

Wastewater Treatment: MBBR System

Dairy facility treats wastewater with Moving Bed Biofilm Reactor (MBBR).

Stuart Ward of *Process Engineered Water Equipment, LLC* explains system design...

Case Study

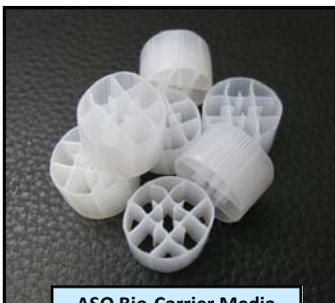
The new lactose crystallization facility at Rumiano Cheese, Crescent City CA necessitated both more area to put it and an improved wastewater treatment system to handle the resulting increased discharge flow. Space was very tight on the one city block the plant occupies. First Rumiano purchased the last remaining non-company owned lot, cleared the existing apartment building and then started fresh.



Expanding Production

The wastewater treatment system improvement goal was to simply add new equalization (EQ) and moving bed bioreactor (MBBR) capacity. The trick was converting an under performing tank into an MBBR. Note the tank itself was not designed for that type of application. A simple task it was not. Others said it was not even possible and turned down the project.

PEWE used innovative engineering and its' state of the art **ASO Bio-Carrier™** MBBR media equipment to overcome the treatment challenge. PEWE custom manufactured the internal piping, sieves and aeration grid which were the heart of the system.

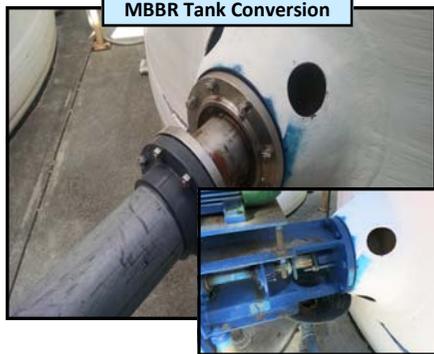


ASO Bio-Carrier Media

MBBR System

PEWE patent-pending **ASO Bio-Carrier™** media provide $626\text{m}^2/\text{m}^3$ of surface area for robust and effective biological growth. The resulting aerobic biology would prove to reduce the BOD well below the permit limit.

The design was for dual equalization tanks to balance the widely varying discharge flows from the existing cheese production facility and the new lactose plant. This smoothes the flow to the downstream MBBR units on a daily basis and provide a food reservoir during extended downtime. After the EQ tanks is a serial setup of three MBBRs that go to work on the BOD. The aerobic bacteria are secure and can efficiently do their work while anchored to the **ASO Bio-Carrier™** media. The sequential MBBR tanks regularly reduce the BOD to less than 20ppm.



MBBR Tank Conversion

Final Results

At start-up the system seamlessly transferred the water through the various process stages. The sump lift station, EQ tanks and MBBR system worked with quiet efficiency. Mr. Gary Smits Production Manager for Rumiano is very happy the **ASO Bio-Carrier™** MBBR is up and running well.



Pleasing Performance

Plant personnel easily manage the new system. The dual EQ tank arrangement allows the pH to naturally correct as well as achieve the desired flow balancing.

And after battling their flow balances for years Rumiano now has a fully functional wastewater plant designed for expected production growth. At the end of the day Rumiano Cheese is pleased with the new smooth running **ASO Bio-Carrier™** MBBR system. Process Engineered Water Equipment, LLC is equally pleased to have been part of their solution.



SuperScreen™
Dueler™ DAF
HD² XLRator™ DAF
Poly-E²™ Economy DAF
T²-Max™ Thickener
OZ Oil/Water Separator™
PolyAccu Dose™
DeWater Systems™



Quality Liquid/Solid Separation Systems

Screening, Gravity, Flotation, Dewatering & Accessories

Test Your Water
with the
HD² XLRator™ Pilot



Reduce
BOD
TSS
COD
FOG



**PROCESS ENGINEERED
WATER EQUIPMENT, LLC**

contact us today at: 360-798-9268 & www.pewe-llc.com