Complete Solution for Water and Wastewater Treatment











About u

We provide sustainable water solutions

Shrilaxmi engineering works specializes in water treatment solutions and provides the complete range of services required to design, build, maintain and upgrade water and wastewater treatment facilities for industrial clients and public authorities.

SLEW

Founded by Sh Ram Dyal ji, SLEW was established with a vision to become the leading Indian water, wastewater and reuse solutions provider in the middle market. We offer global solutions for desalination, water, wastewater, and food & beverage processing.

We provide leading edge sustainable solutions by deploying our highly experienced and highly responsive team. Our staff, comprised of sales, service, technical and engineering professionals, are dedicated to achieving our clients' economic and operational goals.

We have designed and built more than hundreds of plants for clients specially in North India. SLEW has a reputation for innovative engineering and fast deployment to meet the needs of clients all overIndia.

With over 17 years of combined operational experience and attention to energy savings, SLEW has developed state-of-the-art applications and cost-effective solutions for municipalities and clients in the food & beverage, power, mining & metals and agriculture industries & residential projects.

WHAT IS WASTE WATER TREATMENT

Water is an important element for most of the domestic and industrial works. Natural water is pure and safe but the used water is full of contaminants and waste particles- and it is this contaminated water which is called wastewater. This kind of water is unsafe to be released into the environment or to utilize for any task. The different kinds of contaminants found in wastewater are suspended solids, BOD leading to high organic pollution as well as nutrients like phosphates & nitrates that abet a BOD condition. Thus, there is always the need of wastewater treatment which implies to improve the water quality as per the set standards to ensure a safe re-use of the same water. The wastewater treatment is carried by wastewater treatment plants. There are various kinds of wastewater treatment plants

> SO 9001: 2015 GERTIFIED C TAL WASTE WATER SOLUTIONS



Bar Screen SLEW

Bar screen and screening water treatment is the first process unit operation used at wastewater treatment plants. Screening removes objects such as rags, paper, plastics and metals to prevent damage and clogging of downstream equipment and piping. Cleaning frequency depends on the characteristics of the wastewater entering a plant.

Bar Screen Operation and maintenance considerations

- Check and clean the bar screen at frequent intervals.
- Do not allow solids to overflow /escape from the screen bar screen
- Ensure no large gaps are formed due to the breakage of the screening water treatment.
- Replace breakage bar screen immediately.
- Mechanically cleaned screening system to remove larger materials because they reduce labor cost and they improve flow conditions and screening capture.
- Mechanically cleaned bar screen should have a standby screen to put in operation when the primary screening device is out of service.

Daily and weekly maintenance work

- Check gear box oil qty periodically and completely drain out oil and replace afresh as per manufacture's recommendation.
- Check oil pump every day ,top up if necessary
- Check every day chain alignments and must periodically 4 hrs once chain cleaned or removed impurities materials.

Main use of screening water treatment

- To remove the suspended solids
- To avoided the pump cloaking
- To increase the Bacteria attachment in the FBBR system
- To reduce the Studge Quantity in filter press 5 CRTIFIED
- To Reduce the short-circuit in <u>Electro Coagulation System</u>
- To avoided the solids cloaking in the air distribution system in Equalization tank
- To increase the air volume in Equalization tank

Project Brief of screening water treatment plant

Auto is engaged into printing of textile garments using pigments and reactive colours. The Effluent Treatment Plant is designed to treat 40m3 per day of the effluent to achieve the norms prescribed by the local g overning bodies and BSR guidelines. The Factory presently produce only up to 10m3/Day Effluent. The ETP is designed for higher capacity considering the future expansion and addition of Washing Process.

Plan Capacity of screening water treatment plant

The screening water treatment Plant is designed to treat wastewater generated from the processing unit. The Effluent treatment plant is designed to treat 40m3/day of Washing & Printing combined effluent generated from the process house (Washing 15m3/D ay & Printing 5m3/Day). The plant will be capable of operating at the flow rate of 2m3/hr. The Present Effluent generation is 10m3/Day and the Plant is operated for 10 -12 Hours per Day with 50% flow rate.

Sewage Treatment Plant

We Design, Manufacture, Supply, Erection and Commission Sewage Treatment Plants (STP) on Turnkey basis.

Moving Bed Biofilm Reactor (MBBR)

technology



Moving Bed Biofilm Reactor (MBBR) processes improve reliability, simplify operation, and require less space than traditional wastewater treatment systems.

Employs thousands of polyethylene biofilm carriers operating in mixed motion within an aerated wastewater treatment basin. Each individual biocarrier increases productivity through providing protected surface area to support the growth of heterotrophic and autotrophic bacteria within its cells. It is this high-density population of bacteria that achieves high-rate biodegradation within the system, while also offering process reliability and ease of operation.

This technology provides cost-effective treatment with minimal maintenance since MBBR processes self-maintain an optimum level of productive biofilm. Additionally, the biofilm attached to the mobile biocarriers within the system automatically responds to load fluctuations.

ctual Bio Growth Achieved by SLA

Effluent Treatment Plant

We Design, Manufacture, Supply, Erection and Commissioning Effluent Treatment Plant (ETP) on Turnkey Basis.

For various types and natures of wastewaters, effluents which combines advanced physico-chemical treatment processes with tertiary polishing system for the removal of organic, inorganic, oil and grease, heavy metals & suspended solids.

Our methodology - We analyze the effluent samples for different effluent parameters as per nature and compositions, carry out the treatability studies by using different methods checking techno-commercial Feasibility and then designed treatment schemes, processes accordingly to suit the purpose and need.

Our ETP systems are very compact, tailor made designs, portable required very less foot-print to accommodate, energy efficient. The up-gradation, modification in the existing ETP system is possible to achieve desired limiting standard laid down by the Pollution Control Board (PCB).

The Principle :The principle of operation of ETP is Physico-Chemical treatment followed by Polishing Treatments like –Sand Filtration, Activated Charcoal treatment (Adsorption), Ozonisation (Chemical Oxidation), Ultra Filtration (UF), Reverse Osmosis (RO) and evaporation (If required).



LAMELLA CLARIFIER

Lamella Clarifier The big advantage of being small The SLEW lamella clarifier provides an effective answer for the clarification of water and waste water. The lamella clarifier achieves solid-liquid separation by directing the liquid between a series of inclined plates called lamella. The settling surface of each plate is equivalent to its horizontal projection. Lamellae are normally spaced approx. 50 mm apart, with the result that large settling surfaces are concentrated within a relatively small floor area.

Stacking the inclined plates results in the separator having upto ten times the clarification area of a conventional circular settling tank occupying the same floor space. In other words, for the same liquid flow, the lamella clarifier would occupy 1/10th the floor area of a conventional clarifier. A number of standard sizes are available, sizes designated by the settling area. The capacity for each size depends on the type of solid being separated and can be determined experimentally using settling tests.

MBR

The term 'membrane bioreactor' (MBR) is generally used to define wastewater treatment processes where a perm-selective membrane e.g. microfiltration or ultra filtration is integrated with a biological process – a suspended growth bioreactor.

MBRs differ from 'polishing' processes where the membrane is employed as a discrete tertiary treatment step with no return of the active biomass to the biological process.

All commercial MBR processes available today use the membrane as a filter, rejecting the solid materials which are developed by the biological process, resulting in a clarified and disinfected product effluent. A membrane bio reactor is essentially a version of the conventional activated sludge (CAS) system. While the CAS process uses a secondary clarifier or settlement tank for solid/liquid separation, an MBR uses a membrane for this function. This provides a number of advantages relating to process control and product water quality.



WATER SOFTENER

Water softening refers to the process of softening the hard water -so that it flows easy on the plumbing equipment's like pipes and appliances such as washing machines. Hard water is the water which is stuffed with magnesium, calcium & other minerals. The groundwater gathers these minerals from surrounding rock and soil. If the water tests 1 GPG or less, it's soft water but if it is something like 7 to 10.5 GPG, it's hard water. There are water softening plants that work to soften the hard water so that it can be used safely.



Benefits of water Softening

Hard water tends to leave scales or patches on pots, detergent curds on washing machine and soap films. Scales also buildup on the water heaters & reduce their lifecycle. Thus, water softening is extremely important to save the appliances and plumbing equipment's from these patches- that are not just unsightly but also prevent you from getting the most of their utilities. Besides, softened water will also reduce your cleaning time as there would hardly be scales or patches on



WATER TREATMENT FILTRATION PLANT (WTFP)

Water filtration plant, as the name suggests, is the plant engineered to filter wastewater. Raw water as released from household and industries is contaminated and pollutes the environment if it is allowed to flow as it is. Thus, the water filtration plants are used to purify the dirty water so that it can be reused for drinking & other purposes

BENEFITS

Water filtration plant helps a lot in saving the environment, the health of the living organisms and it also assures money-saving benefits through recycling of wastewater. However, the most important benefit of filtering wastewater is that it clears the raw water from its many harmful disease-causing contaminants that can pose serious health issues to us.Laxmi Water Technologies is one of the most sought-after names when it comes to high end water filtration plants in India. The company is known for its premium water filtration plants manufacturing, in full compliance to industrial standards. Moreover, it also extends expert servicing and maintenance assistance for the water filtration plants.

TOTAL WASTE WATER SOLUTIONS

INDUSTRIAL RO PLANT

We offer a wide range of industrial reverse osmosis Plants, according to We need for tap water, brackish water & sea water application. The production range starts from 100 LPH (Liter per hour) to 100 M3 per hour for 400 IBS to 45,000 TDS and reduce TDS @ 90-99%.

All our industrial reverse osmosis Plants are carefully customized and configured to suit the individual requirement of the output water, which varies from normal drinking application to the specific usage, such as food Processing, pharmaceuticals and boiler feeding requirement. This is done through an in depth and complete chemical analysis of the feed water

UV Disinfection of Drinking Water

Using ultraviolet (UV) light for drinking water disinfection dates back to 1910. It is a reliable means of disinfection which involves exposing contaminated water to radiation from UV light. The treatment works because UV light penetrates an organism's cell walls and disrupts the cell's genetic material making reproduction

cell's genetic material, making reproduction impossible.

A special lamp generates the radiation that creates UV light by striking an electric arc through low-pressure mercury vapor. This lamp emits a broad spectrum of radiation with intense peaks at UV wavelengths of 253.7 nanometers (nm) which research has



Salient Features :

- ·Produce high-quality dematerialized water
- \cdot Most modern membrane technology
- ·Modular design
- ·Low water-rejection rate
- ·Low operational and maintenance costs





Services offered in Zero Liquid Discharge Plant System ZERO LIQUID DISCHARGE PLANT

SHRI LAXMI offers complete thermal and non-thermal ZLD solutions to manage tough-to-treat wastewaters. SHRI LAXMI proprietary evaporators, brine concentrators, and crystallizers can help recover more than 95% of your wastewater while reducing the remaining brine as a product or solid. SLEW Severs total organic carbon (TOC) analyzers help control the quality of water to be reclaimed or recycled in semiconductor operations.

Zero liquid discharge technologies help plants meet discharge and water reuse requirements, enabling your business to:

- Meet Stringent Cooling Tower Blowdown And Flue Gas Desulfurization (FGD) Discharge Regulations.
- Treat And Recover Valuable Products From Waste Water Sources.
- Better Manage Thegenerated Output Water.
- Control The Water Quality That Is To Be Reclaimed Or Recycled.

Benefits of ZLD Plant

Zero liquid discharge plant technology is growing globally as an important wastewater management strategy to reduce water pollution and extend water supply.

The main benefits of ZLD are:

- Minimizes Wastewater Discharge
- Maximizes Water Recovery.
- Create A Valuable Product For Sal
- Removing Environmental Issues.

Wet Scrubbers



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Wet scrubbers are effective air pollution control devices for removing particles and/or gases from industrial exhaust streams. A wet scrubber operates by introducing the dirty gas stream with a scrubbing liquid – typically water. Particulate or gases are collected in the scrubbing liquid. Wet scrubbers are generally the most appropriate air pollution control device for collecting both particulate and gas in a single system.

Pollution Systems offers a variety of wet scrubber systems specifically designed for your process application. Many important operating variables are considered when evaluating the size and type of scrubber for any specific application, and your deadline is always a factor in our responsiveness.

Types of Wet Scrubbers

Chemical Scrubbers / Gas Scrubbers Particulate Scrubbers / Venturi Srubbers Ammonia Scrubbers **Chlorine Scrubbers** Particulate / Dust Scrubbers Sulfuric Acid Scrubbers

ULTRAFILTRATION PLANT

SHRI LAXMI We are a leading name in the field of offering Ultra filtration plants. These systems offer tangential flow pressure driven filtration process that help in efficiently separating particles on basis of their molecular sizes. With pore diameters of ultra filtration membranes being in range of 10 to 200 A, solvents and species that have diameters smaller than pore size of membrane passes through membrane and emerge as ultra filtrate (permeate). The particles that are rejected are progressively concentrated in retained stream.

We offer Ultra filtration Plants that are reusable and cleanable with standard chemicals and are designed using advanced process technology with the purpose of removing micro bacterial counts. These Ultra filtration Control Systems act as advanced Industrial Filtration System and find application as pre treatment step to the next in step reverse osmosis process.





MEMBRANE **LP - HP SWITCH** HOUSING 3

S.S. HOUSING



SILICA SAND MEDIA

PUMPS

PP HOUSING & BAG

DOSING TANK

ELECTRICAL PANEL

MS VESSELS

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MAGNETIC FLOW METER

COMPONENTS (SLEW)



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MBBR MEDIA



MBBR (FAB) MEDIA



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TUBE SETTLER MEDIA



FINE BUBBLE DIFFUSER

AIR BLOWERS



COARSE BUBBLE DIFFUSER



PRESSURE GAUGE



SLUDGE FILTER PRESS

SLUDGE CENTRIFUGE

