

DeWRS for Residual Management and ZLD

A real time, fully automated, chemical free, extremely low energy, Ceramic Membrane Process to De-Water solids. The **DeWRS** process allows for full recovery of both the water and solids. The solids can be organic (DOC), biomass, bacteria, and/or metals in any combination from which the water is removed until the solid forms a slump. The recovered water or filtrate is available for its end use such as drinking water.

Chemical Free

There are no chemicals, consumables or labor involved in the **DeWRS** process which eliminates most costs (>95%) associated with traditional concentrate wastewater management and disposal methods. **DeWRS** can operate continuously or on demand and has a 25-year design life. It can be a stand-alone process or integrated with other processes.

Residuals Management

The solids produced by **DeWRS** becomes at best a viable product with commercial value or at worst a very small solid waste handling disposal requirement which can be landfilled, or land applied as per regulations.

ZLD

Zero Liquid Discharge (ZLD) is achievable. **DeWRS** solves the technical and purification challenge when transitioning from a water phase to a solid phase. It is adapted to specific needs (configurable) and is used to dewater and recover metals, DOC, oil & solvents, organics, inorganics, and municipal sludge as essentially neat product.

Carbon Capture

DeWRS is a Carbon Capture process with a very small footprint and very low electrical energy requirement.

Capability

The solids / residuals are recovered at nominally 20% solids. **DeWRS** is applied in high (multi MGD) and low flow applications.

Applications

Drinking Water Filtration Plants
Concentrating DAF Waste & Clarifier Bottoms
Product Recovery, Mining of Water for Metals & Nutrients
Filter Reject / Backwash Waste Dewatering



Municipal Sludge Concentration
Algae & Pathogen Removal
Replaces Filter Presses & Centrifuges





Process

DeWRS recovers fluids such as water that are rich in solid contaminants or second phase constitute. Contaminates are filtered or phase separated to a sludge with a slump or as neat product to customer requirements. The heart of **DeWRS** consists of proprietary ceramic membrane technology using dynamic shock.

Eliminates

Conventional Solutions for dewatering require chemicals (polymer), labor, consumables and high maintenance which are eliminated with the **DeWRS** process. The elimination of these obsolete process inputs further contributes to the unmatched reduction in the operating and capital cost structures of the **DeWRS** process vs alternatives.

Operating Cost and Performance

ZLD costs \$0.64 / day at a 1MGD **Cuf** drinking water plant in operation since 2015.

Certification / Compliance

LT2ESWTR > 4 Log LRV; ANSI61; NEC – UL508A

Solids, Different Water, Composition & Set Points



Watch **DeWRS** Technology [HERE](#)

Watch **DeWRS** Operating: [HERE](#)

Watch **Cuf** with **DeWRS** [HERE](#)

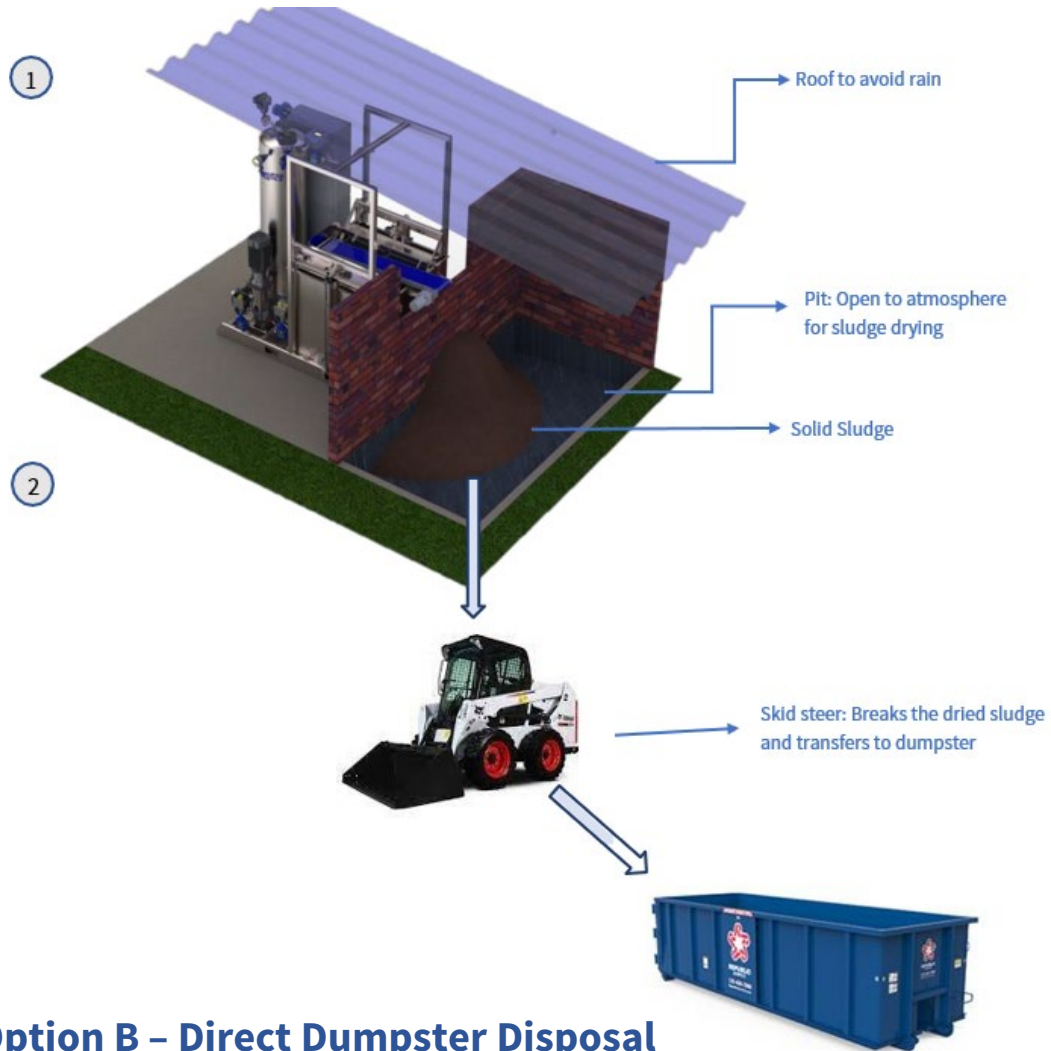
Available in D4, D80, D160



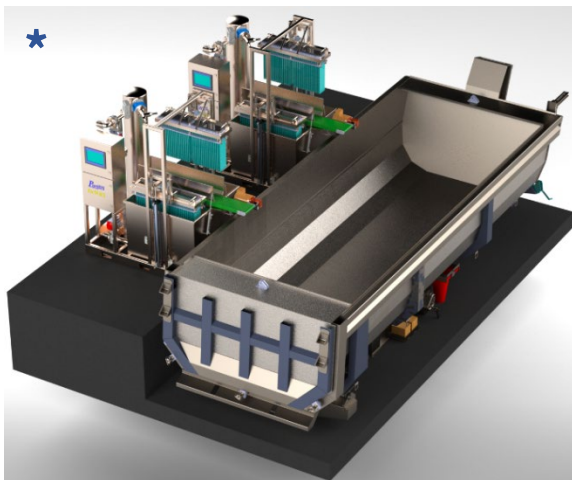


Solids Management Options

Option A – Pit Disposal



Option B – Direct Dumpster Disposal



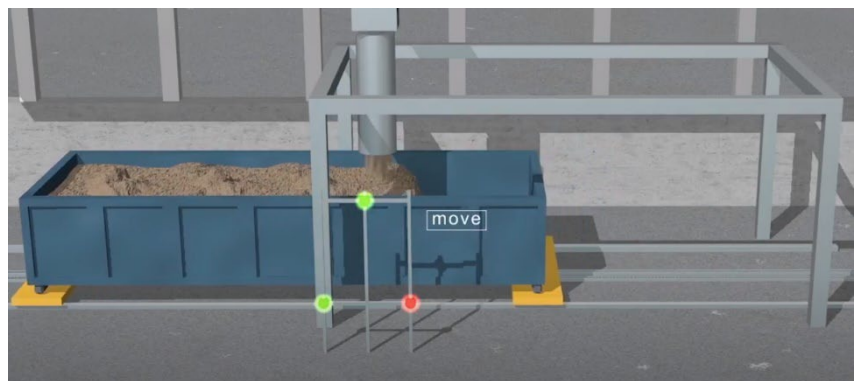
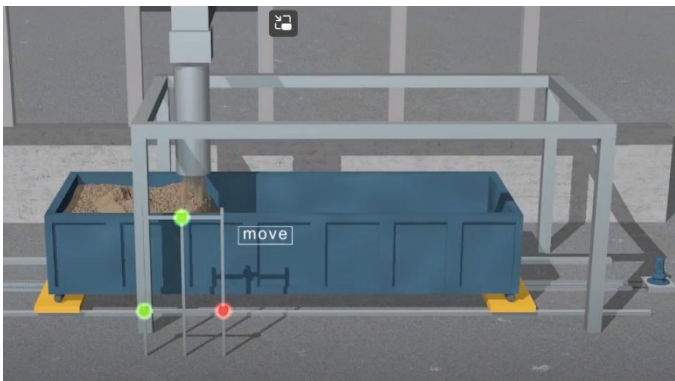
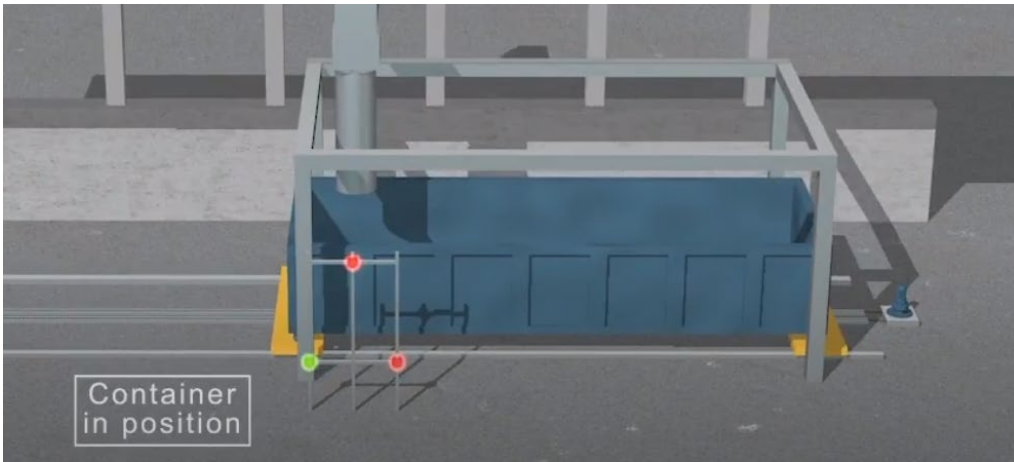
*Plastic or Cardboard Lined Dumpster Advised





Option C – Automated Dumpster Positioning

Watch video [HERE](#)

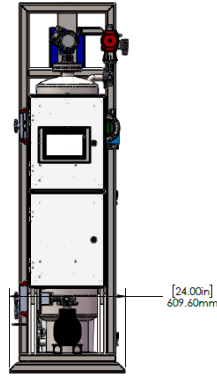
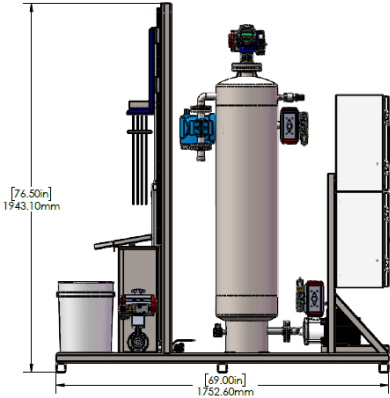


Retrieved from [Dumpsterveryor™ - D.R. Cordell \(cordellmfg.com\)](http://Dumpsterveryor™ - D.R. Cordell (cordellmfg.com))





DeWRS Pilot Verification / D4



Equipment Specifications *

| | | | |
|--------------------|--------------|-------------------|-----------------------------------|
| Duty | >99% | Membrane Life | 20 Years |
| Automatic Turndown | 0-100% Flow | Wetted Material | Stainless Steel |
| Filtrate Loss | 0% | TMP Suction Range | 0-0.7 Bar (0-10 PSI) |
| Operating Modes | Demand Flow | Gasket Material | Viton Or EPDM |
| Filtration Mode | Outside In | NEC | NFPA70, NFPA79 NFPA496, UL508A |
| Concentrate | ~ 20% Solids | Remote | Internet / Wi-Fi |

Application Engineering Data

| | | | |
|----------------|-----------------------------------|-------------------|--------------------|
| Power | 480 Volt, 3Ø, 50/60Hz 6 FLA | Concentrate Inlet | 2.5cm (1") Camlock |
| Network | ProFinet | Filtrate Outlet | 2.5cm (1") Camlock |
| Instrument Air | 1 cfm Oil Free 6 Bar (100 PSI) | Air Supply | 1.27cm (1/2") NPT |
| Weight Dry/Wet | 225 kg (550 lbs)/ | Solids | Tray → Bucket |

*May vary with each application

