NAPIER-REID®



BIO-BATCH® SBR (SEQUENCING BATCH REACTOR)

Typical Sewage Treatment Quality*

BOD	<10 mg/L
TSS	<10 mg/L
Ammonia-N	<1 mg/L
Total Nitrogen	<10 mg/L
Total Phosphorus	<1 mg/L

*Subject to specific design conditions.

Advantages

All in one tank, eliminating external clarifiers and enabling compact footprint, low costs, and easy expansion

Reliable treatment due to built-in equalization, preselection design, and optimal sludge settleability

Enhanced BNR (biological nutrient removal) with no or minimal chemical addition

Operational flexibility to flow/loading fluctuations

Applications

Municipal wastewater

Industrial wastewater (camps, food & beverage, manufacturing, etc.)

Upgrades or greenfield

Small or large sizes

Problem

Municipalities and industries need reliable, high-quality biological wastewater treatment while continuous-flow systems require multiple tanks, complex hydraulics, and higher capital and operating costs—making them ill suited for remote locations, phased expansion, or rapidly changing influent.

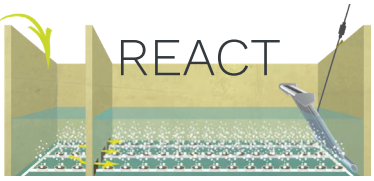
The Napier-Reid Solution

Bio-Batch® Sequencing Batch Reactors (SBRs) provide high-performance activated sludge treatment in a compact, integrated system. Using a time-based process, it combines flow equalization, biological treatment, and clarification in a single basin, eliminating secondary clarifiers and return activated sludge (RAS) pumping. Systems are custom-engineered and fabricated to meet site-specific requirements, suitable for both municipal and industrial applications.

How it works

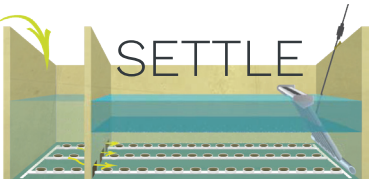
Bio-Batch SBR systems operate in three repeating, automated batch cycles, with two or more reactors arranged in trains to allow intermittent inflow (true batch) and one or more reactors for continuous inflow:

1. REACT



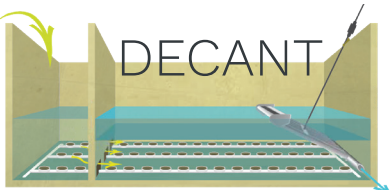
Influent is aerated or mixed mechanically with biomass for biological treatment.

2. SETTLE



Aeration and mixing stop, calming conditions for sludge settling.

3. DECANT



Swing or vertical-shaft telescopic decanters remove clarified effluent without disturbing settled solids.

CERTIFIED ISO9001:2016

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AERO-MOD® atac® EDI® EOSi® MITAwt®
NAPIER-REID® Nexom® triplepoint®

Axius Water companies

Designed to be better

Bio-Batch SBR systems incorporate proven design enhancements, including:

- **True batch or continuous inflow** options available
- **Vertical-shaft telescopic decanters** optimized for small basins (see image at right)
- **Integrated selector zones** for improved biomass health and settleability
- **Automated, PLC-based controls** for precise sequence management
- **Stainless steel or concrete reactor options** to suit site and lifecycle requirements

These features result in consistent effluent quality, operational resilience, and long-term reliability.



Napier-Reid knows wastewater treatment

For more than 75 years Napier-Reid has delivered water treatment solutions across thousands of projects worldwide. Renowned for our innovative designs and quality manufacturing, we provide systems that consistently meet or exceed the most challenging requirements of industries and municipalities alike.

Proven track record

Bio-Batch® SBR technology has been successfully deployed across municipal and industrial projects globally, including large-scale installations such as the **Mafraq Wastewater Treatment Plant** (below) in Abu Dhabi, the world's largest two-basin SBR, treating 50,000 m³/d or 13.2 MGD.



Working with Napier-Reid® is easy and effective

1. We walk you through the project details we need. Move your project forward at **napier-reid.com/contact**
2. We supply design-ready drawings, proprietary technologies, and responsive support.
3. Never worry about your wastewater effluent quality again.

NAPIER-REID®