



**CWT**  
CLEAN WATER TECHNOLOGY

# GEM® System

WELCOME TO THE NEW WORLD  
OF PRIMARY WASTEWATER TREATMENT



**GEM® System**

# CWT End to end Wastewater Treatment Solutions

In addition to the innovative GEM® System, CWT designs and builds turnkey wastewater treatment plants and offers a complete line of Primary, Secondary and Tertiary Wastewater Treatment solutions for Industrial and Municipal WWTP:

## **Aerobic Reactors**

- MBBR (Moving Bed Biofilm Reactor)
- MBR (Membrane Bio-Reactor)
- SBR (Sequential Batch Reactor)

## **Anaerobic Digestors**

- UASB (Upflow Anaerobic Sludge Bed)
- EGSB (Expanded Granular Sludge Bed)

## **Wide Range of Tertiary Treatment Technologies**

- Microfiltration, Ultrafiltration, Nanofiltration, Reverse Osmosis

## **Dewatering Solutions**

- DSP (Dewatering Screw Press)

## **Custom Build Equipment and Solutions**

## About Clean Water Technology

Clean Water Technology INC. (CWT) is a division of Marving Engineering Group, is a global provider of advanced wastewater treatment solutions. CWT has been developing and supplying wastewater treatment solutions for over 15 years. With more than 1,000 installations on five continents, we provide solutions for some of the most renowned companies in their industrial sectors. Likewise, we work with important public institutions.

CWT products and services are the result of many years of work and technological research. We have more than 20 patents developed for wastewater treatment. Our commitment is focused on offering solutions adapted to the needs of our clients. We focus on developing, providing and supporting effective, flexible and easy-to-operate solutions. Our staff has extensive experience in physical, chemical, orifice and membrane processes. We are experts in solving the most complex challenges in the treatment of wastewater of all types.

Contact CWT for more information on the advanced GEM® System and other innovative solutions.





# GEM<sup>®</sup> System

## WELCOME TO THE NEW WORLD OF PRIMARY WASTEWATER TREATMENT

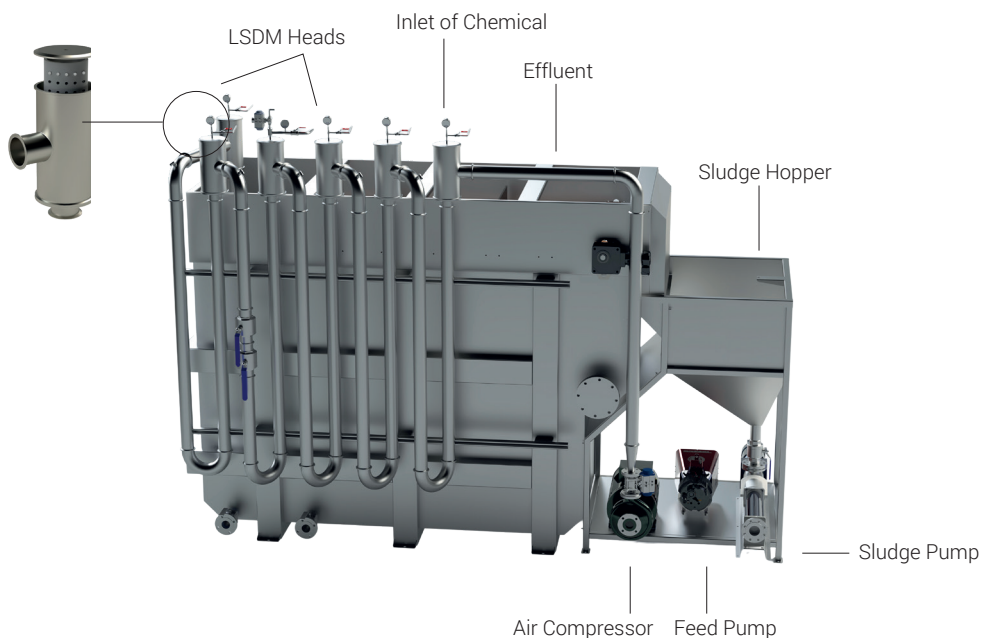
The Gas-Energy Mixing (GEM<sup>®</sup>) System from CWT is the next generation primary wastewater treatment technology. Patented GEM<sup>®</sup> System technology is able to remove MORE contaminants from the stream than any other flotation technology (99.99% of FOG, TSS and non-dissolved COD and BOD).

Compared with conventional DAF Systems, the GEM<sup>®</sup> System ensures better compliance with environmental regulations by removing significantly more contaminants, reducing chemical usage and outputting much drier sludge. The GEM<sup>®</sup> System accomplishes all this with a much smaller footprint than any conventional DAF System.

CWT has over 1.000 installations globally, over a 15 year period in all industries including: Frozen Food, Meat Processing, Milk & Dairy, Seafood, Rendering, Chemical & Petrochemical, Pharmaceutical, Semiconductor, Cosmetics, Pulp & Paper, Bio Diesel, Metallurgy and more.

### GEM<sup>®</sup> System benefits

- Better results - especially in high FOG & TSS environments
- Flexibility - Expandable in terms of flow and contamination loads
- More efficient chemical usage
- Smaller footprint
- Drier sludge
- DO (Dissolved Oxygen) level is higher
- Easy relocation
- Minimal maintenance
- Fast installation
- Less odor
- Rapid System stop/start
- Cost effective
- Renewable by-product generation



SLAUGHTERHOUSES | MEAT PROCESSING | DAIRY & CHEESE | FROZEN FOOD PROCESSING  
SNACK FOOD | FISH & SEAFOOD | DRINKS & CONCENTRATES | RENDERING | PRINTING PULP  
& PAPER | COSMETICS | TEXTILE | CHEMICAL & PETROCHEMICAL | PHARMACEUTICAL  
METALLURGY | SEMICONDUCTOR | LAUNDRIES | BIO DIESEL | PET FOOD | ENERGY



## Higher efficiency

The GEM® System meets regulatory compliance levels more efficiently by eliminating up to 99.99% of FOG, TSS and non-dissolved COD and BOD.

## Lower operating costs

The GEM® System reduces chemical usage by 20%-80% compared with conventional DAF technology. In addition reduces sludge handling, hauling and disposal costs by outputting much drier sludge.

## Easy to install, operate and maintain

Unlike complicated DAF Systems, the GEM® System ships in two pieces that can be up and running in far less time. A stainless-steel tank, easily interchangeable parts plus efficient sludge separation means less cleaning, intervention and repair.

## Bringing GEM® innovation to existing DAF facilities

Upgrade your DAF System with advanced GEM® technology by **retrofitting** your current wastewater system with minimal cost and without expanding the footprint of your existing DAF System. Take advantage of the GEM® System's ability to accommodate changing waste loads, flows or to comply with new regulations.



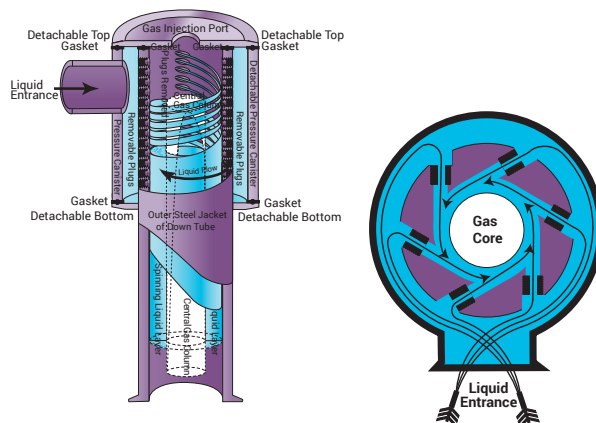


# How the GEM® System works

## GEM® TECHNOLOGY

### Patent #6797181

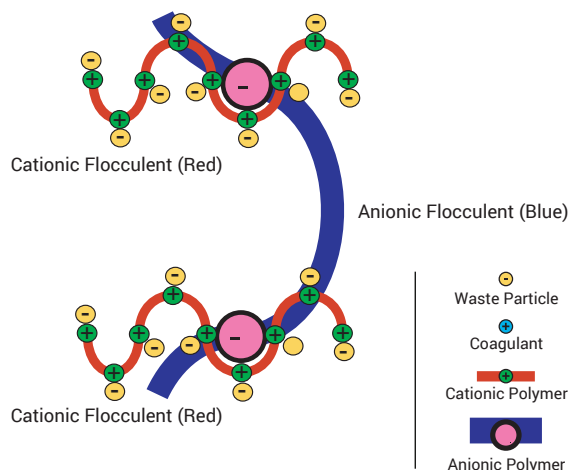
Although many industries have been using DAF technology since the 1950s, there has been little process improvement in decades. The GEM® System is a hybrid physico-chemical technology that combines centrifugal movement and dissolved air flotation concepts by using an array of six patented LSGM (Liquid Solid Gas Mixer) hydrocyclone heads.



## SUPERIOR CHEMISTRY

### Patent #7347939

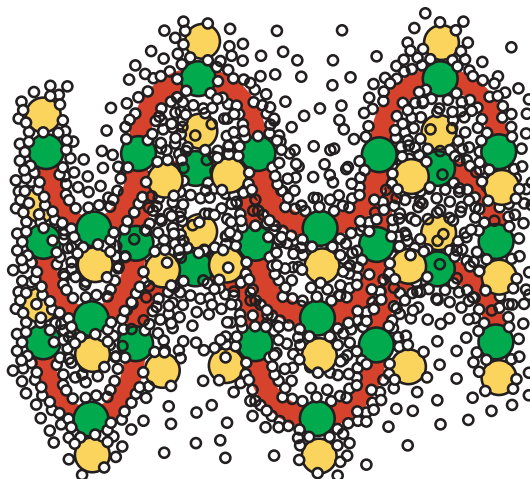
The LSGM array generates high-speed centrifugal force that give the GEM® System the ability to use granular High Molecular Weight (HIMW) Polymers. By uncoiling these polymers, the GEM® System exposes greater polymer surface area, so that 99.99% of contaminant particles are attracted and captured with less chemical usage. When the HMW polymers recoil after skimming, they expel a higher percentage of water, leading to much drier sludge.



## SUPERIOR AERATION

### Patent #7374689

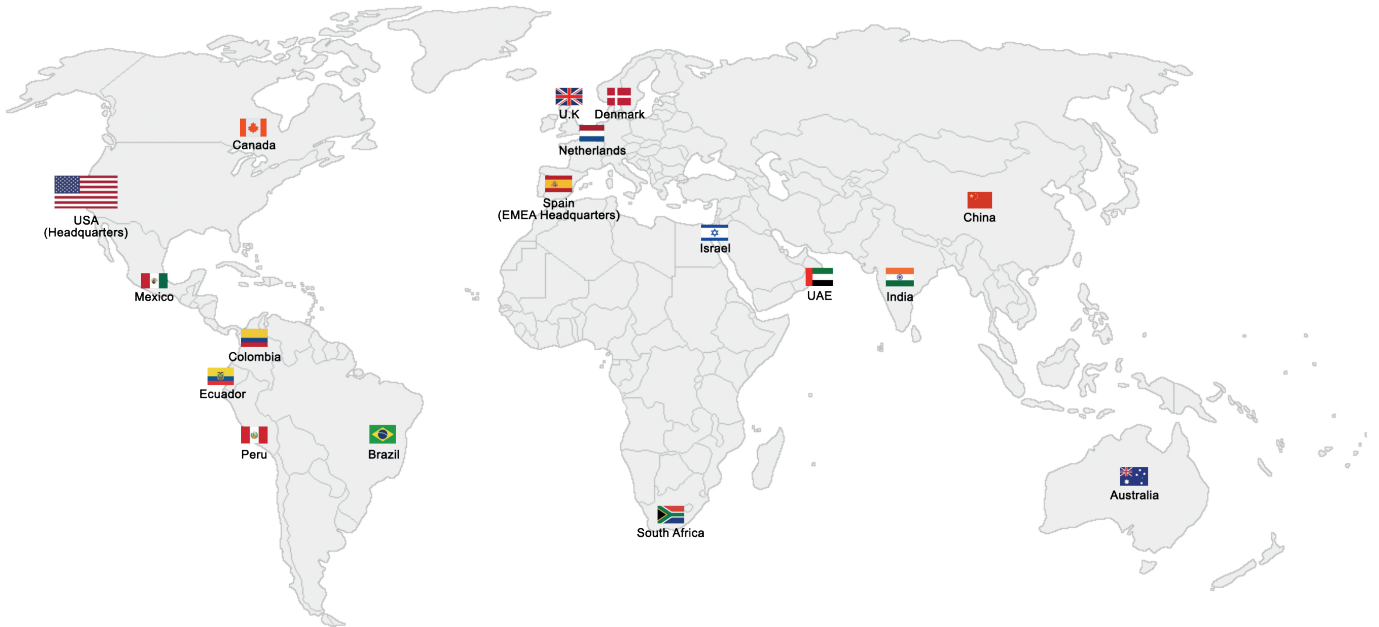
The high-pressure GEM® System hydrocyclones dissolve compressed air into 100% of the wastewater, generating nanobubbles that are much smaller and numerous than in conventional DAF Systems. In fact, the GEM® System generates up to 10 times more bubbles than any other DAF System, which typically dissolve air into only 10%-20% of the waste flow. GEM® System nanobubbles encase much smaller, lighter contaminant particles, leaving virtually zero particles behind.





# CWT

CLEAN WATER TECHNOLOGY



## USA HEADQUARTERS

Clean Water Technology, Inc.  
13008 S. Western  
Ave Gardena, CA 90249, USA  
Phone: +1 310 380 4648  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)

## SPAIN (EMEA HEADQUARTERS)

Ibarluze Industrialdea, Pavilion B-8  
20120, Gipuzkoa, Spain  
Phone: +34 943 049 906  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)

## NETHERLANDS

Phone: +31 633 856 789  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)

## DENMARK

Phone: +45 706 025 11  
Email: [Info@cwt-nordic.dk](mailto:Info@cwt-nordic.dk)

## ISRAEL

Phone: +972 528 774 747  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)

## MEXICO

Phone: +52 722 228 6215  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)

## COLOMBIA

Phone: +57 601 300 0820  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)

## PERU

Phone: +51 126 786 52  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)

## BRAZIL

Phone: +55 549 933 2781  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)

## CHINA

Phone: +86 216 975 6937  
Email: [info@cwt-global.com](mailto:info@cwt-global.com)



[www.cwt-global.com](http://www.cwt-global.com)