DISSOLVED AIR FLOTATION (DAF)
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How does it work?
- Dose wastewater with selected polymeric flocculant
- Pressurize wastewater in charging tank to dissolve air
- Release wastewater from charging tank to flotation tank slowly so air comes out of solution, creating bubbles that lift flocculated particles to surface for removal
- Analyze treated water to determine TSS removal

Results from Existing System

Conclusions
- PEO dosage of 0.87 lb PEO/dry ton TSS result in most effective removal
- Dirtier water (higher TSS) provides better visual results for learning
- Re-designed DAF unit will provide a better and more effective lab experience

Terminology
- Total Suspended Solids (TSS): Solid particulates suspended within waste water
- Flocculation: To combine and collect suspended solids into larger, easier to remove particles
- Flotation: Introduction of air bubbles to float large flocculated particles to the surface
- Charging: Increase of pressure in the system to dissolve air into the waste water
- Active Area: Area within the flotation tank that contacts bubbles required for flotation

DAF Redesign
- Larger capacity: Increased size (4 L) allows larger, more visible TSS removal
- Flow: Better distribution and active area to increase TSS removal
- Quality of life: Clear unit to see flocculation, easier to maintain and operate
- Greater pressure capacity: Increased dissolved air concentration at 80 psi