

**PROPOSAL FOR
SEWAGE WATER TREATMENT**



**Waste to
Wealth**



LET'S TREAT & RE USE THE WASTE

The Current Standard: Bio-Remediation



- **The Process:** Reduction of organic suspended impurities through bacterial digestion.



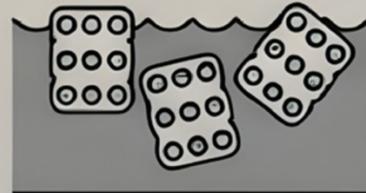
5-7 Days

- **The Constraint:** Natural bio-remediation takes 5-7 days.



High Energy

- **The Workaround:** Accelerated to 48 hours using energy-intensive aeration blowers running 24/7.



- **The Mechanism:** Surface area increased using plastic carriers for bio-film.

WHERE LIES THE PROBLEM?

System Failure: When Biology Breaks Down.



Power Failures.
Interruption in aeration kills the biological process immediately.

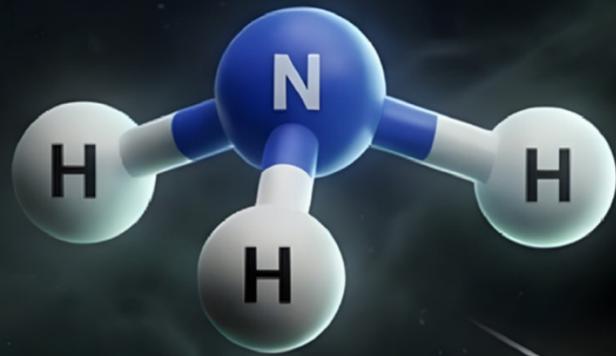
Temperature Fluctuations.
Changes in heat inhibit bacterial digestion efficiency.



Inconsistency.
Environmental factors frequently prevent the 48-hour cycle from completing.

Bio-remediation STPs are fragile ecosystems that frequently under-perform.

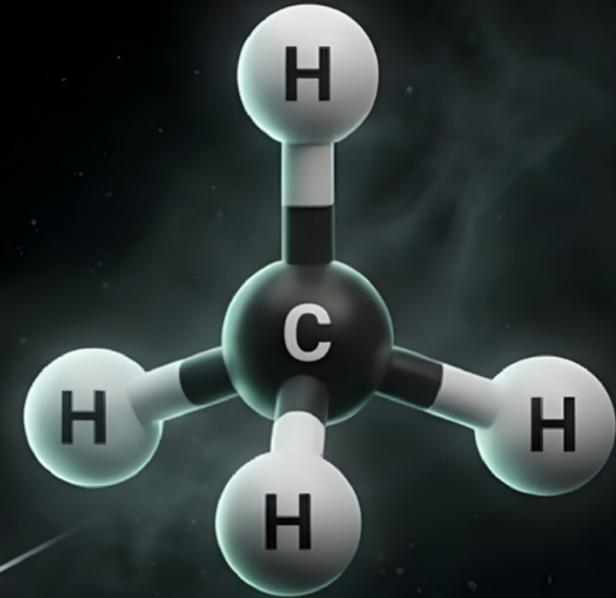
The Hidden Danger: Toxic Gas Emissions



**Ammonia
(NH₃)**



**Hydrogen Sulphide
(H₂S)**



**Methane
(CH₄)**

Bacterial decomposition
releases obnoxious and
highly toxic gases



The Chemical Trap: Chlorination

The industry attempts to fix the problem with dangerous chemicals.

Required for
Disinfection:
>15 ppm

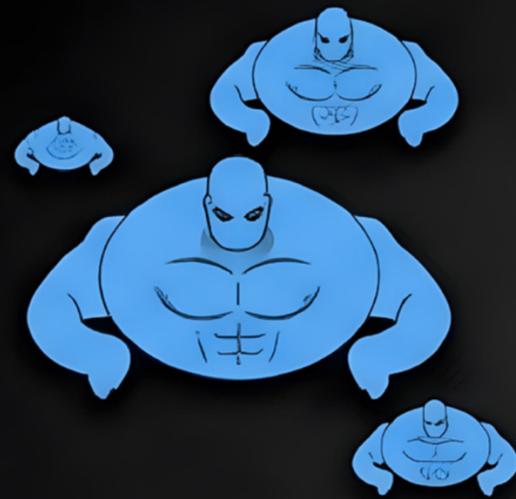
Actual Industry Dosing:
<3 ppm
(to minimize damage)



Result: Stubborn pathogens like E. coli remain active.

Economic Impact: Chlorinated water is unusable for construction or agriculture.

Creating Carcinogens.



**Chlorine
(Halogen)**

+

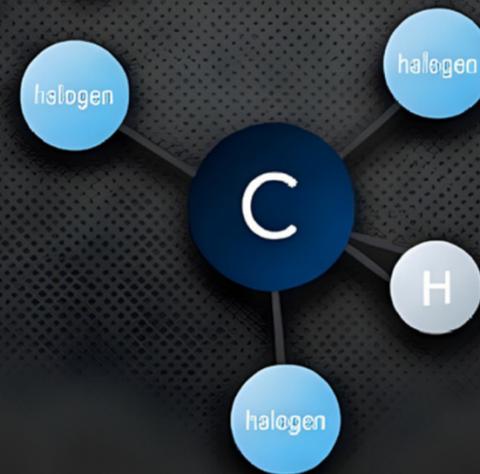


Organic Matter.

=



**Chloroform
(Trihalomethane)**



Chlorine + Organic Matter = Carcinogenic Disinfection Byproducts.

“It is this chloroform that is the cause of most septic tank-related deaths.”

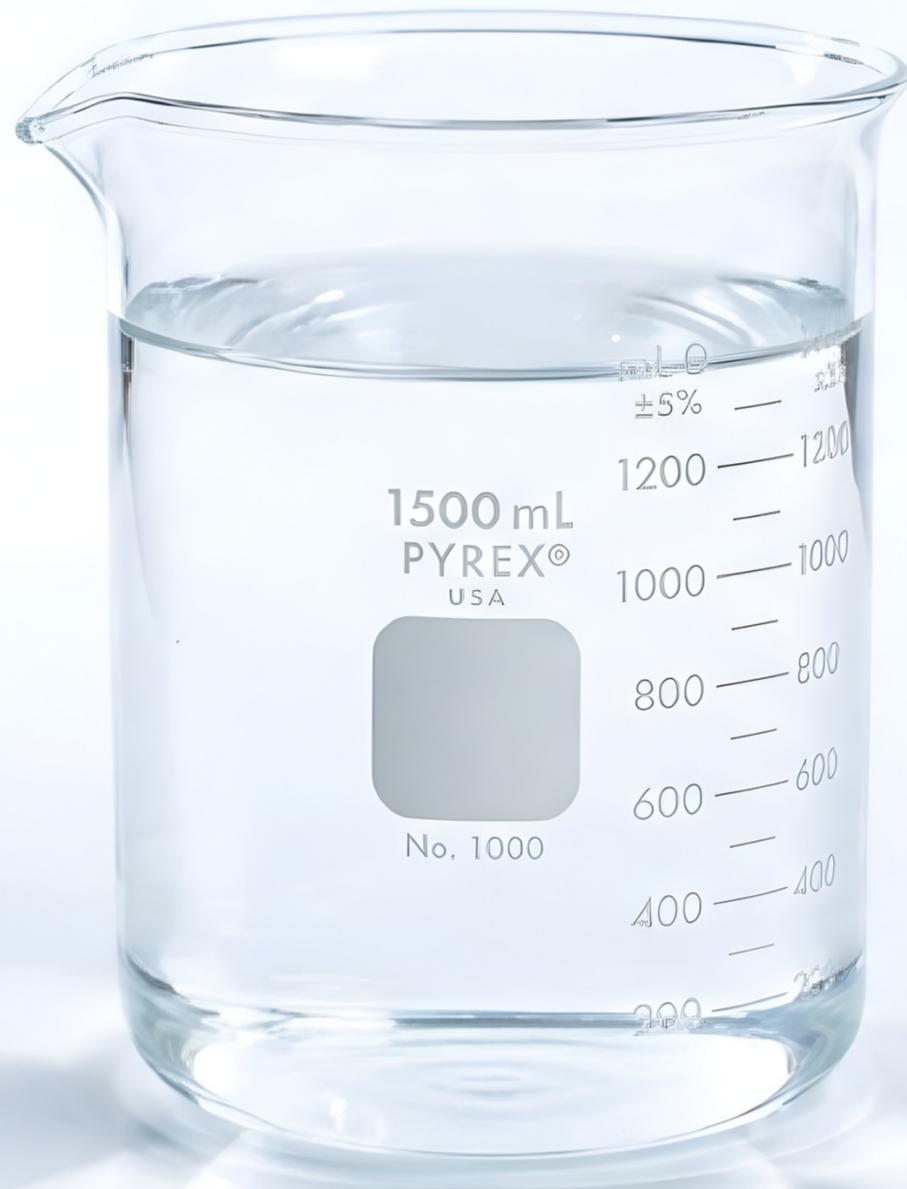
TERTIARY TREATMENT USING RO PLANTS

Why Reverse Osmosis (RO) Isn't the Answer.

RO is effective, but practically flawed:

- **High Cost:** Capital outlay makes treatment prohibitive for mass use.
- **High Waste:** Generates 60-70% reject water.
- **TDS Spike:** Reject water recirculates, increasing Total Dissolved Solids to unmanageable levels.

What is the Solution? Purity, Redefined.



Scientific Purity

The Science of **Nature.**



Neem (*Azadirachta indica*)
Anti-bacterial disinfectant with coagulative properties.



Cleaning Nut (*Strychnos potatorum*)
Flocculant and sedimentation booster.



Drumstick (*Moringa olifera*)
Flocculant and turbidity reducer.



Tulsi (*Occimum sanctum*)
Disinfectant and oxygenator.

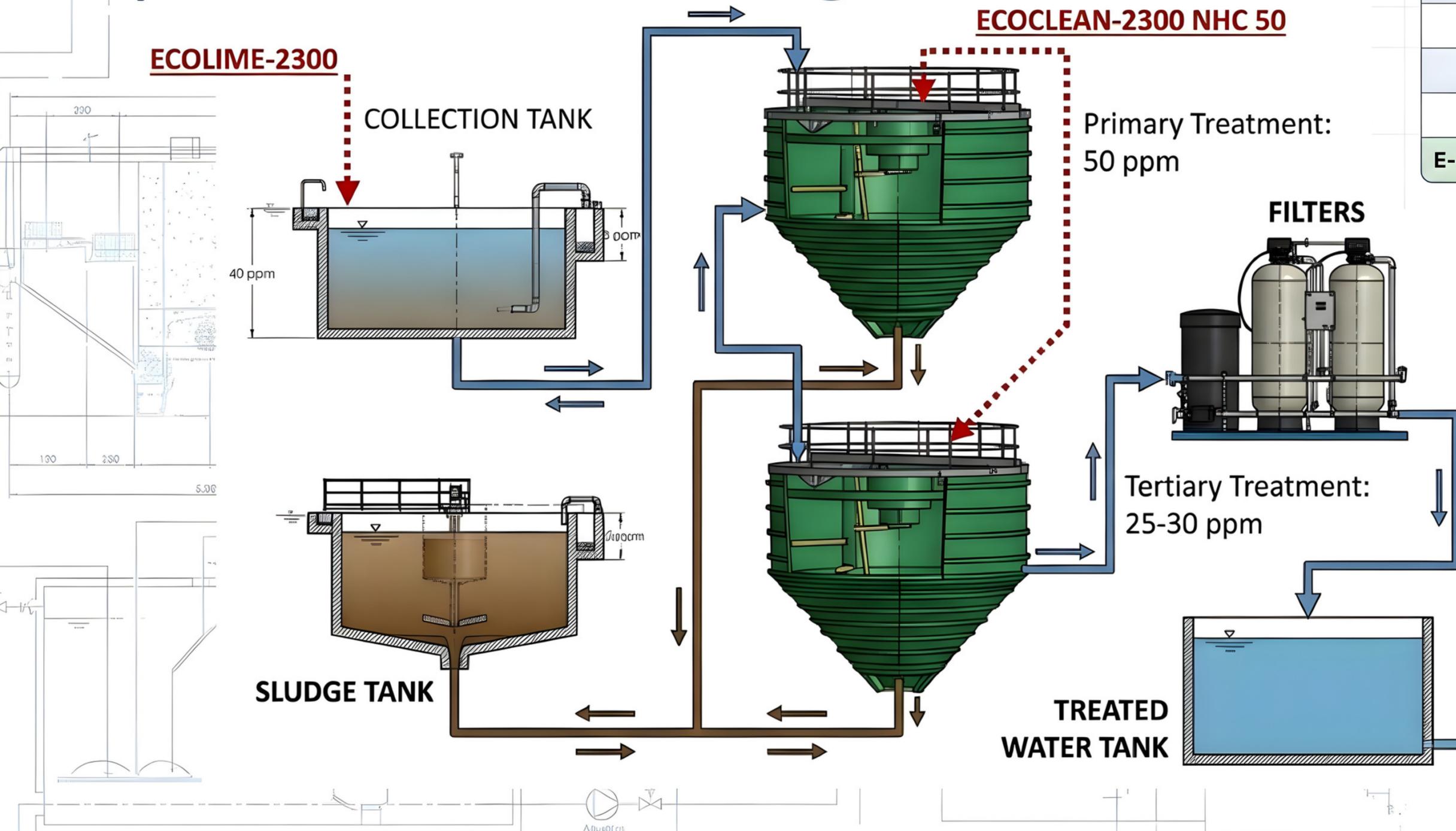
ECOCLEAN-2300

ECOCLEAN-2300 NHC 50

Herbal-based flocculants and disinfectants for total treatment of sewage. Absolutely safe and free from toxicity or side-effects.

Implementation in Large STPs.

Parameter	Specification
pH	6.5 - 7.5
BOD	< 10 mg/L
COD	< 50 mg/L
TSS	< 5 mg/L
Oil & Grease	< 5 mg/L
E-coli & Fecal Coliforms	Absent ✓



TOTAL SEWAGE TREATMENT

ECOCLEAN-2300 NHC 50 : PURITY REDEFINED



Before Treatment



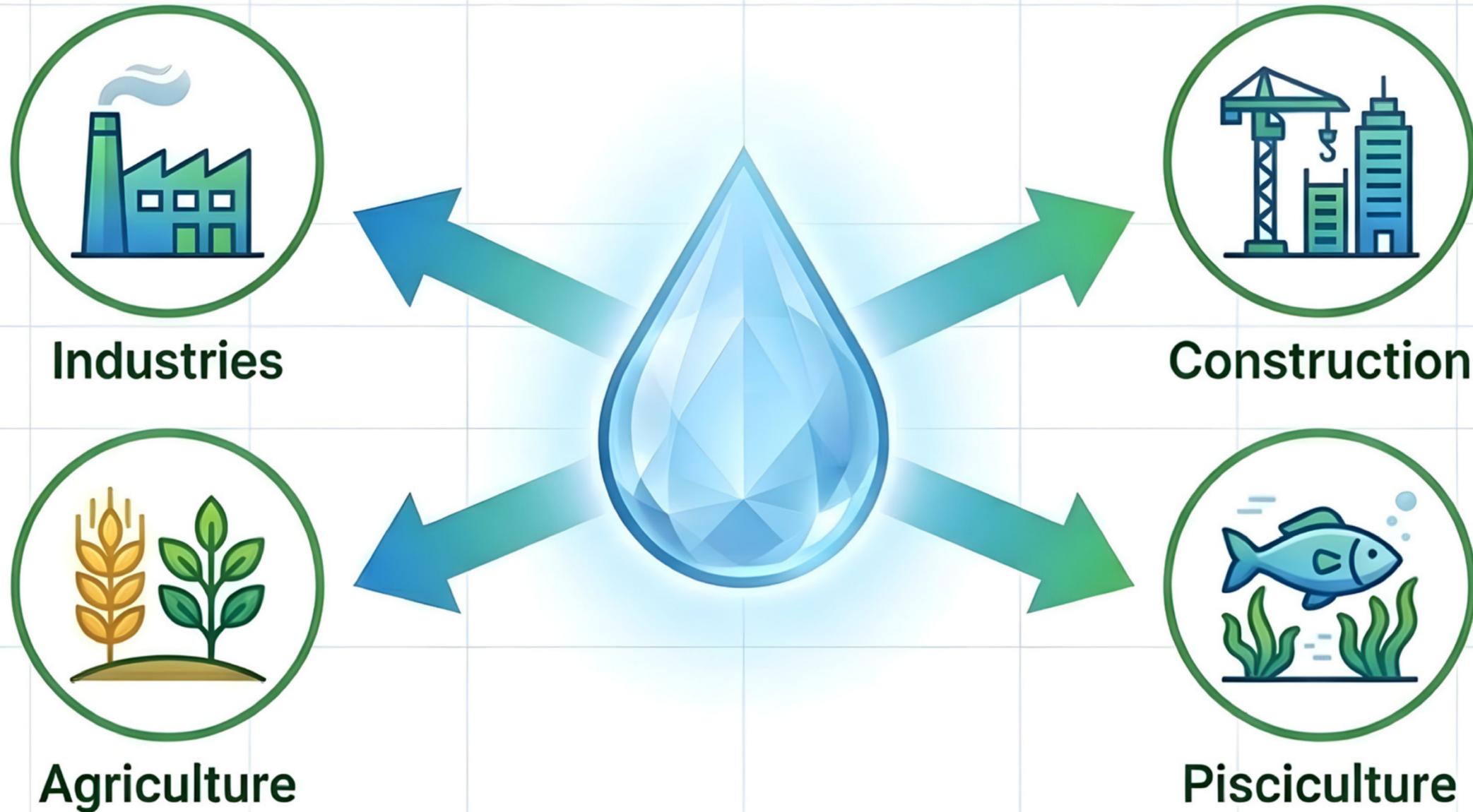
After EcoClean Treatment

COMPARISON OF SEWAGE TREATMENT TECHNOLOGIES

PARAMETERS	GREEN SBR STP	ACTIVATED SLUDGE PRCOCESS [ACP]	SEQUENCING BATCH REACTOR [SBR]	MOVING BED BIO-FILM REACTOR [MBBR]	MEMBRANE BIO REACTOR [MBR]	PHYTO-REMEDICATION
Capacity	1 MLD	1 MLD	1 MLD	1 MLD	1 MLD	1 MLD
Process Type	Flocculation, sedimentation, disinfection using herbal, organic reagents	Aerobic	Aerobic	Aerobic	Aerobic	Bio-remediation
Treatment technology	In situ, Ex-situ	Ex-situ	Ex-situ	Ex-situ	Ex-situ	In-situ and Ex-situ
Ideal location	Housing societies, hotels, hospitals, educational institutions, malls, IT parks, municipal bodies, ponds, rivers, nalas, open drains	Open area in remote location				
Space requirement	100 to 250 sq m/MLD	1500 to 2000 sq m/MLD	500 to 700 sq m/MLD	700 to 1500 sq m/MLD	700 to 1500 sq m/MLD	1500 to 2000 sq m/MLD
Installation period	30 to 90 days	9 to 12 months	9 to 12 months	9 to 12months	9 to 12 months	18 months
Level of expansion and reduction	Convenient modular structures. Can be easily expanded or reduced.	Non-flexible. Fixed. Only expansion is possible at great expense	Non-flexible. Fixed. Only expansion is possible at great expense	Non-flexible. Fixed. Only expansion is possible at great expense	Non-flexible. Fixed. Only expansion is possible at great expense	Non-flexible. Fixed. Only expansion is possible at great expense
Odour and insect vectors	Nil	Generates odour and gases	Generates some odour	Generates some odour	Generates some odour	Considerable odour and flies
Total retention time (per batch)	2 hours	24 to 48 hours	12 to 14 hours	24 to 48 hours	24 to 48 hours	48 to 72 hours
No of batches per day	6-8	1	2			
Sludge	Stabilised, bacteria-free, odourless sludge. Can be dried and used as nitrogenous manure	Stabilised sludge; but not pathogen free.	Non-stabilised sludge			
BOD Removal	90 to 95%	80 to 90%	80 to 90%	80 to 90%	80 to 90%	<80%
COD Removal	90%	80 to 85%	80 to 85%	80 to 85%	80 to 85%	<75%
TSS Reduction	95 to 99%	90%	90%	90%	90%	<80%
Microbicidal efficacy	99.99%	<25% without tertiary				
Need for tertiary treatment for reuse	Not needed	Needed	Needed	Needed	Needed	Needed
Electrical consumption for entire process	50 to 150 KWh/day [0.05 to 0.15 KWh/KL]	500 to 2000 KWh/day [0.5 to 2 KWh/ KL]	300 to 700 KWh/day [0.3 to 0.7 KWh/KL]	600 to 1800 KWh/day [0.6 to 1.8 KWh/KL]	800 to 2500 KWh/day [0.8 to 2.5 KWh/KL]	100 to 500 KWh/day [0.1 to 0.5 KWh/KL]
Plant cost [not including land cost]	1.25 Crore/MLD	3.25 Crores/MLD	2.8 to 3 Crores/MLD	3.5 Cores/MLD	3.5 to 4.5 Crores/MLD	1.5 to 2 Crores/MLD
Operator requirement	2 + 1	4 + 1	4 + 1	4 + 1	4 + 1	2 + 1
Treatment cost	2 paise/litre	4 paise per litre	3.5 paise per litre	4 paise per litre	4.5 paise per litre	2.5 paise per litre

Water That Gives Back.

Safe for reuse in the circular economy.



Unlike chlorinated water, EcoClean treated water is safe for concrete curing and crop irrigation.



INTERNATIONAL CENTRE FOR CLEAN WATER

An IIT Madras initiative

E: analysis@iccwindia.org

W: iccw.world

T: +91 8248996248

Certification of Validation

This certification of validation confirms that the **Ecoclean 2300 NHC50 from Ecohealth Products Private Limited, Chennai, India**, a treatment enhancer for sewage and greywater systems (formulated from nature-derived, environmentally safe ingredients, as informed by the client), was evaluated under practical treatment conditions and found suitable as a sustainable alternative to conventional chemical-based methods. Acting as a combined flocculant, sedimentation booster, and oxygenator, the product demonstrated the ability to reduce key pollutants such as turbidity, BOD, COD, odour, and suspended solids, thereby improving effluent clarity, stability, and regulatory compliance in real-world operation.

The comprehensive validation study for the efficacy of Ecoclean 2300 NHC50 based on the laboratory results can be found in the report. Treatment with Ecoclean 2300 NHC50 maintains TDS levels without significant alteration, generates no secondary pollution, and operates efficiently and safely at low dosages as a sustainable process overall.

The treatment approach with Ecoclean 2300 NHC50 aligns in gaining carbon credits, water credits, and Zero Liquid Discharge (ZLD) principles while delivering favorable cost economics and long-term sustainability.

Endorsed by,

Mr. E Nandakumar
(Chief Executive Officer)
International Centre for Clean Water

Principal Investigator,

Dr. Abirami
(Head of Analysis and Validation)
International Centre for Clean Water

Certifications



**RICH
CERTIFICATION
COUNCIL**

Certificate No: 1507150101

RCC hereby certifies that

ECOHEALTH PRODUCTS PRIVATE LIMITED

Regd. Office: 23, Thangam Colony - II Street, Annanagar West, Chennai - 600 040
Factory: 46/1, Kovalan Street - III Cross Teachers Colony, Erode - 638 011
Tamilnadu, India.

Has compliance with the requirement of Quality Management Systems

ISO 9001:2015

This certificate is valid for the following scope only

1. Research, Development, Manufacture and Supply of Herbal Based Food Supplements, Organic Soil Conditioners, Agricultural Growth Boosters, Herbal Pest Repellents and Chelated Micronutrients and Reagents for Treatment for Sewage and Industrial Effluents.
2. Research and Development of Ecological Conservation Technologies.

Initial Certification Date : 15th July 2015 First Surveillance Due : 14th July 2022
Current Certification Date : 15th July 2021 Second Surveillance Due : 14th July 2023
Certificate is Valid Until* : 14th July 2024

To check the validity of the certificate, please visit www.ricchertifications.in

Authorized Signature



www.ricchertifications.in [richcertifications@gmail.com](mailto:ricchertifications@gmail.com) +91 72000 99280

■ CERTIFICATE ■ CERTIFICATO ■ CERTIFICAT ■ ZERTIFIKAT



Certificate of Compliance

ECOHEALTH PRODUCTS PVT. LTD.

at

REGD. OFFICE: 23, THANGAM COLONY-II STREET, ANNANAGAR WEST,
CHENNAI - 600040, TAMILNADU (INDIA)

FACTORY: 46/1, KOVALAN STREET- 3RD CROSS, TEACHERS COLONY,
ERODE - 638011, TAMILNADU (INDIA)

Has been assessed and found to be Conforming the requirements of:

USDA ORGANIC

"MANUFACTURER, RETAILER, EXPORTER OF ORGANIC DISINFECTANTS,
WATER TREATMENT REAGENTS, AGRO-PRODUCTS AND DIETARY SUPPLEMENTS"

This certificate is issued under the following condition:

1. It applies only to the quality systems maintained in the manufacture of above referenced scope / activities.
2. The certificate remains valid until the manufacturing conditions or the quality systems are unchanged and is subject to continuous surveillance according to the USDA Organic Guidelines.
3. The certificate validity is conditioned by positives results or surveillance audits.

Further clarification regarding the scope of the certificate and applicable of the management system requirements may be obtained by consulting the organization

Certificate Number: QCS-2023-EHPL-0954

To verify this certificate please visit at www.gacb.us

Date of Certification: 30th Aug 2023

1st Surveillance Due: 29th Aug 2024

Date of Recertification: 29th Aug 2026

2nd Surveillance Due: 29th Aug 2025

(Subject to the company maintaining its system To the required standard)



Authorized Signatory



Validity of this Certificate is subject to Annual Surveillance audits done successfully
This certificate remains the property of QCS and must be returned whenever demanded QCS is an independent system product and personal assessment body QCS is accredited by
Global Accreditation Certification Board (GACB)
US OFFICE: Maryland Avenue, SW Washington, D.C. -20202
info@qscertgroup.com, www.qscertgroup.com

Testimonials



EcoHealth
REDEFINING PURITY

Central Railway

Office of CHI Pune
Divisional Railway Hospital
Pune

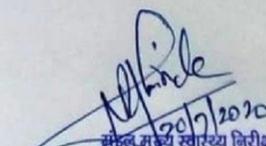
Date:- 20/07/2020

No.PA/Med/H/Sanitation/2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Pune division Health Department of Railway has received sample of Herbal disinfectant i.e. The Neem Based Pharma Grade antimicrobial & antiviral disinfectant solution (Eco-clean 50 Plus Pharma Grade) for combatting the COVID-19 for infection, prevention and control works by Mihir Enterprises Pune.

The same was used for disinfection of offices street walls, entrance, exits and all handling spots in Railway areas. The results are extremely Satisfying as we have achieved control as good satisfaction reports. No adverse reactions were reported by field/ Sanitary staff who has been handling and in general public about exposure to the disinfectant spraying.


20/07/2020
मंडल मुख्य स्वास्थ्य निरीक्षक
Divisional Chief Health Inspector
मंडल रेल अस्पताल, पुणे
Divisional Railway Hospital, Pune

Marico Limited
E-10, M.I.D.C. Area,
Ajanta Road, JALGAON - 425003.
Tel : (0257) 2210235, 2210134, 9823145448
March 29, 2023



To,
The Managing Director
EcoHealth Products Pvt Ltd
Chennai : 600040.

Dear Sir,

This is regarding to your query on how the reagents we are purchasing regularly from you are being deployed in the treatment of effluents generated in our plant.

Primarily, we are using 2 products manufactured by you, viz:

1. Ecolume-C
2. Ecoclean-2300

These reagents are used for treating effluent generated in our plant which produces Edible Oil. The effluent generated is turbid and has a low pH of 1.5 to 3. Traditionally, pH neutralisation was being done with hydrated lime [Calcium hydroxide] or powder lime. While this was effective, it was generating a lot of sludge, which was difficult to manage. After being introduced to your products, we started primary pH neutralisation by dosing EcoLime-C to raise the pH to between 5.5 to 6. Further increase in pH is brought about by adding hydrated lime. By following this process, we are getting optimum neutralisation efficiency, with vastly reduced sludge formation.

After neutralisation, the effluent is treated with about 40 to 50 ppm of Ecoclean-2300 and poly and suitable electrolyte. This causes immediate flocculation and precipitation of all the suspended particles as sludge. The clear water is filtered and further processed. The sludge, which is considerably reduced in volume and therefore easier to manage, is dried and suitably disposed of in conformity to PCB norms.

We would like to state that we have been following the above process for more than four years and we are extremely happy with the performance and efficacy of your products.

Thanks and regards

For Marico 

Peter Gonsalves - Marico India - Mfg - Jalgaon



Marico Limited, Regd. Office : Grande Palladium, 7th Floor 175, CST Road, Kalina Santacruz (E) Mumbai 400 098 India Tel : (91-22) 6648 0480 Fax : (91-22) 2650 0159 www.marico.com
CIN : L15140MH1988PLC049208



March 29, 2023

TO WHOM IT MAY CONCERN

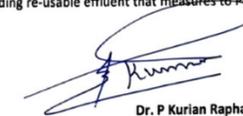
This is to confirm that TATA COFFEE has been using a range of products manufactured and supplied by Eco Health Products Pvt Ltd, Chennai for treating the effluent discharged during coffee processing at our estates in Coorg, Hassan and Chikkamagalur (Karnataka). The treatment process is as follows:

Step 1 : The freshly harvested coffee seeds are de-pulped and the berries are then fermented before the seeds are washed and dried. The de-pulping and fermentation process effluent is thick, dark in colour and has a strong odour. It is also highly acidic. This effluent is first neutralised by online dosing of ECOLIME-2300.

Step 2 : The neutralised effluent is let into a large lagoon, where it is dosed with ECOCLEAN-20 and a prepared solution of ECOSSED-P. This causes flocculation of suspended solid particles, which then sink to the bottom as sludge.

Step 3 : The clear top-water overflows into a series of tanks. The water is clear but contains bacteria and other pathogens and is therefore unsafe of use. To this, the neem-based disinfectant ECOCLEAN-50 PLUS is dosed. This eliminates all the pathogens, making the effluent water absolutely safe for re-use both for irrigation as well as for various secondary uses. The sludge that settles down after treatment will be used for compost preparation.

The entire process involves eco-friendly, herbal-based reagents developed and manufactured by Eco Health Products Pvt Ltd. We have been using these reagents in the above manner for more than six years and found them to be extremely effective in providing re-usable effluent that measures to PCB standards.


Dr. P. Kurian Raphael
Head-R&D
Tata Coffee Limited



WATER AND SANITATION

WAS Bio Engineering (Gh) Ltd.,
P. O. Box L597, Legon,
Accra, Ghana.
www.wasbioengineering.com
Tel; 0244 382 297
020 442 6837

3rd April.,2023.

The Managing Director,
EcoHealth Products Pvt Ltd.,
Chennai; 600040, India

Dear Sir,

TEST RESULTS OF ECOCLEAN RANGE OF PRODUCTS

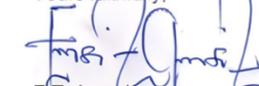
We are happy to inform you that the test results for the Ecoclean 2300 range of products

we conducted have proven to be successful. The treated water is odour free, pathogen free and conforms to Ghana's EPA Standards, for that matter to International Standards.

We therefore wish to order four and half tons of your natural, eco-friendly products

for commercial use in Ghana. Counting on your cooperation.

Yours faithfully,


E.T. Amoah,
Managing Director.

CHANGE INDIA - RESPONSIBLY, SUSTAINABLY



NOVAROON GLOBAL LLP

Anuradha Cinema Building,
1st Floor, MRD Road, Bamunimaidam,
Guwahati, Assam - 781021

Contact : +91 9873744232
+91 8811055987

Email : novaroonglobal@gmail.com

Website : www.novaroonglobal.com