



BGP Environmental Group

EFFLUENT TREATMENT APPLICATIONS

OVERVIEW



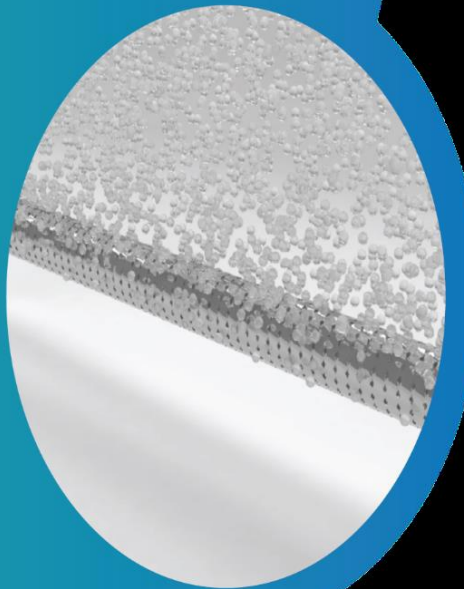
Effluent Wastewater Concerns



Bio-cleaner Technology Description

Bios-cleaner ETP Application Product

Effluent Treatment for the 21st Century



- A green, modern, and innovative solution
- A sustainable, efficient, cost-effective and environmentally-friendly solution
- A more convenient treatment process
- Lower high operation cost to run an Effluent Treatment Facility

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- Biological water treatment processes are based on the exploitation of the concerted activity of microorganisms.
 - Initially, culture-independent technologies and more recently the application of genomics in water microbiology, have drawn a new view of microbial diversity and function of water treatment systems



Abstract

- The current knowledge of the topic places emphasis on crucial microbial processes, carried out in biological water treatment systems driven by specific groups of microbes, which can selectively target certain algae, saprobic, and other microorganisms by design

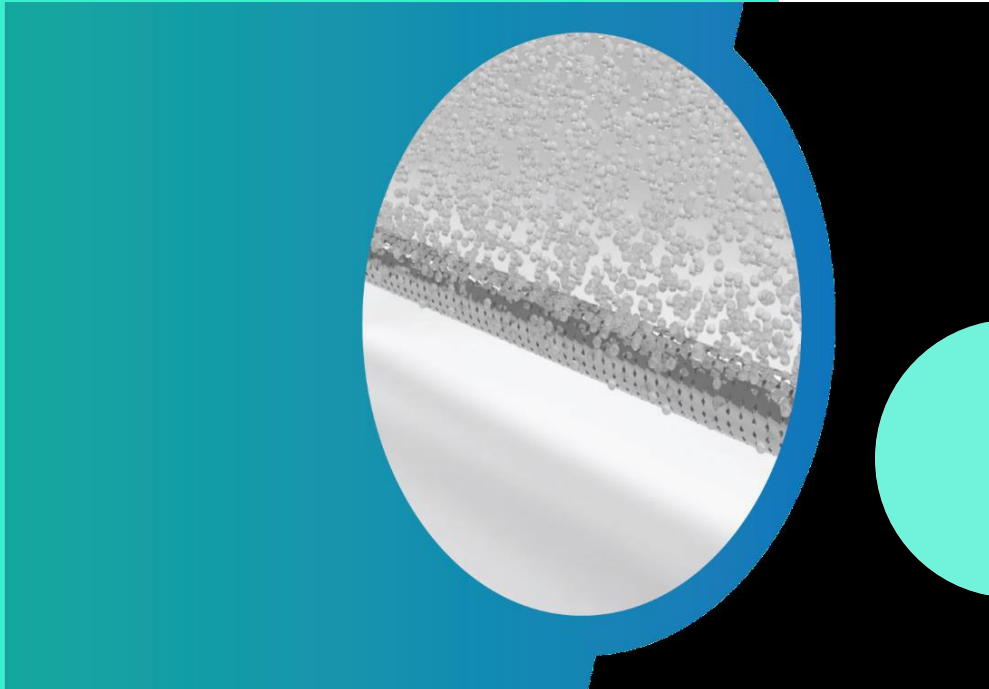


Abstract

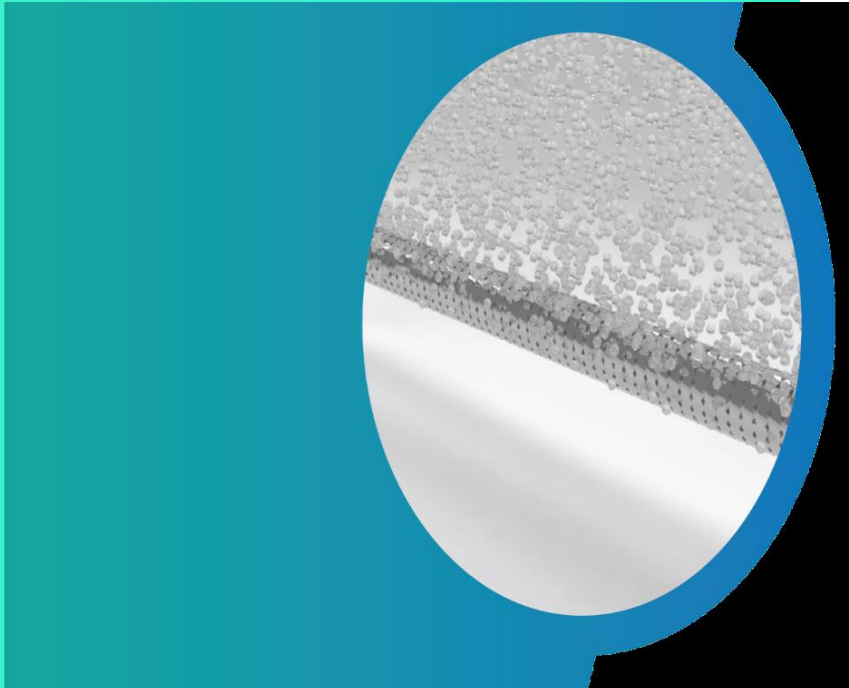
- Bio-Cleaners recent R&D has offered substantial insight into the diversity and ecophysiology of these bacteria never envisioned before, resulting in an immobilized consortium of microbes sourced from geobacters which are highly abundant throughout the world by seeding the colony in a housing unit supplemented by a delivery system for constant accelerated growth and propagation

Game Changing Technology

- Enhancing Secondary Treatment

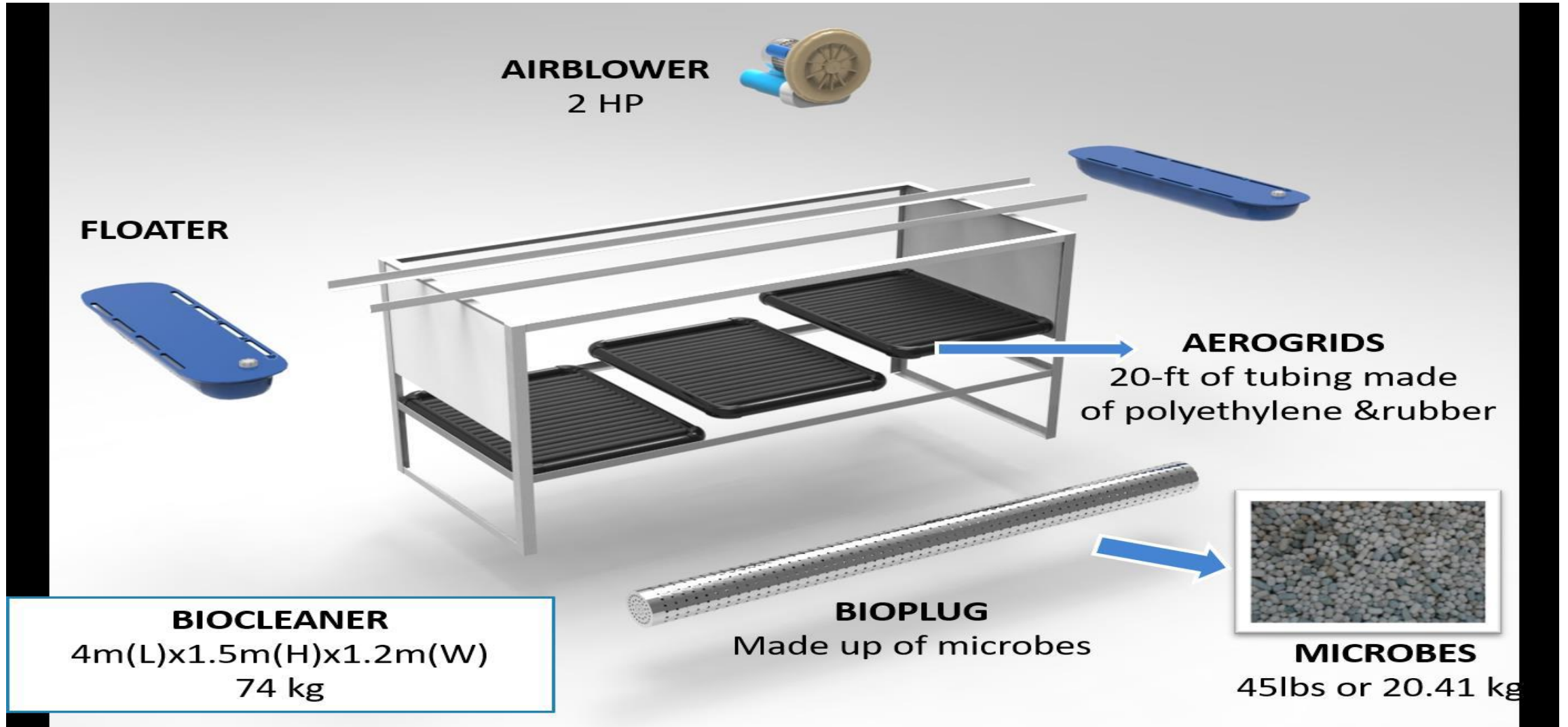


Game Changing Technology



- US Green Patent A
- Canada Patent No. 2,819,228
- No Odor
- No Sludge
- Lowest Opex
- Extremely Portable

Seeder Reactor Components



Game Changing Technology

- Interchangeable media for different types of wastewater treatment
 - BIOSIX: Breakdown of BOD, TSS, FOG, Nutrients and all biological constituents
 - CHEM5: Breakdown phenols, hydrocarbons, surfactants, pesticides, color and other compounds
 - Both microbe consortia and facultative
- All Microbes Used Are Biosafety Level 1



Product Line

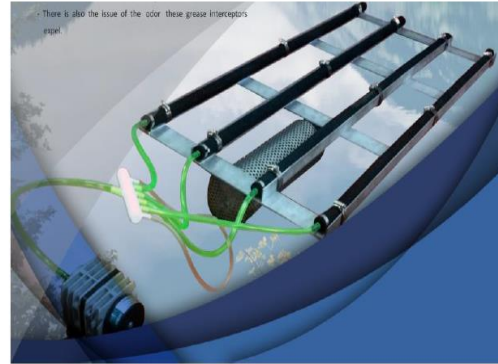
Specification Sheet

A Series Unit



Model A-1

FOG Doctor Biosix Only



Model A-2

2 Grid Biocleaner Unit Biosix/Chem 5

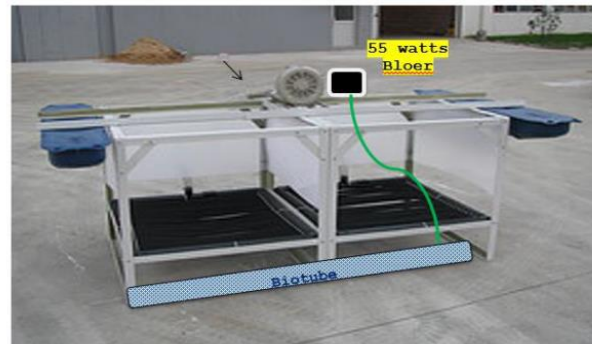


Model A-4

3 Grid Biocleaner Unit Biosix/Chem 5

Model A-3

2 Grid Biocleaner Unit Biosix/Chem 5



Specification Sheet

B Series Unit



Product Line

Model B-1

Sewer Jockey 0.1m (12 inches) Biosix/Chem5



Model B-3

1.5 m (5ft) Augmentation Unit Biosix/Chem 5



Model B-2

1 m (3.28ft) Augmentation Unit Biosix/Chem 5



Model B-4

3 m (10ft) Augmentation Unit Biosix/Chem 5



BIOCLEANER, INC.

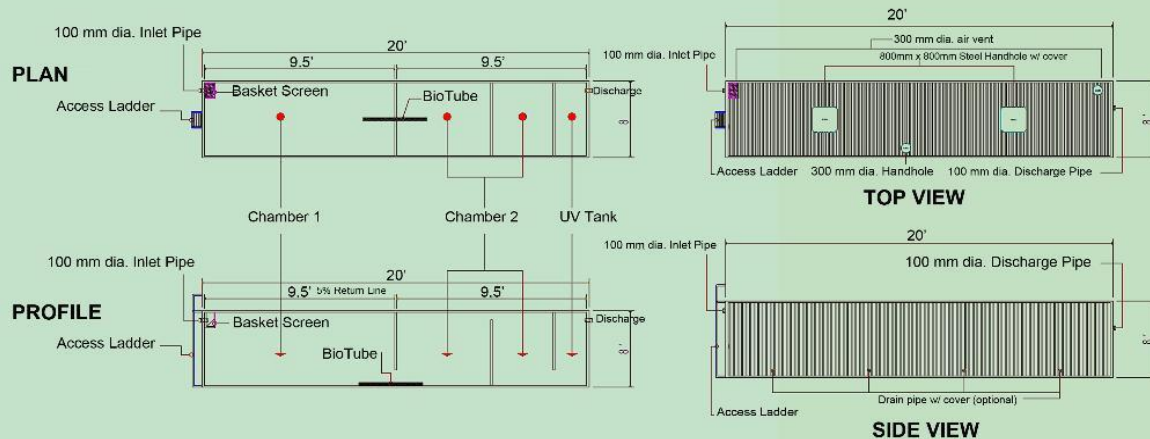


Ammonia, BOD, TSS, sludge and coliform will be eliminated.

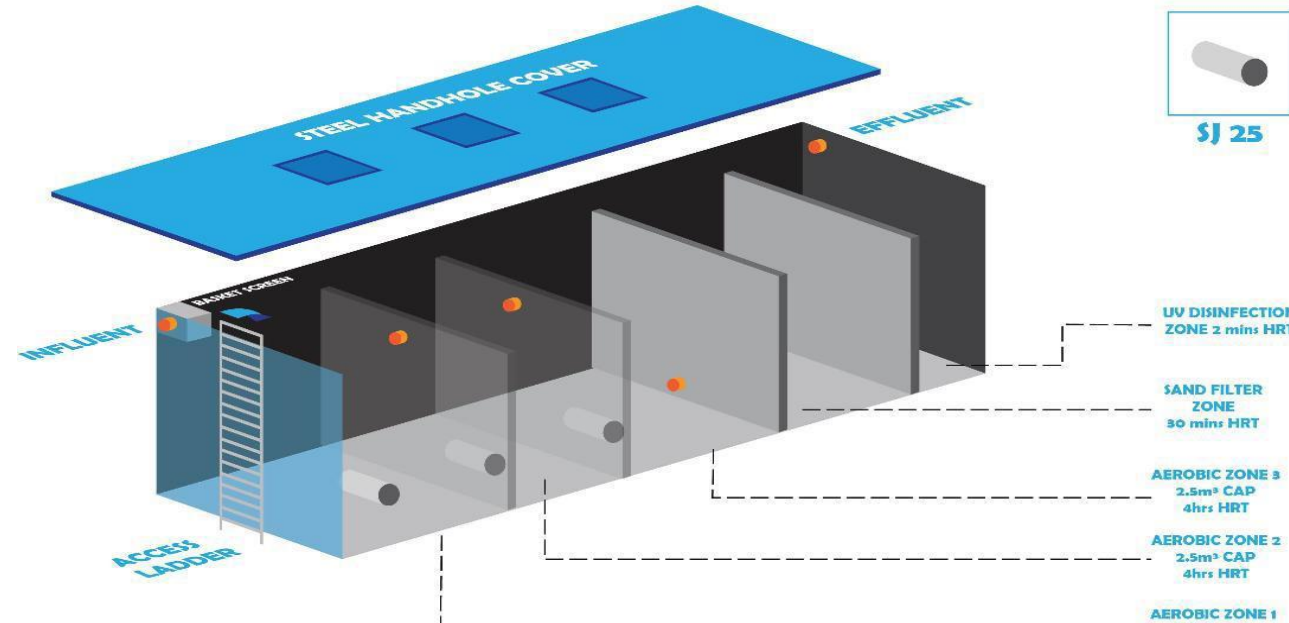
30 CUBIC METER TANK

This is a two chambered tank that has a screen in front and a UV for disinfection at the end to remove the coliform.

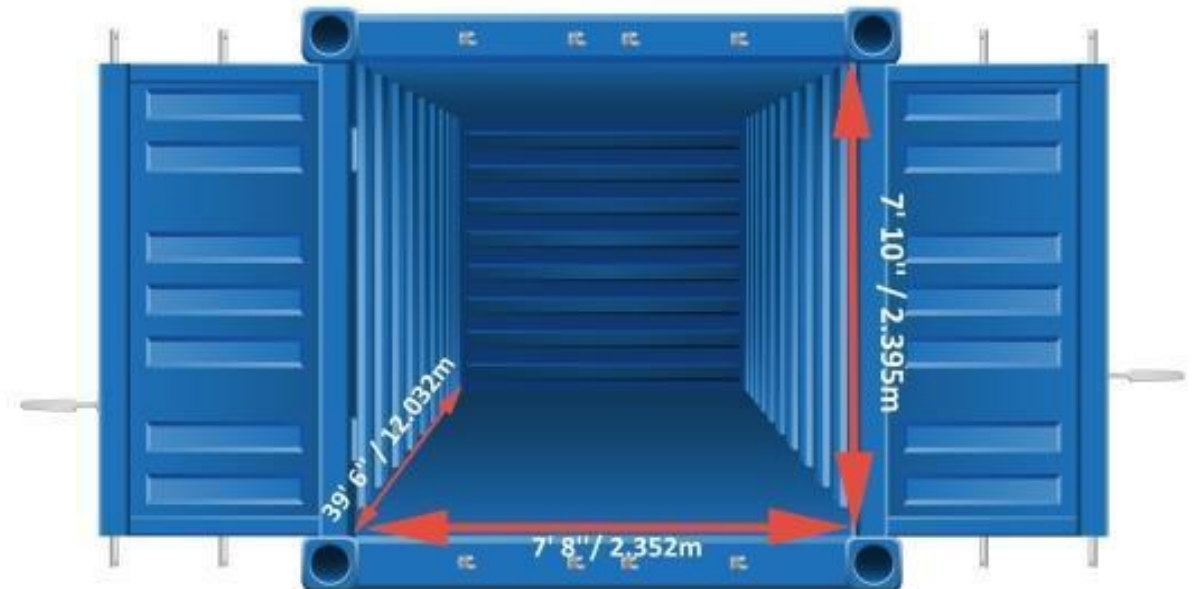
Microbes will eat away the sludge avoiding its build up.
BOD 300 CAN BE REDUCED TO BOD 20.



PROPOSED TANK DIMENSIONS FOR 15 KLD TREATMENT 20 FT CONTAINER TANK REACTOR 6.1m x 2.4m x 2.6m



Cubic Capacity: 2390CuFt / 67.7 cbm

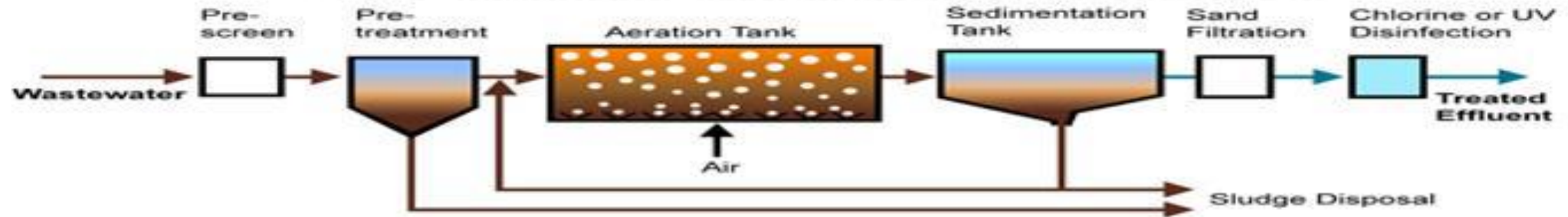


Maximum Weight: 8885 lbs / 4030 kg.

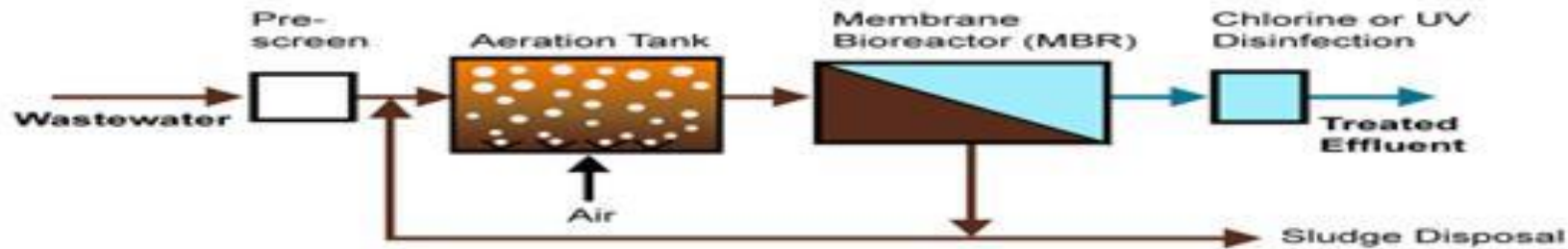
How Can Bio-Cleaner Improve Your Existing Effluent Treatment?



Conventional Wastewater Treatment



Advanced Wastewater Treatment with MBR



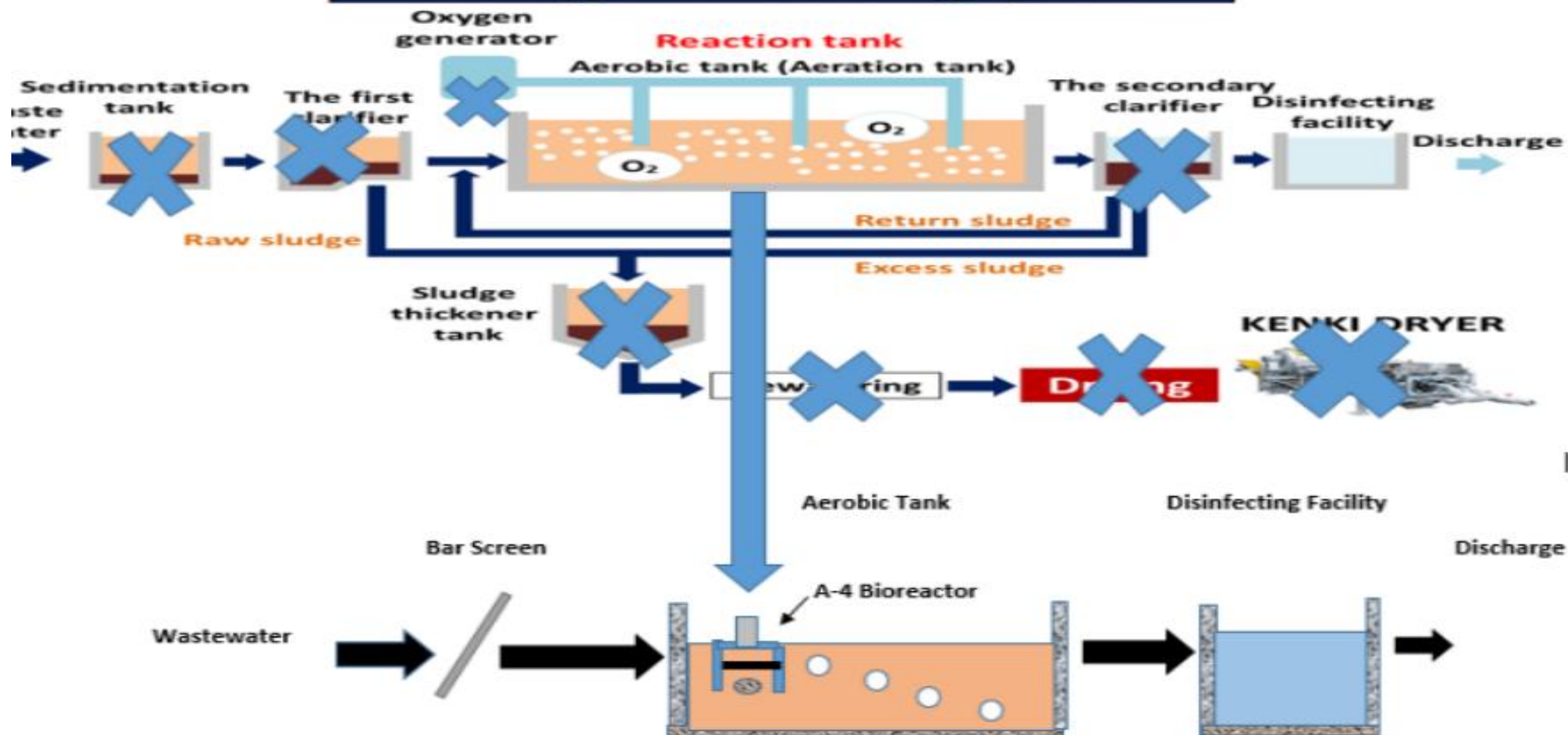
Specification Sheet

A Series Unit

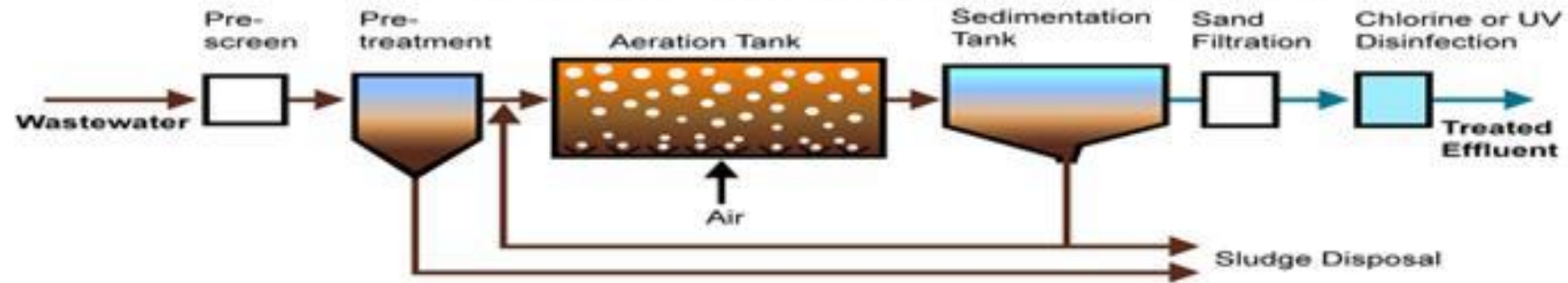


Seeder Reactor replaces Aeration Blowers as Primary Aerobic Treatment for Eliminating Sludge Wasting and lowering Opex

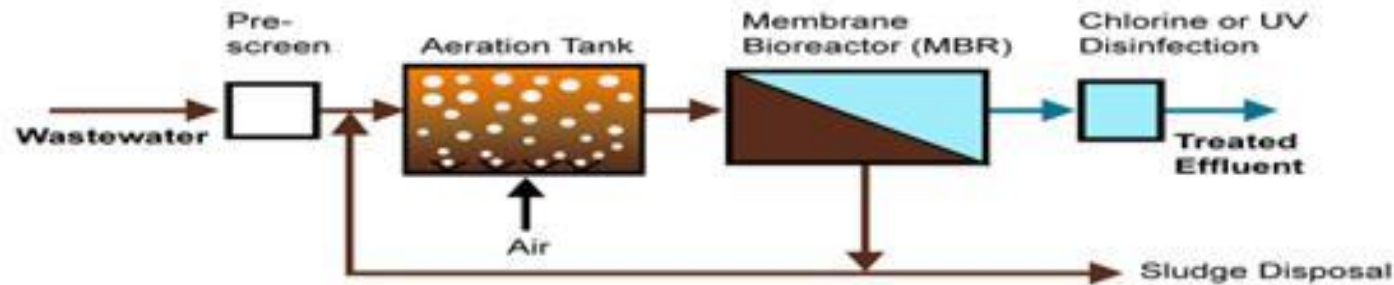
Pure oxygen activated sludge process



Conventional Wastewater Treatment

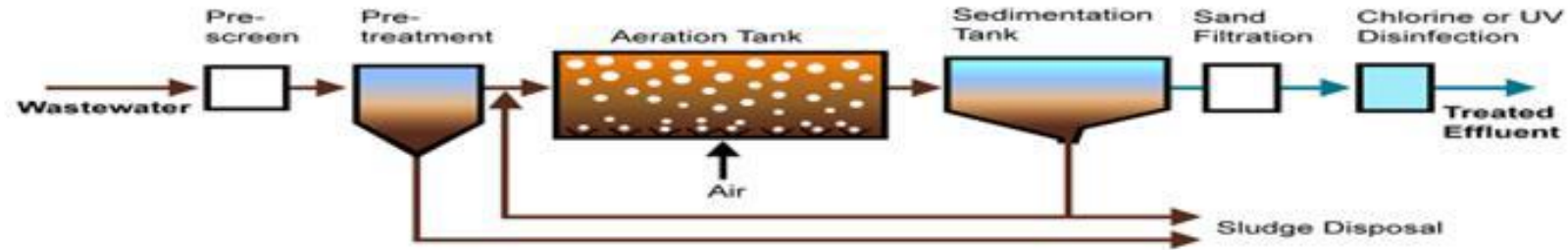


Advanced Wastewater Treatment with MBR

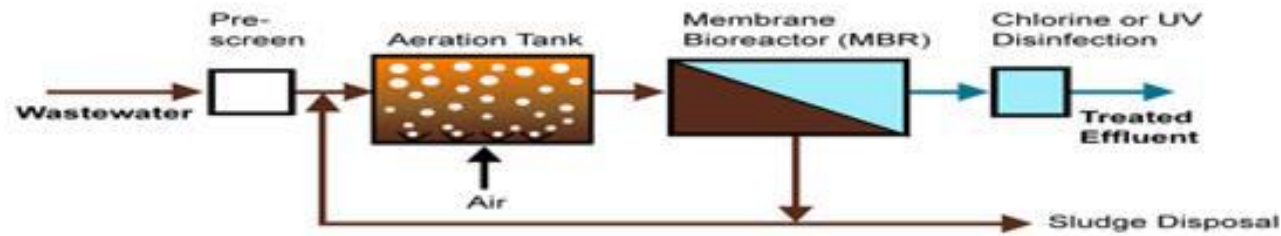


SeederTube Supplement
Aeration Modules For
Eliminating Sludge Wasting
and lowering Opex

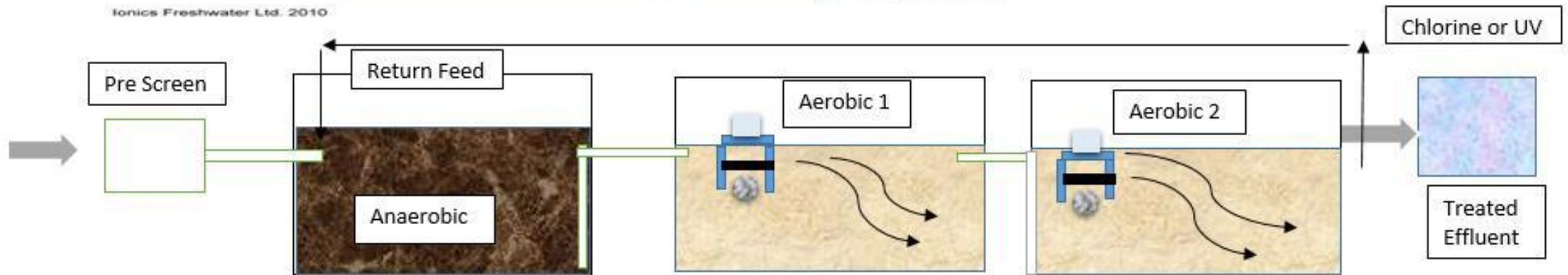
Conventional Wastewater Treatment



Advanced Wastewater Treatment with MBR



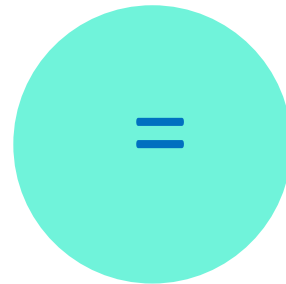
Ionics Freshwater Ltd. 2010



Aerobic Zoning

Characteristics of Effluent Treatment

Bio-cleaner Biological
Treatment Process



No Sludge Wasting

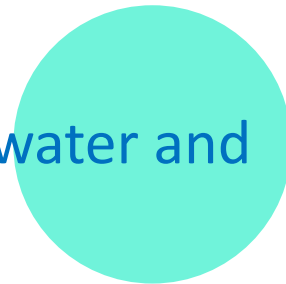
- Less Labor
- Color Removal
- COD/BOD Removal
- Organic Contents
- Smaller Footprint
- Lower Opex
- Odor
- Meet COP-26 Criteria

Bio-cleaner Treatment with COP -26 Compliance

Sustainable and Development Goals -6

6-3 Improve Water Quality, Wastewater, and Safe Reuse

- Good Ambient Quality For Wastewater and Water Bodies
- Less Dependence of Chemical Usage
- Reduce Pollutant Exposure
- Eliminate Hazardous Waste Dumping



Textile ETP Design

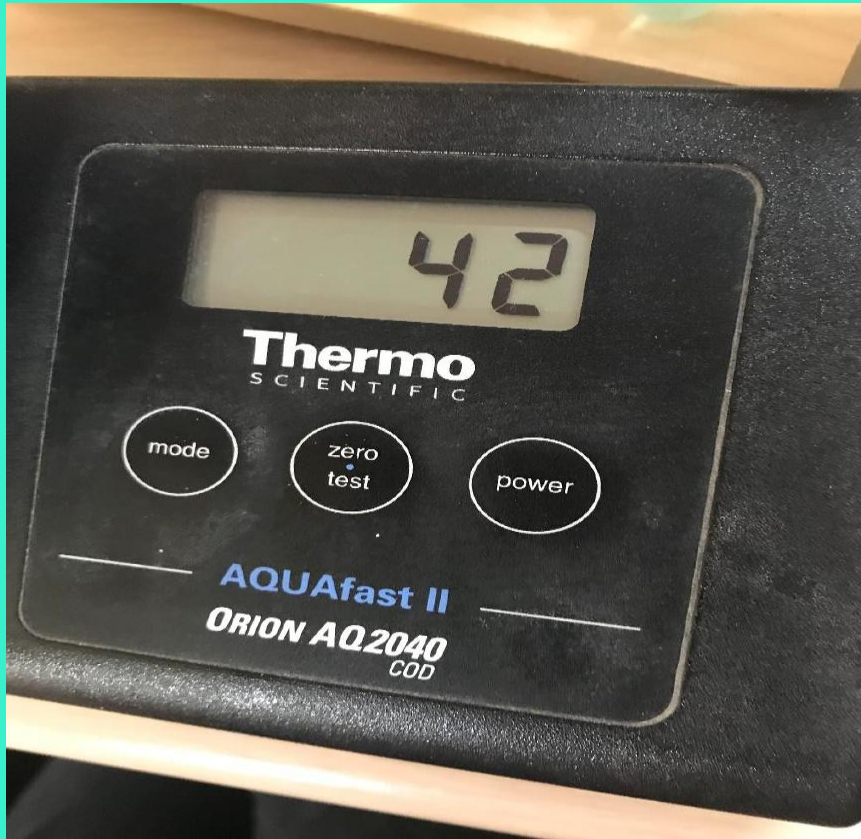
Design for 100 m³/d

COD 1000 ppm to less 50 ppm

Proposed 4 Sewer Jockeys – Chem5



Effluent Results



- Foul Odor Gone
- The water becomes clearer
- COD under 25000 ppm lower to COD 42 ppm

COD Reader of the treated water using Chem 5 Consortium

Manohar Filaments – Existing Modules

- Primary Chemical Treatment FeCl –Reduced 90% Chemical Use
- 2 Aeration Tanks 200 KLD and 100 KLD –Bio-cleaner Upgrade
- Tertiary Treatment Sand Filter and Activated Carbon
- Sludge Modules –All Decommissioned

Treatment Results

Parameters	100 KL Tank	200 KL Tank	50 KL Tank (Underground)	Final Treated Effluent
Color	200	150	100	20
Odor	spetic	Spetic	Spetic	Mild
COD	619	329	281	72.3
BOD for 03 Days at 27C	223	128	103	21
pH	6.95	7.31	7.73	7.57
TSS	150	72	49	13
TDS	1235	1693	1869	1318
Silica	16.6	14.9	14.6	4.7
Calcium as Ca	22	25	28.2	19
Magnesium as Mg	13.4	20.1	31.2	22.8
Iron as Fe	6.25	2.14	2.35	0.67
Oil & Grease	24	22	9	0.6

Formula For Success

No Chemical Loading

No Microbial Loading

No Odor

No Sludge Wasting

Lowest Operating Cost

Convenient

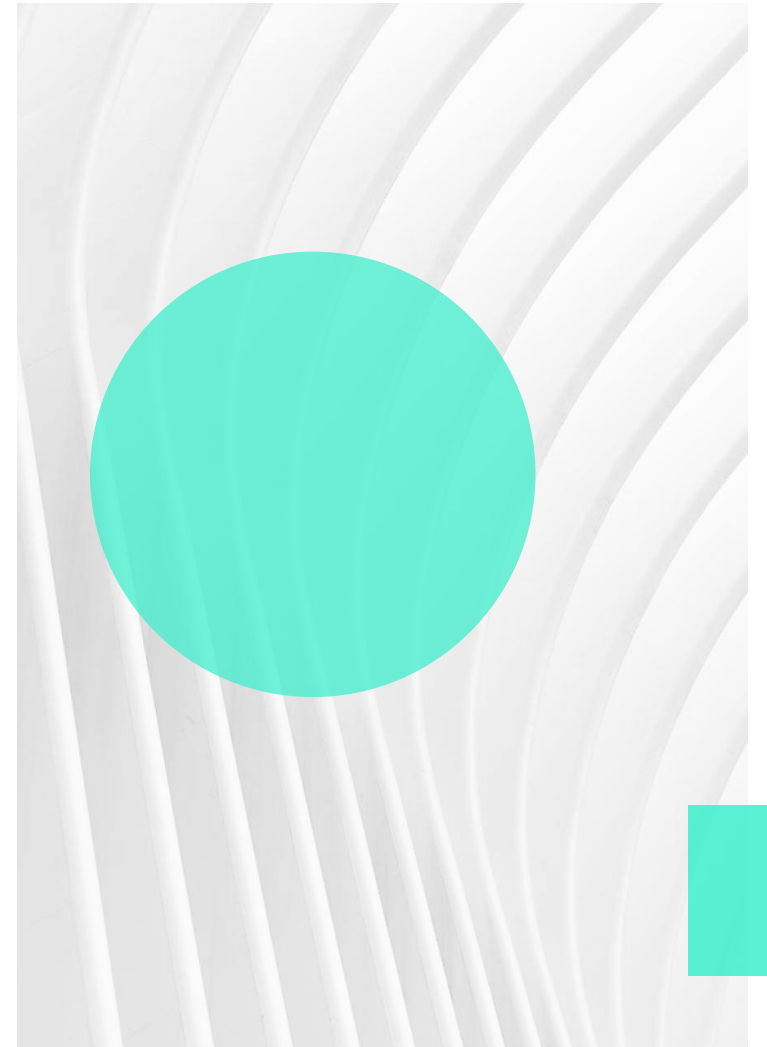
Modular and can be Retrofitted

Green and Sustainable

The Future of Effluent Treatment

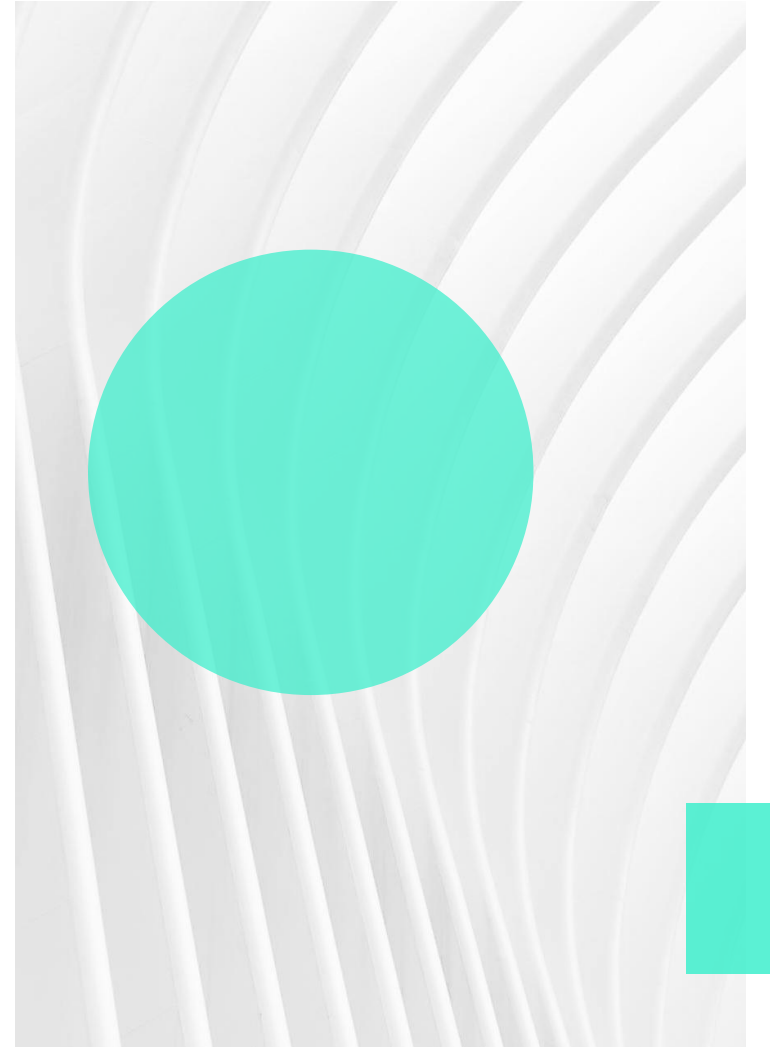
It's the 21st Century. Effluent Treatment deserves a 21st Century solution

- | | |
|------------------------------|--------------------------|
| • While also eliminating: | Bio-cleaner is: |
| • Sludge Wasting | Environmentally Friendly |
| • Estrogen | Convenient |
| • Antibiotics | Portable |
| • Minimal Manpower | Modular |
| • Solar using minimal energy | Affordable |



Vision Statement

- An investment today is an investment in the future. Realizing a full potential in our customers health. We look to inform and inspire our customers with the latest in Health innovative products.



To Summarize

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THANK YOU

800 265 0027