



ADVANCED BIOLOGICAL WASTEWATER TREATMENT

BioGill is a biotechnology company that brings together the power of science and nature to improve the quality of wastewater for a healthier environment. We design and manufacture above-ground, attached growth bioreactors that deliver highly effective, low cost and energy efficient water treatment systems. By combining simple, yet smart technology and natural biological processes, BioGill units are highly effective in reducing organic loads in wastewater. Our goal is to deliver wastewater treatment solutions that are good for the environment and good for the bottom line.



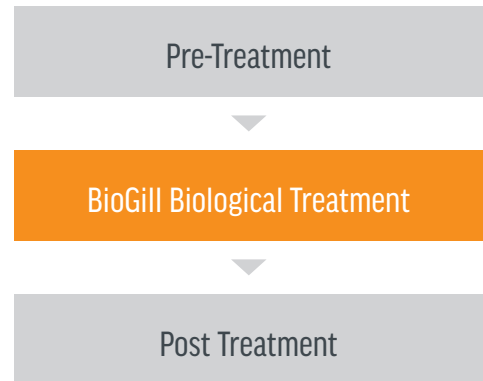
KEY FEATURES

- Simple to install & operate
- Easy to maintain
- Compact footprint
- Low sludge output
- Aerobic & anaerobic treatment in same pass

KEY BENEFITS

- Effective & rapid treatment of soluble organics
- Boost performance of existing plants
- Resistant to shock loads, FOG & high organic waste streams
- Low energy & operating costs
- Low odor

TREATMENT PROCESS



HOW BIOGILL WORKS

Biological wastewater treatment relies on microorganisms to consume nutrients in the wastewater. Like all living things, microorganisms need the right habitat to flourish. BioGill above-ground bioreactors use patented nano ceramic media, known as gills, to provide the ultimate air and liquid interface for the microorganisms to grow, multiply and thrive. Arranged in suspended vertical loops, each gill is folded over a support, creating two distinct sides: one in contact with the water and the other in contact with the air.

By providing the perfect oxygen rich habitat, the microbes perform at their best, protected in the biofilm and effectively removing pollutants from the wastewater. BioGill solves many of the shortfalls of other technologies by delivering effective treatment of high organic waste streams, Fat, Oil and Grease (FOG), as well as reducing odor.

STEP 1	Wastewater is pumped to the top of the BioGill bioreactor.
STEP 2	The wastewater is then dispersed over the looped gills and gravity fed down through the unit.
STEP 3	Biomass self-optimizes, growing the most suitable microbes to feed on a given wastewater. The result is a robust biomass that is more resilient to shock loads, FOG and high organic wastewaters.
STEP 4	Natural air convection, resulting from the heat generated by the biomass, increases the supply of oxygen.
STEP 5	Treated wastewater exits the BioGill system with reduced levels of BOD, COD and FOG.

PROJECT RESULTS

Brewery wastewater NORTH AMERICA <i>Up to 95% TOC mg/L removed per 24 hour cycle</i>	95%
High sugar wastewater / confectionery AUSTRALIA <i>Up to 96% BOD mg/L removed per cycle batch</i>	96%
Sauce / topping production JAPAN <i>Up to 91% soluble COD removed over a 24 hour cycle</i>	91%
Soda / soft drink AUSTRALIA <i>Up to 85% COD removed over a 24 hour cycle</i>	85%
Winery wastewater NORTH AMERICA <i>Up to 97% BOD removed per cycle batch</i>	97%
Performance boost to existing STP MIDDLE EAST <i>90%+ BOD reduction in 6 hour cycle</i>	90%
Reduced energy at existing STP PHILIPPINES <i>Reduction in energy demand by 80%. Up to 89% BOD reduction</i>	89%

Fig. 1 Gill Structure

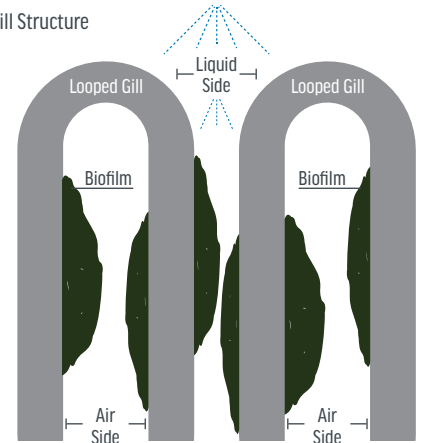
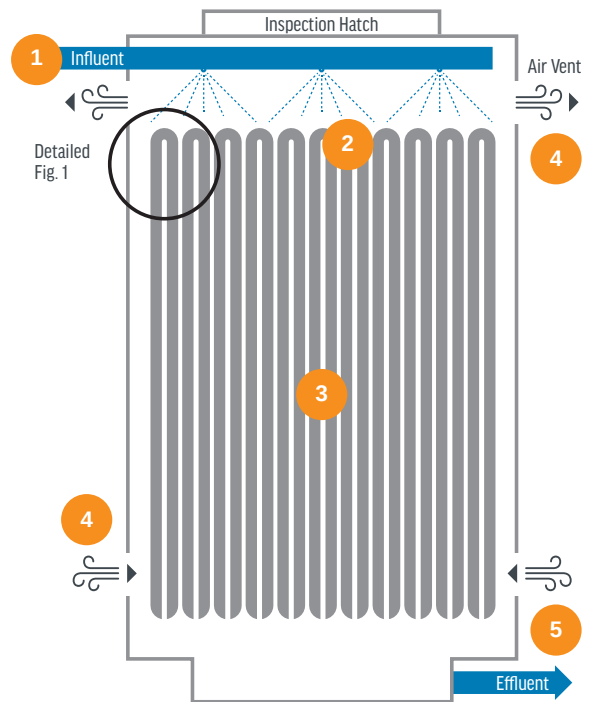


Fig 2. BioGill Process Flow



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Case studies and technical reports are available at biogill.com