

Las Vegas Street Water Resource Recovery Facility Colorado Springs Utilities

Design Data

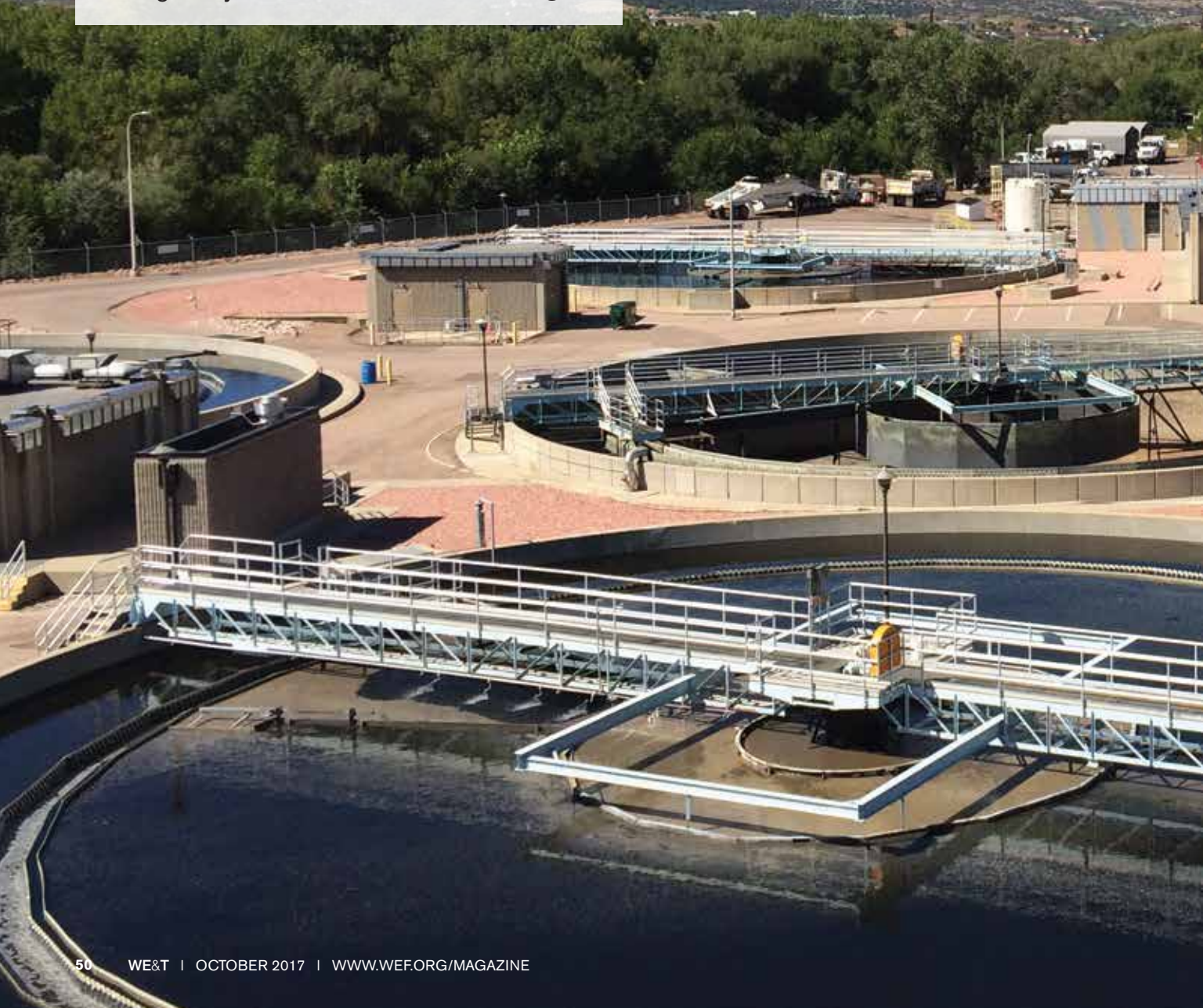
Location: **Colorado Springs, Colo.**

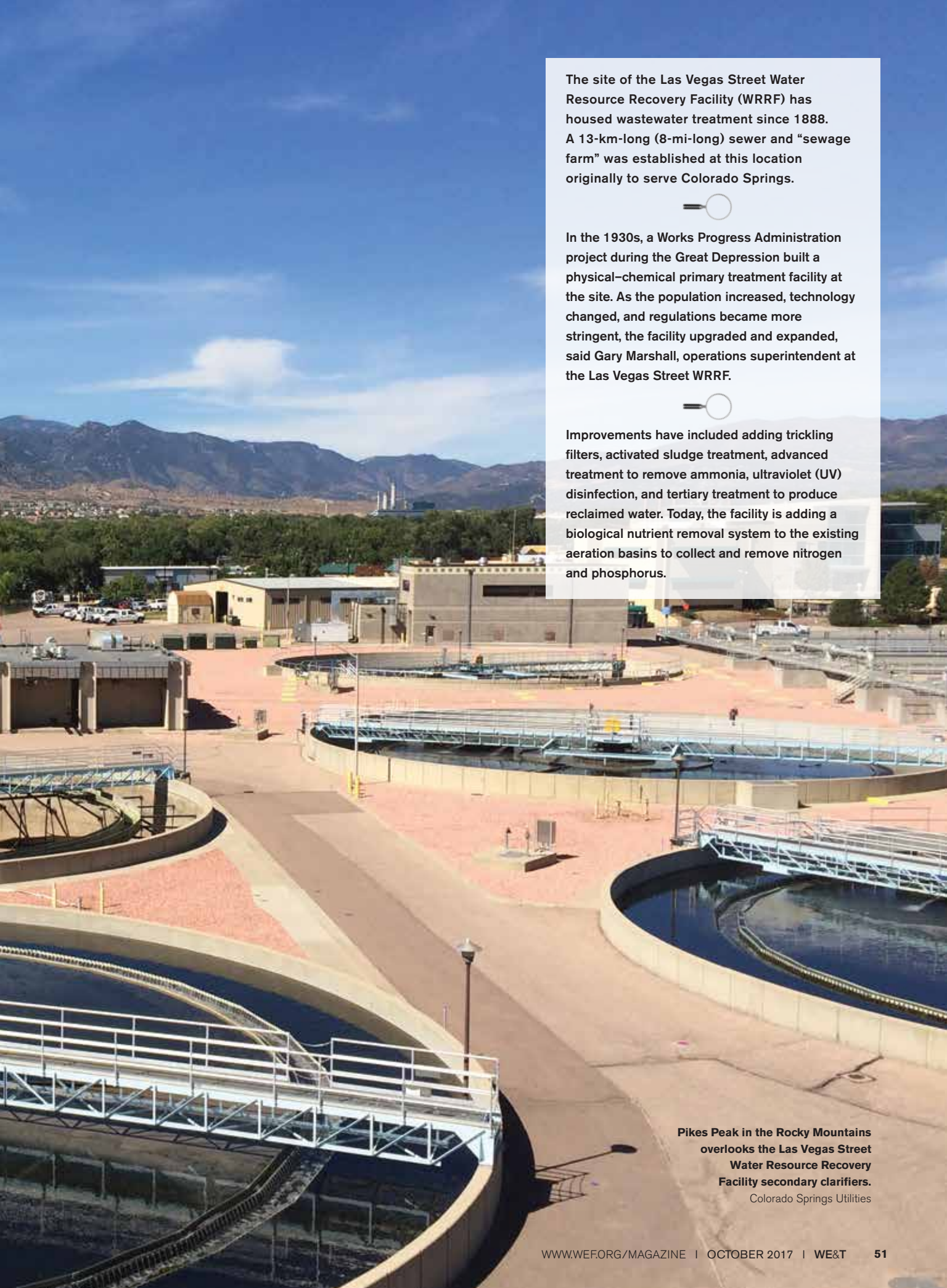
Startup date: **approximately 1937**

Number of employees: **22**

Design flow: **284 million L/d (75 mgd)**

Average daily flow: **110 million L/d (29 mgd)**





The site of the Las Vegas Street Water Resource Recovery Facility (WRRF) has housed wastewater treatment since 1888. A 13-km-long (8-mi-long) sewer and “sewage farm” was established at this location originally to serve Colorado Springs.

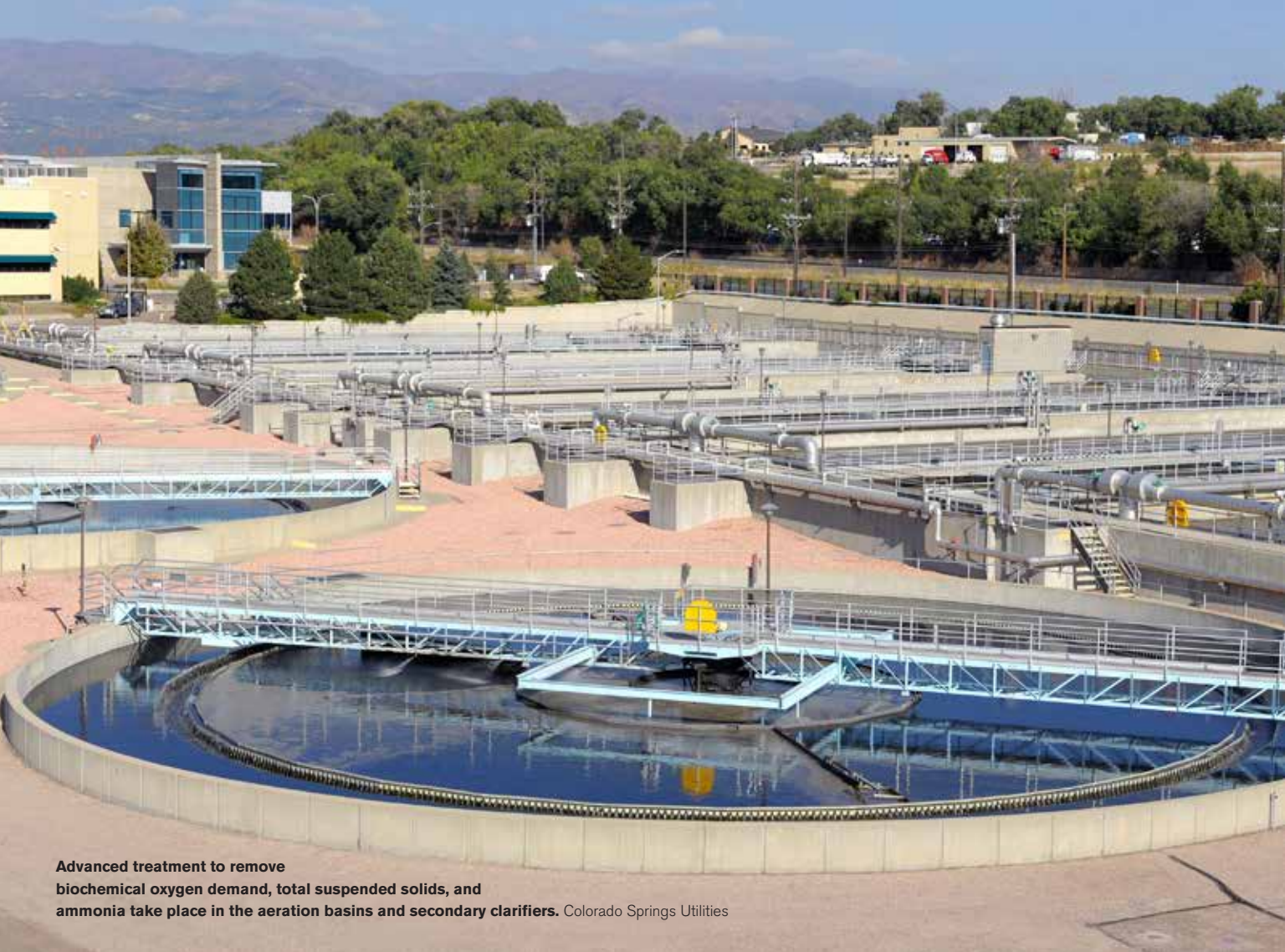


In the 1930s, a Works Progress Administration project during the Great Depression built a physical-chemical primary treatment facility at the site. As the population increased, technology changed, and regulations became more stringent, the facility upgraded and expanded, said Gary Marshall, operations superintendent at the Las Vegas Street WRRF.



Improvements have included adding trickling filters, activated sludge treatment, advanced treatment to remove ammonia, ultraviolet (UV) disinfection, and tertiary treatment to produce reclaimed water. Today, the facility is adding a biological nutrient removal system to the existing aeration basins to collect and remove nitrogen and phosphorus.

Pikes Peak in the Rocky Mountains overlooks the Las Vegas Street Water Resource Recovery Facility secondary clarifiers.
Colorado Springs Utilities



Advanced treatment to remove biochemical oxygen demand, total suspended solids, and ammonia take place in the aeration basins and secondary clarifiers. Colorado Springs Utilities



Step screens capture large solid materials that would damage equipment or clog downstream processes. Colorado Springs Utilities



Colorado Springs Utilities (CSU) joined the City of Colorado Springs to participate in a children's water festival, Marshall said. CSU demonstrates xeriscaping, water conservation, and environmental stewardship to the public at its Mesa Conservation and Environmental Center. In addition, tours of the WRRF are given for various school groups as well as to cadets from the Air Force Academy (El Paso County, Colo.).



Technology improvements and automation have allowed WRRF staffing levels to drop from 56 employees in the 1990s to 22 today.



The facility's reclaimed water supplies a local power facility and irrigates parks, golf courses, cemeteries, and college campuses, Marshall said.



The facility has won numerous awards, including the Water Environment Federation (Alexandria, Va.) Burke Safety award, the Rocky Mountain Water Environment Association Plant Performance award and Silver Safety award, and the National Association of Clean Water Agencies (Washington, D.C.) gold Peak Performance award.



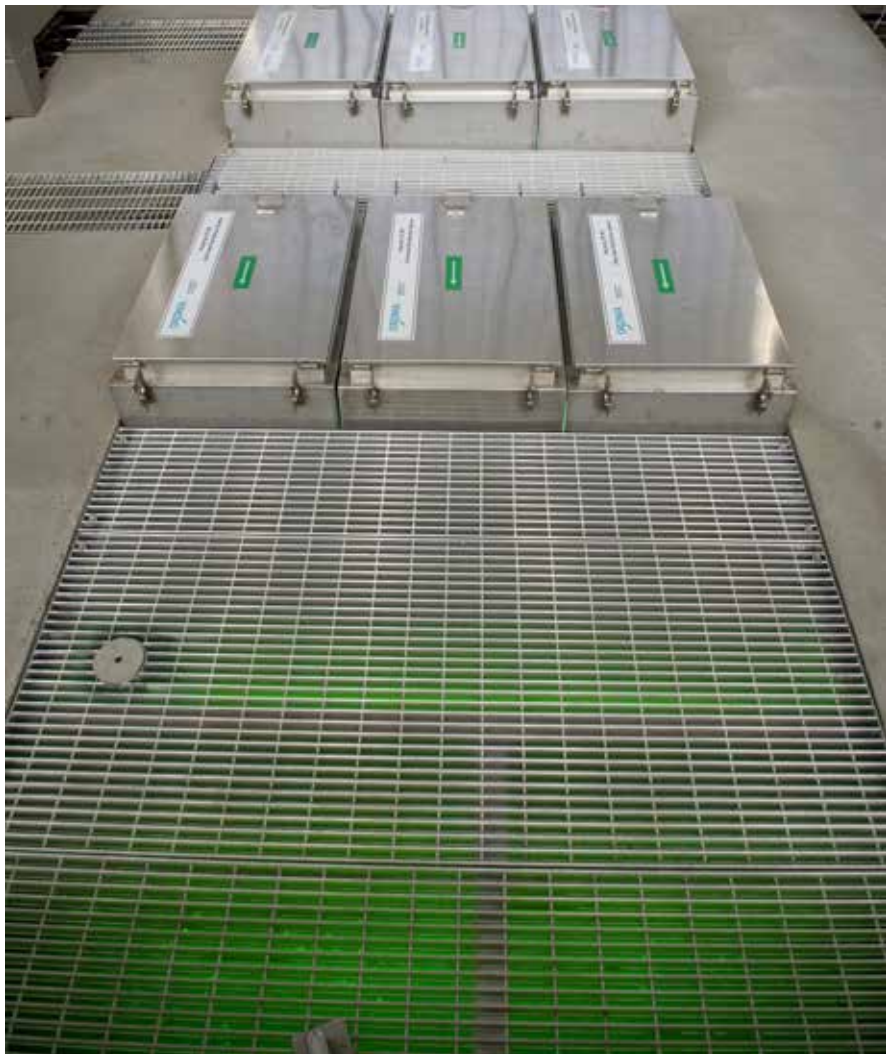
Wastewater from Colorado Springs enters the WRRF through three interceptors and a force main. The flow first encounters fine-step screens. Primary clarifiers remove settled solids and other floating materials. Aeration basins are being upgraded to enable anaerobic, anoxic, and aerobic zones to remove nitrogen and phosphorus in addition to carbonaceous pollutants. Secondary clarifiers separate settled mixed liquor solids before UV disinfection.



Biosolids from the treatment process are pumped 29 km (18 mi) south to the Clear Springs Ranch Solids Handling and Disposal facility for treatment and disposal.



Primary sedimentation tanks remove suspended matter and floatables from the treatment process to prepare wastewater for additional treatment. Colorado Springs Utilities



Ultraviolet light replaced gaseous chlorine for disinfection purposes in 2010.

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