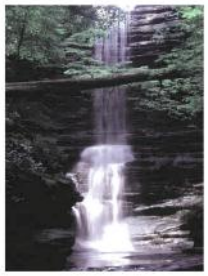


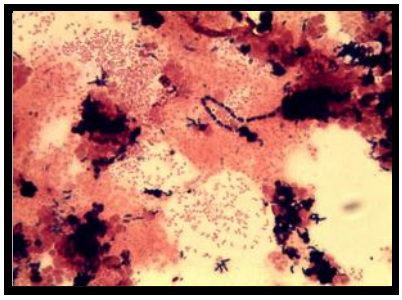
Environmental Leverage INC.

Turning Liabilities into Leverage

March 2011

The Wastewater Insight

MYSTERY BUG OF THE MONTH



We started this month out with a new

Mystery Bug of the month!

Check out our website for more photos of our new mystery bug!!!! WWW.EnvironmentalLeverage.com

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Lift Stations, Manholes &Wetwells

Wastewater lift stations are used to help transport liquid wastewater from homes and businesses across the city to the treatment plant for processing and cleaning.

Lift Stations

Sewage lift stations are by definition installed in a difficult operating environment. The commonly used prefabricated steel "can" stations are constantly subjected to a corrosive environment on both the interior and exterior of the station. Because these structures are out of sight they often do not receive the type of care and maintenance needed to protect steel surfaces.

Industrial Lift stations

Whether you are a food plant or a chemical plant, lift stations can collect food particles, sauces, grease, oils etc.

Proper removal of this build-up can reduce the slug loadings to the plant.

Addition of N and P, along with bioaugmentation can significantly help with degradation of oils and grease.

Floor drains and channels

can build up oils and grease that leaks off machines and is washed down when the floors are cleaned.

Process equipment may use hydraulic oils that can easily add up to a huge amount of oil that winds up down the sewers.

Manholes

Grease can build up in manholes. This can impact flow, as well as increase BOD loading to the city POTW. Sewer costs may vary but most average approximately $1.50 per thousand gallons but can range from $0.20 to about $8.00 per thousand gallons. Surcharges for BOD5 could range from $0.025 to up to $3.00 per pound!

Bioaugmentation can be used with a block hung in the lift station to slowly degrade the grease. Addition of supplemental nutrients is required though, since there is not enough N and P to support such high BOD loading.

Wetwells

Construction oils, oils from cars, trucks, front loaders, process equipment, hydraulic oil leaks, all can wind up down the sewers and into the wetwells, manholes and collection systems.

Odors

A significant problem many times with lift stations is in addition to concerns for sewer personnel exposed to accumulated gases; sewer gases left to accumulate in air-tight environments can create additional toxic gases and underground potential for explosion, stagnation, and dead space in lines. Aeration is a viable option to reduce odor. Many odors accumulate because of oxygen-deficient environments. The cost to retrofit old sewer systems (lines, stations, can be astronomical for a municipality.

Grease

Fats, oil and grease - - also called FOG in the wastewater business - - can have negative impacts on wastewater collection and treatment systems. Most wastewater collection system blockages can be traced to FOG. Blockages in the wastewater collection system are serious, causing sewage spills, manhole overflows, or sewage backups in homes and businesses.

Why is grease a problem?

In the sewage collection and treatment business grease is singled out for special attention because of its poor solubility in water and its tendency to separate from the liquid solution.

Large amounts of oil and grease in the wastewater cause trouble in the collection system pipes. It decreases pipe capacity and, therefore, requires that piping systems be cleaned more often and/or some piping to be replaced sooner than otherwise expected. Oil and grease also hamper effective treatment at the wastewater treatment plant.

Grease in a warm liquid may not appear harmful. But, as the liquid cools, the grease or fat congeals and causes nauseous mats on the surface of settling tanks, digestors, and the interior of pipes and other surfaces which may cause a shutdown of wastewater treatment units.

Problems caused by wastes from restaurants and other grease-producing establishments have served as the basis for ordinances and regulations governing the discharge of grease materials to the sanitary sewer system. This type of waste has forced the requirement of the installation of preliminary treatment facilities, commonly known as grease traps or interceptors. Two years ago, the federal government raised the required temperatures for restaurants from 180 degrees to 210 degrees. The impact on this is that the grease now does not cool down in the grease traps, but later in the pipes or lift stations.

Grease can harden and cause floating “turtles” in the lift station that are hard to break down.

Grease can cause a scum layer to build up on the sidewalls of the lift station.

One way to help solve the problems for grease build-up is to add biological products. Not only does it help eliminate grease build-up, it lowers maintenance costs, helps to control odors and helps to keep the lines clean also.

Nutrient Deficiency

Grease and oils have such a high BOD that they can significantly change the BOD loading to the system and cause a serious nutrient deficiency. Not only can you have foaming and filamentous bulking, but you can wind up with zoogleal bulking. Below is a photo of a clarifier with floating solids that appear jelly-like.

Zooglea is also very hard to dewater, and adds significant weight to your solids. Polymers cannot help Zooglea, and adding chlorine to your aeration basins with Zooglea will only make it worse.

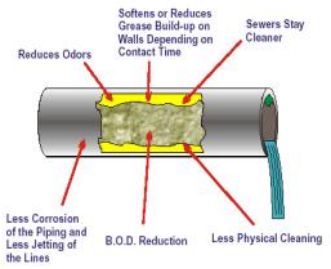
Antifoams that are oil based have also been known to cause filamentous bulking, foaming, nutrient deficiency and the growth of Nocardia. Even though the first use is for foaming, technically after a short while, they mix in with the water, add a significant amount of BOD loading to a system, which add to the nutrient deficiency and cause the MLSS to become even younger, and thus foam even more. Nocardia also likes oil based antifoams. Systems that had no oils present anywhere in the process side and used oil based antifoams all of a sudden developed Nocardia or Type 1863 after their use.

Bioaugmentation along with the addition of nutrients is one way to help upstream in your wetwells, manholes or lift stations to reduce grease and lower BOD.

A Bio-Brick is an improved biological product, specifically formulated and packaged for use in lift stations .

To assure optimal performance of these organisms, under the toughest conditions, they are produced and blended together with “high potency” nutrients and stimulants. Bio-Brick also contains specialty penetrants and surfactants, which loosen and liquefy heavy grease or oil deposits.

MicroClear 207 is an improved biological product, specifically formulated and packaged for use in lift stations, wetwells and manholes. MicroClear 207 is also used for softening and degrading food type fat, oil and grease.



To assure optimal performance of these organisms, under the toughest conditions, they are produced and blended together with "high potency" nutrients and stimulants.

MicroClear 207 also contains specialty penetrants and surfactants, which loosen and liquefy heavy grease deposits, thereby assisting in their biodegradation.

Grease Control in Lift Stations- **MicroClear 207** is packaged specially to maximize performance in lift stations.

QUICK RELEASE dissolves in seconds for immediate action.

Call Environmental Leverage if you need help with grease and oil removal.

MORE NEWS:

There still are a couple spots open for our class in Thorn Creek Sanitary Basin- Chicago Heights

Filamentous Identification the Easy Way!

March 23-24th 2011

Thorn Creek Basin Sanitary District

700 W. End Ave

Chicago Heights, IL 60411

This will be our Two Day Advanced Filamentous Identification Class

March 23 and 24th. Ask for our Brochure. This class does have limited space, so if you have been on our waiting list for classes, be sure to contact us quickly, as the class fills up very fast.

Iowa Water Environment Association's 20th Annual Biosolids Conference

March 16, 2011 2:30-3:15 PM

"Land Application/A Comparison of Food Process BioSolids vs. Municipal BioSolids". Paper to be presented by Tracy Finnegan

Last Month's
MYSTERY BUG OF THE MONTH

Last Month's Bug of the month

These actually are amoebae.

Did you guess right? They usually indicate a very young system with high BOD loading. Reduce wasting or increase bioaugmentation short term if these are dominant in your system.

Mystery Bug of the month!

Check out our website for more photos of our new mystery bug!!!!
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