to remove.”

**Tertiary treatment** comes next. It is a filtration process that removes the majority of the remaining suspended particles. In essence, this process “polishes” the water, improving the quality of the effluent before it is discharged to the receiving stream.

The final treatment step is **disinfection** to destroy pathogenic, or disease-producing, organisms. The district uses ultraviolet disinfection at its plants.

“As many customers know, much of our treated wastewater is returned as recycled water for residential and commercial landscape irrigation,” says Vickie Caulfield, EID wastewater operations manager. “And some of the treated wastewater is discharged to streams under state regulations. In fact, the treatment standards we must meet are nearly as demanding as for drinking water.”

To learn more about wastewater treatment regulations, visit [www.eid.org](http://www.eid.org), click on the Recycled Water home page, and then on the Title 22 icon for Title 22 of the California Code of Regulations.

And remember: Be careful what goes down your drains. If you don't put it in, we don't have to take it out!

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—Steve Boren