Sustainable and economical treatment against fatbergs and wipes in sewers

Taka Technologies

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PRODUCT IDEA | Sep 11, 2022

SEWER HEROES: FIGHTING THE FATBERG

By MOCingbird
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Building Techniques

Details

Introducing ourselves

Taka Technologies provides consulting services in water and wastewater management

>50 years industry experience collectively across many geographies including the UK, Europe & USA

Excited to bring **simple new tools and technologies** to help those at the front lines solve problems

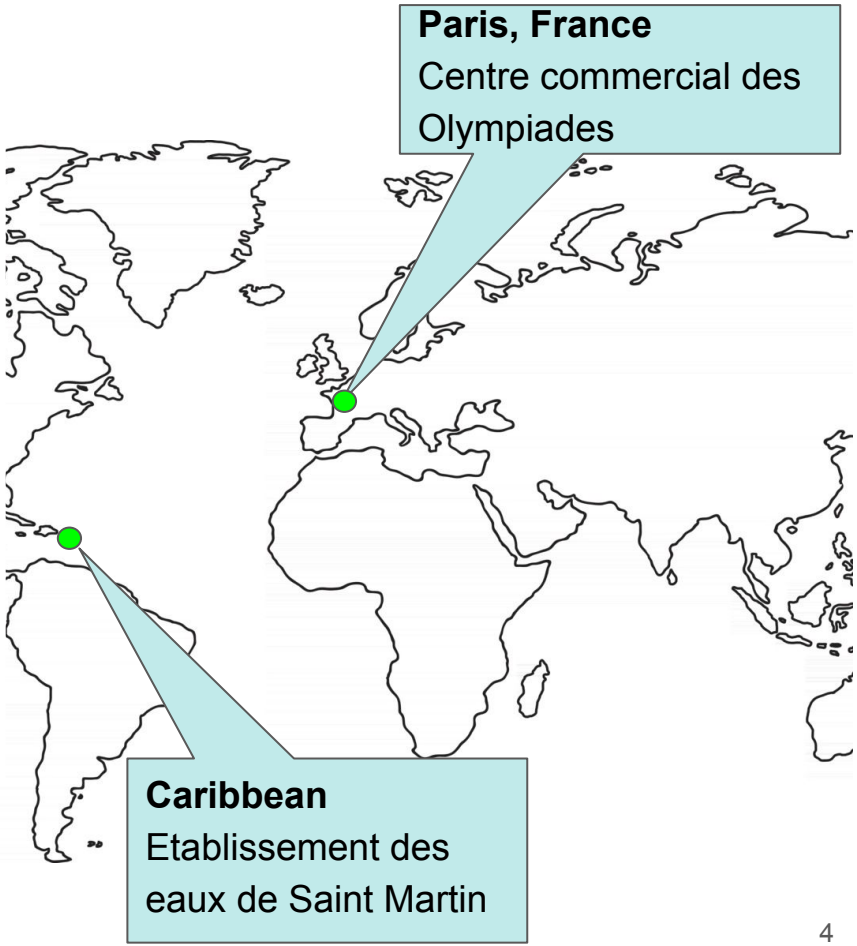
Family business which approaches work through **collaboration and an ecosystem of partners**

BAR : technology partner

BAR is “Biotech Action Reseau” a technology company providing equipment and supplies for sewage networks:

- FOG, Fat Oil Grease, reduction
- Wipes shredding
- H_2S reduction
- And more in progress!

Launched in 2016 by Pierre Dedenys and Patrice Orleach, including two case studies for today



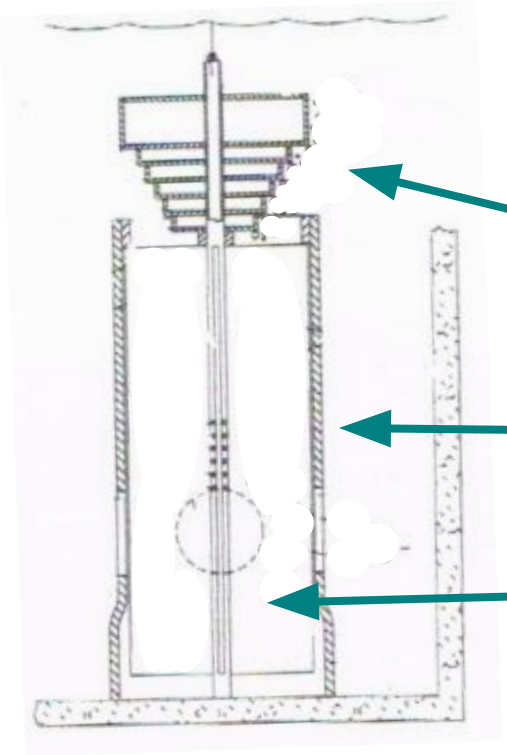
Agenda for today

- Mini Hercules solution
- Case studies
- Next up and further applications
- Q&A

A few facts about Fatbergs

- Fatbergs consist of fats, oils, and greases or - FOG - which solidifies with other solid waste in sewers
- Wet wipes have significantly increased the frequency and size of fatberg formation
- Global challenge
- Removing fatbergs, once at their largest, is expensive and dangerous for workers

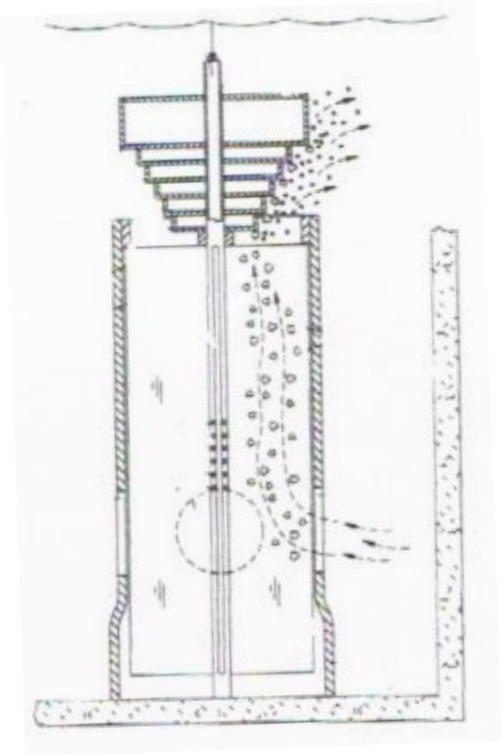
Mini Hercules



- Equipment designed to be immersed in an existing tank or lift station
- Inverted cone with blades and ridges
- Manifold
- Air fed from bottom through a small blower on surface

Product variants

How does it work?



- Air is injected from bottom upwards into the manifold creating a Venturi effect and a powerful permanent movement within the lift station
- Contents in lift station are projected upwards at high speed to the inverted cone, where solids collide against the blades
- An coïloidal emulsion of micro fine particles and non reforming grease is created
- Wipes are shredded
- Overall solution is furthered through the processes of contact surface augmentation and the stimulation of existing bacteria

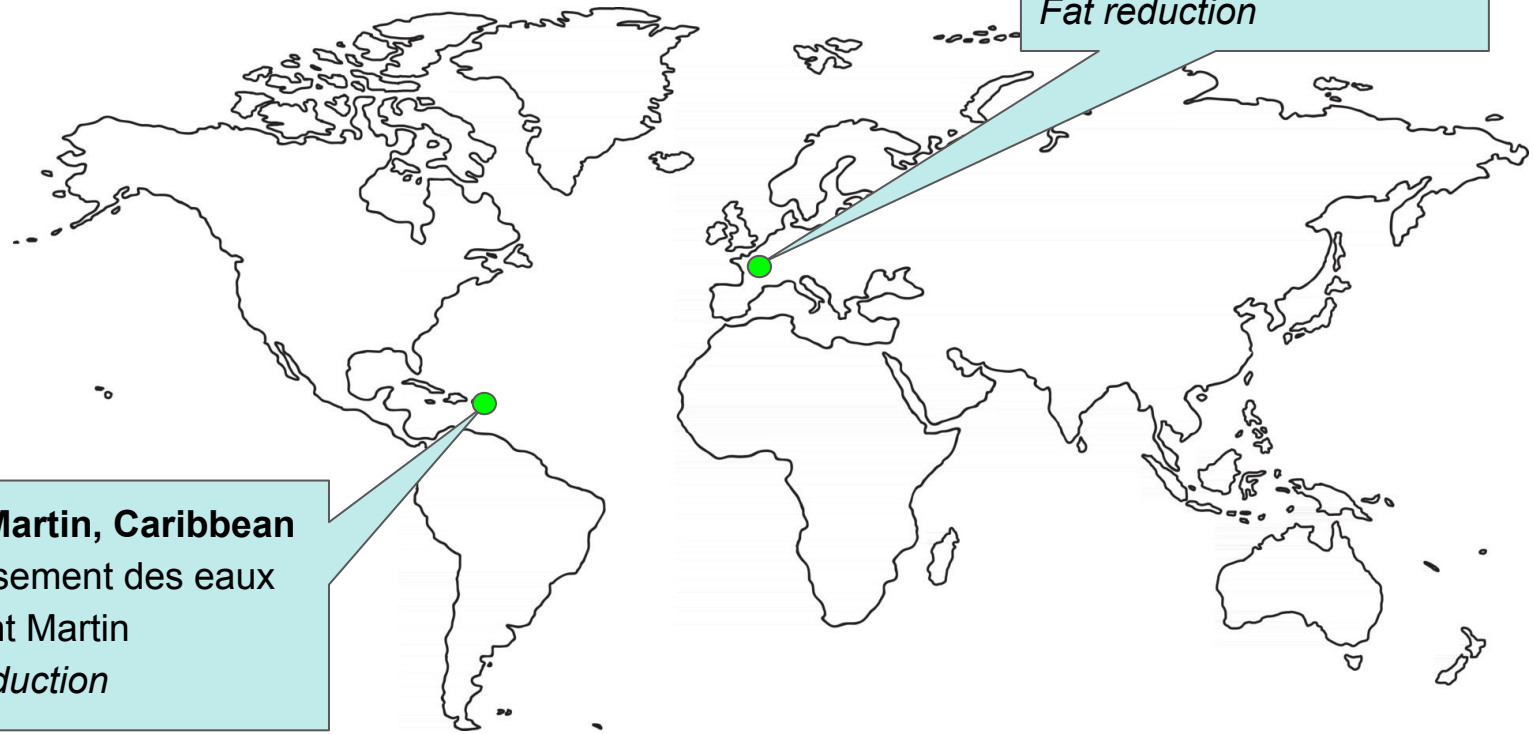
Mini Hercules Key Features

Availability & reliability	➢ Material selected & system designed for durability : no moving or mechanical parts in the product in the lift station - so no clogging or mechanical failures! ➢ Non corrosive material ➢ Very low electrical consumption from the blower
Ease of installation	➢ Immerging and lifting up the device is done by hand
Speed	➢ Particles speed up to 20 m/s ➢ High levels of aeration and oxidation
	➢ Optional ozonation treatment when necessary

Mini Hercules results on fat, wipes and elements eventually producing H_2S

- **Fast** : visible results from the first hour
- **Effective** :
  - degrades FOG, including free fatty acid - the most difficult to eliminate
  - **shreds most disposable wipes** and tissues
- **Sustainable** : **long term breakdown of FOG** into coloïdal emulsion which is non reforming
  - Multiple processes contribute to this including sonication and bio-stimulation
- **Preventative action :**
  - prevents the generation of fat blocks
  - prevents the formation and development of the sulfate-reducing bacteria, and thus of the sulfuric acid, **eliminating H_2S generation**

Case studies



Paris, France
Centre commercial des Olympiades
Fat reduction

Saint Martin, Caribbean
Etablissement des eaux de Saint Martin
H_2S reduction

Fat reduction to save costs in Paris, France

Project details :

Centre commercial des Olympiades
Facility management in a major commercial complex
Pilot in 2019 and installation in March 2020

Installation details :

Mini Hercules permanently installation at lift station as preventative treatment and cost reduction measure

Customer challenge :

- High levels of fat formed in a lift station at level -3 of the parking lot
- Cost and hassle to remove the fat physically to the ground level for disposal with a bobcat every 3 weeks
- Odors and animal infestations

Project results

- Over 2 years successfully used with **very little fat generated**
- Approval from city of Paris Wastewater Department with confirmed **no downstream issues** or reforming FOG

H_2S reduction in St.Martin sewerage network

Project details :

Local Water Utility, St.Martin, French side of the Carribean Island (Etablissement des Eaux de Saint Martin)
Installation 2021/2022

Customer challenge :

- High levels of H_2S throughout the sewage network
- Odors on the east side of the island
- H_2S level at WWTP over 60ppm well above the 10ppm threshold
- Future concern to consider : fat formation in the western region

Installation details :

- 10 Mini Hercules in lift stations throughout the network
- Half submerged blocks of bacteria introduced at a few lift stations to help bioaugmentation in the sewers

Project results :

➢ Below 2 ppm average H_2S at WWTP, with peaks between 6 and 11ppm, **achieving regulatory requirements**

➢ **Significant savings over the alternative** : use of chemicals

BAR : Next up and further applications

- **New equipment** for fat elimination, H_2S reduction and wipes blockage elimination

  Release expected end of ‘22

- **Application to stem eutrophication in ponds** : project Etang de Thau, South of France, a major oyster production area in France

  Pilot completed
  Implementation ‘22 & ‘23

- **Application to reduce COD in Produced Water on offshore oil platforms**: project in Trinidad

  Pilot completed onshore
  Pilot offshore in ‘23

Ongoings projects for Taka Technologies

- **Pressure Management and NRW reduction** in water/gas networks
- Use of **IoT for network management**
- **Effluent treatment** in UK and in Eastern Europe
- And more!

Thank you !