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San Diego Business

Good Bugs and Bad Bugs

The Colonization of San Diego

By Milton N. Burgess P.E.

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Ugh, what IS that smell? is usually a question for which no one really wants an answer! The real reason is to make sure the person asking this rhetorical question is not the originator. Anyone walking by some City sewer manholes has had this experience.

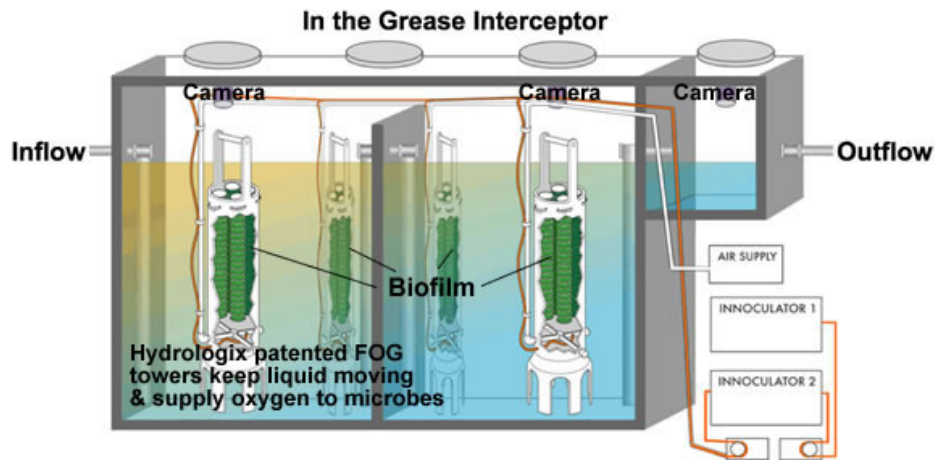
Beneath the streets of San Diego are literally hundreds of miles of pipes carrying human waste (sewage) from homes and businesses to sewage treatment facilities.

When physical fitness trainers tell us to do aerobic exercises we know they mean providing oxygen to our muscles with exercise. Anyone who has run a marathon at some point is in the anaerobic zone. The terms mean “with oxygen” and “without oxygen”.

Anaerobic microbes thrive due to the lack of oxygen in sanitary sewer pipes (always wondered how the word sanitary got in general use, since the inside of a sewer pipe carrying human waste is far from “sanitary”) Among the metabolic by-products of these anaerobic microbes is a gas called hydrogen sulfide. It is really an odorless gas, but when mixed with oxygen becomes very stinky and is commonly called sewer gas.

This brief lesson in biology is necessary to provide the background for a recent innovation in sewer technology. No, that is not a oxymoron. There really is a lot of technology involved in the business of transporting, treating and disposing of human waste.

Hydrologix, Inc. headquartered on the Big Island of Hawaii has extended the technology used in very large sewage treatment plants. They have developed, over the past eight years, a patented system for treating the waste products of restaurants, homes and small businesses using aerobic microbes. Just like people tend to do, microbes live in colonies with other microbes who are similar. There are anerobic microbes and aerobic microbes and they don't like each other very much. And to my knowledge there is no diversity training program.



The Hydrologix® GRS Grease Interceptor

Graphic courtesy Hydrologix

Currently Hydrologix has one of their units under test at the Rancho Bernardo Inn where the good (aerobic) bugs are processing the waste from the kitchen of the Inn that goes into a City required grease interceptor. The products of the metabolism of aerobic microbes are carbon dioxide and water. Hence, no sewer gas smell. Because the bugs eat the grease (and other vegetable and protein waste), periodic pumping of the grease interceptors is not required usually more often than once every one and a half to two years according to Dr. Markus Lenger, Hydrologix, Inc Chief Scientific Officer.

Dr. Lenger has another unit installed at the San Elijo Joint Powers Authority Pump Station on Coast Boulevard in Cardiff-by-the-Sea. This unit processes the effluent from five restaurants that do not have grease interceptors. On April 24 I visited the San Elijo location with Robert Carr, Hydrologix Director of Biological Systems and John Pace, Hydrologix Director of Engineering and Dr. Lenger. The previous day I was with the same group at the Montage Resort in Laguna Beach where a unit has been in place for over four years. The Montage unit is particularly noteworthy, since the Montage, an upscale destination resort, is located on the beach near very sensitive tide pools.

A very interesting feature of the Hydrologix unit is the use of the internet to monitor the operational status at each installation 24/7. Cameras are located in the grease interceptors that show the condition of the interceptor. Other instrumentation monitors the quality and quantity of the microbes being grown and sent to the interceptors and the pH (acidity or alkalinity) of the bio mixture as well as temperature and other data.

In addition to the above installations, Hydrologix has several in places in the State of Hawaii. For more information, see www.hydrologix.org. In the interest of full disclosure, I am personally interested in helping Dr. Lenger expand the number of installations. I may do some consulting work for him.

Business Sector : Biotechnology

About the author: [Milt Burgess](#) is a Registered Professional Mechanical Engineer in several states and a licensed California contractor with experience in all phases of mechanical construction and consulting spanning several decades