

# SUCCESS STORIES

AQUA-AEROBIC SYSTEMS, INC.



FROM PRETREATMENT... TO REUSE

**PLANT NAME/LOCATION:** Rockmart, GA WWTP

**TYPE OF PLANT:** Municipal/Domestic

**DESIGN DAILY FLOW:** 3.0 MGD (11356 m<sup>3</sup>/day) **PEAK FLOW:** 7.5 MGD (28391 m<sup>3</sup>/day)

**AQUA-AEROBIC PRODUCTS:** Dual-basin AquaSBR<sup>®</sup> System

## AQUASBR<sup>®</sup> SYSTEM REPLACES AGING PUROX SYSTEM INCREASES CAPACITY, ADDS FLEXIBILITY, AND IMPROVES OVERALL EFFICIENCY

From 1980 to 1995, the City of Rockmart, GA operated a high rate Purox system to treat the city's wastewater. The plant was designed to treat 860,000 gpd on average with the ability to handle a peak flow of 1.2 mgd.

With continued residential growth and the neighboring commercial laundry, poultry processor and chemical plant, the system began to experience inconsistencies that the aging Purox system was not able to handle. The city realized that the aging plant was becoming inefficient and would not accommodate the future demands that would be imposed on the facility.

City planners began to look at alternatives to insure that the wastewater treatment plant would serve the city's current and future needs. The first alternative was to expand the existing plant by converting the clarifiers to aeration basins and build two additional clarifiers. Another alternative was the installation of an AquaSBR system. A cost analysis was conducted on both options and concluded that an AquaSBR system was more economical than upgrading the existing Purox system.



One of the two AquaSBR basins during the React Phase of treatment.

The new AquaSBR system went

on line in 1995 and has provided the city of Rockmart, GA and the surrounding area with efficient and economical wastewater treatment. According to Dan Kay, Plant Supervisor, "*general effluent from the AquaSBR system is usually in the single digits.*" He adds, "*for once our treatment system is running itself and not running us.*"



**PRODUCTS**

**Aqua-Jet®**  
Surface Aerator

**Aqua-Jet II®**  
Contained Flow Aerator

**AquaABF®**  
Automatic Backwash Filter

**MixAir®**  
Aeration System

**AquaDDM®**  
Direct Drive Mixer-Blender

**AquaSBR®**  
Sequencing Batch Reactor

**AquaDisk®**  
Cloth-Media Filter

**AquaDiamond™**  
Cloth-Media Filter

**AquaDrum™**  
Cloth-Media Filter

**ThermoFlo®**  
Spray Cooler

**Aqua EnduraDisc®**  
Fine Bubble Diffuser

**Aqua EnduraTube™**  
Fine Bubble Diffuser

**Aqua CB-12™**  
Coarse Bubble Diffuser

**Aqua CB-24®**  
Coarse Bubble Diffuser

**AquaMB Process™**  
Multiple-Barrier  
Membrane System

**MSBR®**  
Modified Sequencing  
Batch Reactor

**SERVICES**

Process and Mechanical  
Engineering

Quality Manufacturing

Aftermarket Sales &  
Service

International Expertise

**CONTACT US**

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**ROCKMART CHOSE THE AQUASBR® SYSTEM FOR ITS UNMATCHED FLEXIBILITY**

Approximately 3-4 times a year the chemical plant located across the street from the Rockmart treatment facility overloads the plant in the middle of the night. Because of the AquaSBR system's ability to automatically adjust to varying loading rates, only one of the two basins is affected during each of these events allowing the plant to stay on-line without operator attention. *"A flow through system would never handle that type of loading,"* says Kay. *"It would just go over the weir."*

**AQUASBR® SYSTEM PROCESS**

The AquaSBR system operates on a simple concept of introducing a quantity of waste to a reactor, treating the waste in an adequate time period, and subsequently discharging a volume of effluent plus waste sludge that is equal to the original volume of waste introduced to the reactor. 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.

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

**DESIGN CHARACTERISTICS/DATA  
AVERAGE MONTHLY OPERATING DATA**

Loading	Design Influent	Current Influent	Current Effluent	Permit Effluent
<b>Avg Flow mgd</b>	3.0	1.1	-----	-----
<b>Peak Flow mgd</b>	7.5	2.7	-----	-----
<b>BOD5 mg/l</b>	250	171	5	30
<b>TSS mg/l</b>	250	195	3	30
<b>TKN mg/l</b>	35	20	0.11	4.7

**AQUASBR® SYSTEM ADVANTAGES:**

- All components retrievable and accessible
- Tolerates variable hydraulic loads
- Controls filamentous growth
- Tolerates variable organic loads
- Provides quiescent settling
- Separation of aeration and mixing
- Lower installation costs
- Return activated sludge pumping eliminated
- Small footprint
- Simple to expand or upgrade
- One company accountability



*"With simple adjustments, I can make the AquaSBR system do what I want it to do. Its flexibility is something that a flow-through system just doesn't have."*