

# GREEN & WHITE LIQUOR CLARIFIERS AND MUD WASHERS

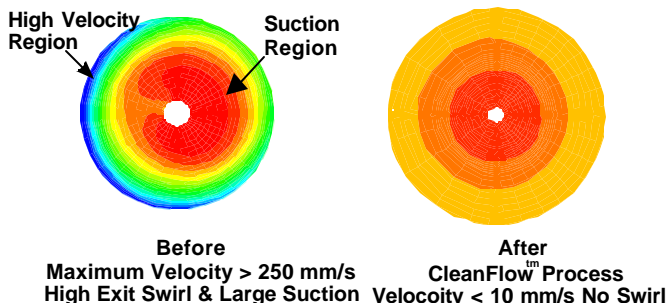
Want to do more with less. Let American Flow Technology convert your existing green and white liquor clarifier and mud washer into a properly designed sedimentation tank. No more worries about high turbidity. You may possibly never have to use a polymer again. And more important, you will avoid the extra expense of a pressure filter or a new tank.

## PROBLEMS WITH GREEN LIQUOR CLARIFIERS

Many clarifiers in service today have been built without considerations of flow hydrodynamics. Spreadsheet analysis and standard equations used in the industry cannot guarantee a design that assures turbidity levels less than 100 ppm for liquor clarifiers.

Feedwells have been designed to impart energy to the inlet feed in the hope of facilitating flocculation of the dregs. In practice, computer simulations using CFD of the flow show that feedwells used in various tank designs generate high shear rates, making polymers less effective. In addition, feedwells impart unacceptable high levels of swirl at the outlet resulting in non-uniform flow and unnecessary momentum imparted to the dreg containing liquid. Your current feedwell may therefore be an effective flow mixer and not promote sedimentation. Because most feedwells impart high levels of swirl, they can produce unnecessarily high flow velocities and cause a vortex that pulls flow inside the feedwell, as shown below.

### Flow Distribution Exiting Feedwell



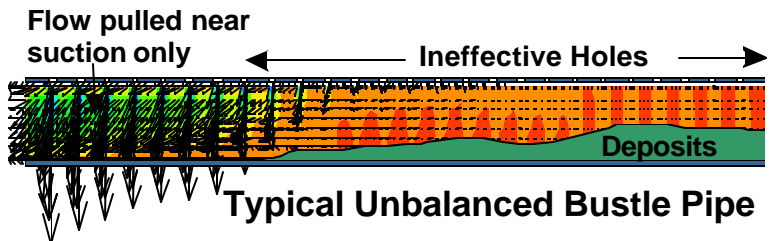
Advanced analyses of bustle pipes used in the industry show that bustle pipes do not draw flow equally, thus compounding the problem. Only a flow balanced bustle pipe can ensure maximum settling times for the dregs, utilise the entire tank, and avoid flow short-circuits.

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## CLEARFLOW™ PROCESS

By applying American Flow Technology ClearFlow™ Process to your clarifier or mud washer, you immediately obtained the best available technology to ensure a dramatic reduction in turbidity, guaranteed. Furthermore, this process is applied to minimize retrofit and installation costs. Existing bustle pipe and feedwell components are reused when applicable. Nothing else on the market comes close to what American Flow Technology can offer to solve your turbidity problems to avoid the following problems while minimising costs:

- Poor mud settling
- Dirt in the bleached pulp
- Poor weak wash clarity and settling
- Reduced mud filter dewatering
- Ongoing polymer monthly expenses
- Reduced causticizing efficiency



## TAILORED SOLUTIONS FOR YOUR CLARIFIERS

American Flow Technology performs engineering and design work including

- Advanced process modelling of hydrodynamics
- Custom retrofit design using a propriety and proven clarifier ClearFlow™ process technology
- Turnkey installations of ClearFlow™ technology

Gives us a call and we will demonstrate to you why your clarifier or mud washer cannot achieved its target performance due to flow short-circuits resulting in a non-efficient use of your tank for sedimentation purposes.

## WHAT CLIENTS ARE SAYING

**Dave Erickson**, Project Engineer, Potlatch Corp: *"I was impressed with the level of detailed hydrodynamic analysis done on our clarifier"*