

Medora Corporation

City / Paper WWTP / Tissue Manufacturer

USWWOR-LOC757.001

Topics: Wastewater, complete mix, partial mix, sludge reduction, energy savings



Superintendent drives his boat by one of the SolarBee® units at the wastewater treatment plant.

Customer: Information is available upon request from Medora Corporation. 866-437-8076 info@medoraco.com

Overview: The City wastewater treatment plant (WWTP) consists of two lagoons. The primary lagoon is a complete mix pond covering 2.8 acres with a 12 ft operating depth and a total volume of 6.9 MG. The secondary lagoon is a partial mix pond with three cells covering 35.2 acres with a total operating depth of 20-25 ft and a total volume of 138.8 MG. Influent to the primary pond is 90% municipal and 10% industrial wastewater, with an average ow of 1.5 MGD and a hydraulic retention time of 4.6 days. While Boise Cascade was discharging to the secondary pond the influent was approximately 33% municipal and 67% industrial wastewater, with an average ow of 12 MGD and a system hydraulic retention time of 11.6 days. The Paper Plant quit discharging to the secondary pond in 2012 as they moved their process to another plant but, a Tissue Manufacturer started discharging to the secondary pond after Paper Plant stopped but, at approx. 50% of the waste load.

Conditions / Objectives: The WWTP had high energy costs associated with using aeration for mixing, as well as excessive sludge buildup. While Paper Plant was discharging, the secondary lagoon was using approximately 550 hp/ day of aeration / mixing hp.

Solution: Seven (7) SB10000v18 units in the secondary lagoon deployed September 2010. Two (2) SB10000v18 units in the primary pond deployed March 2011.

Results: The acquisition of the 9 SolarBee® units was part of the City's decade-long energy-saving plan for its WWTP. The purchases were offset by a grant from the Bonneville Power Administration's Energy Smart Industrial Program that covered about 70% of the total cost. Aeration usage in the secondary lagoon has decreased approximately 52% from 550 hp/day to 266 hp/day, while still meeting dissolved oxygen, BOD and TSS requirements. This savings exceeds original goals that gave an estimated payback period of about 2.5 years. In January 2012, the City won the state award from the Oregon Leaders Award, which recognizes Oregon industrial sites that demonstrate leadership in pursuit of energy efficiency. According to an engineering study, the City should save 2.2 million kilowatt hours per year. The superintendent noted "We're saving more money than we expected and we're getting better mixing and better treatment." The customers also appreciate the SCADA capabilities for monitoring each SolarBee® individually, and have been very happy with the significant energy and cost savings since they incorporated solar-powered circulation in the WWTP facility.

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