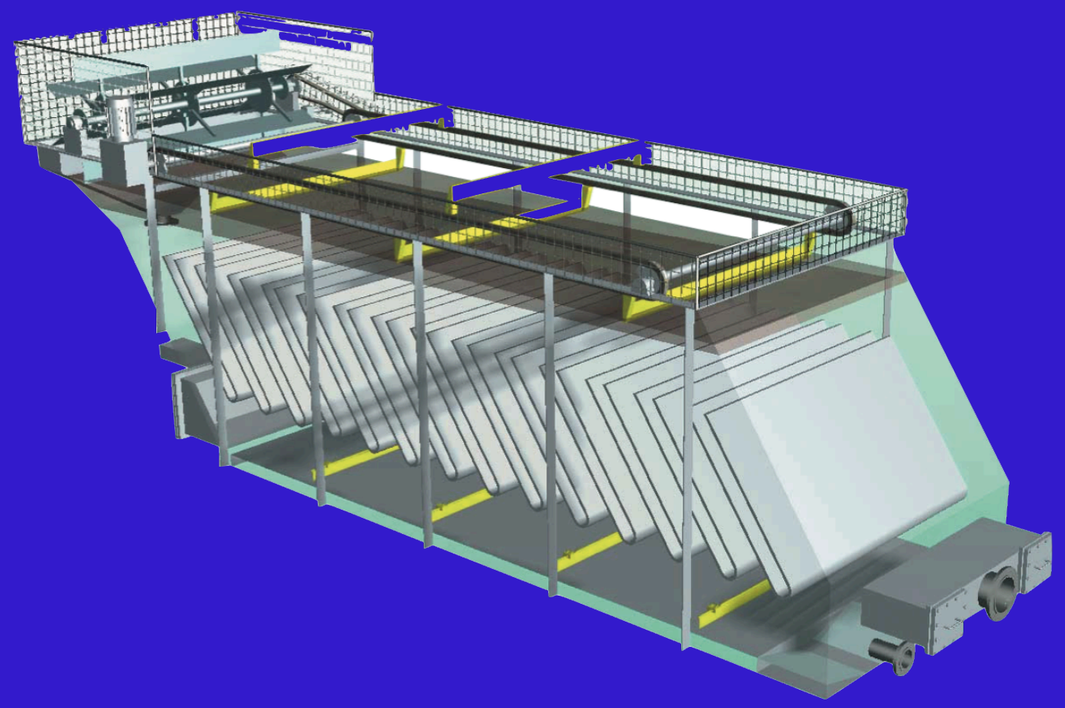
DAF DISSOLVED AIR FLOTATION SYSTEM

ENVIRONMENTAL TREATMENT SYSTEM



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HYDRO TECHNOLOGIES

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GENERAL DESCRIPTION

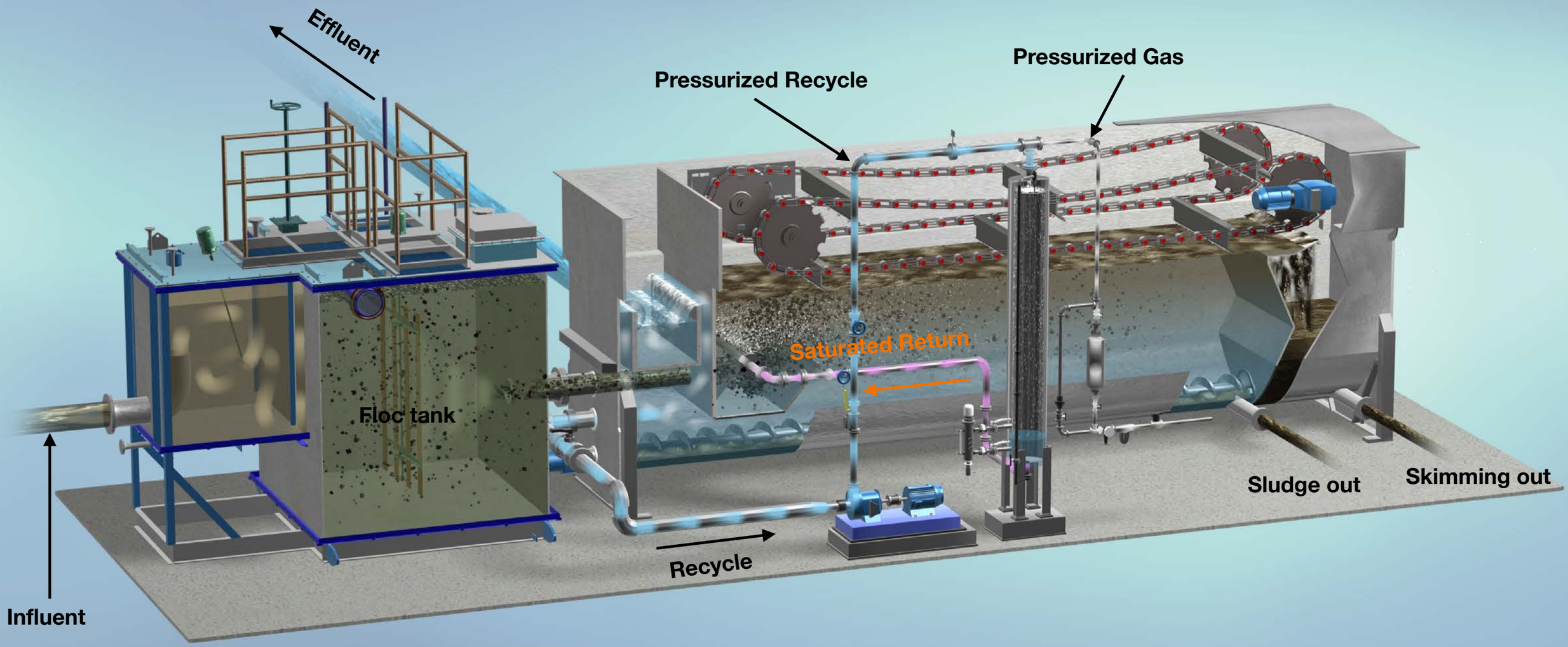
Dissolved Air Flotation (DAF) is a proven and effective physical/chemical technology for treating a variety of industrial and municipal process and wastewater streams. DAF systems are commonly used to meet

a variety of treatment goals including:

- Product recovery and reuse
- Pretreatment to meet sewer discharge limits
- Pretreatment to reduce loading on downstream biological treatment systems
- Polishing of biological treatment effluent
- Thickening of biosolids

DAF systems are designed to remove total suspended solids (TSS), biochemical oxygen demand (BOD), and fats, oils and greases (FOG) from a wastewater stream. Contaminants are removed through the use of a dissolved air-in-water solution produced by injecting air under pressure into a recycle stream of clarified DAF effluent. This recycle stream is then combined and mixed with incoming wastewater in an internal contact chamber where the dissolved air comes out of solution in the form of micron sized bubbles that attach to the contaminants. The bubbles and contaminants rise to the surface and form a floating bed of material that is removed by a surface skimmer into an internal hopper for further handling, while heavier solids sink removed by the bottom auger.

Installation Scheme:



HOW IT WORKS?

As the density current travels laterally, clean water, being heavier, peels away from the bottom of the density current and flows downward. At the bottom of the tank, the downward flow gathers in a laminar fashion to form a horizontal return current, which accelerates as it nears the outlet.

The downward velocity of liquid from the surface layer to the return stream at the bottom is relatively constant along the length of the tank, and is uniformly close to a minimum flow. This assures that bubbles are moving upward throughout the entire volume of the tank. With conventional designs, the density current creates a large, recirculating volume of bubble free water in the center of the separator. As a result, much of the volume of the tank is underutilized and the effective time for the bubbles to remove contaminant's is limited as the density current flows past the "dead" recirculating zone.

STANDARD FEATURES INCLUDING:

- Complete, skid-mounted design for quick, easy installation
- Rugged 304/316 SS tank design that will not flex and is corrosion resistant
- Integral flocculation tube that is equipped with three chemical injection ports and is designed to provide optimal mixing of coagulant and flocculant chemicals
- Safe, simple, reliable design and operation provides superior performance without the use of high maintenance, labor intensive plate-packs that can foul or collapse
- Completely prewired control cabinet requiring only a single drop of 460V/3 ph power to operate
- Variable speed skimmer drive
- Large, internal float hopper minimizes pumping requirement
- DAF float hopper is equipped with a float level sensor to enable an optional sludge pump to be started and stopped automatically
- Automated settled solids auger
- Quality drive and pump components for long-term reliability

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