



## WATER PURIFICATION AND WASTEWATER TREATMENT SOLUTIONS



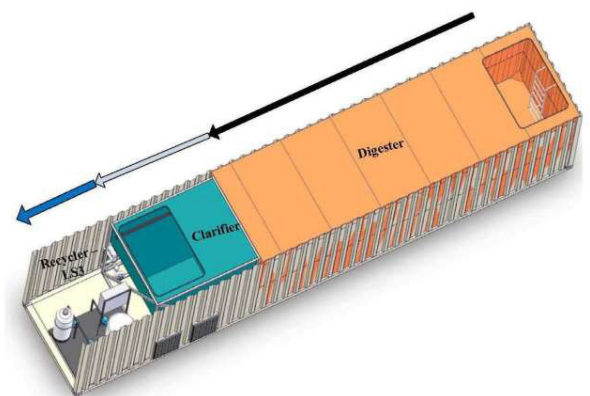
### ALWAYS-ON INDUSTRIAL WASTEWATER AND SEWAGE TREATMENT

Commercial and industrial facilities including mining and fracking sites, meat and agriculture processing facilities and manufacturing sites need to eliminate contamination of groundwater or fragile environments. Residential communities in remote and environmentally sensitive locations often face situations where sewer service is either unavailable or too costly to install, and septic is not permitted. These commercial, industrial and community sites need an always-on, scalable wastewater treatment solution that can process and treat chemical and biological wastewater.

PATHION wastewater treatment solutions deliver complete, containerized or utility-scale wastewater treatment solutions for both industrial wastewater and sewage. Our water treatment solutions can be combined with renewable energy systems and microgrids to operate uninterrupted anywhere water needs to be treated. Our industrial wastewater and sewage systems can return potable (drinkable) water, both eliminating wastewater contamination of ground water or fragile environments and drastically reducing the amount of water consumed by a facility or community. PATHION's industrial wastewater treatment system can purify water from fracking oil wells, mining operations, meat and agriculture processing facilities and manufacturing facilities. Unlike traditional systems, PATHION's minimal Biological Oxygen Demand (BOD) facility emits no methane and produces no organic sludge to haul away. State-of-the-art Nano Fiber Purification filters contaminants to below 1 micron to remove all bacteria, viruses, parasites and hazardous chemicals, including all PFAS and heavy metals.

### TWO INNOVATIVE TREATMENT SOLUTIONS:

PATHION provides treatment solutions both for sewage and for industrial wastewater. Our sewage solution can be customized to nearly any size or need, containerized or permanently installed, to deliver complete, odorless, automatic operation. Incoming sewage is ground and aerated to create a self-devouring floc that does not use an anaerobic process, and therefore does not create sludge during clarification. Cleaner effluent is withdrawn and filtered to below 5 microns to proceed to LS3 Water Purification to filter to 1 micron, remove hazardous chemicals and disinfect with UV or Nano-Processing to kill any bacteria or viruses that remain. The effluent is purified, totally reusable and can supplement quality drinking water.



PATHION's industrial wastewater treatment solution is scalable, containerized and uses proprietary processes and additives in unique engineered configurations to induce a broad range of controlled chemical reactions, notably oxidation and/or reduction reactions, that remove and/or alter specific targeted substances. Effluent then can be recycled as gray water or further filtered into potable water.

### **BENEFITS OF WATER TREATMENT IN A MICROGRID:**

PATHION wastewater treatment solutions combine with PATHION DirectCore™ Energy Management System to provide an always-on microgrid solution to ensure both 24/7/365 power and clean water on any commercial, industrial or community site. Hybrid microgrids based on PATHION DirectCore™ seamlessly interchange between wind, solar, diesel, and the grid to provide uninterrupted, reliable, low-cost electricity. The system is continuously monitored in real-time and switches to PATHION's on-site energy storage in under 250 milliseconds if grid power is lost.



### **ONLY PATHION SOLUTIONS CAN DO THIS:**

- Provide a complete, always-on water and power solution handling industrial wastewater and sewage treatment coupled with energy management, control, and optimization of all microgrid components
- Return wastewater as certified potable (drinkable) water with a zero BOD process, no methane emissions, no sludge to haul and minimal maintenance
- Serve any site from small residential communities generating less than 10,000 GPD influent, to complex, large-scale industrial sites processing >1M GPD influent with systems that exceed EU, WHO, International and US EPA standards
- Deploy clean water and energy to remote locations, offering autonomy and reliability in the field
- Save money with energy optimizations, easy operation and cost efficient water treatment that will improve local infrastructure and quality of life

### **BIOLOGICAL OR CHEMICAL**



### **MILITARY GRADE**



### **SCALABLE, CONTAINERIZED**



### **DEPLOYABLE**

## **How can we help you?**

PATHION works closely with our customers to define their critical problems and find the best solutions, including offering insight on operations and processes both before or as part of a critical water and/or energy system upgrade. We then continue to support our customers throughout the life of the facility. Visit <https://pathion.com/contact/> to schedule an evaluation.