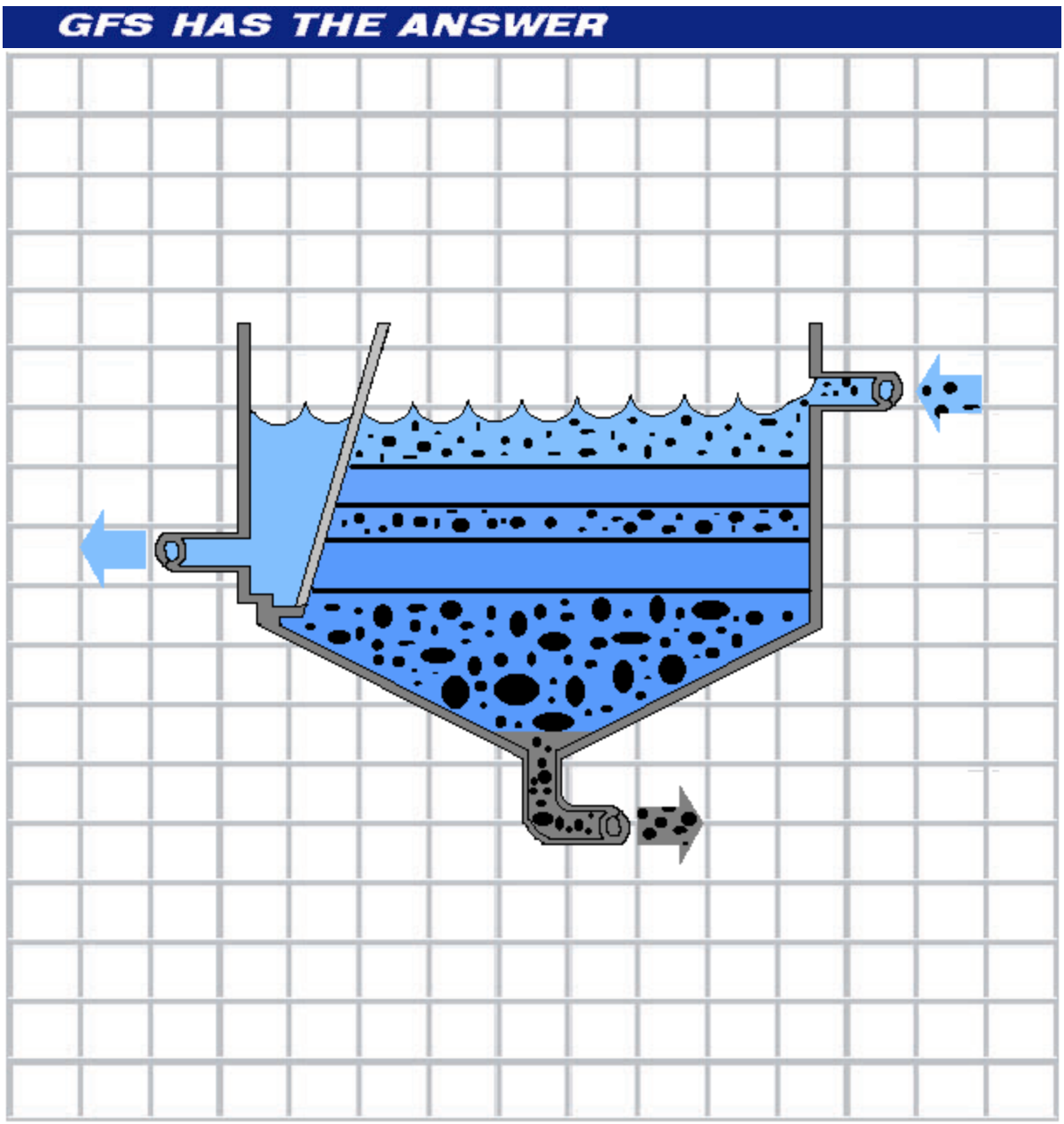
Gravity Flow Systems Southwest, Inc.

GFS HAS THE ANSWER

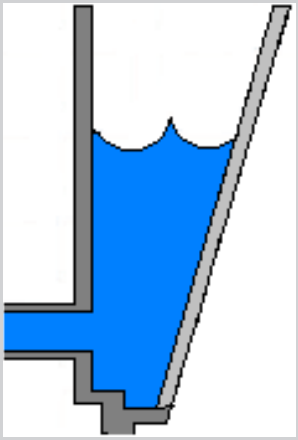


GFS Lateral Flow™ Thickener

Simple, versatile, Energy-Efficient Sludge Thickening

The Lateral Flow™ Sludge Thickener

The Proven Cost-Effective Technique For Liquids Removal



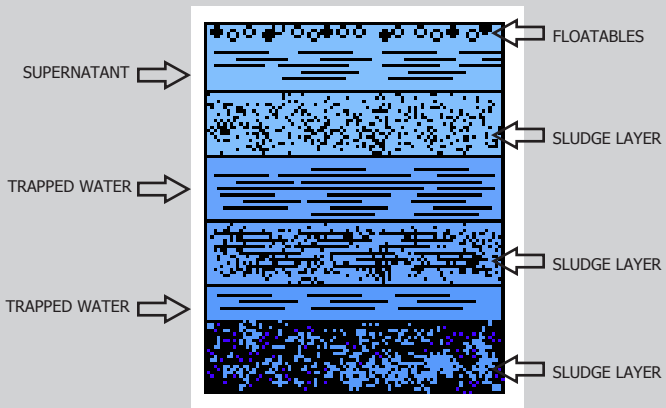
GFS Lateral Flow Thickeners are the most effective method for removing excess liquids from all biological sludges and many industrial sludges. Gravity Flow Systems Southwest, Inc. Lateral Flow™ Thickeners require no direct energy or power input. Unwanted liquids are separated by taking advantage of natural phenomena.

Adaptable to most types of installations, Lateral Flow™ Thickeners can be easily mounted in existing tankage or incorporated in new construction. The units are stainless steel throughout for maximum durability under the most demanding conditions.

Versatile in design, the system can thicken one type of sludge one day and another the next. Lateral Flow™ Thickeners can even be employed with aerobic digesters, reaction tanks and gravity thickeners.

Operation is simple and inexpensive, and relies on the basic laws of nature and physics. When allowed to settle without outside agitation, sludges precipitate into stratified layers separated by bands of trapped liquid. Lateral Flow™ Thickeners extract this trapped liquid by providing a region of reduced head. The water and other liquids migrate from the tanked region of high head to the lower head of the Thickener well. The only energy consumed is for auxiliary pumping prior to the start of the thickening operation.

Reliability is insured by the system's uncomplicated design. Lateral Flow™ Thickeners have *no moving parts* and need no expensive chemicals to function. The units are not susceptible to shock loads, and are virtually maintenance-free. They can be easily automated to suit individual treatment plant capacity needs. Best of all, they exhibit a high capture rate, yet are inexpensive to buy and install.

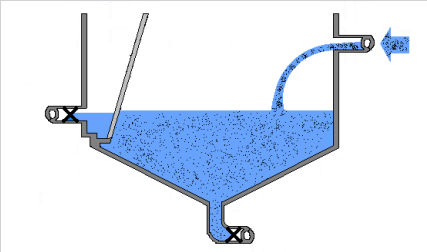


Allow sanitary sewer or many industrial waste sludges to stand, and the influences of specific gravity and fluid mechanics cause the components to separate. Floatables rise to the surface, while heavy elements sink to the tank floor.

As some solids floc and settle downward however, they form an impermeable layer that trap bands of water at intermediate levels. It is the supernatant and this trapped liquid that GFS Lateral Flow™ Thickeners quickly and economically remove.

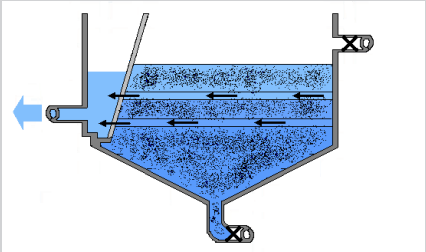
ECONOMICAL SLUDGE THICKENING FOR MUNICIPALITIES AND INDUSTRY

THE LATERAL FLOW™ THICKENER AT WORK



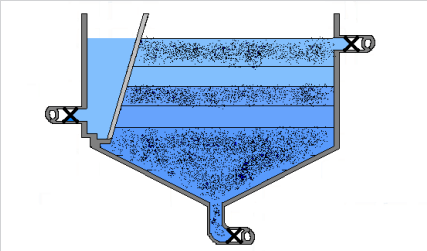
1. FILLING

Sludge is introduced to the main thickening tank, while water slowly flows through the Lateral Flow™ Thickener screen, filling the chamber behind. In some cases, water may be simultaneously added to the chamber behind the screen to keep the differential in the water surfaces close to even.



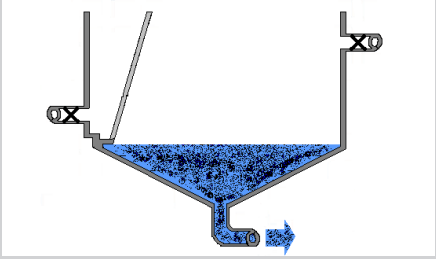
3. THICKENING

The effluent is extracted from the through the Lateral Flow™ Thickener screen by gravity or pumping. Supernatant and any banded layers of water present pass through the screen element, seeking the lower pressure within the receiving well. Sludge is kept from following the water by the screen itself.



2. DETENTION

After filling is complete, the main thickening tank contents are allowed to stand until stratification occurs. This normally requires from 2 to 12 hours, with most plants working on a 24 hour cycle for scheduling convenience.



4. REMOVAL

Thickened sludge is pumped out of the tank for final dewatering via GFS Wedgewater™ Filter Beds or other means. The GFS Lateral Flow™ Thickener unit is washed down for the next cycle.

MUNICIPAL TREATMENT APPLICATIONS

Thicken all types of dilute biological sludges, with or without inorganic additives such as alum, prior to final dewatering, hauling, or land disposal.

Optimize digester capacity by reducing the water content of clarifier sludge prior to digestion.

Allow both digestion and thickening in a single aerobic digester (Lateral Flow™ Thickener is simply isolated during the digestion cycle.

INDUSTRIAL WASTE TREATMENT APPLICATIONS

Thicken any industrial sludge which shows a tendency to settle—even sludges which will not react to external stimuli such as flotation or stirring.

Allow sludge formation and thickening in a single tank during chemical reaction processes for systems that produce sludge through precipitation.

GFS LATERAL FLOW™ THICKENER PERFORMANCE STATISTICS

Sludge Type	Initial Solids	Final Solids	Average Volume Reduction
Raw Primary	1-3%	5-8%	70%
Waste Activated	0.5-1.5%	4-7%	80%
Aerobic Digested	0.5-1.5%	4-6%	80%
Anaerobic Digested	1.5-3%	5-8%	65%
Aerobic Digested with Alum	0.5-2%	10-16%	65%

*This chart illustrates operating results and capabilities from typical municipal and industrial installations employing Lateral Flow™ Thickeners, or from pilot plant demonstrations. The concentrations and capabilities listed from each type of sludge are for *general information purposes only.* Because variation in concentration and capacities may be experienced due to the individual nature of a particular sludge, contact Gravity Flow Systems Southwest for specific design data. Gravity Flow Systems Southwest, Inc. accepts no responsibility for any operational or design data not submitted in writing directly from Gravity Flow Systems Southwest, Inc.

Gravity Flow Systems Southwest, Inc.

Dripping Springs, Tx.
Phone: (830) 379-5730
Email: info@gravityflow.com
www.gravityflow.com