URAI IMPEX PRIVATE LIMITED

Waste Water Treatment Plants

Content

Company Profile

URAI IMPEX PRIVATE LIMITED is a well established organization engaged in the International Business with Africa and Gulf countries since over 2 decades.

- Our expertise lies in exports of:
  - Nature Friendly Environment Protection Solutions such as Ozone Purification Systems, Air Purification Systems, Waste Water Treatment Systems, etc.
  - Turnkey Projects (Mineral/ Aerated Water)
  - Organic Waste Management Systems
  - Low and Medium Voltage Electrical Switch Gear Manufacturing, etc.
  - Industrial Machineries, Raw Materials, Spares, Supplies, etc.

- Our focus currently is on delivering sustainable environmental solutions to meet compliance, business and operational needs.

- Our experienced environmental management staff addresses client projects across the full business life cycle — from asset planning, development and operations, to product integration and facility compliance, to site remediation, restoration, sustainability and reuse.

- Our solutions balance complex technical, regulatory, business and stakeholder issues to produce measurable value and cost-saving approaches for our clients.

Our Affiliations

- Our head office is in the commercial capital of India – MUMBAI which is also one of India's largest port. Moreover, we are well connected with the other Government Departments and offices related to the Export-Import formalities. We are also associated with many of the leading overseas trading companies

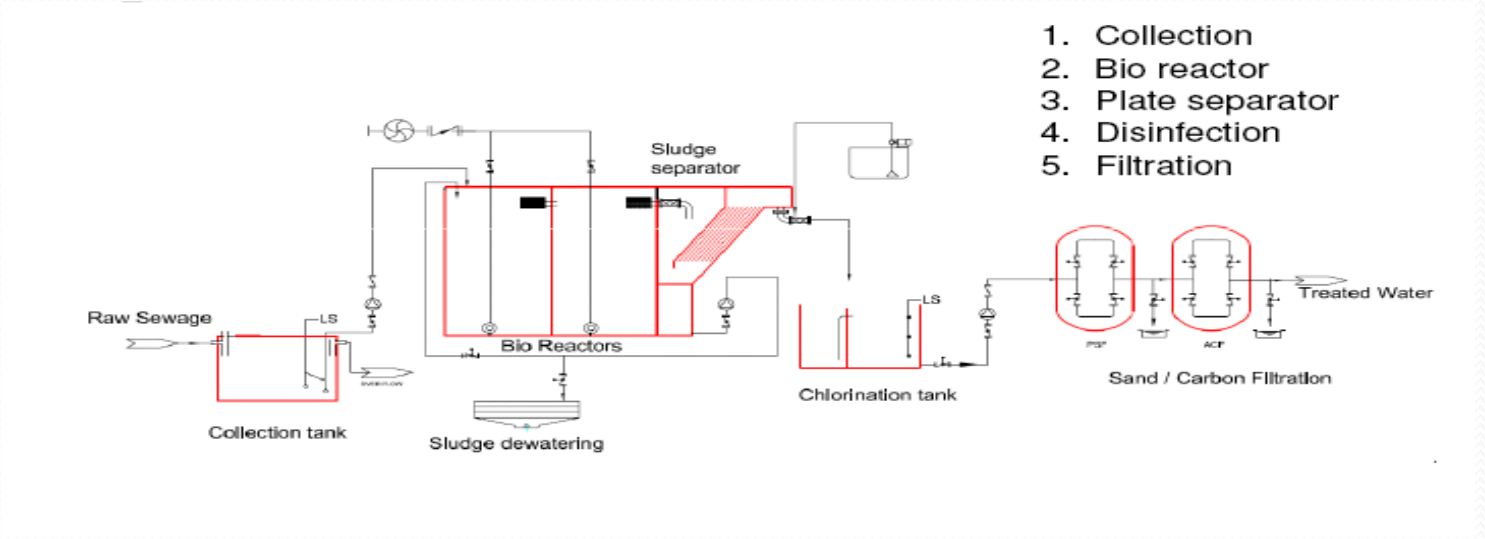
- We are Members of various Export Promotion Councils such as EEPC (Engineering Export Promotion Council), Chemexcil India (Basic Chemicals, Pharmaceuticals & Cosmetics Export Promotion Council), etc. along with other associations such as Bombay Industries Associations, Trans Asian Chamber of Commerce & Industry and Indo American Society

Interesting Facts

- Melbourne's tap water has over 20% of treated sewage water
- Dubai uses treated sewage water for gardening and watering trees around the city
- Hong Kong provides treated seawater for toilet flushing to 80 per cent of its seven million residents
- Singapore has built five treatment plants - cleaning its sewage to such a high standard that it can be **recycled back into the water supply.** Singapore's tap water is about 2% treated sewage
- Recycled toilet waste could be soon introduced to London's tap water, under plans being considered by the Government

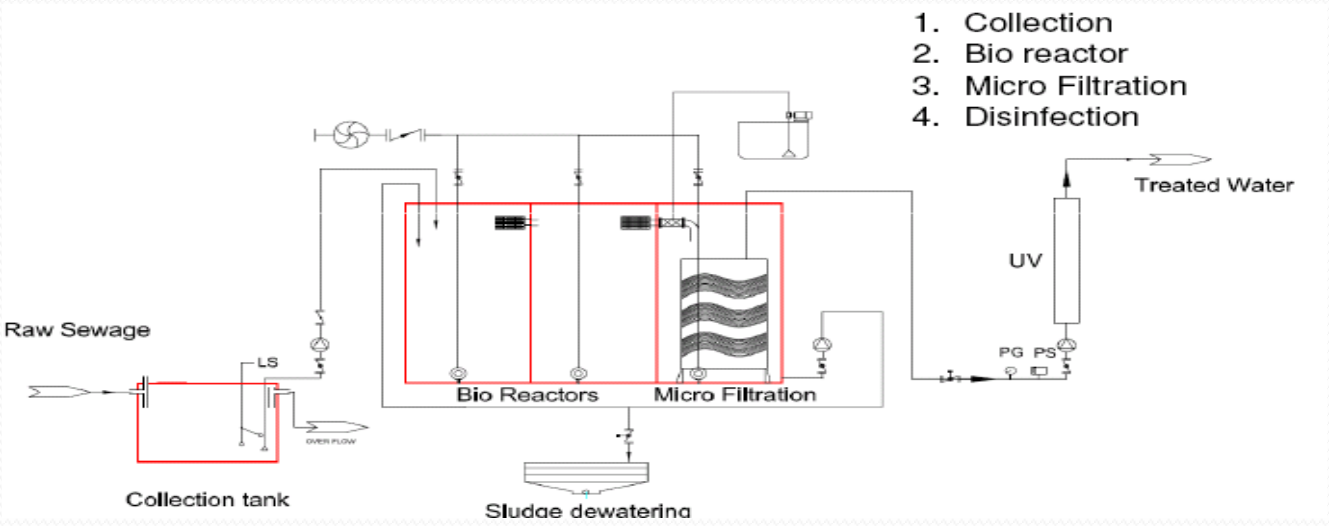
Indicative Process Overview

Basic Model (based on Moving Bed Bio Reactor Technology)



The above process is just a broad overview (MBBR technology), depending upon the need and requirements, the same may change

Hybrid Model (based on Dual Technology i.e. (Moving Bed Bio Reactor and Membrane based Bio Reactor Technology)



The above process is just a broad overview (MBBR +MBR technology), depending upon the need and requirements, the same may change

Indicative Process Overview (Continued)

1st and 2nd Chamber is filled with Bio Media and water. Before starting pumping of waste water, the system blowers start.
The blowers force air through the manifolds into the first 2 chambers

1st CHAMBER

- The influent wastewater enters the first chamber and comes in constant contact with the Bio Media and air.
- Large surface area @ 400 – 500 m^2/m^3 provided by the Bio Media helps the bacteria to form large colonies on the Bio Media
- Circular motion of the media is caused by the air flow. Each element of the media slowly moves in a circular motion from the surface to the bottom and then upwards again. During this movement, it is in constant contact with the injected air
- Slowly a bio film develops over each element, which disintegrate the BOD present in the effluent

2nd CHAMBER

- Through the perforated screen at the top the effluent flows from the first chamber to the second chamber
- The same treatment is repeated in this chamber and the remaining BOD from the first chamber gets fully digested
- The treated water then enters the third chamber……..

BASIC MODEL - 3rd CHAMBER

- A baffle plate guides the water entering the third chamber downwards.
- The settler provides a large surface area for suspended particles to settle down on it and the particles are guided towards the bottom.
- Clean water is let out of the system and collected to holding tank. Secondary treated water then passed treated with sodium hypo for disinfection and then passed through series of sand and carbon filter for further clearing and polishing

OR

HYBRID MODEL - 3rd CHAMBER

- Here the treated water is directly sucked out via the Membrane modules which are immersed in the same tank;
- Effluent from this Micro filtration Membrane is consistent in quality as membrane is an effective barrier against suspended solids and microorganism.
- The treated water then passed through the disinfection system.

The settled biomass is discharged in to the Sludge holding tank/ sludge filter. The sludge is used as a fertilizer for gardening

Comparison with Conventional Plants

Sr No	Parameter	Packaged MBBR, MBR Plants	Conventional Plants
1	Treatment Efficiency & Performance	Highly Efficient and Consistent	Output may not be consistent always
2	Biological treatment (Type of treatment)	Complete treatment occurring at one step	Requires multiple separate treatment units, tanks etc
3	Area (land) requirement	The packaged plant requires less land area	Requires more land area,
4	Civil cost	Relatively lesser civil cost, plant is a compact unit and can be easily relocated	It may require expensive pile foundation with high uplift. As it requires several treatment units with circular shape and huge area, it becomes expensive for civil works.
5	Handling of peak flows	Consistent quality at the outlet is achieved as system can handle peak flows effectively and produces constant flow at average rate after treatment	They cause temporary deterioration in quality in case of peak flow
6	Sludge Digestion	Sludge can be used as manure or soil conditioner, it is generated from the Biological System which is fully digested	Major amount of Sludge generated for the primary clarifier which is undigested and requires proper digestion.
7	Remote monitoring of plant performance	The plant is completely automatic and provided with remote monitoring facility to monitor its performance	Requires Manual interference and regular physical monitoring
8	Insects	Packaged, enclosed system. No scope of insect breeding	Mosquitoes and other insects can breed on open ponds
9	Odour	Plant can be covered from the top and special odour control system eliminated foul odour	Opens ponds emit a lot of bad/foul odour
10	Cleaning and other maintenance	Minimal manual intervention/cleaning involved	Ponds need to be cleant regularly to clear deposits and increase carrying capacity

Waste Water Treatment Products Range

- **Industrial Wastewater Treatment Plants**
  - Effluent Treatment Plants
  - Package Effluent Treatment Plants
  - Zero Liquid Discharge Plants

- **Sewage Treatment Plants**
  - Conventional Sewage Treatment Plant
  - Packaged Sewage Treatment Plants
  - Municipal Waste Treatment Plants

- **RO Treatment Plants**

- **Waste Water Treatment Components and Consumables**
  - RO
  - Surface Aerators
  - Membranes
  - Oil Skimmers
  - Clarifiers
  - Static Mixers
  - Treatment Chemicals
  - Bio Media
  - Pumps
  - Blowers
  - Filters
  - Stirrers, Etc

Key Features

- Customised Design - Every plant is carefully designed based on local EPA requirements and the actual waste water parameters such as:
  - BOD – Biochemical Oxygen Demand
  - COD – Chemical Oxygen Demand
  - Suspended Solids
  - Oil/Grease
  - pH
  - Volume of waste water generated per day
  - Others chemicals(specific to the industry/customer)

- Packaged Type – can be easily relocated

- Ease of Operation – Automated PLC Control

Reference Images

Basic Model
(based on Moving Bed Bio Reactor Technology)

Reference Images

Hybrid Model
(based on Dual Technology i.e. (Moving Bed Bio Reactor and Membrane based Bio Reactor Technology)

Water Characteristics of Basic and Hybrid Models

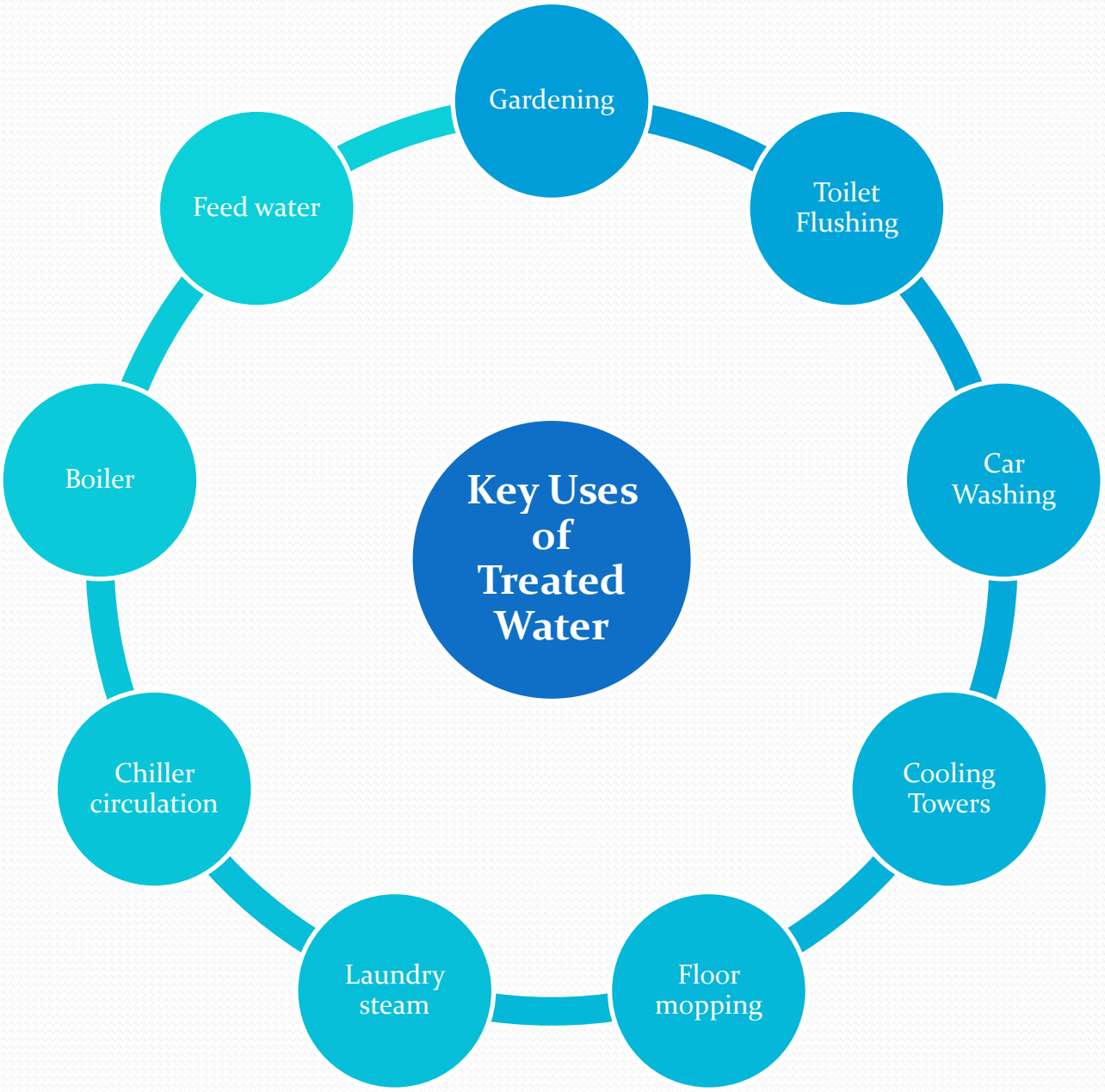
			General Standards	
Parameters	**Outlet – Basic Model (MBBR)**	**Outlet – Hybrid Model (MBBR+MBR)**	**Discharge into Public Sewerage**	**Discharge for land irrigation**
pH	6.5 to 8.5	6.5 to 8.5	6.5-8.5	6.5-8.5
BOD in mg/l	< 30	< 10	350	100
TSS in mg/lit.	< 30	< 10	600	200
Oil & Grease in mg/l	< 10	< 5	20	10

Plants can be customised to suit country specific EPA requirements

*Based on broad standards, however, actual may slightly differ depending upon the inlet

Actual Images - Treatment Results

Key Uses of Treated Water



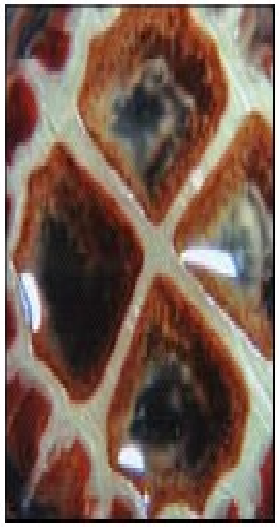
Key Benefits

TRIPLE BOTTOM LINE BENEFIT = Economical + Environmental + Social

Decrease in fresh water cost in the long term	**Protects the environment by conserving energy, water, materials and other resources**	**Provides better value for money in the long-term**
Build goodwill and create brand image	**Gaining competitive advantage**	**Regulatory compliance (ISO 14001, country specific environmental laws)**
Awards and International Recognition	**Contribute towards Corporate Social Responsibility**	**Plant is compact and occupies less space. Can fit in existing premises**

Key Components

Bio Media – Used in 1st and 2nd Chamber



Membrane – 3rd Chamber of Hybrid Plant

Large Surface Area – Long Life and Self Cleaning

Select Credentials - Waste Water Treatment Projects

ETHIOPIA

- Abay Paints Factory-ETP
- Beaeka General Business PLC - ETP
- Kombolcha Steel Product Ind – ETP
- Modern Building Industries - ETP
- Moha (Pepsi) Bottling Plant – Hawassa – ETP
- Nefas Silk Paint Factory Addis Ababa- ETP

SPAIN

- Elsamex S.A. – for Ethiopia – Packaged STP

TANZANIA

- Sunflag Tanzania Ltd.

NIGERIA

- Topcee Food Ltd.

EGYPT

- American International Contracting, Inc.

LIBERIA

- Winchester Procurement UK

GUYANA

- Giftland Max

BAHRAIN

- Cornertech Inspection Services

KUWAIT

- Saudi Arabia Chevron Mina Saud

BANGLADESH

- Reliance Businessline
- Shade Fashion

SRI LANKA

- Yonsan Engineering PTE Ltd

MEXICO

- Eco Azur

Other Offerings

1. **Ozone Disinfection Solutions**
2. **Organic Solid Waste Solutions**
3. **Chemicals**
   - Acids
   - Rubber Chemicals
   - Sugar Processing Chemicals
   - Water Treatment Chemicals

4. **Engineering Plants /Products**

   - Barbed Wire Manufacturing
   - Blow Moulding Machines
   - Boilers
   - Boilers
   - Elevators
   - Engineering Spares
   - Engineering Workshops
   - Hardware Supplies
   - Hot dip Galvanizing Plant
   - J Bolt Manufacturing Plant
   - Nut Manufacturing Plant
   - Pumps
   - Stapler Pin and U Pin Manufacturing
   - Steel Rolling Mills and Tube Mills
   - Steel/Concrete Poles
   - Valves
   - Wire Nails/Wood Screw ….. and others

Select Credentials – Other Turnkey Projects

Sr. No.	Project Name & Country
1	Manufacturing Milk Sweets at ETHIOPIA
2	Plastic Packing Bottles at GHANA
3	Manufacture of Plastic Carry Bag at GHANA
4	Manufacture of Fruit Juice in PET Bottles at ETHIOPIA
5	Silica Sand Beneficiation at ETHIOPIA
6	Wire Galvanising Plant at ETHIOPIA
7	Hot Dip Galvanising Plant for Structural steel at ETHIOPIA
8	Wood Screw, Wire Nails & J Bolt Making Plant at ETHIOPIA
9	Barbed Wire Fencing Manufacturing Plant at Ethiopia
10	Rubber Fan Belt Manufacturing Plant TANZANIA
11	Plastic Injection Molding Machines for Beer Crates at Ethiopia

Contact Us

Urai Impex Private Limited

53, Apollo Industrial Estate,
Off Mahakali Caves Road,
Andheri (East), Mumbai - 400 093
Maharashtra, India

Tel: 00 91 22 66926527 / 66926528

Mobile/Whatsapp: 00 91 9819607951

Fax: 00 91 22 66926527

Email : urai@uraiimpex.com

www.uraiimpex.com