



**AQUARIUS**  
PROJECTS & CONSULTANT



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# ABOUT US

We Aquarius Projects & Consultant (ISO 9001-2008 Certified Company) takes the opportunity to introduce ourselves as pioneers of water with versatile experience in, Water, Wastewater, Process Application with membrane technology system & consultancy in India with having 2.0 Decades Experience in Hand. We develop the system from Concept Designing with Pilot study Basic Engineering, Detail Engineering with Manufacturing & supply for Water, Wastewater System Recycling system & process specific applications with Total Project Management in terms of Planning, Scheduling and monitoring to achieve the desired target of completion. We custom-design with complete systems to suit the specific requirements of our customers.

## ADEQUACY AND TREATABILITY STUDY

**Our Approach toward Treatability for Process application / Waste water is as below:-**

**A** **Comprehensive adequacy audits for existing ETPs and recycling plants, in order to determine the potential of the plant's performance to be improved**

- **In-depth studies by experts**
- **Undertake incoming effluent characterisation based on present and future expansion plans**
- **Re-establish design basis**
- **Identify bottlenecks/gaps in the existing treatment processes and operations**
- **Recommend techno-commercially viable options for system up gradation**
- **Pilot trials, lab trials are conducted if required**
- **Provide detailed adequacy report.**

**B** **Treatability And Pilot Studies**

Treatability and pilot studies are used to assess the feasibility of different treatment schemes

- **The studies can be for primary, secondary, or tertiary treatment**
- **The studies can also be targeted for removal of specific impurities or recovery of high value chemicals from the wastewater**
- **This is the ideal way to minimise technical risks before the implementation of a full scale project**



## Process Optimisation Studies

Process optimization studies are designed to enhance the existing treatment process to minimize process upsets and to improve system efficiency.

# EFFLUENT TREATMENT PLANTS (ETP)

- **Aquarius has in hand experience of more than a decade in Design, Engineering and Execution of Water treatment project we have exposure towards all the Process Technology and Process Equipments used in Water Treatment.**
- **We offer Customised solution for wide range of Industrial Effluents.**
  1. **Pre Primary Treatment**
  2. **Primary Treatment**
  3. **Secondary Treatment**
  4. **Tertiary/Advance Treatment**
  5. **Zero Liquid Discharge(ZLD)**

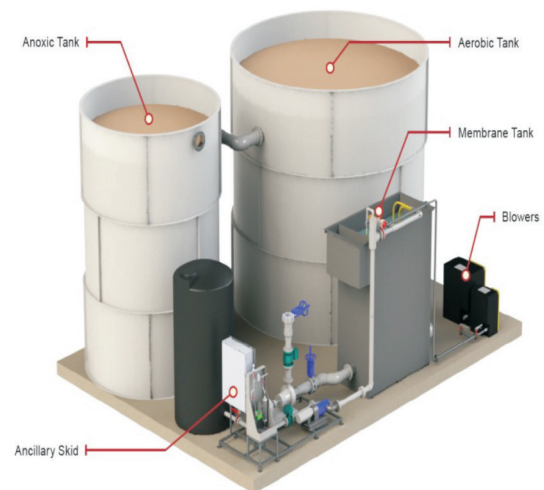


# SEWAGE TREATMENT PLANTS (STP)

We offer a variety of Stp treatment plant with different Technology as per customers needs with respect to availability of Spaces,Budget and application of reuse

- **Conventional (Activated Sludge Process)**
- **Combination of Anaerobic and aerobic Process**
- **Advanced Technology (MBR, MBBR/FBBR, SBR, SBBR etc.) Packaged Containerized based.**
- **Cost Effective Root Zone Technology based Sewage Treatment with Natural Plants, Earthworms & Microbes**
- **Upflow Anaerobic Sludge Blanket process (UASBR)**

We cater from Packaged Sewage Treatment Plant to Large Size Sewage Treatment Plant for Residential / Townships / Commercial / Industrial / Hotels & Resorts / Hospitals / Educational Institutions / IT Parks / Farmhouse/Villas etc. We have various options/ technologies for treatment of sewage water according to availability of space, Budget & application of reuse



# PROCESS EQUIPMENT AND WASTE WATER EQUIPMENTS.

We Design, Manufacture, supply Erection and Commissioning.

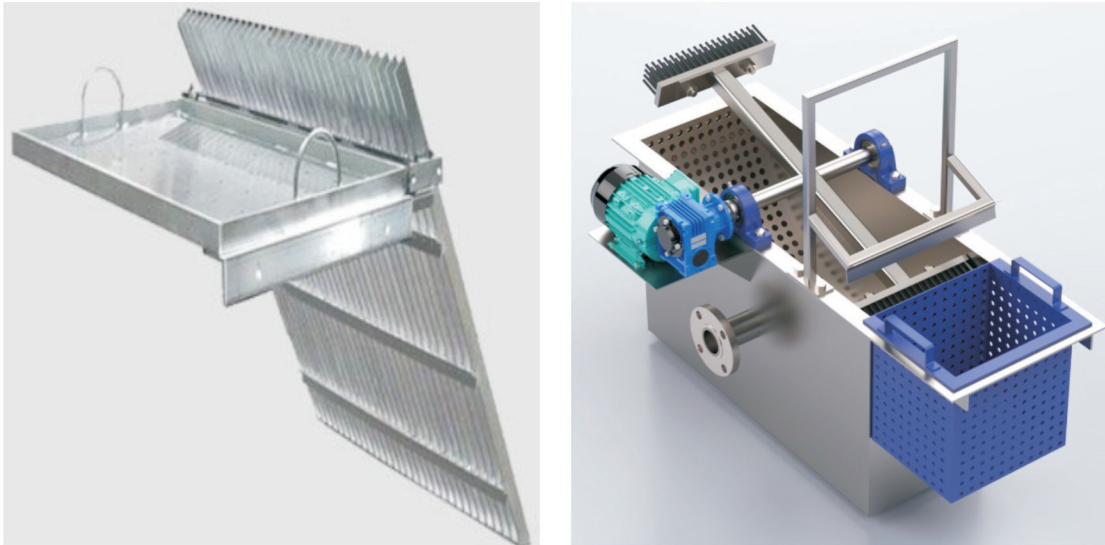
**Below is our product range for Water and Waste Water Equipments:-**

- **Screen (Manual / Auto)**
- **Flash Mixer,Flocculators,Agitators**
- **Clarifiers, Clariflocculators, thickeners**
- **Reaction Clarifiers / Solid Contact Clarifiers**
- **UASBR /Anaerobic Reactors/Trickling Filters.**
- **Fenton Rectors.**
- **Advance Oxidation**
- **Lamella Tube Settlers /Lamella Clarifiers /Tilted plate Separator**
- **Aerators (Fixed,Floating,Submerged)**
- **Aeration System-Fixed type, Retrievable Type**
- **Tilted plate Interceptor (TPI)/Corrugated plate Interceptor**
- **Dissolved Air Floatation Unit- Circular, Rectangular.**
- **API Oil Separators**
- **Oil Skimmers**
- **Pressure Sand Filters/Activated Carbon Filters/Dual Media Filters/ Glass media Filters.**
- **Vacuum Drum Filters**
- **Organic Water Processor**
- **Cyclones /Scrubbers**
- **Other such tanks, Reactors, Heat Exchangers**
- **Site Fabrication,Erection and Commissioning work**

# PROCESS EQUIPMENT AND WASTE WATER EQUIPMENTS.

## A) Manual /Auto Screens

The Screen is designed to separate and Grit/debris from the Raw euent.



## B) Flash Mixer and Flocculators.

Flash mixer is specially designed with aggressive speed agitation

The mixer design ensure ecient, minimum energy consumption and long life.

The Equipment blend coagulant and other chemicals with wate/waste water prior to occulation.

## C) Flocculators

Flocculator is designed at low speed rpm form bridges between the ocs and bind the particles into large agglomerates or clumps. Bridging occurs when segments of the polymer chain adsorb on diert particles and help particles aggregate. The colloidal and suspended particles which are formed in the Flocculation zone are removed by scraper mechanism



### D) Clarifiers, Thickeners, Reaction Clarifiers/Solid Contact Clarifiers. etc

Clarifiers are settling tanks built with mechanical means for continuous removal of solids being deposited by sedimentation. A clarifier is generally used to remove solid particulates or suspended solids from liquid for clarification and/or thickening. Inside the clarifier, solid contaminants will settle down to the bottom of the tank where it is collected by a scraper mechanism. Concentrated impurities, discharged from the bottom of the tank, are known as sludge, while the particles that float to the surface of the liquid are called scum.



### E) Lamella tube settler/Lamella/Lamella Clarifiers/Tilted plate Separator etc

The main advantage of lamella clarifiers over other clarifying systems is the large effective settling area caused by the use of inclined plates, which improves the operating conditions of the clarifiers in a number of ways. The unit is more compact usually requiring only 65-80 % of the area of clarifiers operating without inclined plates. Therefore, where site footprint constraints are of concern a lamella clarifier system is preferred.



## F) Aerators (Fixed, Floating) and Diffusers.

Aeration provide two functions: they transfer air into the basins required by the biological oxidation reactions, and they provide the mixing required for dispersing the air and for contacting the reactants (that is, oxygen, wastewater and microbes).

Typically, the floating high speed surface aerators are rated to deliver the amount of air equivalent to 1 to 1.2 kg  $[[O_2]]/kWh$ , Low speed surface aerator present such high diameter. Therefore SOTE for low speed surface aerators is about 2 to 2.5 kg  $O_2/kWh$ .

There are two main types of submerged diused aeration systems for lagoon applications: oating lateral and submerged lateral. Both these systems utilize fine or medium bubble diusers to provide aeration and mixing to the process water. The diffusers can be suspended slightly above the lagoon floor or may rest on the bottom. Flexible airline or weighted air hose supplies air to the diffuser unit from the air lateral



## G) Dissolved Air Flotation (DAF)

Dissolved air flotation (DAF) is a water treatment process that clarifies wastewaters (or other waters) by the removal of suspended matter such as oil or solids. The removal is achieved by dissolving air in the water or wastewater under pressure and then releasing the air at atmospheric pressure in a flotation tank basin. The released air forms tiny bubbles which adhere to the suspended matter causing the suspended matter to float to the surface of the water where it may then be removed by a skimming device.

Dissolved air flotation is very widely used in treating the industrial wastewater effluents from oil refineries, petrochemical and chemical plants, natural gas processing plants, paper mills, general water treatment and similar industrial facilities. A very similar process known as induced gas flotation is also used for wastewater treatment. Froth flotation is commonly used in the processing of mineral ores. In the oil industry, dissolved gas flotation (DGF) units do not use air as the flotation medium due to the explosion risk. Nitrogen gas is used instead to create the bubbles.



## G) Dissolved Air Flotation (DAF)



## H) Pressure sand / Activated Carbon / Dual media / Multigrade Filters / Glass media Filter

These are depth filtration and the mechanism is impingement and entanglement of solids on account of low-pressure differential. The slurry enters the sand bed and the clear liquid is collected from the bottom outlet



# OUR PRODUCT RANGE FOR RECYCLING AND RECOVERY SYSTEMS.

- **Ultra filtration System**
- **Submerged Ultra Filtration/MBR.  
(Hollow Fibre /Flat Sheet)**
- **RO System**
- **NF System**
- **Ceramic Membrane System**



Different technology and Process is used for Recycling water system. The most common technology is membrane based system in terms of UF NF & RO System.

Reverse osmosis (RO) is a water purification process that uses a partially permeable membrane to separate ions, unwanted molecules and larger particles from drinking water. In reverse osmosis, an applied pressure is used to overcome osmotic pressure, a colligative property that is driven by chemical potential differences of the solvent, a thermodynamic parameter. Reverse osmosis can remove many types of dissolved and suspended chemical species as well as biological ones (principally bacteria) from water, and is used in both industrial processes and the production of potable water.



# OUR PRODUCT RANGE FOR ZERO LIQUID DISCHARGE.

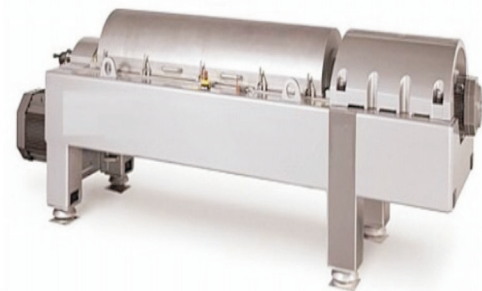
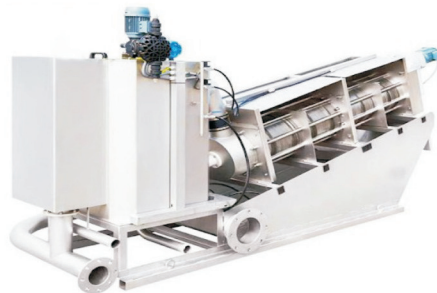
- **Multi Effect Evaporator.**
- **Stripper**
- **Agitated Thin Film.**
- **Nutch Filters**
- **Pusher Centrifuge**
- **Basket Centrifuge**



Zero liquid discharge (ZLD) refers to a treatment process in which the plant discharges no liquid effluent into surface waters, in effect completely eliminating the environmental pollution associated with treatment. Apart from this benefit, a ZLD process also makes effective use of wastewater treatment, recycling, and reuse, thereby contributing to water conservation through reduced intake of fresh water.

# OUR PRODUCT RANGE FOR SLUDGE MANAGEMENT

- **Sludge Digester.**
- **Sludge Thickeners.**
- **Decaners.**
- **Centrifuge.**
- **Screw press /Volute.**
- **Belt Press.**
- **Filter Press.**



The Sludge Generated from ETP/STP need to remove the moisture to certain level as per Central pollution control Norms and then to sent for disposal. The Equipments are used for Dewatering of Sludge and to reduce the moisture content.

# OUR PRODUCT RANGE AND STRENGTH IN PROCESS APPLICATION WITH MEMBRANE TECHNOLOGIES

## Pharma & Biotech Industry

- **Antibiotics, Proteins and Enzyme, Amino acids and vitamins.**
- **Vaccines, Growth hormones, Antigens & Antioxidants.**
- **Recycling of cooling tower blow down & boiler blow down.**

## Fine Bulk Chemical Industry

- **Water & waste water treatment.**
- **Recycling of cooling tower blow down & boiler blow down.**
- **Salt removal from product.**

## Textile Industry

- **Recycling & recovery of water from textile dye effluent.**
- **Salt (NaCl) recovery from dye bath effluent.**
- **Recycling of cooling tower blow down & boiler blow down.**

## Dairy Industry

- **Milk Processing, Whey Processing, and Dairy effluent recycling.**
- **Dairy rinse water recycling and recovery of milk solids.**
- **Standardization of milk, harvesting a component of milk.**
- **Recycling of cooling tower blow down & boiler blow down.**

## Fruit, Fruit Juice and Beverage Filtration

- **Clarification and pre-concentration of fruit juices**
- **Aloe vera, grapefruit, strawberry, orange, peach, pineapple, apple, pear, carrot, celery juice and juices**
- **Fructose clarification**

## Distillery Industry

- **Recycling of process condensate from evaporator through membrane technology.**
- **Reduction of COD and color removal from Biomethanated spent wash**
- **Recycling of cooling tower blow down & boiler blow down.**

## Other Industry

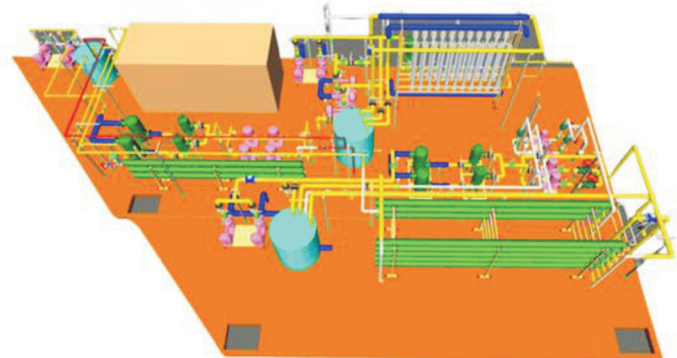
- **Production of water for Peritoneal Dialysis unit in hospital.**
- **Recycling of treated waste water form Electroplating Industries.**
- **Recycling of treated waste water form PCB manufacturing industries.**
- **Juice concentration and clarification.**
- **Catalyst recovery.**
- **UF for Concentration of Gelatin.**
- **Ceramic MF System for Fermentation Broth Clarification.**



# OUR SERVICES EXPERTISE

## Our Engineering and Additional Service

- Technical Consultancy for Water, Energy Audits, HAZOP Study.
- Analysis of the data, Design of system and system components.
- Detail engineering work of Total Water Management System including. Dimensional drawing for civil works.
- Specifications for mechanical and electrical works.
- Formulation of Tender Documents for Mechanical and Electrical works.
- Technical scrutiny of the quotations received
- Preparation of Documents like DQ/IQ/OQ.
- Operation & Maintenance.
- Pilot Trials on Pilot Scale Plant.
- Trouble Shootings
- Water analysis
- Revamping
- Automation of Existing Plant
- Online Monitoring and data logging.
- Rainwater Harvesting
- Suggesting measures for Optimization of water usage by in plant control
- Review of analytical data of water and effluent streams and segregating the same on principles of level of pollutants and treatability.
- Jet cleaning services for Multi effect Evaporator.
- Review of analytical data of water and effluent streams and segregating the same on principles of level of pollutants treatability.



# SALES AND SUPPLY OF SPARES, CHEMICALS & CONSUMABLES

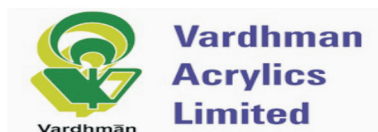
We do Supply Spare and Chemicals for Total Water, Waste Water, Recycling and ZLD Systems.



## OUR VALUED CUSTOMERS



Value through values



# CONTACT US

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**Our Authorized sales partners**



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