



# "The best gift you can give to coming generations is water"

# **SUMMARY**

#### Why we need the WATER TREATMENTS

Though 70% of the surface of the earth is covered with water, 97% out of it is the salt water, 2% of it is in the form of glacier ice on the north & south poles. It means only less than 1% of all the water on the earth is usable water. We use this small amount of water for drinking, transportation, heating & cooling, industry and many other uses.

But we can't run away from the fact that this 1% of water is also not in form of fresh water, we are polluting it continuously. Surface Water Pollution, Ground Water Pollution, Microbiological Water Pollution, Chemical Water Pollution are few types of the water pollution. Whereas causes are Sewage & Waste Water, Industrial Waste, Marine Dumping, Oil Pollution, Under Ground Storage Leakage, Global Warming etc.

So to save the environment recycling of used water is our social & moral responsibility, and if we fail to follow it, we will be answerable to our next generation.

### **ABOUT US**

#### How can we help you?

We, "M/S RAJNEER ENVITECH PVT. LTD", are well known service provider in water treatment solution. With our sufficient & meaning full experience in this field we can easily come out with the solution on any of your environment related problems. We empower with skilled & experience staff, environment experts, advisors & experienced well known vendors & associates, which make us possible to provide economical, efficient as well as customize environment solutions.

Our aim is to provide eco-friendly, better, reliable environmental solutions to reduce pollution & improve environmental status. Want to be always easily reachable to customers for serving them better in any mean.

#### What it mean by WATER TREATMENT

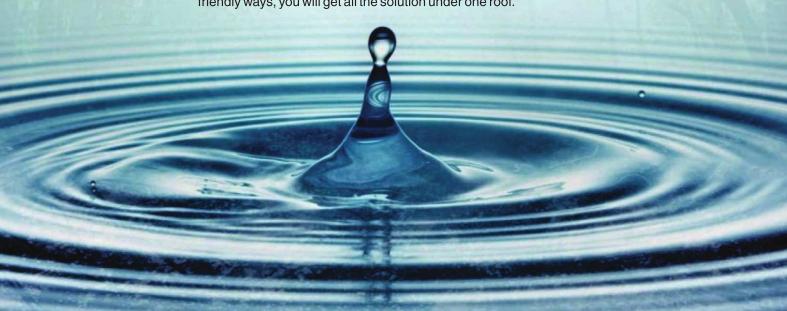
The Egyptians were the first people to record methods for treating water, more than 1500 years ago. They indicate the most common ways of cleaning water were by boiling it over a fire, heating it in the sun, or by dipping heated piece of iron in to it. Filtering boiling water through sand and gravel and allowing it to cool was another common treatment method.

But now water treatment is the much more complex, because of increase in water pollution.

Water treatment describes those industrial-scale processes used to make water more acceptable for a desired end-use. The goal of water treatment process is to remove contaminants in the water, or reduce concentration of such contaminants so the water becomes fit for desired end use. One such use is returning water that has been used back into the natural environment without adverse ecological impact.

The Processes involved in treatment of water depends upon the quality of generated waste water. However, the in general water treatment process involves; settling, filtration, coagulation, aerated lagoons, activated sludge, slow sand filters, activated carbon filter, disinfection.

As described today's water treatment is very complex but we are here to provide you all these complex solution in simpler, effective & eco friendly ways, you will get all the solution under one roof.





# Best gift we can give to next generation is...

# SEWAGE TREATMENT PLANT

Sewage treatment is the process which removes majority of the contaminants from waste water or sewage and produces both a liquid effluents suitable for disposal to the natural environment and sludge.

Procedure consist sequence of three major actions, at first step is removal of solids, oil, grease by physical separation, second step includes biological treatment to remove organic load, third step includes filtration as well as disinfection of bacteria, (i.e Primary, Secondary and tertiary)





Sewage effluent commonly gets reused for gardening, toilet flushing, cleaning, as well as in production after additional further treatments. Even by using advance technology it is now possible to reuse sewage effluents for drinking water too. As well as sludge produced during process may get reused as farm fertilizer. By norms now it is mandatory for industry or residential areas to have STP where sewage generation is more than 5m3/Day. RAJNEER ENVITECH PVT. LTD. assures you for result oriented design, odour free treated water, as well as we are bound to maintain all outlet parameters much lower than MPCB prescribed norms.



# ...Healthy Environment

# EFFLUENT TREATMENT PLANT

Effluent treatment plant is needed where ever water is getting polluted by industrial & chemical processes during the production. It makes the water reusable for the production. In many cases effluent water from one process may get suitable for reuse in another process somewhere else on site.

We offer a wild range industrial effluent treatment plants for application in paint shop, dairies, paper mills, oil refineries, leather industry, glass factories, chemical & processing industries etc. These industrial effluent treatment plants are designed to provide pollution free working environment and recycle the water for other application.





The Industrial effluent treatment plants involve different stages of treatments including physiochemical treatment and biological treatment followed by tertiary treatment.

Our engineers can also provide custom design effluent treatment plant based on specific application requirement of the customer. Can provide integrated means combined sewage treatment set up with simple control to make operation easier.

All the effluent treatment plants with the design specifications laid down by the regulatory authority.

## **ZLD TECHNOLOGY**

The rapid growth of Industrialization over the past few decades has degraded the quality of water resources available in nature, especially freshwater resources. Freshwater scarcity around the globe has posed a major threat to economic growth, water security, and ecosystem health. Numerous industrial processes have threatened the availability and value of freshwater resources.

#### What is ZERO LIQUID DISCHARGE?

Zero Liquid Discharge (ZLD) is an engineering approach to water treatment where all water is recovered and contaminants are reduced to solid waste. The process is widely considered by environmental experts to be beneficial to industrial and municipal organizations as well as the environment because no effluent, or discharge, is left over. ZLD systems employ the most advanced wastewater treatment technologies to purify and recycle virtually all of the wastewater produced. This technology also converts wastewater from an industrial process to solids and treats water for reuse.

The conventional way to reach ZLD is with thermal technologies such as evaporators (multi stage flash (MSF), multi effect distillation (MED) and mechanical vapor compression (MCV)) and crystallizers and recover their condensate. ZLD plants produce solid waste.

ZLD is considered to be the most demanding wastewater/effluent treatment technology of the modern era since the cost and challenges of recovery increase as the wastewater gets more concentrated. Other water treatment processes attempts to only maximize recovery of freshwater and minimize waste. ZLD is today touted as the best approach to eliminate liquid waste and maximize water use efficiency for an industry.

In the last decades though, there has been an effort from the water treatment industry to revolutionize the high water recovery and ZLD technologies. This has led to processes like electrodialysis (ED/EDR), forward osmosis (FO) and membrane distillation (MD)





Multistage evaporator remains one of the popular method used for concentration of aqueous solutions. Water is removed from solution by boiling the liquor in an evaporator and withdrawing the vapors.

There are two types of feeding that can be used when dealing with multiple-effect evaporators. Forward feeding takes place when the product enters the system through the first effect, which is at the highest temperature. The second effect uses the heated vapor created in the first stage as its heat source (hence the saving in energy expenditure).

Another method is using backward feeding. In this process, the dilute products are fed into the last effect which has the

lowest temperature and are transferred from effect to effect, with the temperature increasing. The final concentrate is collected in the hottest effect, which provides an advantage in that the product is highly viscous in the last stages, and so the heat transfer is better.

## **ATFD System**

Mechanically Agitated Thin Film Dryer (ATFD) is an indirectly heated continuous dryer. Mechanically Agitated Thin Film Dryer is an indirectly heated continuous dryer. The feed can be in the form of a solution, slurry, wet cake or paste. If required it operates under vacuum. We offer both vertical and horizontal versions.

Agitated Thin Film Dryer Vertical In a vertical dryer, the rotor blades is hinged. The feed enters the shell tangentially and gets spread along the inside surface of the shell into a thin film. The feed progressively passes through different phases like liquid, slurry, paste, wet powder and finally powder of the desired dryness. The vapors flow counter current to the film. The powder gets collected in a powder receiver at the bottom.

Agitated Thin Film Dryer¬ Horizontal orientation is required when the feed is in the form of a thick slurry, paste or wet powder. The fixed clearance rotor with screw elements prevent scale formation and convey the material from the feed end to the powder discharge end in a continuous fashion.





### **FILTRATION PLANTS**

#### **Softeners**

Hard water may contain excess Calcium (Ca+), Magnesium (Mg+), to remove these contains softening is needed. Softeners may get used in industrial as well as

domestic application.

#### **Demineralization Plant**

Demineralization or DM Plant helps to remove dissolved minerals from water to make it suitable for industrial and municipal use. The process Involves purifying water by filtering it through a tank containing beads of synthetic resin. These beads are chemically treated to either absorb negatively charged anions or positively charged cations. There are two types of Demineralization, Membrane Demineralization & Mobile Demineralization.

Generally used in the ground water, chemical processing, salt removal, sweeteners, waste water, water softening, electro-plating, high pressure boilers.



## **Swimming Pool Ozonator**

Swimming pool water treatment by Ozone is widely used nowadays .Ozonator has wide benefits When ozone gas is injected into your spa water, it acts as a powerful sanitiser that destroys most of the bacteria and viruses present in the spa water.

# Industrial FILTRATION PLANTS

#### Sand Filter & Carbon Filter

It is most commonly used type of filter, water moves vertically through sand which often has layer of activated carbon or anthracite coal above the sand, removes the turbidity or suspended solids from the water. Carbon Filters generally use to remove colour, odour & chlorides, volatile organic compounds, sediment with turbidity or suspended solids.

#### **Reverse Osmosis**

Around the world household water purification system includes Reverse Osmosis step, are commonly use for improving water for drinking & cooking. Also get use in the industry.





# **OUR OTHER SERVICES**

#### **Operation & Maintenance**

We are well known service provider in case of all water treatment plants, so able to handle operation & maintenance in well known industries. While providing services we are able to achieve our motto by keeping all the parameters at desired level. Proper preventive maintenance & optimum use of chemicals are our strong points.

#### **Laboratory Analysis**

To control all the parameters at desired level it is essential to keep close watch on it. To serve this purpose, we are ready with well equipped laboratory for all physical, chemical parameters as well as microbial analysis, portability tests, treatability study.

#### **Air Monitoring**

Ambient, work place monitoring: Nitrogen Dioxides (Nox), Sulphur Dioxides (Sox), Carbon Monoxide (Co), Respirable Suspended Particulate matter (RSPM). We also provide scrubbers.

### **Stack Monitoring**

Nitrogen Dioxides (Nox), Sulphur Dioxides (Sox), Carbon Monoxide (Co), Suspended Particulate matter (SPM).

## **Noise Level Monitoring**

Decibels

### **MPCB Compliances Clearance Services**

As it is difficult for any organization to keep consents & Environment statement on line, we are ready to serve you for it.

Supply of all the chemicals for water & waste water treatment. Cooling Tower, Boiler Chemicals, Polyelectrolyte, RO, etc

Anti-scalent pH Booster

Anti Corrosion Sludge Conditioner

Anti-Algae Dis-Scalent

More & More Services you will hire from us, More & More Healthy environment you will get.



# OUR RESPECTED CLIENTS...















































































































































Join in this revolution with us.....



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