

Purifics has developed a comprehensive Chemical Free Water Purification Process. These unique technology innovations combine the best of Fifth Generation Ceramic Ultra-Filtration Membrane Technology (**Cuf**), Chemical Free AOP+ (**Photo-Cat**), and DeWatering Recovery System (**DeWRS**) (Zero Liquid Discharge) with Complete Process Automation. **Cuf** is a durable and robust SiC hydrophilic membrane process that filters contaminants, reduces complexity and chemicals, and eliminates membrane replacement and costs. **Photo-Cat** is the only photocatalytic AOP+ that destroys all chemicals, without adding chemicals. **DeWRS** achieves zero liquid discharge and recovers product in a thick concentrate for mineral reuse or direct to landfill.

Purifics systems purify water by removing: Chemicals, Metals, Turbidity, Bacteria, Viruses, Oil, Particulate, TOC, BOD, COD, DOC, Color, Taste, Odor, Hardness, TDS, EDCs, PPCPs, TSS, TTHM & HAA Precursors, H₂S, green algae & Silica. See reverse for details.



Purification Technologies:

Cuf Ceramic Ultra Filtration -- **Cuf** is a unique ceramic membrane technology that has been refined over 20 years of industrial and municipal applications. Significant refinements in both process and 5th generation ceramic membrane design have advanced the technology substantially to the point where it renders other UF technologies obsolete. **Cuf** features substantially smaller footprint, reduced OPEX and CAPEX, and reduced complexity over other traditional UF systems.

Photo-Cat Photocatalytic Advanced Oxidation Process (AOP+) -- **Photo-Cat** is a chemical free, photocatalytic membrane system that destroys organic contaminants in water with no waste. **Photo-Cat** is used in both industrial and municipal markets. **Photo-Cat** is unique in that it has the greatest oxidation potential of all AOPs, and it has a unique reductive capability, making **Photo-Cat** AOP+.

DeWRS DeWatering Recovery System -- **DeWRS** is a zero liquid discharge (ZLD) system which concentrates the sludge and recovers oil, solids and other contaminants during the closed loop process in the **Cuf** system. **DeWRS** eliminates the need to truck waste water to hazardous waste sites.

Cuf / **RO** Ceramic Ultra Filtration / Configurable Reverse Osmosis -- Purifics has successfully piloted a complete water purification system utilizing **Cuf** and **RO**. These combined unit processes purify groundwater, removing TSS, turbidity, sand, pathogens, nitrates, and heavy metals. This combination of technologies can be utilized to treat groundwater of even the poorest

quality to drinking water standards.

Contaminants Removed:

Metals:	Cr ⁶ , Fe, Hg, Pb, Mn, As, Tc ⁹⁹ , Sn, Ba, Be, Cd, Co, Cu, Ni, Se, Th, Au, Ag, Pt, V, Zn, Al, U, P			
Bacteria:	Cryptosporidium, E-coli, Giardia, Bacteriophage, Spores, Cyanobacteria, etc. >5 Log removal (Remove, or kill, or consume)			
Viruses:	Adenoviruses, MS2, etc. >7 Log removal (Remove, or kill, or consume)			
Oil/NAPL:	Heavy, Light, Oil/Sand, LNAPL, DNAPL, mechanical & chemical emulsions, diesel, gasoline Recovered as Neat product			
Particulate:	Absolute ceramic membrane filtration of particulate, Range <400 - 25 nm size by filtration, agglomeration, oxidation, reduction, etc.			
NORMs:	Radium 226, Radium 228, Gross Alpha, Gross Beta			
TDS:	Nitrates, Calcium, Sulfites, Chloride, etc.			
Chemicals:	Alcohols	Amines	Chlorinated Aromatics	Herbicides/Pesticides
	Aldehydes	Aromatics	Chemical Warfare Agents	Ketones
	Alkanes	BTEX	Dioxins/Furans	Nitro-Organics
	Alkenes	Carboxylic Acids	Energetics	PAHs
	Alkynes	Chlorinated Alkanes	Ethers	Peroxides
	Aliphatics	Chlorinated Aliphatics	Explosives	Phenols
	Amides			TTHM & HAA Precursors

Specific Contaminants of Concern

Purifics processes do not generate H₂O₂ residual, Bromate, NDMA and will destroy these contaminants if present.

Fluids Purified

In addition to water, Purifics systems purify fluids such as NAPLs & fuels, and aggressive chemicals such as solvents, acids and bases.

Solution Specification

Purifics complete water purification systems operate at various ranges and are able to achieve advanced purification levels suited to the client's desires or requirements. Purifics technology has been accredited with a variety of awards and certifications.



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