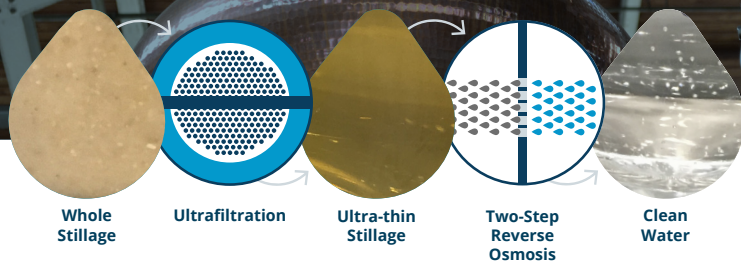




# STILLAGE FILTRATION



## OUR SOLUTION

### Benefits & Impacts

*Digested Organics provides distillers with a filtration solution that can process whole or thin stillage into clean water and concentrated co-products*

#### ULTRAFILTRATION (UF)

- UF recovers 65-85% of stillage as ultra-thin stillage, greatly reducing suspended solids, fats/oils, bacteria, and BOD/COD levels
- Ultra-thin stillage is ideal for use as backset to enhance yeast propagation and reduce freshwater use without displacement of non-fermentable solids
- For sites that already use evaporators, UF can reduce the total volume and solids loading, reducing energy costs and maintenance
- UF concentrate is high in total solids and protein, making it more valuable as an animal feed while remaining easily pumpable for transportation in tanker trucks

#### TWO-STEP REVERSE OSMOSIS (TSRO)<sup>™</sup>

- Ultra-thin stillage can be further purified onsite to produce clean water for reuse and discharge along with a second concentrate co-product
- Lower energy cost and smaller footprint compared to traditional centrifugation and evaporations systems

## BENEFITS



Reduce stillage disposal costs and complexity



Automated technology with remote access and mobile alerts



Reduce stillage volumes and conserve freshwater



Opportunities to create higher value co-products

## HOW IT WORKS

### Technology & Performance

#### ULTRAFILTRATION

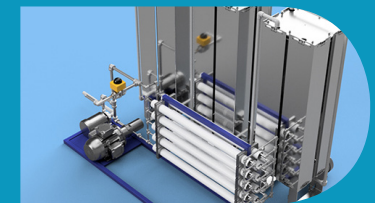
- Porous stainless-steel tubular membranes (3/4") with internal titanium dioxide coating for abrasion resistance
- Robust design handles high temperatures, high solids, high viscosities, and extremes in pH
- Cleans quickly using standard chemistries
- Welded and bolted construction in ASME pressure vessel
- Designed to last 10-15 years in challenging applications with little downtime, maintenance, or repair
- Can operate in batch-mode or continuously and be mounted horizontally or vertically

#### TWO-STEP REVERSE OSMOSIS

- Integrates low-pressure, anti-fouling forward osmosis technology with traditional reverse osmosis
- Reduces volume of ultra-thin stillage by 80-90%
- Highly reliable, non-biological solution to purify ultra-thin stillage
- Creates clean water ready for reuse or discharge
- Generates a new value-added concentrate product
- Highly automated design requires minimal operator attention



UF Equipment



TSRO Equipment



PLEASE CONTACT US TODAY FOR A  
CUSTOMIZED QUOTATION.

844.934.4378

## JUST ASK OUR CUSTOMERS...

The Ultrafiltration and Two-Step Reverse Osmosis system provides the exact solution for managing the whole stillage generated at our distillery. The system allows us to run real time and use our existing infrastructure of storage tanks and tanker trucks to completely manage all our stillage without having to create a dried feed material at a much higher cost. It also offers a smaller footprint and requires less energy compared to more traditional systems involving centrifuges and evaporators.

We are now able to provide a highly valuable concentrated animal feed instead of a watered down whole stillage and generate a clean ultra-thin stillage we can re-use in our process. The clean water generated from the Two-Step Reverse Osmosis process can be used for boiler feed water, or discharged.

The system provides an advanced, automated, and cost effective solution to an age old problem that has become more challenging with the growth of the industry. Over our 13 years in the distilled spirits industry we have not experienced a more effective system to remediate whole stillage like this system can.

- Shane Baker

Co-Owner of Wilderness Trail Distillery



### EXPLORING Filtration

Call us to learn more about how a Stillage Filtration System can help your facility. We will assess your current situation and make recommendations about where we can provide you with the most benefits.



### TESTING Filtration

Digested Organics will perform detailed pilot testing on your material at our facility in Michigan and provide you with a thorough report and proposal for a full-scale installation.



### IMPLEMENTING Filtration

Digested Organics delivers, installs, and commissions your new filtration system while teaching employees how it works and ensuring it meets or exceeds your expectations.



### MAINTAINING Filtration

The filtration system becomes an integral part of your facility and allows you to streamline and expand your operations, reduce freshwater consumption, and sell a concentrated animal feed co-product.



## OUR SOLUTIONS WORK

PARAMETER	WHOLE STILLAGE	ULTRA-THIN STILLAGE	UF CONCENTRATE	CLEAN WATER
Total Solids (%)	6.1	1.7	15.1	0.04
COD (mg/L)	66,910	17,760	109,700	14
TKN (mg/L)	3,100	372	7,000	< 1.0
Phosphorus (mg/L)	600	448	700	< 0.01
Potassium (mg/L)	800	797	800	1.1
Sulfur (mg/L)	300	43.5	500	< 0.5

### LET US SHOW YOU HOW TO:

Reduce Stillage Handling Costs | Enable Increased Production | Reclaim Water