



## PLEASANT MOUNT WELDING, INC. SEQUENCING BATCH REACTOR (SBR) TECHNOLOGY

### CASE #2 - SUCCESS STORY: NEW INSTALLATION

#### PLANT NAME AND LOCATION

#### **Benton-Nicholson Joint Sewer Authority (BNJSA) Wastewater Treatment Plant in PA**

Design: *Daily Flow / Peak Flow* 0.140 MGD / 0.140 MGD



This facility was monitored for two years to evaluate compliance with the total nitrogen discharge limits set by the Chesapeake Bay Biological Nutrient Removal requirements. It met or exceeded those limits without any chemical addition. The BNJSA saved over \$1 million by not having to construct clarifiers and related equipment.

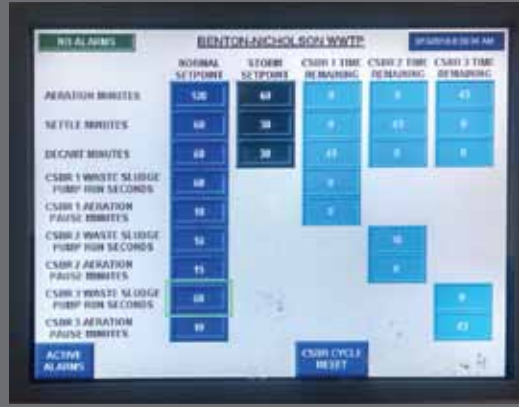
#### THE SOLUTION

Incorporated in 1998, the BNJSA utilizes a state-of-the-art Sequencing Batch Reactor (SBR) with an average daily flow of 0.024 MGD. The initial NPDES permit required BOD<sub>5</sub>, TSS and NH<sub>3</sub>-N removals. When the NPDES permit was renewed, DEP listed additional effluent parameters that were to be monitored for two years. These included NO<sub>2</sub>-N, NO<sub>3</sub>-N, TKN and Phosphorus.

The purpose of this monitoring was to evaluate the overall performance of the SBR and establish whether or not the equipment was meeting the Total Nitrogen and Phosphorus removals necessary for nutrient removal required to support the Chesapeake Bay initiative. The results? The BNJSA SBR met or exceeded the effluent discharge parameters for nutrient removal.

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“When SBR technology was new, everyone just crossed their fingers and hoped it would work. And it did. Now we’re focused on refining the process.”

*Bob Non, President, PMWI*



< Control Panel and HMI... the Heart of the Operation

## PMWI SBR SYSTEM PROCESS

Pleasant Mount Welding Inc.'s SBR system operates on a simple concept: introduce a quantity of waste to a reactor, treat the waste in an adequate time period and discharge a volume of effluent plus waste sludge equal to the original volume of waste introduced.

This "Fill and Draw" principle of operation involves the basic steps of Fill, React, Settle, Decant and Sludge Waste.

The system may be designed to include seven individual phases of operation, but the inclusion or duration of any individual phase is based upon specific waste characteristics and effluent objectives.

When nutrient removal is required, a simple adjustment to the SBR permits nitrification, denitrification and biological phosphorus removal. Optimum performance is attained when two or more reactors are utilized in a predetermined sequence of operations.

## PMWI SBR SYSTEM ADVANTAGES

- All components are retrievable and accessible
- Tolerates variable hydraulic and organic loads
- Controls filamentous growth (a type of foaming common to traditional activated sludge treatment)
- Provides quiescent settling
- Saves energy via separation of aeration and mixing
- Lower installation costs
- Eliminates return activated sludge pumping and secondary clarifiers
- Small footprint
- Simple to expand to upgrade
- One company accountability



Call (570) 282-6164 or learn more at [www.pmwi.net](http://www.pmwi.net)

**PLEASANT MOUNT WELDING, INC.**

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