

## Hydro MicroScreen™ Reduces Solids Loading from Industrial Wastewater Effluent 77% on Average

### Project Profile

#### Objective

Excessive solids loading was forcing a particle board manufacturer to clean out their sedimentation system more frequently than they desired and they wanted a better solution.

#### Solution

Hydro MicroScreen significantly reduced solids loading, reduced sedimentation tank cleaning frequency, and allowed the plant to operate a full capacity even during CIP.

### Benefits from Reduced Solids

Sedimentation systems have a very large footprint and require a long residence time. Additionally, in this plant's case the sedimentation tank needed to be cleaned out frequently. Hydro MicroScreen helped:

- Protect sedimentation system capacity
- Recover material to send back to process
- Prevent costly NPDES issues
- Reduce TSS and output dewatered wood

### Situation

A large particle board manufacturer in western Oregon was facing high levels of Total Suspended Solids (TSS) in their effluent. Their TSS primarily consisted of sawdust and 1/4" wood chips. They have three outfalls covered under a single National Pollutant Discharge Elimination System (NPDES) permit that had the potential to become an expensive EPA violation if excessive TSS was not removed before outfall. Their existing sedimentation tank was divided into stages with fabric baffle weirs. After sedimentation flows are sent to a pea gravel filter bed to remove solids prior to outfall; but rain events and growing demand were straining their capacity.

Excessive solids loading during plant washdown had the potential to limit the effectiveness of their sedimentation system. This system relies on gravity, the weir walls, and detention time to remove TSS prior to flows entering their pea gravel filtration system. A big storm event, combined with plant washdown, could overwhelm this critical system.

The plant was looking for a more effective TSS removal system that could handle larger loads, reduce required detention time for settling, protect their sedimentation system, and reduce the frequency of required cleaning.

### Solution

Hydro International was contacted to install a demonstration unit on site and test the Hydro MicroScreen's performance under the wide variety of operating conditions they encounter. Various flow rates were tested, with and without prior polymer addition, and during plant washdown. Grab samples of influent to the Hydro MicroScreen and effluent out of the Hydro MicroScreen were analyzed by the plant's on-site laboratory staff.

**Hydro MicroScreen™ outputs dewatered materials that they could use as fuel**



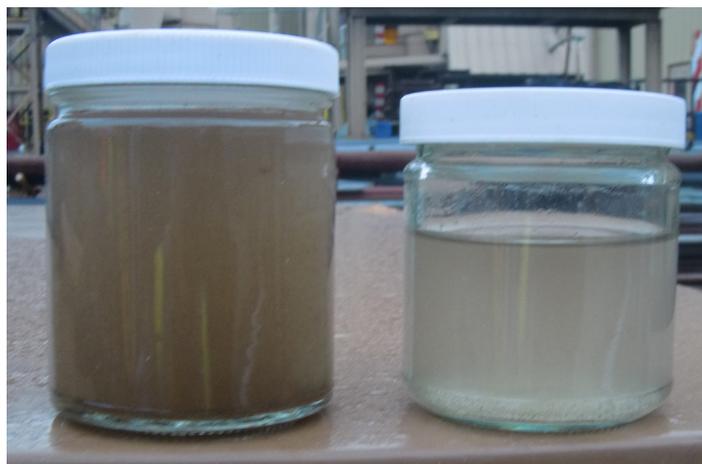
Hydro MicroScreen On-Site

## Outcome

Despite the wide variety of their operating conditions, one thing was consistent – the Hydro MicroScreen’s performance – with 77% TSS removal (on average) under all operating conditions. Additionally, solids output from the Hydro MicroScreen system were visibly dry.

On average solids were 25% TS which allowed them to be fed back into the plant process as a fuel source allowing them to reclaim their solids rather than paying to send them to landfill.

To watch a brief video showing the Hydro MicroScreen operating at this particle board manufacturer, [visit this link](#).



Influent to Hydro MicroScreen™ (Left) and Effluent (Right)



Dewatered solids output

Measured Total Suspended Solids Removal on Variable Operating Conditions		
Influent Concentration (mg/L)	Effluent Concentration (mg/L)	Percent Removal
1200	136	89%
488	112	77%
1700	868	49%
560	196	65%
288	96	67%
6480	1720	73%
2724	272	90%
1252	12	99%
1224	200	84%
<b>Average TSS Removal 77%</b>		



Solids loading on belt



Discharging compressed, dewatered materials

## Learn more

To learn more about Hydro International’s Industrial Wastewater Solutions, visit [hydro-int.com/Industrial](http://hydro-int.com/Industrial)

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