AWS
ADVANCED WATER SOLUTIONS

WATER TREATMENT WITHOUT THE WASTE

891 Kingsway Drive, Burlington, ON L7T 3H8 | **Tel:** 905 – 975 – 7922
Email: advancedwatersolutions@sympatico.ca | **www.advancedwatersolutions.com**

ZERO® ADVANCED WATER SOLUTIONS PATENTED TECHNOLOGY

WATER TREATMENT WITHOUT THE WASTE!

Advanced Water Solutions (AWS) has a mandate to develop and apply state-of-the art and prepackaged water purification technologies to solve problems affecting humanity and the environment. A key focus area of AWS is to maximize the reliability and effectiveness of reverse osmosis (RO) membranes as a powerful and cost-effective water purification and desalination tool. For many years, AWS has been developing, piloting and applying innovative, patented processes to pre-treat the influent water and minimize or eliminate the RO and other process rejects, thereby solving serious environmental problems and reducing the cost of water desalination

- Reverse Osmosis (RO) membrane systems remove even the smallest particles and ionic species from drinking water. Other methods of water purification like boiling or ultra violet light destroy bacteria but do not remove particles of inorganic and organic pollutants like metals and chemicals.
- A reverse osmosis water purifier has membrane filters that are eco-friendly as they do not produce any chemicals
- RO systems remove 99%+ of salts, bacteria and pyrogens, PCBs, pesticides, dioxins, PFOA's, phthalates, and THMs (trihalomethanes).
- RO systems eliminate all heavy metals that are harmful to health, like arsenic, cadmium, lead, mercury, as well as animal waste and other chemicals
- RO systems remove dissolved minerals, water hardness, sulphides, sulphides, iron, manganese and other contaminants that may be unpleasant, unhealthy and unsafe for human consumption.

ZERO® FUSS

ADVANCED APPROACH = SIMPLE RESULTS

DIFFICULT WATER

Designed and Built for the Most Difficult Water Sources

MODERATE WATER

Customized for your Application Recommending Only what is Needed

MUNICIPAL & PROCESS WATER

High Purity Process Water or Simply Demand More from your Water

RAW WATER - Suitable for Water Containing: Iron, Manganese, Sulphur, Hardness, Tannins, Organic Carbon, Ammonia, High Suspended Solids, Bacteria, E-Coli, Lead, Mercury, Pesticides and Pharmaceutical Contamination.

PRETREATMENT- Advanced Filtration & Reclamation: Chemical-free oxidation process and removal of iron and manganese. Does not form harmful THMs or other by-products while wasting less water to drain and reducing waste to landfills by minimizing disposable filters and media. Good quality water will prolong the life of downstream purification systems such as RO membranes, activated carbon and ion exchange media.

POLISHING – ZERO® High Recovery Reverse Osmosismembranes: Remove organics and soluble ions such as hardness, sodium, chloride, ammonia, pesticides, and lead while operating at 90 to 95% recovery resulting in less waste down the drain to the local infrastructure.

DESIGNER WATER – High Quality Drinking Water (or Process Water) Sized for all applications from single residential dwellings, schools, small municipal hamlets to high demand industrial processes. Custom configurations for even the toughest applications and enviroments.

SYSTEM BENEFITS

PROBLEM	ZERO®
Large amount of waste from conventional RO Systems can overload downstream waste lagoons or handling facilities.	Patented High Recovery ZERO® Process often reduces waste to 2-5% or 95% to 98% recovery.
Poor drinking water (or process water) quality from wells and aquifiers.	Innovative and effective pretreatment, disinfection and purification without using hazardous chemicals.
Reverse Osmosis membrane fouling and scale formation resulting in loss of capacity. High cost minimal and zero liquid discharge in remote applications where waste disposal is limited.	Patented design that elimates membrane surface fouling and scale formation, resulting in reliable operation.
Biofouling of membrane surface with other pretreatment methods	Reduces treatment cost of zero liquid discharge applications, making them viable.
	Does not rely on biological pretreatment process and controls biological growth within the sytem.

COMPETITIVE ADVANTAGES

ADVANTAGE	ZERO®
Highest Recovery	Offers the highest achievable purified water recovery, up to 99%.
Simple & Proven Design	Will not suffer from surface fouling or scale formation and therefore requires very little maintenance.
Demonstrates Consistent Product Water Quality	Rigorous, customized design and effective chemical-free pretreatment ensures reliability regardless of incoming water quality.
Cost Effectiveness	The high recovery of purified water and small waste volume generated translates into rapid return on investment.
Premium Quality	Assembled using only high quality components for extended life and ease of maintenance.
Green Technology	Minimum impact on the environment through the reduction of liquid waste and solid waste to landfill.

ZERO®

DRINKING WATER PILOT SYSTEM

1 GPM mobile system for on-site studies and use as an effective tool when designing solutions for the toughest applications and poor source water quality. Suitable for virtually any drinking water source and its flexible design allows to test any scenario. Pilot studies are a very effective method of identifying and addressing critical water treatment challenges under representative field conditions and guarantees a reliable end product.

ONBOARD FEATURES

- Multiple Operating Modes
- Pre-Screen and Sediment Filtration
- Advanced Oxidation
- Patented Ultrafiltration Process & CIP
- Optional Coagulation and Clarification
- Patented High Recovery Process
- PLC Controlled, Remote Access
- Automatic Data Logging

WHAT WE DO

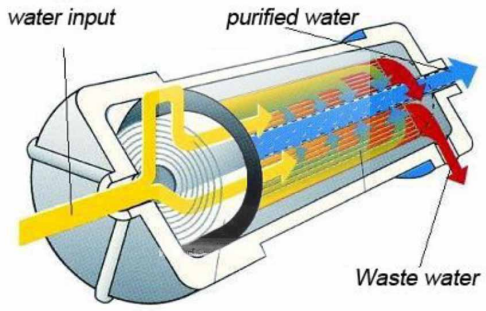
Our group is committed to developing proven innovative technologies and solutions focused on maximizing the product while minimizing waste. Our team, composed of leading experts are committed to listening to the customer needs, analyzing raw water samples, performing advanced process modeling, bench-scale testing and pilot assessment, aimed at arriving at optimum designs as well asaddressing cultural and geographic challenges, training and development of support structures.

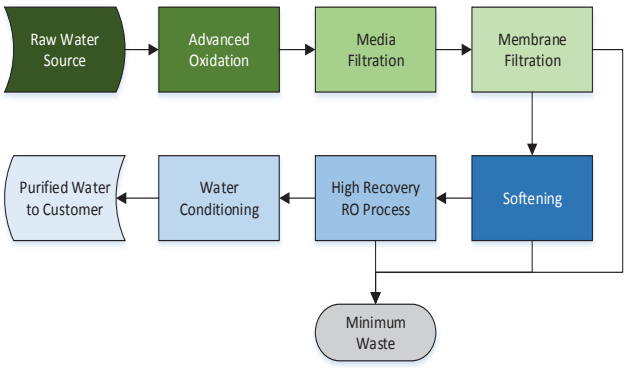
AWS ADVANCED WATER SOLUTIONS

PATENTED PROCESS

The primary filtration within our treatment process is Reverse Osmosis membranes. Reverse Osmosis is a process in which soluble organic and inorganic compounds (such as salts) are removed from water. A semi-permeable membrane allows only the water to pass through, not the impurities or contaminates and these impurities and contaminants are then safely disposed of.

- The patented technology enables the full osmotic potential of the membrane through continuous contaminant removal.
- Reducing both chemical consumption and chemical costs via selective closed loop conditioning



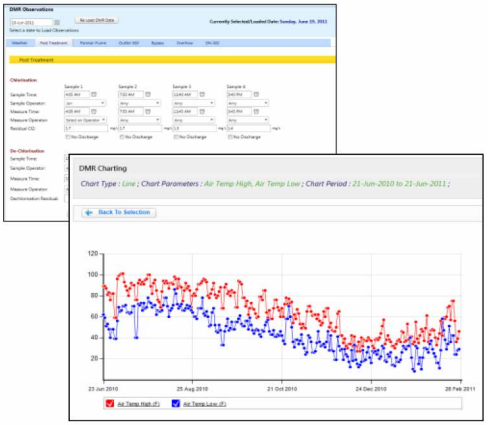


"TURN-KEY" OFFERINGS & CUSTOM PLAN

All water sources are different and must be analyzed and systems designed accordingly. Our team is committed to providing all necessary expertise, training and support needed for your particular solution. Particular concerns are often identified with high contamination due to a variety of unwanted substances such as hardness, iron and manganese, heavy metals like arsenic, radium, cadmium, chemicals, trihalo pesticides, methane and sulphur gases, etc.

CLOUD BASED TECHNICAL SUPPORT

- The EasyLogBook is an online, cloud based tool that provides detailed operating Instructions while organizing an operator's input but can also be customized with daily check lists and logs, schedules and reminders.
- Defines operator input and allows for timely, remote support as technical staff can view live streaming data.
- Detects system's discrepancies by comparing manual data entries to process instruments and limits.
- The EasyLogBook has proven to be a reliable, easy to use flexible platform.



AWS
891 Kingsway Drive, Burlington, ON L7T 3H8 | **Tel:** 905 – 975 – 7922
Email: advancedwatersolutions@sympatico.ca | **www.advancedwatersolutions.com**