

## LIMITLESS POSSIBILITIES



Worldwide Experts in Water Treatment





### WHERE IS SiC USED?

SIC IS USED IN A WIDE VARIETY OF WATER AND WASTEWATER APPLICATIONS IN BOTH MUNICIPAL AND INDUSTRIAL SECTORS. IT'S PRIMARY GOAL IS TO REMOVE SOLIDS, TOXIC POLLUTANTS, AND PATHOGENS, CREATING A SAFE, CLEAN, AND SUSTAINABLE WATER SOURCE.









All too often all of the focus is placed on the membrane, portraying it as a black box that is independent of its surroundings. The reality is that membranes are one of many subsystems that go into any water or wastewater treatment plant. While the membranes are often the workhorse of a treatment system, they can only be successful if the rest of the system is designed properly. The combination of Cembrane SiC Technology with Ovivo's system integration and process expertise have created a powerful new brand of treatment systems: SiC BLOX Systems. SiC BLOX Systems have the widest range of applications with the widest operating window to solve new and existing problems. SiC Blox systems come in conventional,

SiC Blox systems come in conventional, in-ground designs, packaged plants ("micro"), and mobile configurations ("remote").





# STORM TREATMENT

Climate change is creating bigger storms and more pollution. Every year over 850 billion gallons of untreated sewage are discharged into our waterways. Beaches close. Fish die. People get sick. Storm driven sewer discharges are a big problem, and they're getting worse. stormBLOX technology offers a simple and a sustainable treatment solution to this huge problem.

stormBLOX instantly treats right at the on-set of a storm while physically blocking solids and pathogens from being discharged into our waterways. Other treatment options, such as ballasted clarification, compressed media filtration, cloth filtration, and chlorination simply can't treat storm flows as quickly and as effectively as stormBLOX.

These other technologies pass thousands to millions of gallons untreated at the onset of a storm as they come on line. Plus, stormBLOX effluent meets all disinfection requirements without supplemental chemicals, preventing toxic by-products from harming aquatic life.









#### stormBLOX IS USED IN THE FOLLOWING APPLICATIONS/MARKETS:

- CSO facilities with consent decrees
- SSO facilities with consent decrees
- MBR plants with >3Q peaking factors due to high I&I
- CAS plants with >5Q peaking factors due to high I&I

#### **BENEFITS OF stormBLOX INCLUDE:**

- Disinfection without chemicals
- Instantaneous treatment
- Supplement secondary treatment
- No disinfection by-products
- Utilize as tertiary filtration system during dry weather
- Extremely small footprint, easily fits into existing infrastructure
- Easily placed off-line regardless of weather conditions









MBRs are a fantastic technology that we need – it provides a level of wastewater treatment that no other technology can, but they sometimes face operational challenges or difficulties. Let's remember that membranes in an MBR are in a turbulent, high mixed liquor, high fouling environment which can place tremendous stress on any membrane. ecoBLOX systems can endure and withstand the stresses of an MBR environment by utilizing membranes that are a rock! ecoBLOX systems are truly resilient. ecoBLOX systems have the widest operational window meaning they can adapt, without failure, to changes in process conditions. This ability to adapt ensures smooth operation, long membrane life, and low life cycles costs. ecoBLOX plants are also a great fit for installations with seasonal flow, like ski resorts, where temporarily shutting down the system for an extended period of time makes sense.







#### ecoBLOX IS USED IN THE FOLLOWING MARKETS:

- Replacement of struggling or failing MBR plants
- Retrofit of CAS plants
- Greenfield plants
- Packaged plants

#### **BENEFITS OF ecoBLOX:**

- Increase capacity of existing MBR plants
- 100% recoverability
- Widest operating window
- Membrane life is decoupled from chemical cleaning
- Easy to operate and maintain
- They can be easily placed offline with no special preservation







Wastewater treatment is a challenge in and of itself, but dealing with the leftover sludge presents a whole new set of issues. When managed poorly, sludge management can be very costly, bad for the environment, and make a real stink – literally.

solidBLOX transforms wastewater treatment plants by optimizing sludge handling process while lowering effluent NH3 and TP. When coupled with aerobic digestion, solidBLOX eliminates foul odors while producing reuse quality effluent, which is good for all of us. By thickening to 3%, solidBLOX also can reduce sludge hauling requirements, reducing both cost and pollution. An aerobic digester can now be operated at 3% solids, reducing the size of a conventional aerobic digester significantly. Plus, by using SiC to thicken solids, polymer addition is eliminated, saving plants a ton of money and hassle. Last, but certainly not least, solidBLOX helps make natural organic fertilizer which is good for all of us.









#### solidBLOX IS USED IN THE FOLLOWING MARKETS:

- Aerobic digestion plants
- WWTP with high hauling costs
- WWTP with tight TN and/or TP limit



#### BENEFITS OF solidBLOX ARE:

- Class B solids with a lower footprint and energy consumption
- Thickening to >3% solids without the use of polymers
- Lower sludge hauling costs
- Elimination of foul odors associated with conventional aerobic digestion
- Reuse quality effluent that compliments a BRN process







There simply isn't enough clean water in our world today. Fresh water supplies are under severe duress due to demand and pollution. What clean water we do have is rapidly vanishing as extreme droughts strengthen their grip. Simply put, we need more water!

Effluent from conventional wastewater treatment plants is a readily available, reliable, and renewable resource that we don't take advantage of. ultraBLOX is the most versatile and advanced tertiary system for creating clean, pure, and safe water. Placing the SiC membrane at the final step of the plant allows you to prevent phosphorus, metals, pathogens and other trace contaminants from passing. Reuse and discharge to our water ways is safer than ever before. By creating a new and reliable water source, ultraBLOX helps alleviate pressure on already strained water sources.







#### ULTRABLOX IS USED IN THE FOLLOWING MARKETS:

- Advanced treatment of secondary effluent to essentially zero solids.
- Advances reuse such as DPR, IPR, and Title 22
- Industrial process water make-up
- Hollow fiber plant rehab
- Plants with TP limits <0.3mg/l and Plant will low heavy metal limits

#### **BENEFITS OF ULTRABLOX:**

- Increase capacity of existing hollow fiber plants
- Quick and full recovery, minimize impacts of EPS and algae fouling
- Combine with ozone, PAC, enhanced coagulation, or tertiary MBR
  for advanced treatment capabilities
- Takes less chemical to achieve low TP limits
- Pathogen removal
- Heavy metal removal
- Lower downstream treatment (RO, UV, etc.) costs









Fresh water supplies are severely stressed and access to safe drinking water becomes a greater challenge each and every day. It is imperative we protect what fresh water we have access to ensure health and safety is never compromised. As more and more exotic chemicals contaminant our water, the need for new approaches to ensure safe and clean water has never been more critical. Let's block these unhealthful chemicals from entering our drinking water with SiC! With rapidly ageing infrastructure, clearBLOX systems are perfectly suited for upgrading/retrofitting conventional gravity filter plants to meet current drinking water requirements. clearBLOX ensures our water is safe and that we never have to compromise our health. clearBLOX protects us from today's most toxic pollutants by creating new treatment approaches and solutions for water.





#### clearBLOX IS USED IN THE FOLLOWING APPLICATIONS:

- Conventional gravity filter retrofit
- Filter backwash recovery
- · Metal, including radium, removal from groundwater
- BWRO pre-treatment
- SWRO pre-treatment
- Surface water filtration for potable water.
- Submerged hollow fiber plant retrofit

#### **BENEFITS OF clearBLOX:**

- Performance and effluent quality independent of incoming feed
- Eliminate polymers
- Maximize water recovery
- Increase capacity of existing hollow fiber plants
- Lowest SDI (RO pre-treatment)
- DOC/THM pre-cursor removal
- Remove complex organic compounds such as pharmaceuticals or PFAS
- Minimize or reduce post disinfection requirements
- Lower downstream treatment (RO, UV, etc.) costs
- Higher overall water recovery (i.e. less wasting)





