

Royal Dairy

Royal City, Washington – USA

Client Profile: Royal Dairy is a large dairy built in 2001 with 15,000 head, 7,000 of which are milking cows. The Allred family strives to be progressive in every area of operation and has successfully positioned Royal Dairy as a leader in sustainability in Washington State. Faced with increasing regulations regarding nutrient management in dairy flush effluent, Royal sought out a robust wastewater system that could not only withstand the cold winters of Central Washington, but also convert the nutrients from dairy flush into beneficial byproducts and reusable assets.



Average TKN Removal: 86%

Average TP Removal: 94%

Average TSS Removal: 99%

System Design: The goal of dairy flush water treatment is to remove total nitrogen from the effluent before to facilitate the dairy's ability to reutilize the water for flush lanes and irrigation. With an average winter temperature of 29°F, Royal Dairy needed to verify that the system could withstand the elements and, in 2015, first decided to install a 5,000 GPD system. For the first one and a half years, the system averaged 80% TKN removal with the highest performance of 95% TKN removal. Pleased with the results, Royal Dairy expanded the system in February 2017 to approximately 200,000 GPD with a footprint of approximately 81,000 square feet.

