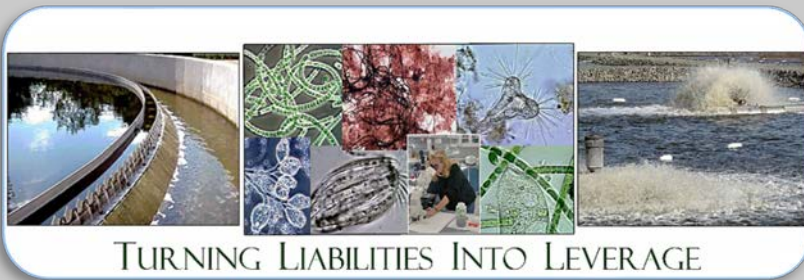


Municipalities and Sanitary Wastewater Case Histories & Capabilities

Environmental Leverage[®] Inc.





Grease control Municipality



Solids floating
entire bed in
clarifier

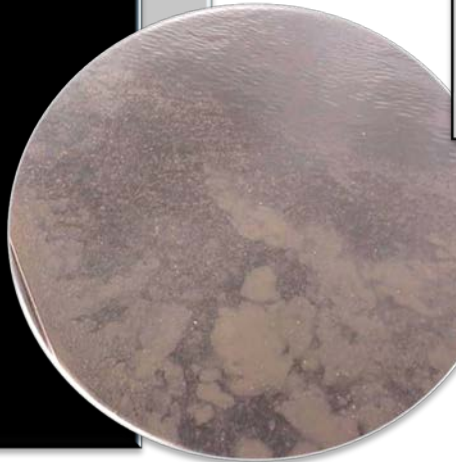


Foaming in
aeration basin

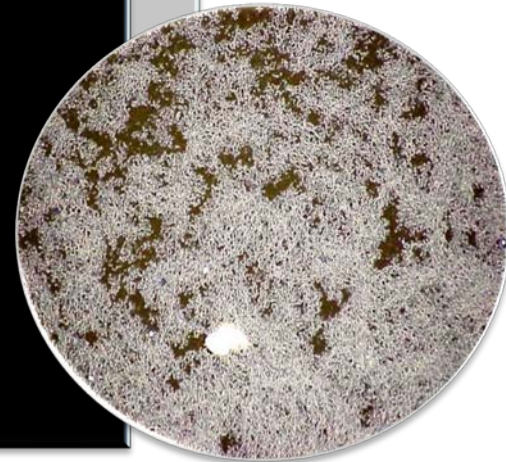




**Grease
was
floating
on the
surface
of the
clarifier**

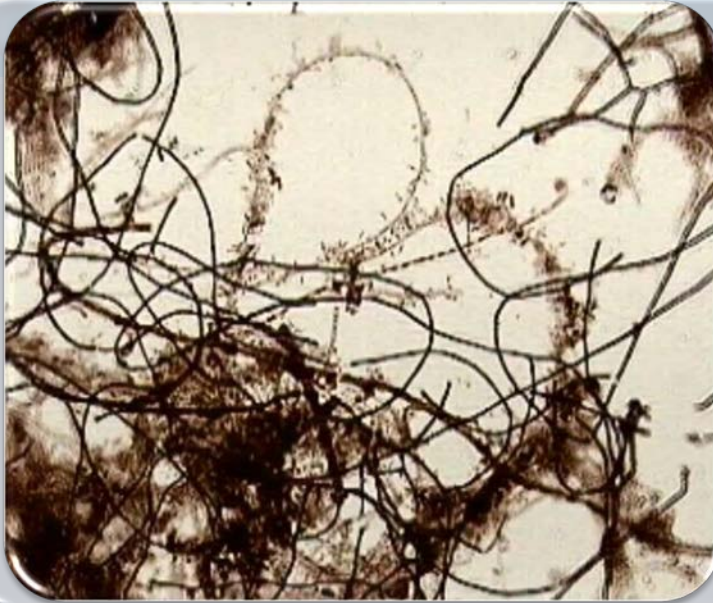


**and
solids
were
floating
to the
top**

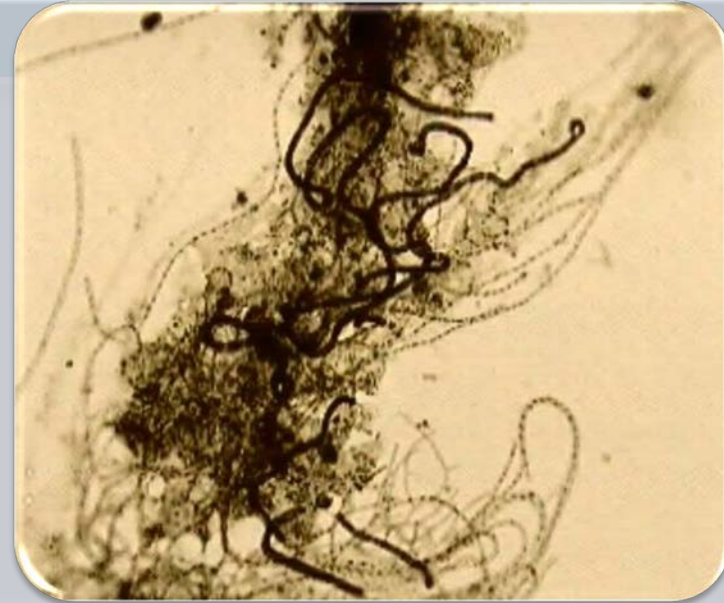


The final clarifier beds were too thick. Holding the solids too long causes lack of air to the biomass, and septic conditions can cause growth of filaments, and gassing and ashing, which can cause TSS problems also. Low F/M and low DO filaments were growing due to the fact they were holding too many solids. They adjusted RAS and WAS and reduced or eliminated many of the problems

Use the Microscope to Troubleshoot



This plant had
Microthrix, Nocardia,
Types 0041, 1851,
1701, Thiothrix II



and *N. limicola*

Take one filament at a time, zoom in, narrow down just one filament at a time and do not get overwhelmed. Yes, there are a ton of filaments, there probably is a common denominator though that is making these grow. There may be multiple causes also. In this case, there was a series of problems that needed to be fixed in order to reduce the filaments present



Problems solved



The plant was able to install a number of changes, increase grease removal in the primary, reduce filaments, reduce solids in the clarifier, and wound up with a better final effluent and lower operating costs!



Municipality Case History



Turning Liabilities Into Leverage!™



Municipality Case History



Grease in
Manhole
outside
Chinese
restaurant
prior to
bioaugmen-
tation





Municipality Case History



Oxidation ditch
7-7-11
Before
Bioaugmentation



Oxidation ditch
8-8-11
After
Bioaugmentation



Municipality Case History



7-7-11



WETWELL

8-8-11 after short term use of
bioaugmentation





Municipality Case History



Clarifier



7-7-11 Before Bioaugmentation

8-8-11 After Bioaugmentation



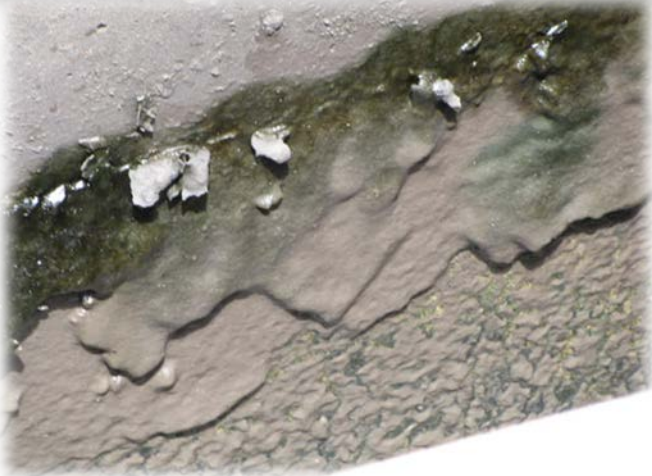
High levels of gassing and ashing



Lower levels of ashing and gassing but still scum and solids in centerwell



Municipality Case History



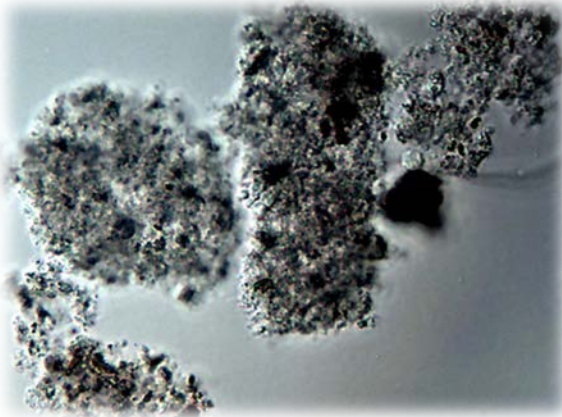
Inlet channel does have scum on sidewall build up that can slough off and add to TSS



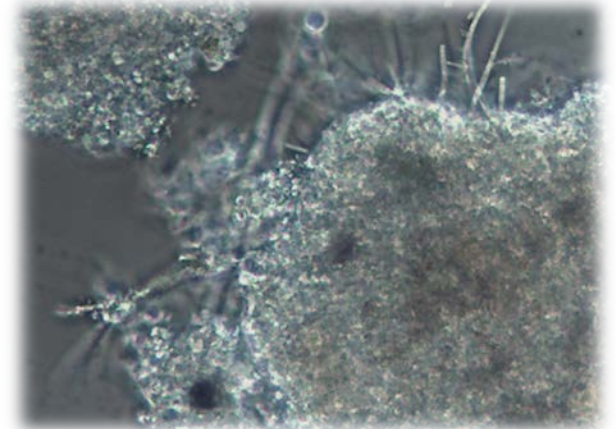
Brush guard has algae that can slough off and add to TSS also



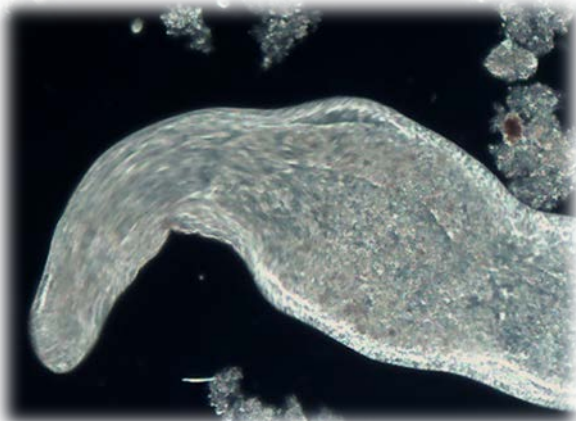
Municipality Case History



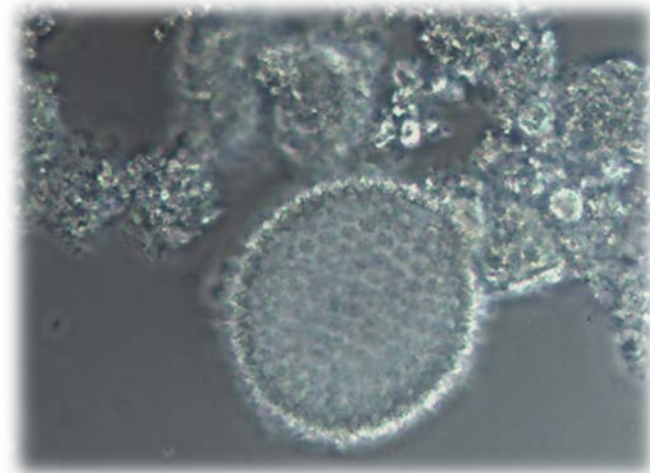
Some black spots due to septicity



Only a few filaments



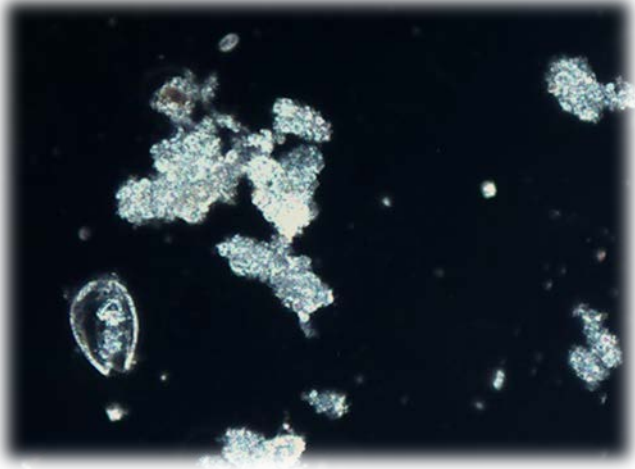
Worm



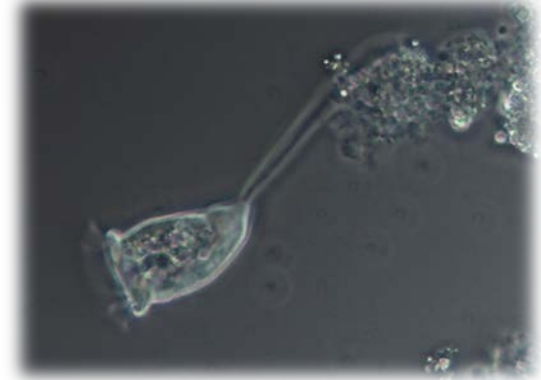
Pollen



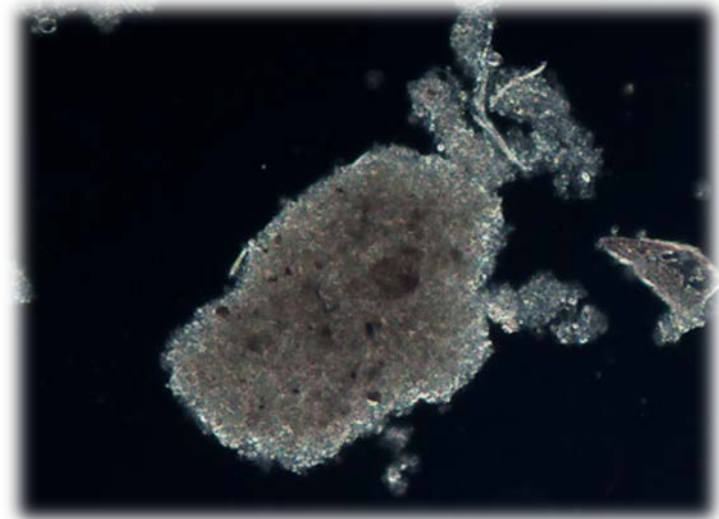
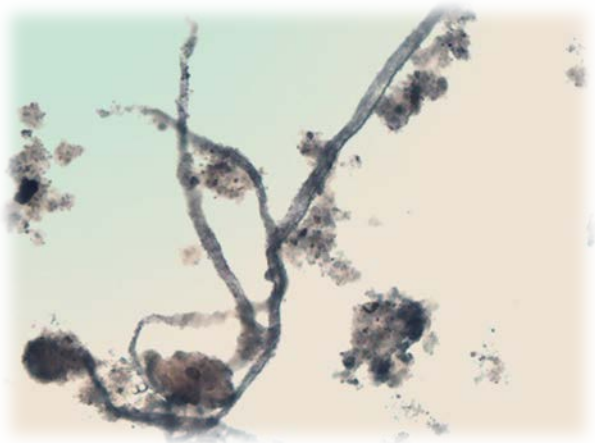
Municipality Case History



A little bit of fiber, check screening



Stalked ciliates



Nice firm, compact floc, clear supernatant



Odor control, TSS issues at Municipality



Municipality with Egg factory as major discharger. Odor control and safety issues due to purple sulfur bacteria in lagoons. High TSS in effluent

Onsite audit, training, consulting at Egg factory, increase in ammonia supplements, and bioaugmentation with MicroClear 207 and MicroClear M100 Micronutrients solved everything.





Foaming issues at Municipality



Plant with foaming due to high grease and oils as well as septicity.

Use of bioaugmentation and solids handling as well as onsite audit. Now plant running fine



MicroClear BioNite High FOG & Odor Control MicroBlock Solid for FOG



Heavy rains, hydraulic overload FOG at Municipality



Before and After



MicroClear 207 for high FOG MicroBlock Solid for FOG



Heavy FOG causing foaming at Municipality



High grease causing foaming issues.
Use of MicroBlock upstream in lift stations

Before and After



MicroClear 207 for high FOG MicroBlock Solid for FOG



Septicity causing foaming at Municipality



New plant-
Serious foaming
issues

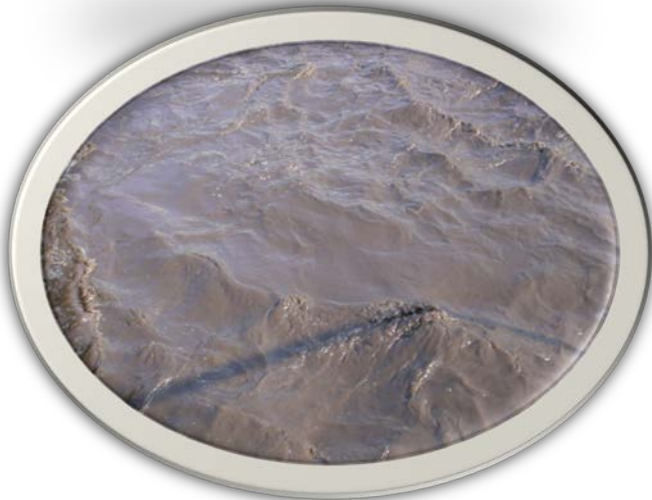
Onsite audit,
operator training
Holding solids too
long in clarifier and
turning air off in
Digester



Operator control on
solids handling only
thing necessary!!!



FOG causing foaming at Florida Municipality



High grease causing foaming issues.
Use of MicroBlock upstream in lift stations
Bioaugmentation
MicroClear 207 and MicroClear M100 at Plant



MicroClear 207 for high FOG MicroBlock Solid for FOG



Environmental Leverage

The Next Generation of Solutions



- **Chemicals, Laboratory, Training, Consulting, Total Systems Approach**
 - Onsite Audits & Consulting
 - Beneficial Reuse & Biosolids Alternatives
 - Training Programs
 - MicroClear® & MicroSolv™ Bioaugmentation Products
 - Cooling Tower & Wastewater Lab Services
 - Computer Based Dosing Wizards
 - Wastewater Audits
 - Online ELearning Courses





Wastewater Training Programs



Wastewater Training Materials 4 – CD Set

Higher Life Forms CD

Filamentous Bacteria CD

An Overview of Wastewater Training

Wastewater Microbiology

Filamentous Identification



The Easy Way™ Training CD

Powerful Filamentous Training


Custom Training CD or Manuals

Microbiology Training

“How To Use The Microscope”



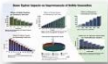
Training & Hands On Workshop
Presented by Tracy Finnegan



Wastewater Training

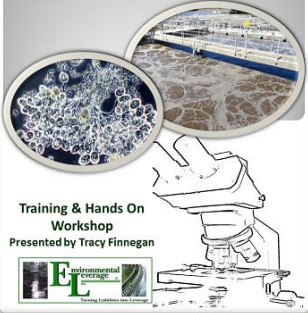
Visual Troubleshooting

Tracy Finnegan






© EnvironmentalLeverage.com

Microbiology Training In Wastewater




Training & Hands On Workshop
Presented by Tracy Finnegan




Microbiology Training


Indicator Organisms




Training & Hands On Workshop
Presented by Tracy Finnegan



Troubleshooting Microbiology




Training & Hands On Workshop
Presented by Tracy Finnegan





Microbiology Training

“Filamentous Identification The Easy Way”





Training & Hands On Workshop
Presented by Tracy Finnegan

An Overview of Wastewater Treatment

CUSTOM TRAINING MANUAL

Author Tracy Finnegan

Wastewater ELearning Training



Online ELearning: Wastewater Training Courses Overview

Control and Minimization of Total costs of operations is always necessary, but guaranteed reliability and long term sustainability are the keys to transport your wastewater treatment system above and beyond normally targeted measures. These wastewater training programs are based upon years of experience and accumulation of practices on actual performance of thousands of treatment systems. These wastewater training programs have been consistently successful in teaching people how to be proactive and achieve their goals of reducing Total Costs of Operation while also achieving compliance.

You will learn step by step procedures which will enable you or your operators to develop quick, easy to establish system checks to control and monitor your system in order to predict upsets, minimize energy and chemical usage, and avoid costly repairs and unnecessary maintenance procedures.

These courses have been pre-approved for Wastewater CEU's in Alaska, California, Connecticut, Idaho, Indiana, Maine, Massachusetts, Nevada, New York, North Carolina, Tennessee, Vermont, Washington and West Virginia. Some states do not require pre-approval. If you need these approved for your state, please contact our office.

These courses are eligible for CEU's, Contact Hours or PDH (Professional development hour) in Alabama, Arizona, Maryland, Virginia and more to come.

Now approved in Canada for Nova Scotia and Saskatchewan.

- Online computer-based training
- Interactive courses with videos, photos, & quizzes
- Convenience and flexibility at individual pace
- No travel expenses or hassles.

www.EnvironmentalLeverage.com



Environmental Leverage Analytical Services



- Wastewater Biomass Analysis
- Filamentous Identification
- Cooling Tower Microbio Analyses

Environmental Leverage Inc.

Wastewater Microbiology Lab Testing

Standard Wastewater Biomass Analyses :

- Cover letter with comments, recommendations and troubleshooting tips.
- Higher life form sheet
- Floc structure analyses
- Photo Sheets
- A CD with photos and videos included \$250.00

Wastewater Biomass Analyses with Filamentous Identification including Gram and Neisser stains, suggestions on causes and control, troubleshooting tips as well as the standard analyses. \$350.00

Wastewater Biomass Analyses

Filamentous Identification

Filamentous Identification

Higher Life Forms or Indicator Organisms

Filamentous Identification Worksheet

Floc Characterization Worksheet

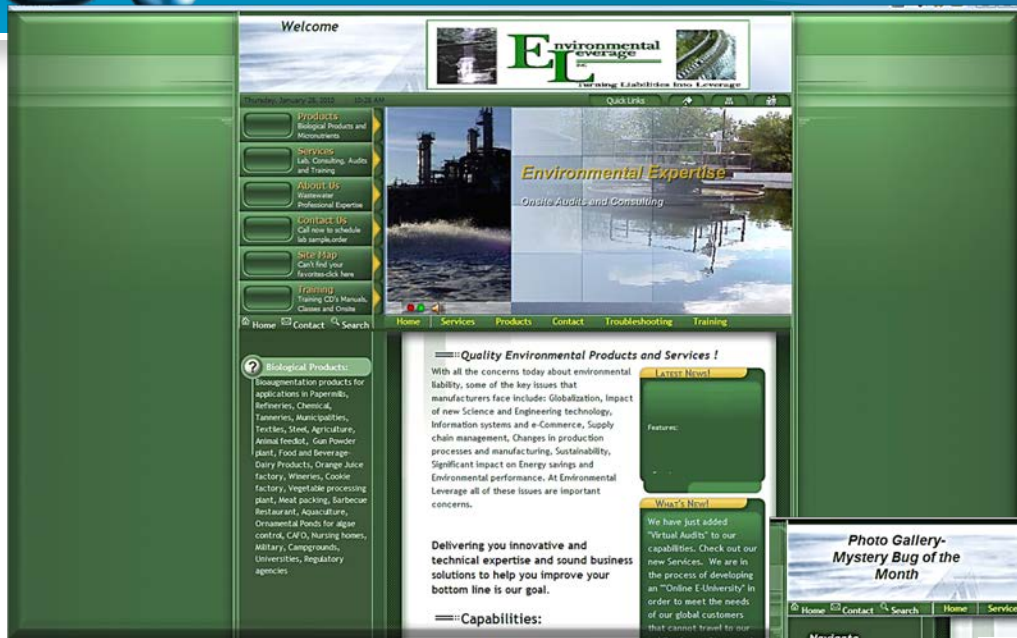
India Ink and LactoPhenol Cotton Blue Stains

Filament Causes and Controls

Send 50-100 ml sample in plastic container overnight. No ice cubes, blue ice only. Call to set up sample testing 630-906-9791. Results same day as sample received

Quality • Service

Always striving to bring the latest technology available to you!



Welcome

Environmental Leverage
Turning Liabilities Into Leverage

Quick Links

- Products: Biological Products and Microsystems
- Services: Lab Consulting, Audits and Training
- About Us: Professional Expertise
- Contact Us: Call now to schedule lab sample order
- Site Map: Can't find your bioresources here
- Training: Training CD's Manuals, Classes and Online

Home | Contact | Search

Environmental Expertise

Onsite Audits and Consulting

Quality Environmental Products and Services!

With all the concerns today about environmental liability, some of the key issues that manufacturers face include: Globalization, impact of new Science and Engineering technology, Information systems and e-Commerce, Supply chain management, Changes in production processes and manufacturing, Sustainability, Significant impact on Energy savings and Environmental performance. At Environmental Leverage all of these issues are important concerns.

Capabilities:

Delivering you innovative and technical expertise and sound business solutions to help you improve your bottom line is our goal.

What's New!

We have just added "Virtual Audits" to our capabilities. Check out our new Services. We are in the process of developing an "Online E-University" in order to meet the needs of our global customers that cannot travel to our



TURNING LIABILITIES INTO LEVERAGE

- Training & Treatment Systems Audits
- Newsletters (*digital monthly troubleshooting*)
- Troubleshooting
- Filamentous ID.
- Higher Life Forms
- Bug of the Month
- Microscopic Biomass Analyses



Photo Gallery - Mystery Bug of the Month

Home | Contact | Search | Home | Services | Products | Contact | Troubleshooting | Training

Mystery Bug of The Month - From 2004 - 2017

What's New!

We now have a brand new "Higher Life Form videos" in our Training CD list. Check out our new Training Materials. We are also in the process of developing an "Online University" in order to meet the needs of our global customers that cannot travel to our public classes. Stay tuned for details and updates.

Free swimming ciliates

These photomicrographs were taken from a wastewater sample. Most of the objectives used were 100x, 400x and 1000x. You can see this free swimmer open what looks like a flap to capture food. Notice how when you go from low power to a higher magnification, more details jump out. Do not be afraid to go up to a higher magnification, even 1000x!

Biological Products:

Bioprecipitation products for applications in Papermills, Textiles, Chemical, Tanneries, Mastic Qualifiers, Animal Feedlot, Gas Powder Plant, Food and Beverage Dairy Products, Orange Juice factory, Wineries, Cookie factory, Vegetable processing plant, Meat packing, Surface Restaurant, Aquaculture, Ornamental Ponds for algae control, C&D, Nursing homes, Military, Campgrounds, Universities, Regulatory agencies



Join Environmental Leverage® on a Journey into the Future with our next generation of Water & Wastewater Treatment solutions

The future begins now. . . .

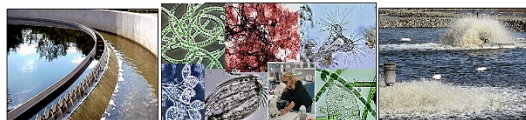
Environmental Leverage® Inc. bringing you Tomorrow's Water Today !!!!

Check out our new Elearning
WastewaterElearning.com/elearning

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Batavia, IL 60510 USA
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www.EnvironmentalLeverage.com
www.WastewaterELearning.com



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