

microBLOX™

RTO (Ready-to-Operate) Enviroquip® MBR Systems

Key Features & Benefits

- Complete, Ready-to-Operate MBR System
- High solids operation
- Gravity filtration
- Simple, single-stage process
- Few moving parts
- Small footprint
- Easily located, deployable

How we create value

- Guaranteed to meet most stringent nutrient limits
- 25 % - 50 % lower total installed cost
- > 5x less waste solids hauling
- 12 week delivery (2 weeks for submittals)
- Highest reuse quality effluent
- All replacement parts in stock (72hr delivery)
- Comprehensive service plans available

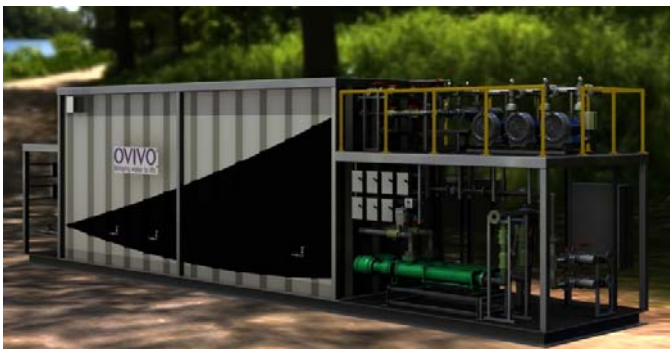


microBLOX™

microBLOX™ Membrane Bioreactor (MBR) Systems are fully functional solutions to wastewater treatment problems and are ideally suited for a wide range of applications, including, but not limited to: housing developments, state parks, rest areas, isolated communities, military camps, shopping malls, golf courses, resorts, casinos, sewer mining (scalping), some industrial and more.

microBLOX™ technology was designed and engineered to be extremely simple to operate and optimize. This single-stage process uses one set of blowers to provide mixing, air scouring and process oxygen. For higher strength waste, concentrated oxygen can be efficiently added to the process on an as needed basis. Each System can be guaranteed to meet the most stringent nutrient limits and online monitoring is available for ammonia, nitrates and phosphorus in the effluent.

Backed by one of the largest water companies in the world, Ovivo, microBLOX™ Systems are built on the experience of Enviroquip® MBR Systems and our over 130 operating plants in the US and 330 plants worldwide.



62,500 GPD microBLOX plant is easily installed and ready-to-operate

Why microBLOX™?

- **Lowest Total Cost of Ownership**

Total installed and operating costs can be lower than all other comparable technologies.

- **The Most Space Efficient**

At higher flow and/or pollutant loading, microBLOX™ can treat more waste than any other technology in a given footprint (maximum unit capacity up to 62,500 gpd).

- **Most Reliable**

Considered Best Available Technology (BAT), microBLOX™ Systems are guaranteed to meet the most stringent nutrient limits and to produce the highest, reuse quality effluent over a broad range of operating conditions.

- **Single Source Responsibility**

There is only one number to call for technical support, parts or service (with parts delivery in 72 hrs).

- **Built for Operators by Operators**

All components are accessible; no electrical components are located in mixed liquor. Full remote monitoring capabilities using easily configurable phone application.

microBLOX™ Range

Standard Systems

Each microBLOX™ comes equipped as a fully functioning, ready-to-operate MBR system, including:

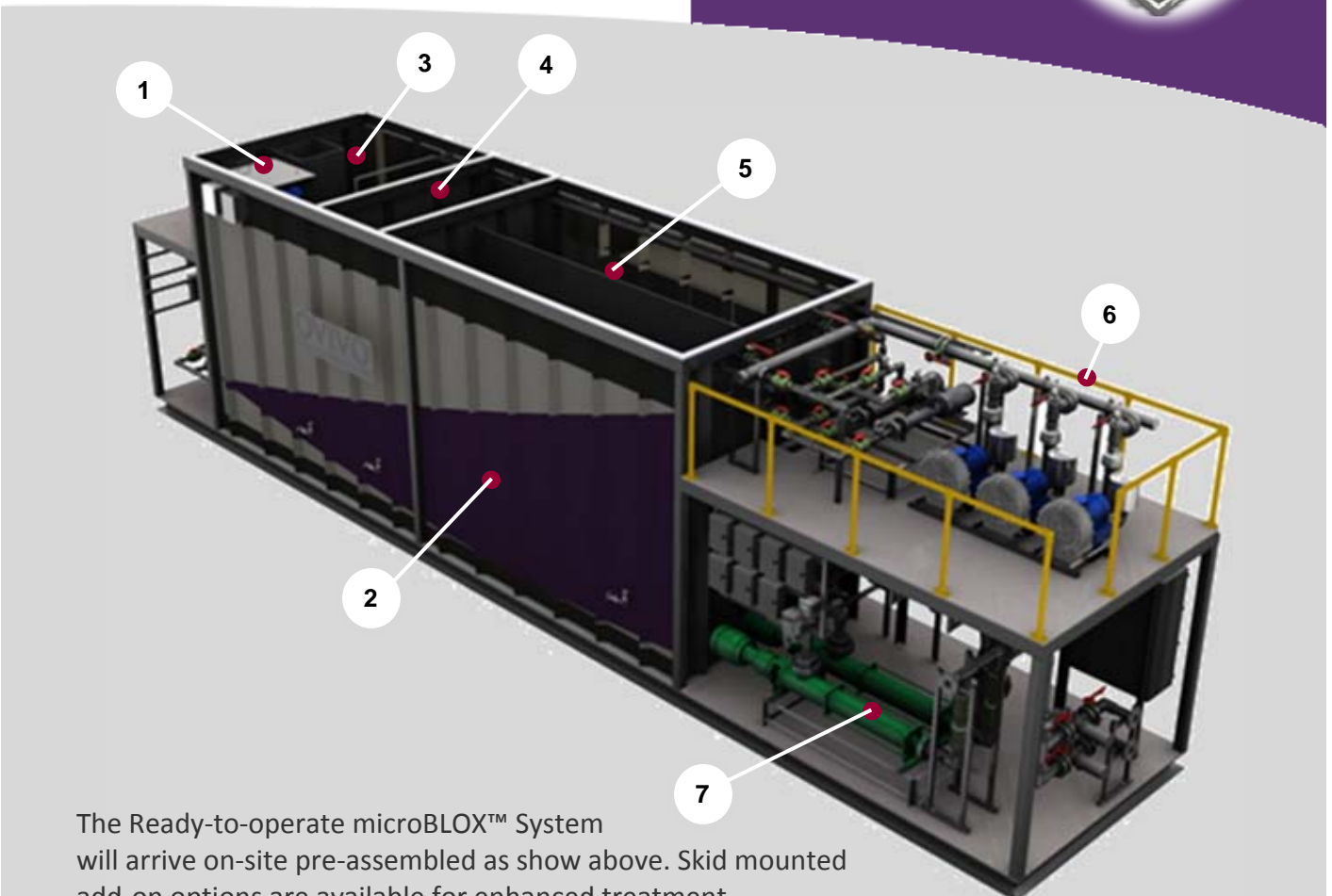
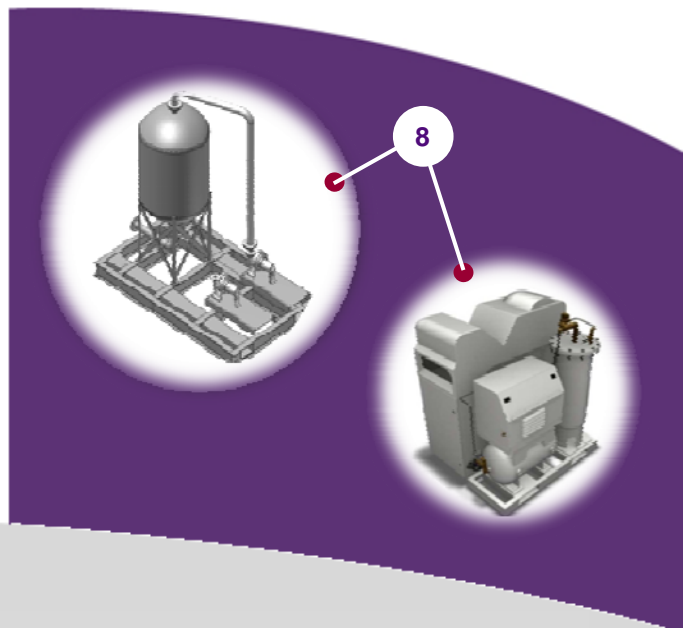
- Fine screening (1)
- Integrated, tested process tankage (2)
- Equalization Zone (3)
- WAS Zone (4)
- Submerged membrane units by KUBOTA®(5)
- Pre-wired, factory tested equipment (6)
- Remote monitoring controls

Options

Several options are available to tailor the capabilities of each microBLOX™ System to meet specific project needs including:

- Online nutrient monitoring
- Winterization packages
- Chemical dosing (add. carbon, pH, coagulants)
- Permeate disinfection
- Permeate pumping (7)
- Concentrated oxygen delivery systems (8)

Treated Effluent Quality		
Parameters	Typical Values	Achievable Values
BOD ₅	< 2.0 mg/l	Non Detectable
Total Nitrogen (TN)	< 10.0 mg/l	< 3.0 mg/l
Ammonia (NH ₃)	< 1.0 mg/l	< 0.3 mg/l
Phosphorus (TP)	< 1.0 mg/l	< 0.03 mg/l
Fecal Coliform	< 2.2 CFU/100 ml	Non Detectable
TSS	< 2.0 mg/l	Non Detectable



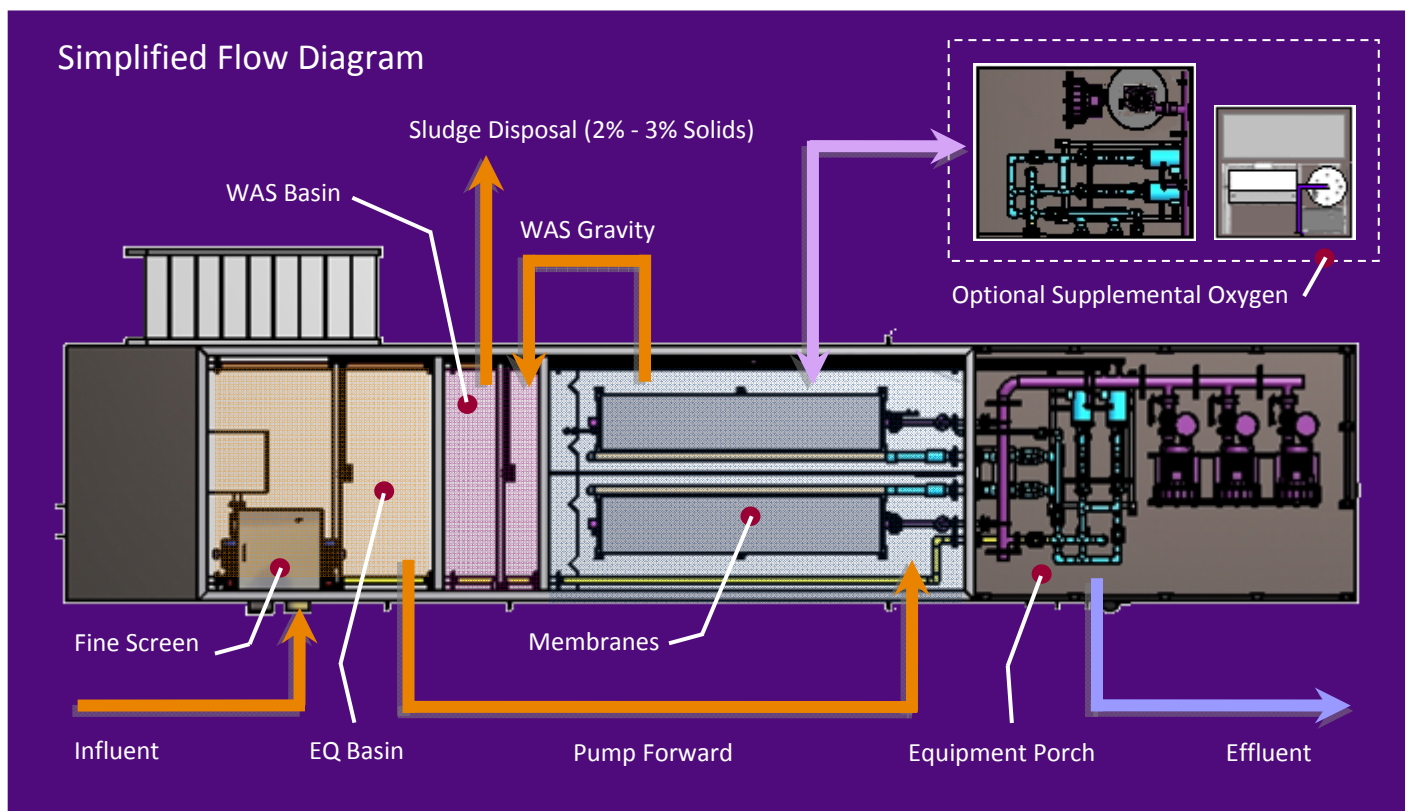
The Ready-to-operate microBLOX™ System will arrive on-site pre-assembled as show above. Skid mounted add-on options are available for enhanced treatment.

The Process

A microBLOX™ System can be configured to run in flow-through or batch modes depending on site conditions and treatment goals. As shown above, influent (raw wastewater) is screened before filling a dedicated Equalization Zone. Equalized wastewater is then pumped into a single-stage MBR process designed to operate over a range of dissolved oxygen conditions to achieve nutrient removal targets. For smaller, municipal applications, process oxygen is delivered exclusively by membrane aeration. Biologically treated wastewater is then gravity filtered (or pumped) using KUBOTA membranes to produce reuse quality effluent with only one tank; there is no recycle, no mechanical mixing and no fine bubble diffusers.

For higher strength wastes (e.g. light industrial or commercial), or to increase hydraulic throughput, options are available using various oxygen concentrator technologies. Oxygen makeup and delivery systems are completely skid mounted and easy to setup requiring only a few field connections. The onboard controls system is equipped with programming necessary for seamless integration.

Unlike other MBR Systems, a microBLOX™ System integrates solids thickening into the biological process to keep waste solids handling costs down and to improve overall reliability. As necessary, partially digested, thickened solids are wasted to an integral Waste Activated Sludge (WAS) Storage Zone. WAS can be stored at 2% - 3% solids, which can reduce hauling frequencies by more than 5 times that of conventional (package) technologies using sedimentation for solid/liquid separation.



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