

Make the Most of your Budget with the Latest in
Lamella Clarifiers

Sedimentation/Settling

- “Sett” it and forget it
- Large tanks and space requirements
- Designs for wide range of flows
- Changes?



Sedimentation/Settling

- Settling/Sedimentation Tanks – Particles smaller than 25 micrometers generally tough to settle.
- Spheres settle better than flat objects (parachutes v rocks)
- Settling affected by forces (flow streams) acted on objects.



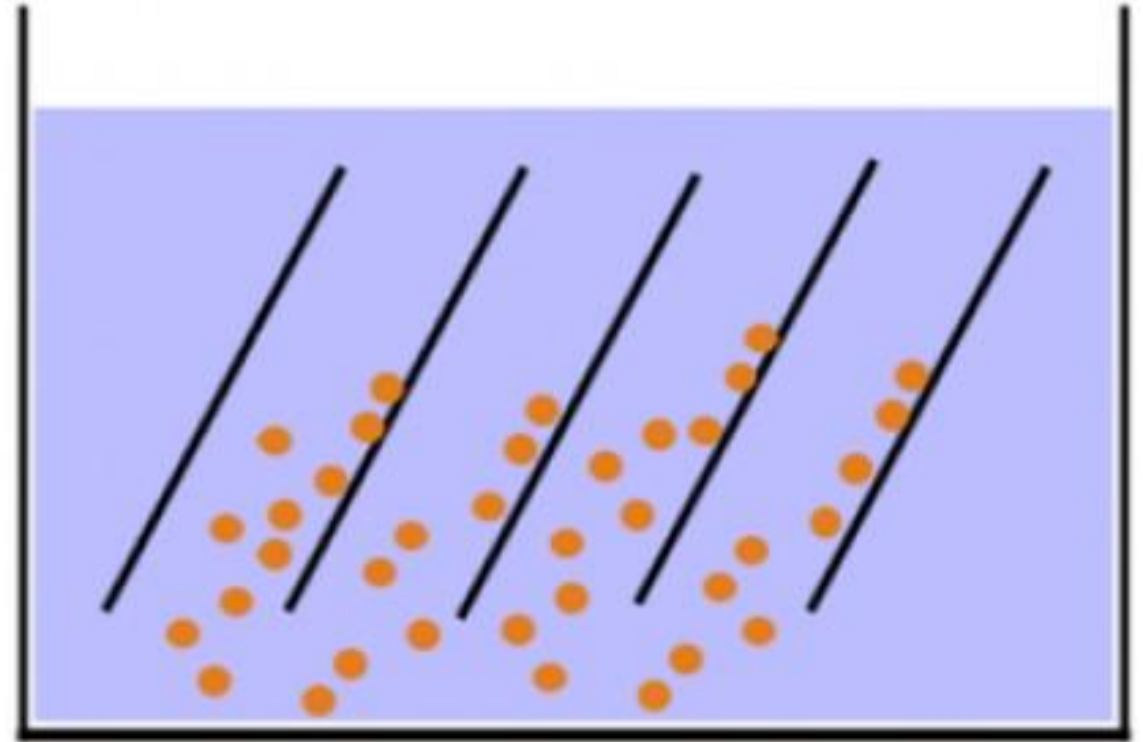
Sedimentation/Settling

- What to do about space limitations?
- How much could footprint be reduced?
- Will smaller footprint affect performance?

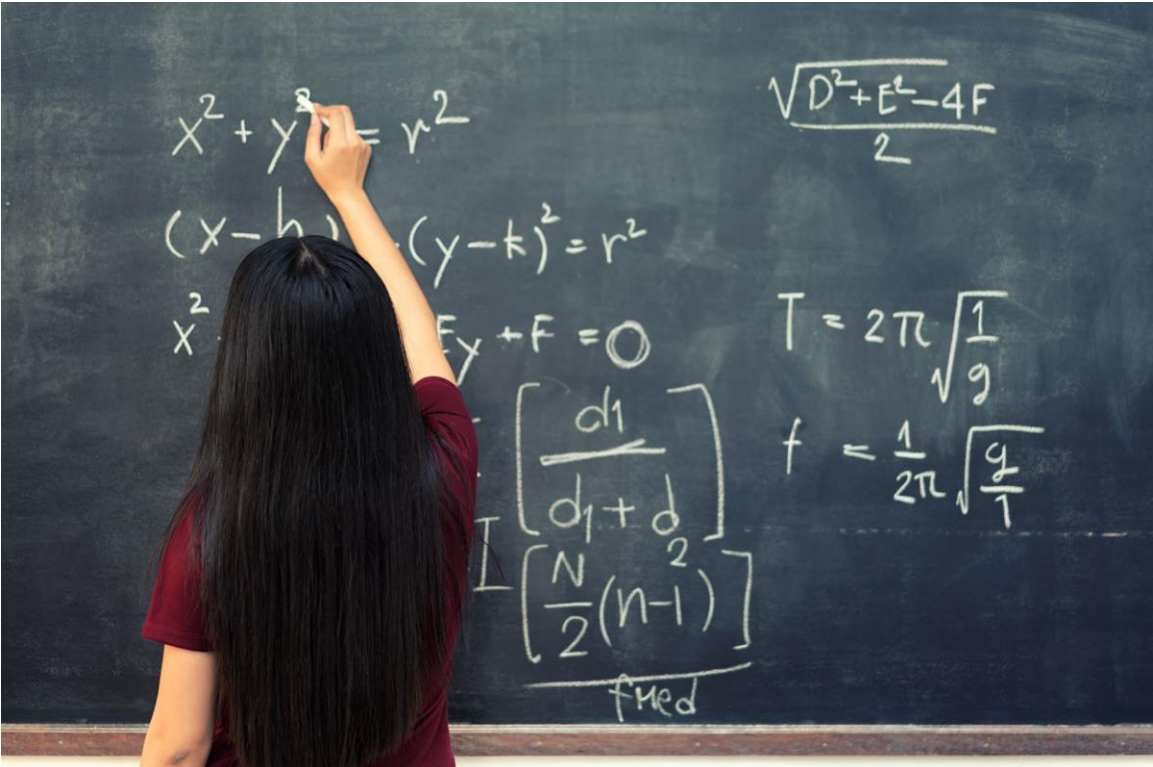


Lamella Clarifiers

- Developed for water/wastewater in 1971 by Parkson.
- Laminar flow
 - Following smooth paths in layers. As opposed to turbulent flow.

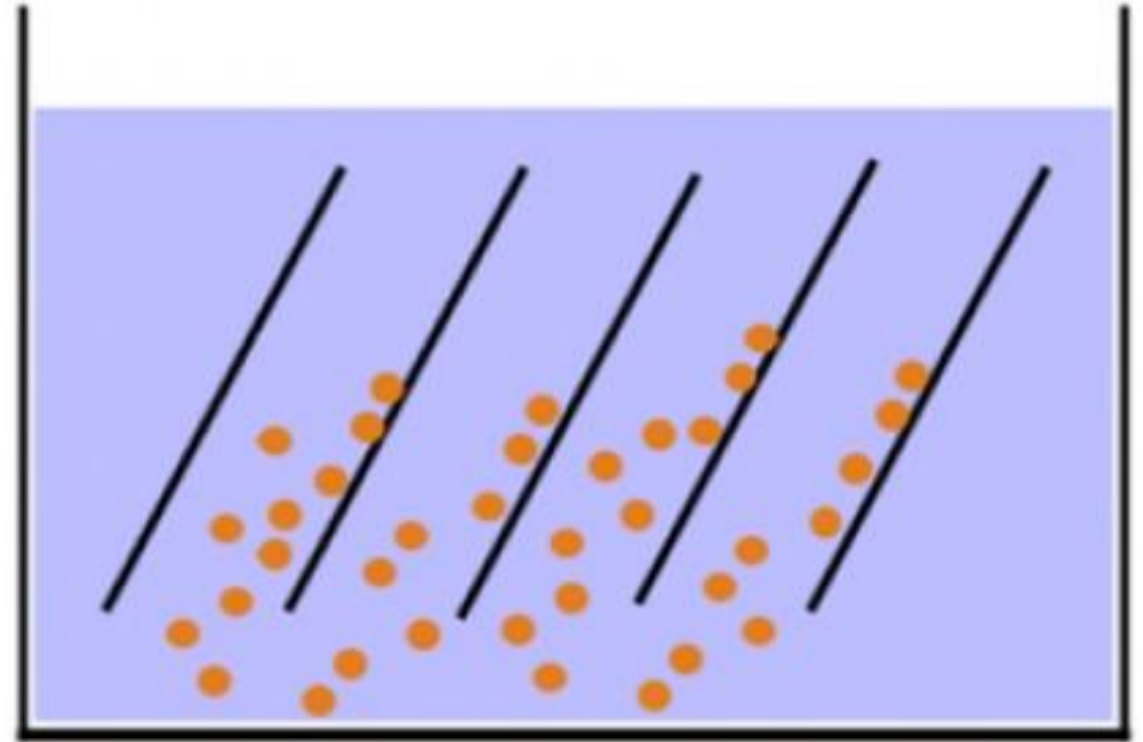


■ MATH AND PHYSICS WARNING!!



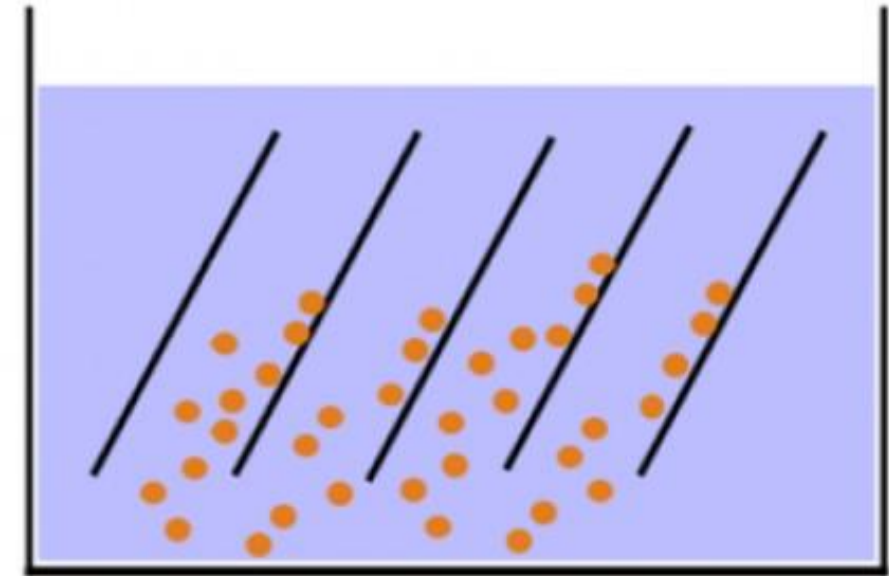
Lamella Clarifiers

- Stokes Law
- Density of particles to settle in relation to density of fluid the particles are in.
- Footprint reduction!! Up to 80%!! Up to 2X flow capacity.

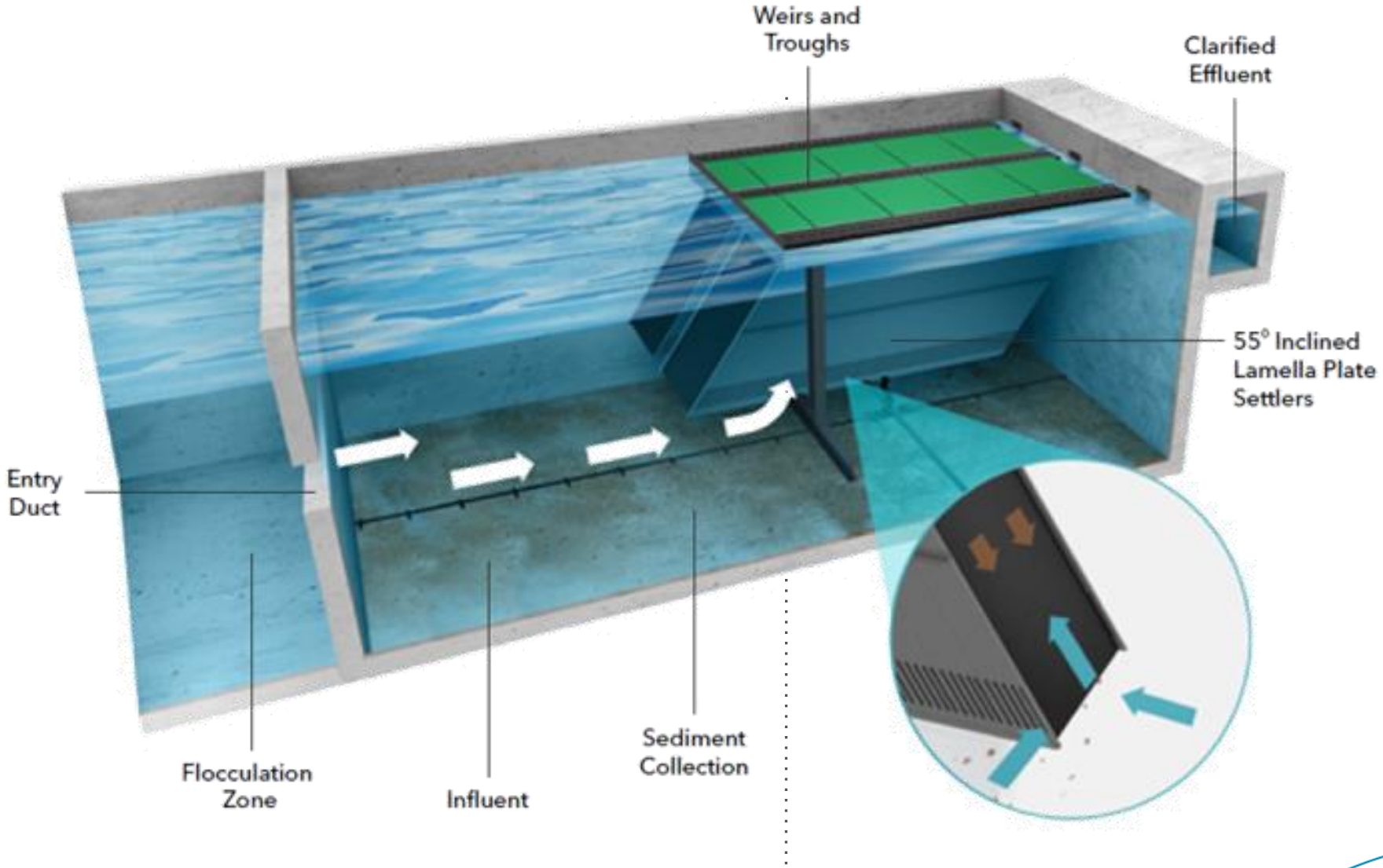


Lamella Clarifiers

- Why the angle?
- Cleaning?
- Drafting?
- Particles settle faster when they get to draft.
- Sweet Spot – 45 degrees to 60 degrees



Lamella Plate Clarifiers

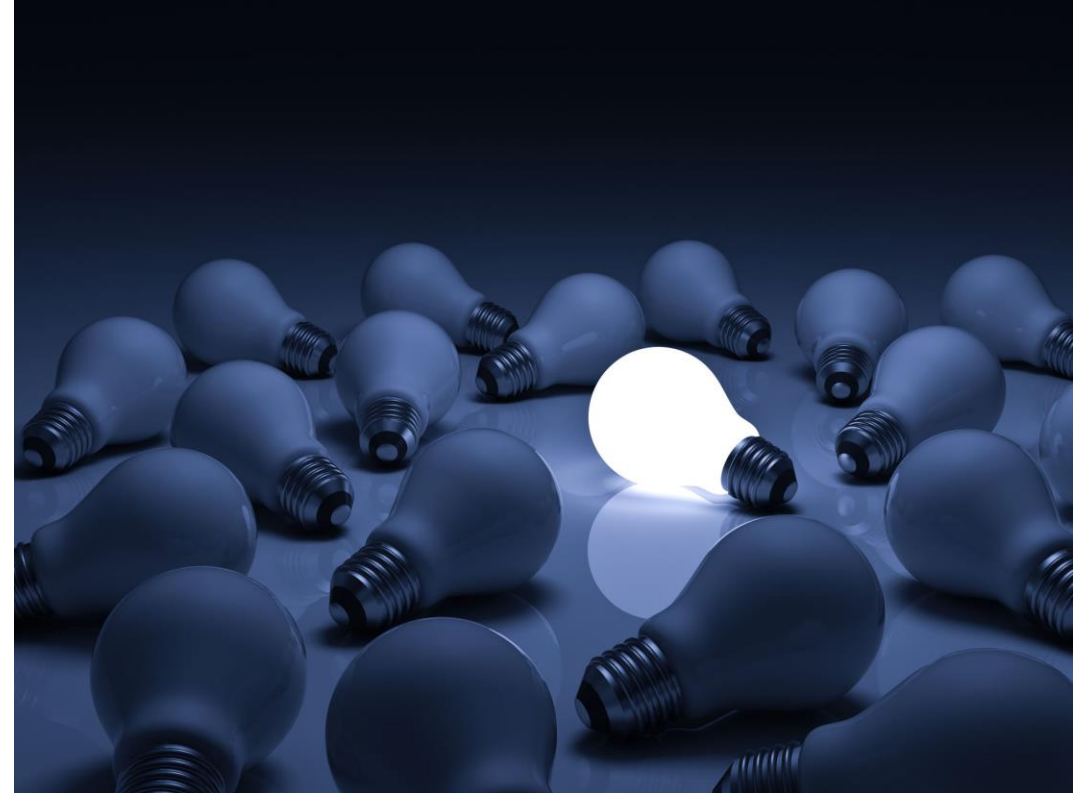


Lamella Clarifiers – Before and After

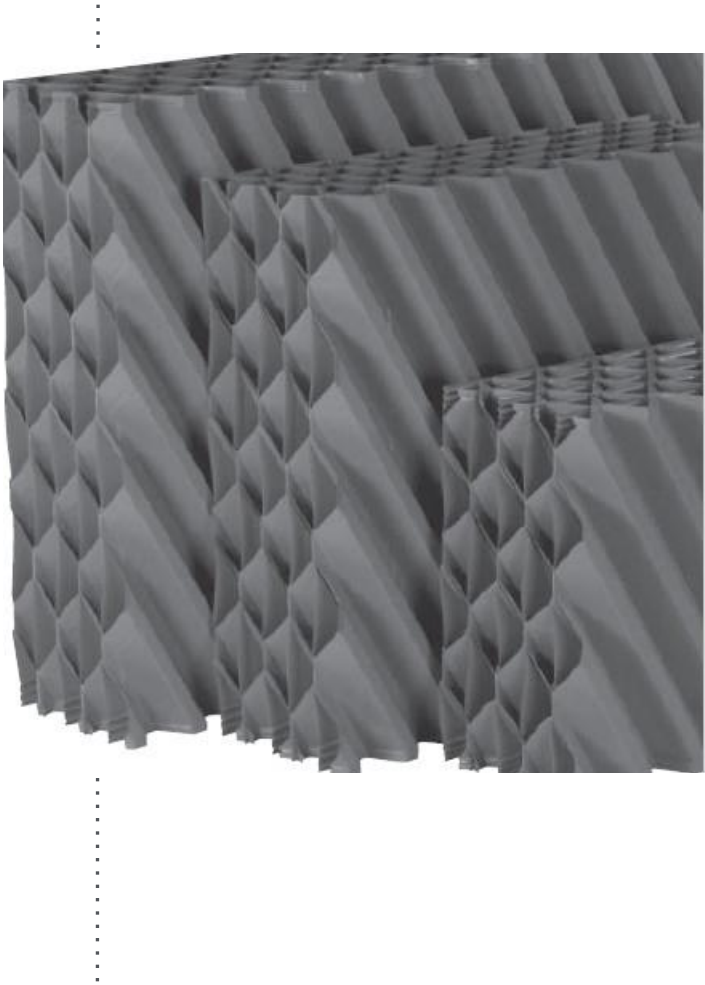
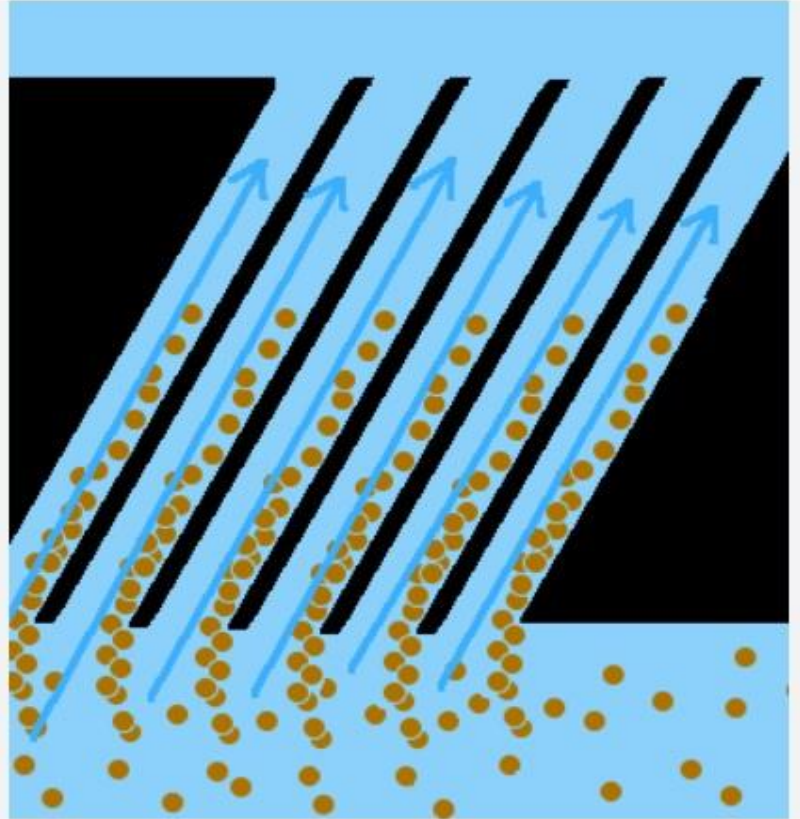


Lamella Clarifiers

- Wait... Maybe there's another way!!??



Lamella Tube Settlers



Lamella Tube Settlers Versus Plate Settlers

Plate Settlers:

1. Capital Cost
2. Ease of Installation
3. Maintenance
4. Safety
5. Longevity/Life Cycle



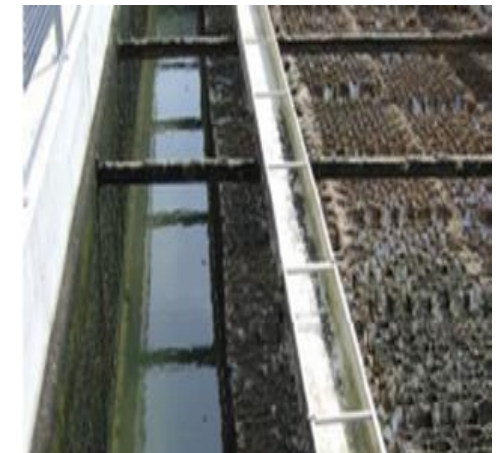
Lamella Tube Settlers Versus Plate Settlers

Tube Settlers:

1. Capital Cost
2. Ease of Installation
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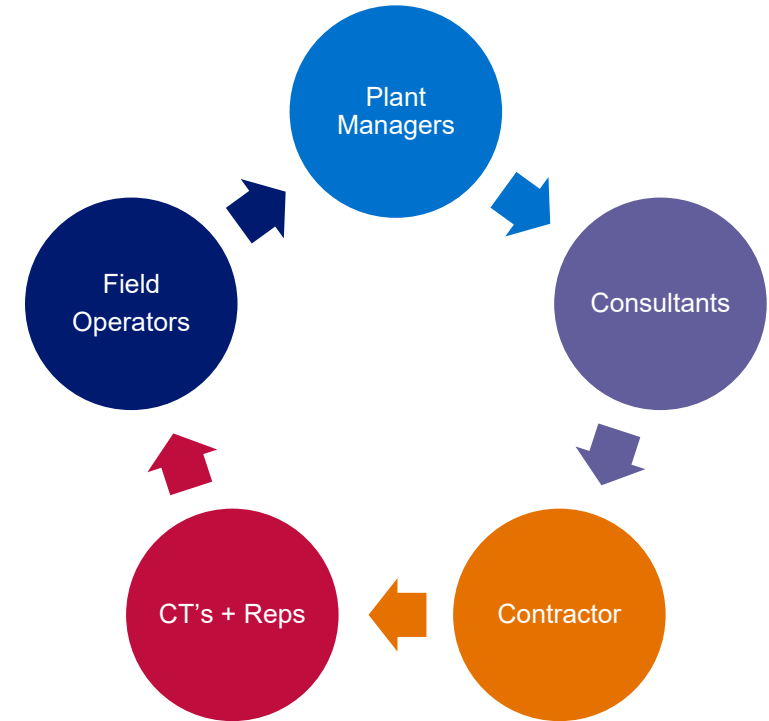


~2x support footprint

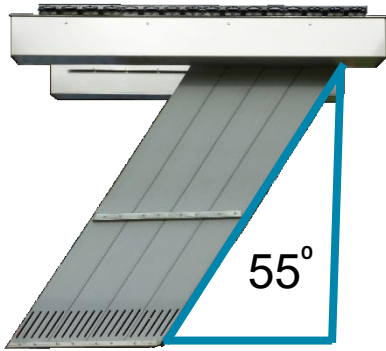


Voice Of Customer

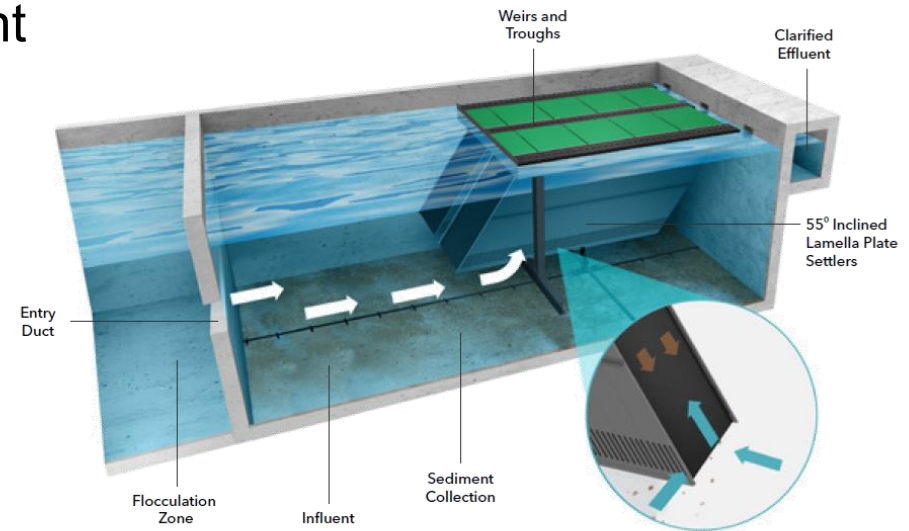
- ✓ Plate settlers requires low maintenance
- ✓ Customers prefer plates over tubes due to reliability
- ✓ Settlers with 55° angle provide best performance
- ✓ Retrofit design challenge plate settlers
- ✓ Servicing and accessibility is important



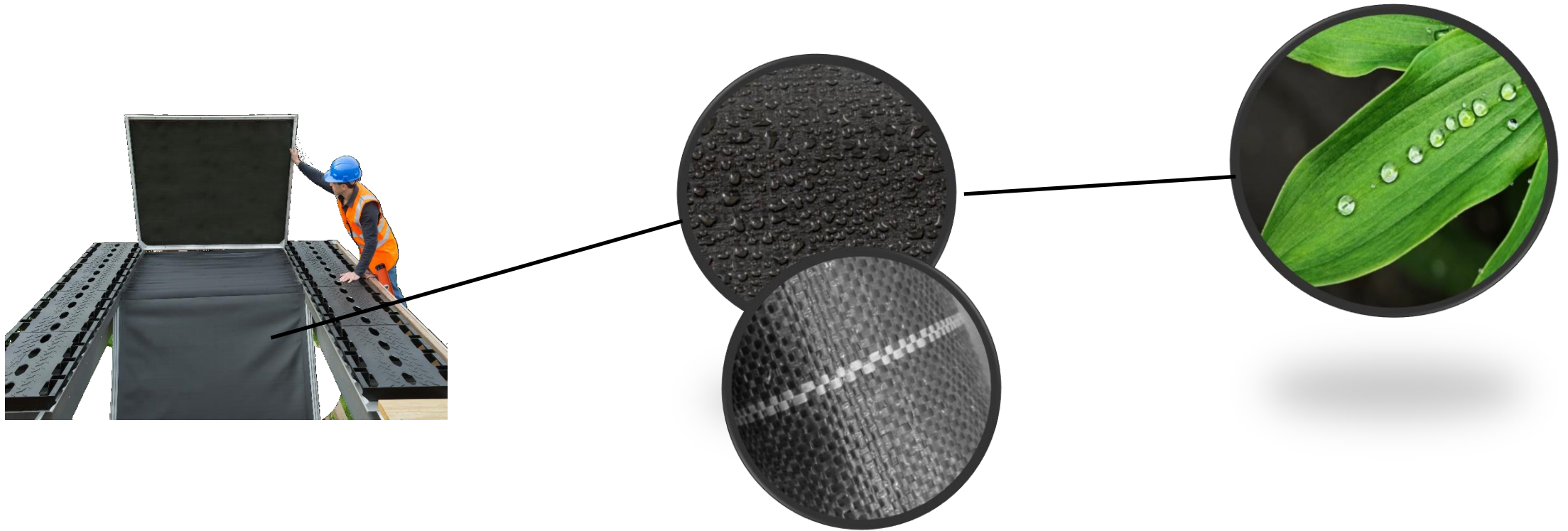
Concept



- ✓ Use established & successful design arrangement
- ✓ Reduce overall weight and costs
- ✓ Ease of replacement
- ✓ Flexible materials
- ✓ Reducing cleaning
- ✓ Easy access




Easy Maintenance – Hydrophobic Geotextile



✓ Hydrophobic geotextile **reduces cleaning requirements**

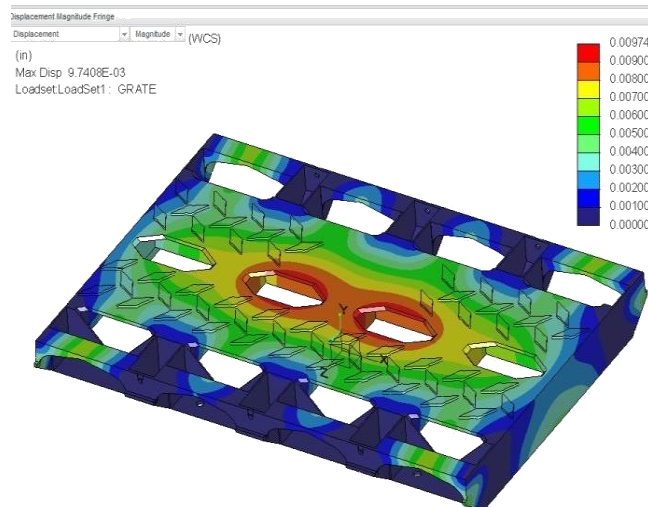
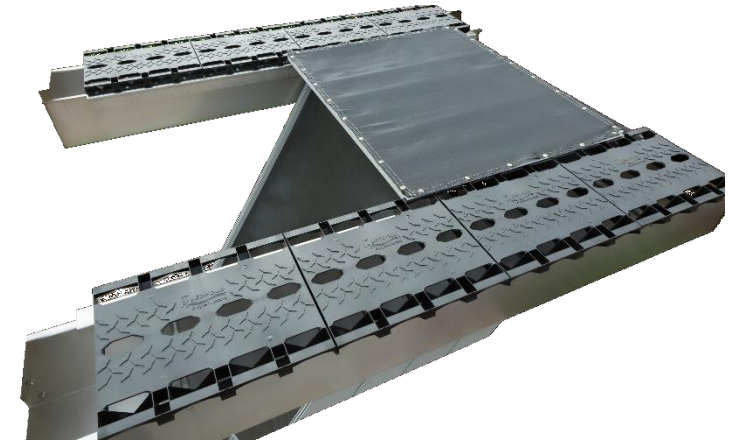
Reliable Material - Geotextile in Action




- ✓ **High strength material** tested in large scale applications
- ✓ Resists abrasive fluids
- ✓ **UV resistant**
- ✓ Woven HDPE with **+20 year life span**
- ✓ 100%  Recyclable

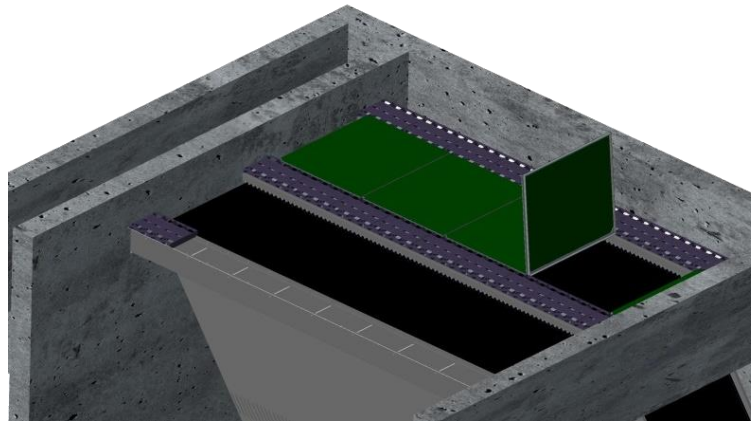
Ease of Service –Trough Cover

- ✓ Simple access with 50cm / 20 inch wide catwalk
- ✓ Non-slippery with SS-type grating
- ✓ UV protected
- ✓ Protection from debris and wildlife
- ✓ **V**-notch weir for even flow distribution
- ✓ Holds up 300lbs / 150kg 10years



Ease of Service – Mesh UV Cover

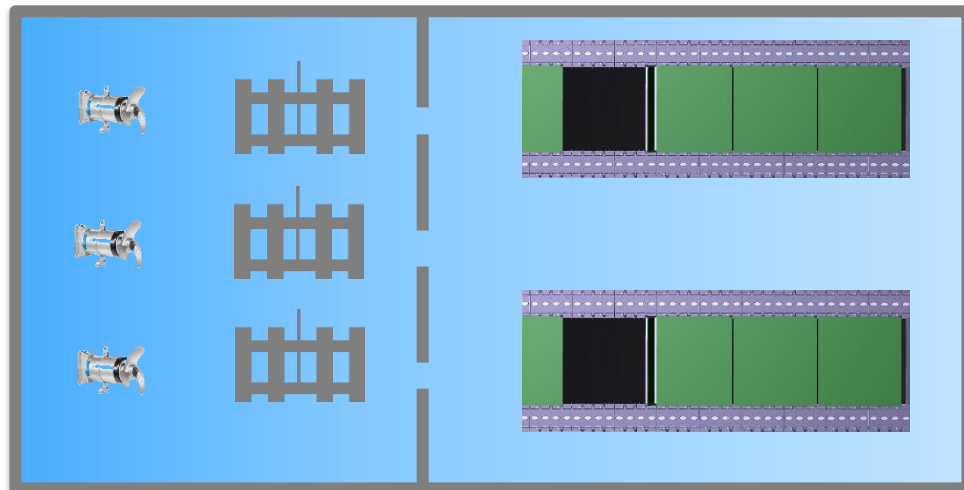
- ✓ Provides ~90% shade (Algae)
- ✓ Allows water flow of ~84lps / m² (120gpm/ft²)
- ✓ 100%  Recyclable



Easy Retrofit

Different sizes

- ✓ Maximize retrofit capability
- ✓ Reduce installation costs



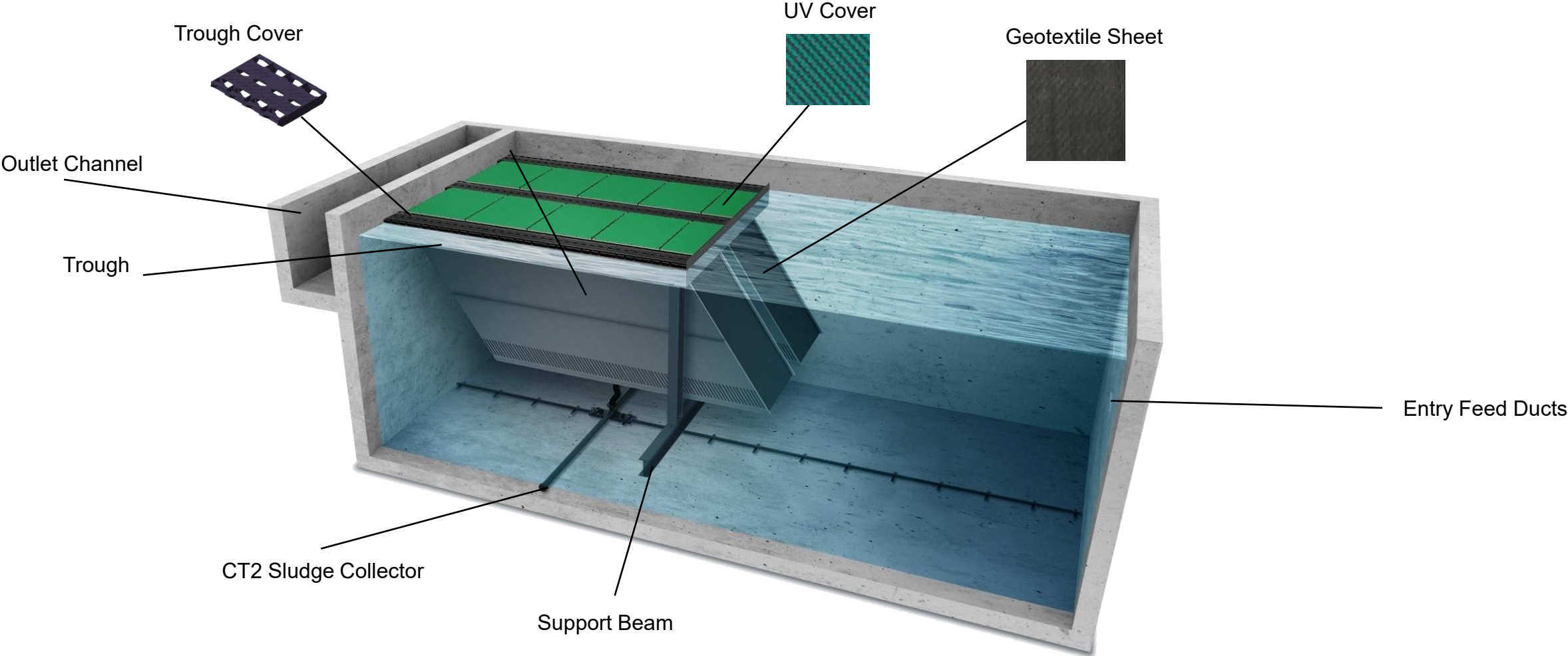
Construction Cost Savings

Comparison: 400 sq ft basin

Leopold **2t** (4,500lbs) vs Stainless Steel Plate Settlers **14.5t** (29,000lbs)
Additional Savings in Shipping Costs



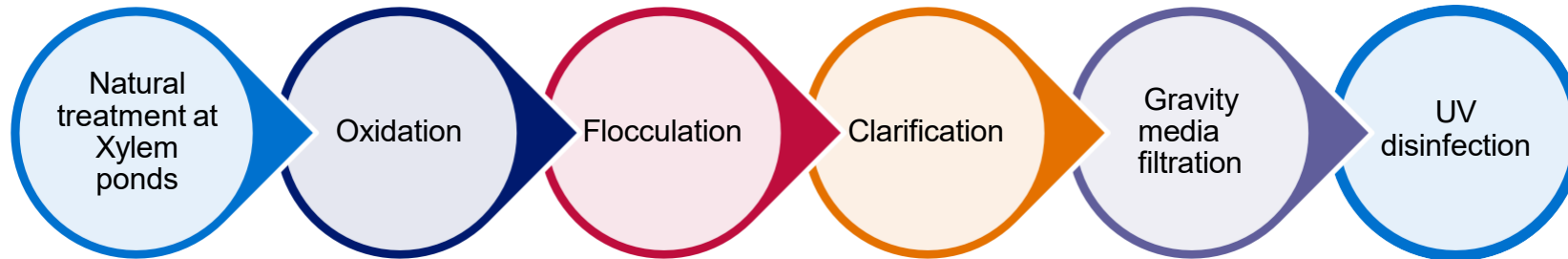
Product Overview



Industrial water reuse in Emmaboda, Sweden

Water treatment facility at Xylem Emmaboda manufacturing plant

- Treats 20 million liters a year
- Provides plant with 100% recycled process water



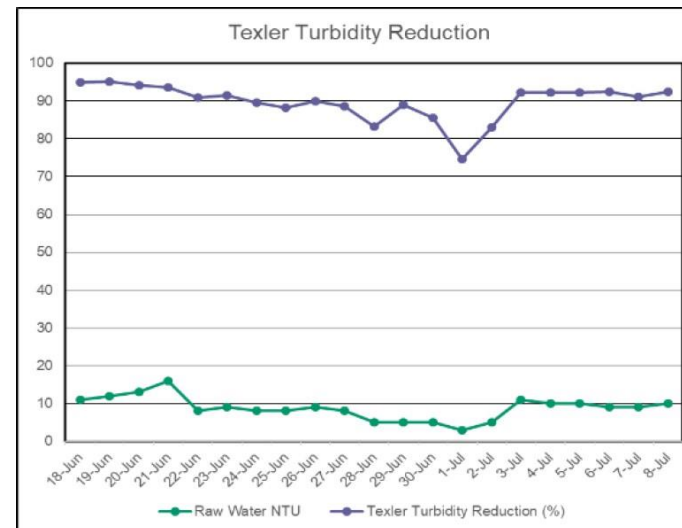
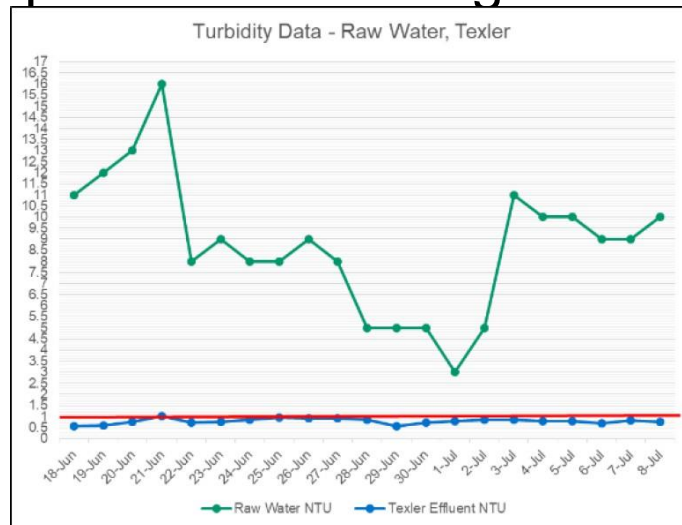
The treatment process uses more than 20 Xylem technologies, including:

- Leopold Texler lamella clarifier
- Leopold Type 360 underdrain for gravity media filtration
- Wedeco Spectron UV disinfection system
- Flygt and Lowara pumps
- MJK flow and level meters
- WTW/YSI water quality probes



Texler™ clarifier performance: Western PA pilot

- Drop-in pilot unit
- 2+ years of data
- Demonstrated ability to:
 - Increase flow by 100%
 - Remove avg. 90% of incoming solids
 - Control turbidity spikes
- Outperformed existing clarifier



Water Spray Testing



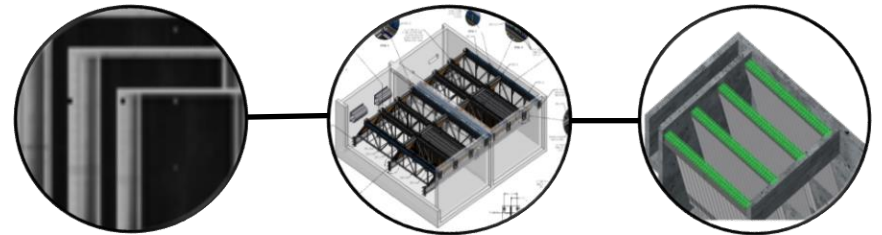
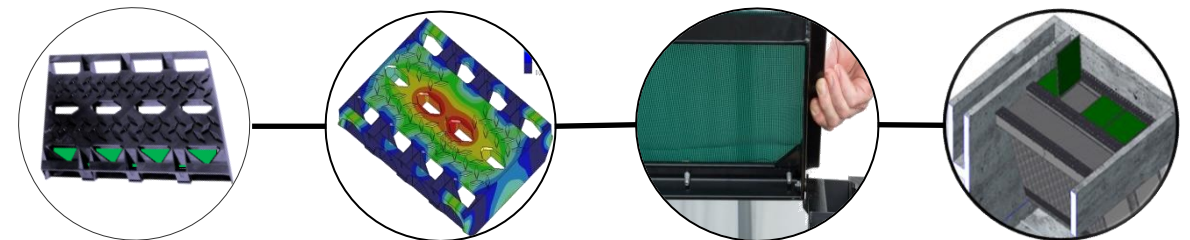
The Benefits are Clear

✓ Reduced maintenance with hydrophobic Geotextile design

✓ Reliable, corrosion free and UV resistant woven HDPE

✓ Easy service durable Trough Covers

✓ Reduced installation cost and easy retrofit with flexible design





Thank You!