



A member of the



GWE AEROBIC TREATMENT

Although in economic and ecological terms, anaerobic solutions are a better option for treatment of concentrated industrial wastewaters, aerobic treatment is still widely applicable to municipal wastewater treatment and as a polishing step to meet stringent effluent qualities required for specific applications, such as discharge to surface waters or water reuse. GWE offers a complete range of aerobic wastewater treatment solutions able to meet any discharge requirements.



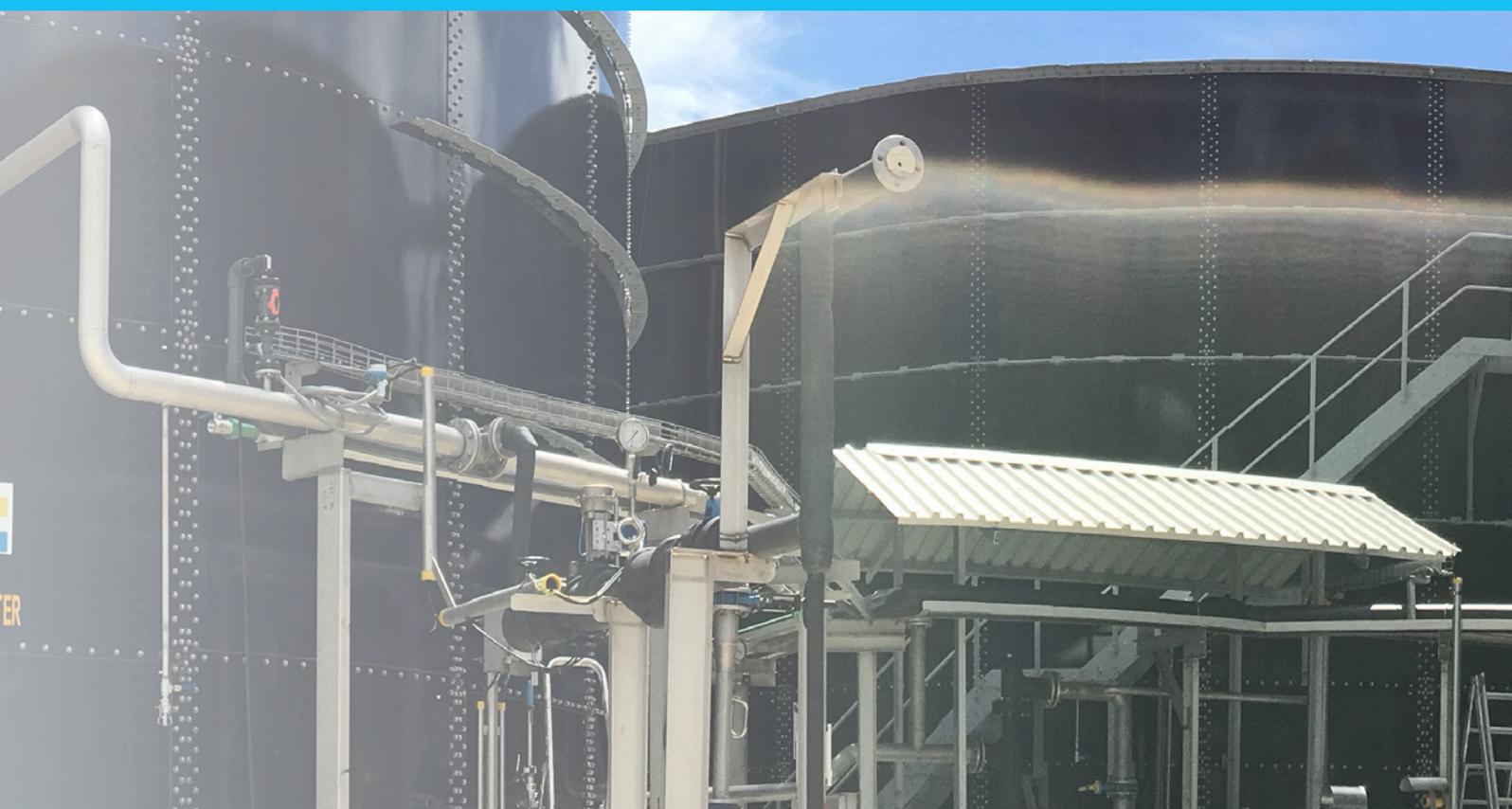
GLOBAL WATER & ENERGY (GWE), a member of the Global Water Engineering Group of Companies, is a solutions provider to the global marketplace for industrial wastewater treatment, water reuse and green energy production. To that end, GWE offers state-of-the-art technologies to assist industries and private owners in their efforts to grow, while reducing their operational costs.

SOLUTIONS FOR CLEAN WATER & GREEN ENERGY



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GLOBAL WATER & ENERGY

AEROBIC WASTEWATER TREATMENT OVERVIEW

Highly effective and able to generate very high-quality effluents, aerobic biological wastewater treatment processes were once the solutions applied to treat most types of industrial wastewater. Nowadays, with far greater emphasis on energy-efficiency and the minimization of residuals (i.e. waste sludge), they are mostly limited to dilute industrial wastewaters, municipal applications, or as a polishing step after anaerobic treatment. However, when strict discharge requirements are present, it is still nearly impossible to design a full biological treatment system for any type of wastewater without applying at least one aerobic step. Therefore, our portfolio of technologies also includes a variety of different aerobic treatment systems.

A complete range of wastewater treatment solutions able to meet any discharge requirements from one technology supplier

In aerobic biological treatment processes, organic pollution is converted to carbon dioxide and water. The process requires active aerobic biomass and supplying a suitable amount of oxygen to the reactor in order for the treatment to take place. To provide nutrient (nitrogen and phosphorus) removal, aerobic systems can be configured with a variety of stages that operate under specific conditions to promote biological uptake and conversion of nutrients.

ACTIVOX™

CONVENTIONAL ACTIVATED SLUDGE(CAS)

GWE's ACTIVOX™ conventional activated sludge system is applicable to most standard aerobic treatment scenarios. The basic package consists of an activated sludge step with final clarification and sludge recirculation. The system is simple, robust, and reliable in operation.

DEL MONTE,
Philippines,
Pineapple canning



FLOTOX™

AEROBIC TREATMENT WITH ENHANCED CLARIFICATION STEP

The FLOTOX™ system consists of an aeration basin and GWE's SUPERFLOT™ - AIR dissolved air flotation unit, for sludge separation. Organic pollutants (COD, BOD) and ammonia are removed in the aerobic treatment. Depending on the application, the aerobic stage can be standard activated sludge or another technology, such as a Moving Bed Biofilm Reactor (MBBR).

Within the SUPERFLOT™ - AIR, the mixed liquor is introduced together with recycled clean effluent in which air is dissolved under high pressure. Clarification of the effluent occurs via solids separation by a rising sheet of fine bubbles. Floating sludge is then removed by a surface scraper.

INDIAN OCEAN TUNA,
Seychelles,
Seafood canning



ASTEROX™

ADVANCED MULTI-STAGE ACTIVATED SLUDGE SYSTEM WITH NITROGEN & PHOSPHOROUS REMOVAL

ASTEROX™ is a tailor-made and state-of-the-art activated sludge treatment process. Through the use of selectors (bulking sludge control) and a plug-flow design with denitrification options, the process is ideal for the treatment of relatively complicated wastewaters requiring some level of nitrogen and phosphorus removal to meet discharge limits.

CERVECERIA NACIONAL QUITO,
Ecuador,
Brewery



SEQUOX™

CONVENTIONAL SEQUENCING BATCH REACTOR (SBR)

SEQUOX™ is a flexible form of treatment technology, ideal for small projects with variable wastewater composition and applications with irregular or seasonal wastewater production. Available as a single tank or multiple reactors, the operation of a sequencing batch reactor allows for full treatment in one basin. It is operated in a repetitive sequence of filling, aerating, settling and draining.

The SEQUOX™ - 2 system employs two tanks to allow for continuous wastewater intake, to minimize or eliminate equalization requirements.

SIERRA LEONE BREWERY
Sierra Leone,
Brewery

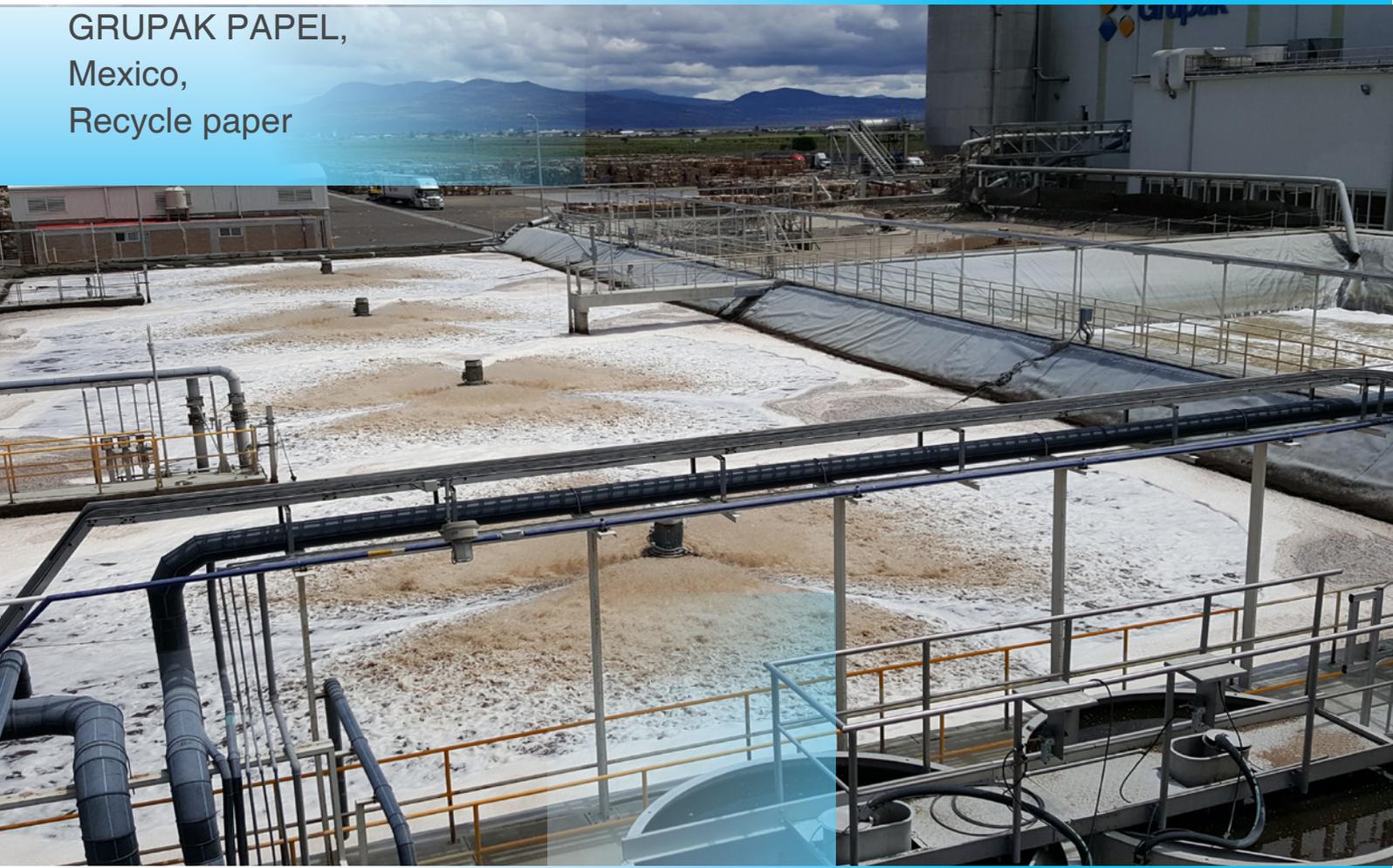


CYCLOX™

CONTINUOUS AEROBIC SBR

The CYCLOX™ continuous batch reactor process treats wastewater in three or more activated sludge basins, one of which serves as a settling tank during a few hours of operation, eliminating the need for separate clarifiers. Every few hours another basin serves as the settling tank, and the flow patterns between the basins are changed. It is an ideal solution for larger flow applications with variable wastewater composition or seasonal production.

GRUPAK PAPEL,
Mexico,
Recycle paper



MEMBROX™

MEMBRANE BIOREACTOR (MBR) SYSTEM

For the highest treatment efficiency with the possibility of wastewater recycling and reuse, GWE recommends MEMBROX™ technology. It is a compact, concentrated form of activated sludge treatment system that utilizes a membrane filtration stage in place of conventional gravity-separation clarification. Suitable to nearly all applications, including biological nutrient removal, our conservative approach to design allows for reliable performance and low operational costs.

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USA,
Greek Yogurt Production



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