



حلول خط الطاقة

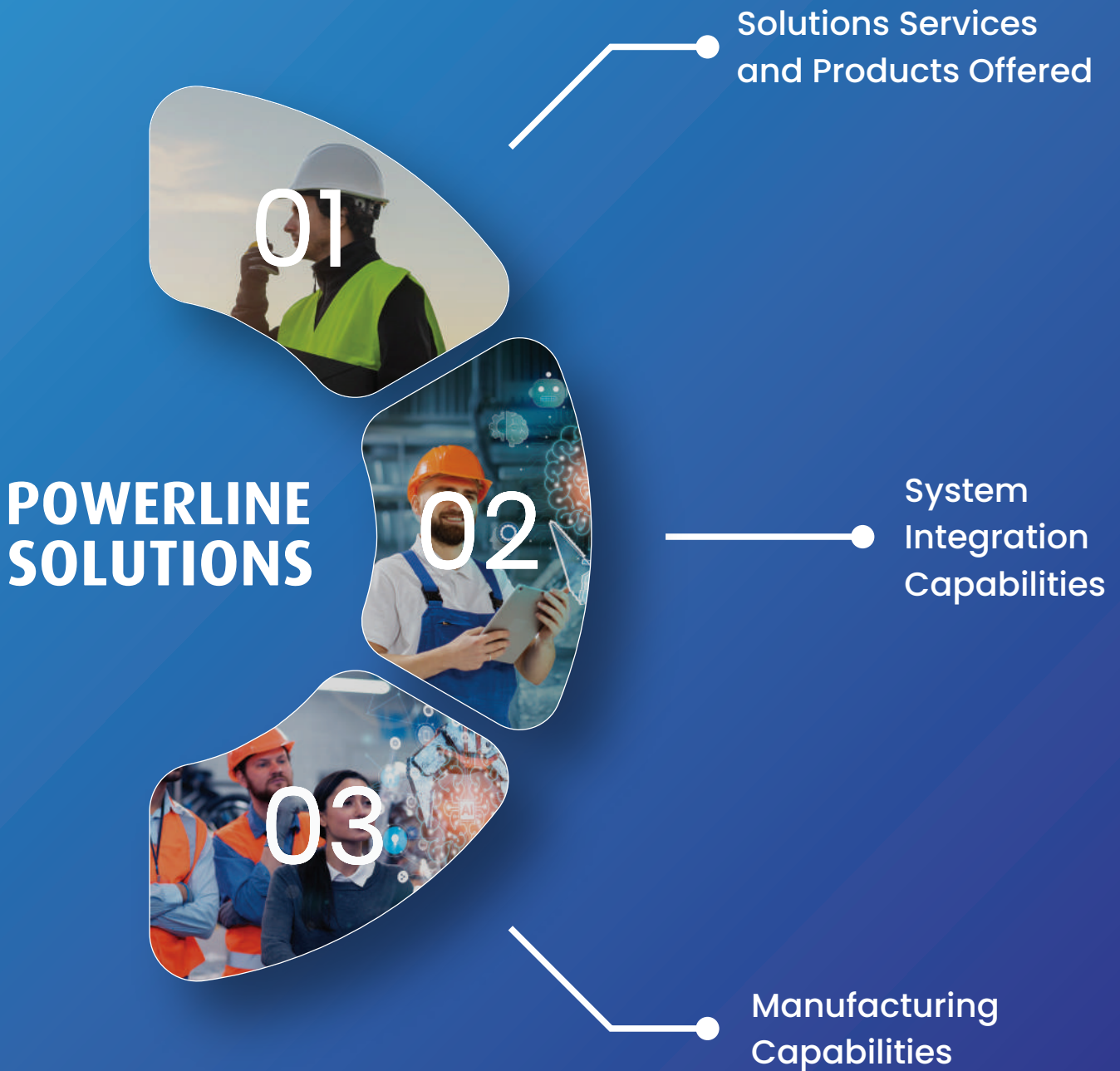
POWERLINE SOLUTIONS

**WATER & ENGINEERING
SOLUTIONS**

www.powerlinesolutions.com

Commencing its journey in 2007, Powerline Solutions has set the standard for excellence in niche industrial segments, leveraging our expertise and in-depth knowledge. With a proven track record spanning almost two decades in the Saudi Arabian market, we have successfully completed several projects in core industrial segments, with the majority characterized by their challenging nature.

At **Powerline Solutions**, we are founded on the principles of leadership and impeccable commitment to our values, which form the bedrock of our operations. Our core values include Ethics, Safety, Quality, Environmental Integrity, Rigorous Training & Employee Welfare.



Solutions Services and Products Offered:



▮ EPC Projects

▮ Supply of Specialized Equipment and Solutions: We provide a comprehensive range of

- Mechanical Equipment
- Power Transformers
- Switchgears & Protection Upgradation
- Health care systems equipment & solutions.
- Electrical equipment & Solutions
- Power Quality devices & Solutions
- Instrumentation Devices & Solutions
- Power Backup Solutions

▮ Expert Service Team: Our highly competent and factory Trained service team is equipped to handle any challenges in

- Static & rotating Mechanical Equipment
- Power Transformers
- Industrial Backup Power Systems
- Instrumentation & Control Systems
- Power System Protection
- Industrial Drives
- Power Quality Services
- Health Care Systems

System Integration Capabilities:



- Analyzer shelter and sample handling systems.
- Containerized emergency Power Backup Solutions.
- Containerized Modular RO Packages & Modular Sewage Treatment Plants
- Modular Engineering packages for process cooling systems, chillers and chemical dosing skids.

Manufacturing Capabilities:



- All types of gas detectors, Flame detectors, alarms and controllers.
- Critical control valves for industries such as Oil and Gas, Petrochemicals, Power, Water, Wastewater, submarine and Cryogenic applications.
- Electrical Panel enclosures and special application switchgear components.
- Diverse range of polymer and rubber products.

Partner with Powerline Solutions for impeccable commitment, unparalleled expertise, reliability, and innovation in industrial solutions and services. Let us empower your success.

Comprehensive Water and Wastewater Treatment Solutions

Our extensive range of water and wastewater treatment systems are designed to provide efficient, reliable, and sustainable solutions for various applications. Whether you're dealing with brackish water, seawater, industrial effluents, or municipal wastewater, our advanced technologies ensure optimal performance and compliance with stringent environmental standards.

Water Treatment Solutions

Welcome to our comprehensive guide on water treatment systems. Our advanced technologies and solutions cater to diverse water treatment needs, ensuring efficient and sustainable water management for various industries. Explore our range of systems designed to meet your specific requirements.

- **Brackish Water Reverse Osmosis (BWRO)**



Brackish Water Reverse Osmosis (BWRO) systems are designed to treat water with moderate levels of dissolved salts and impurities. These systems utilize semi-permeable membranes to remove ions, molecules, and larger particles, providing high-quality water suitable for industrial, agricultural, and potable uses.

- **Sea Water Reverse Osmosis (SWRO)**



Sea Water Reverse Osmosis (SWRO) systems are engineered to desalinate seawater, producing fresh, potable water from high-salinity sources. Our SWRO systems are robust and energy-efficient, making them ideal for coastal regions and maritime applications.

- **Ultra/Nano Filtration Systems**

Ultra and Nano Filtration Systems use advanced membrane technologies to remove fine particles, bacteria, viruses, and dissolved substances from water. These systems are essential for applications requiring high-purity water, such as pharmaceutical manufacturing, food processing, and potable water production.



- **Multimedia Filtration System**

Multimedia Filtration Systems utilize layers of media, such as sand, anthracite, and gravel, to remove suspended solids, turbidity, and particulate matter from water. These systems are crucial for pre-treatment processes, enhancing the efficiency of downstream treatment stages.



- **Electrochlorination System**

Electrochlorination systems generate chlorine on-site through the electrolysis of saltwater and common salt. This method provides a safe, reliable, and cost-effective solution for water disinfection, eliminating the need for transporting and storing hazardous chlorine gas. In some case based on the client's requirement, gas chlorination can also be provided.



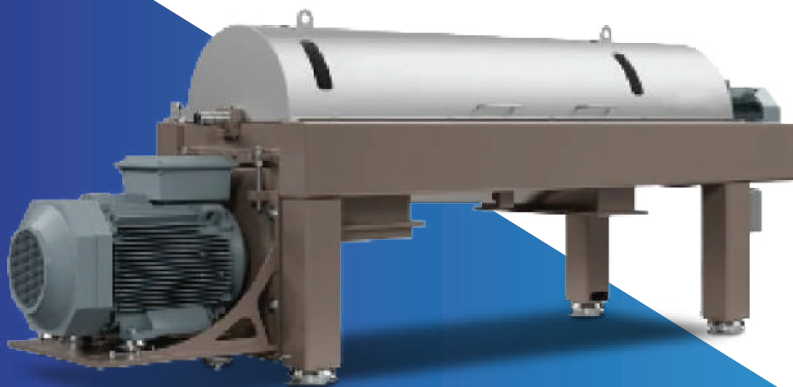
- **Chemical Dosing System**

Chemical Dosing Systems precisely inject chemicals into water or wastewater streams for coagulation, flocculation, pH adjustment, and disinfection. Accurate dosing ensures optimal treatment performance and compliance with water quality standards.



- **Sludge Thickeners and Decanters**

Sludge Thickeners and Decanters are designed to concentrate and dewater sludge from wastewater treatment processes. These systems reduce the volume of sludge, making it easier to handle and dispose of, while recovering valuable water for reuse.



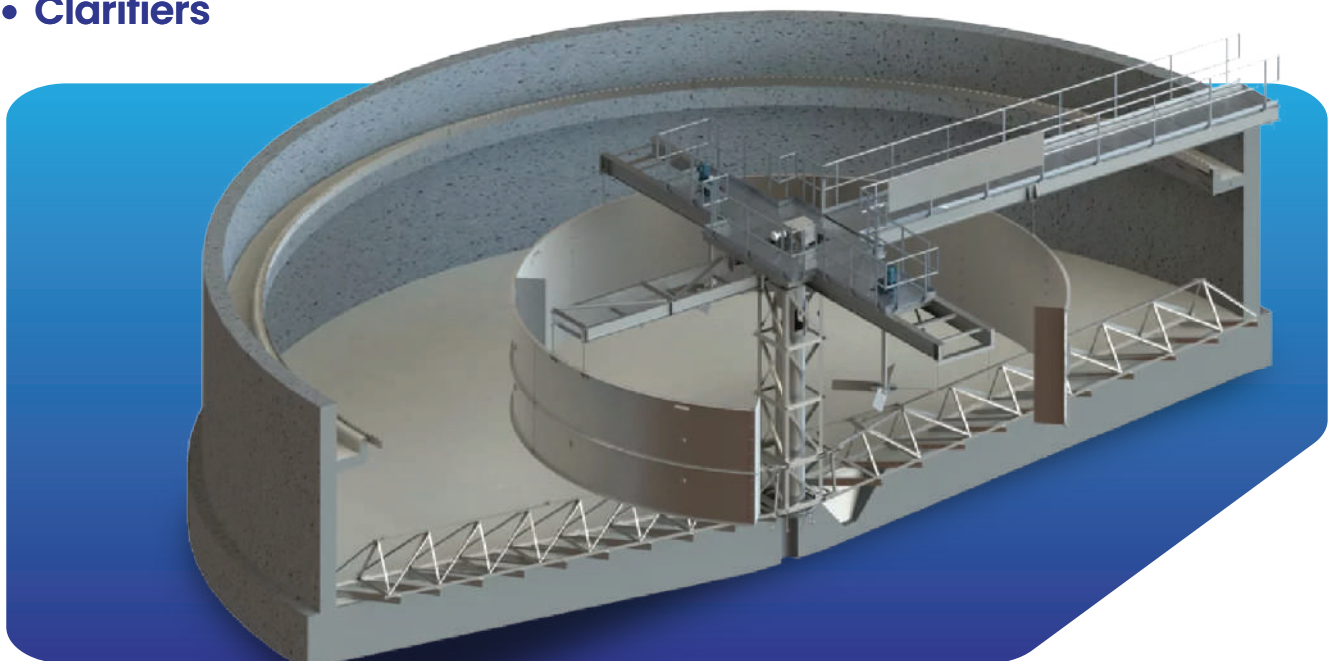
- **Packaged Plants in Container/Skids**

Our Packaged Plants in Container/Skids offer complete water treatment solutions in a compact, portable format. These turnkey systems are pre-engineered, assembled, and tested for rapid deployment, making them ideal for remote locations and temporary installations.

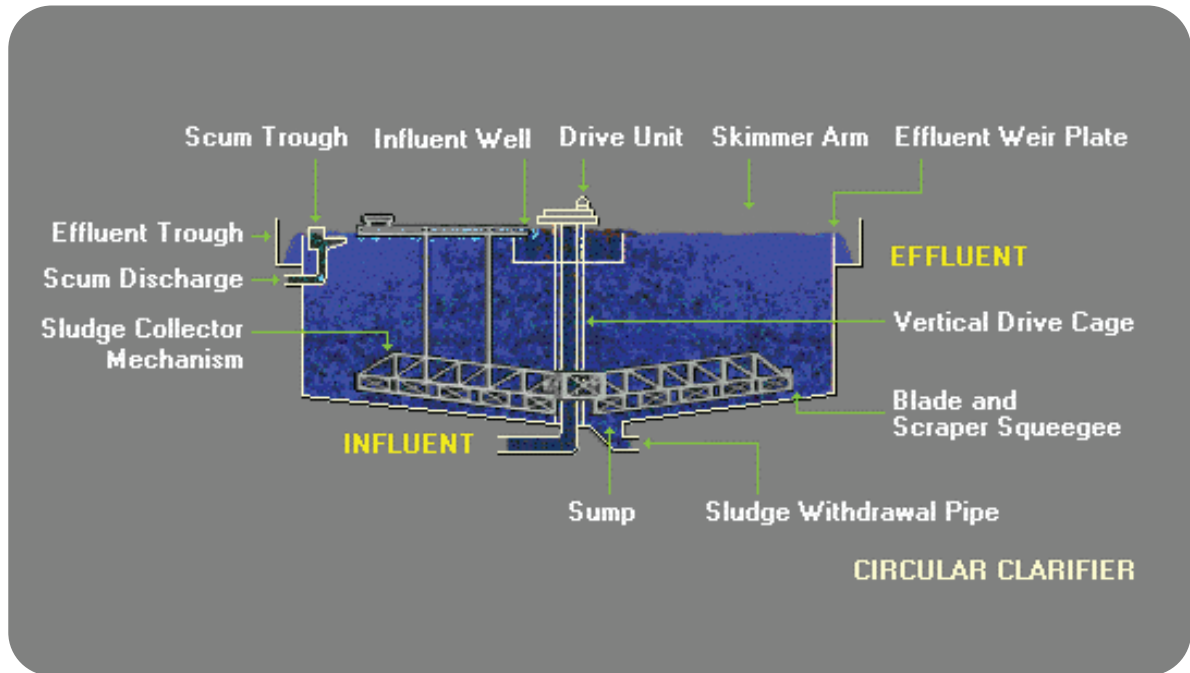


Waste Water Treatment

- **Clarifiers**



Clarifiers are used to settle suspended solids from wastewater, producing clear effluent and concentrated sludge. These systems are fundamental in primary and secondary wastewater treatment processes.



• Clarifloculators

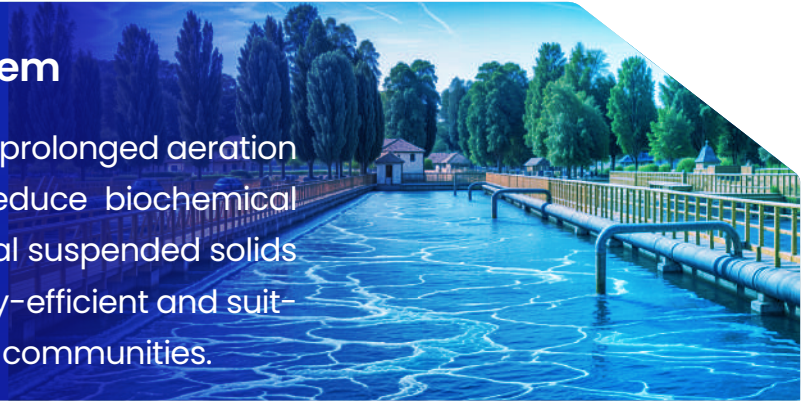
Clarifloculators combine flocculation and clarification in a single unit, enhancing the removal of suspended solids, organic matter, and nutrients from wastewater.



Blowers provide aeration in wastewater treatment processes, supplying oxygen to support biological treatment and ensure efficient degradation of organic pollutants.

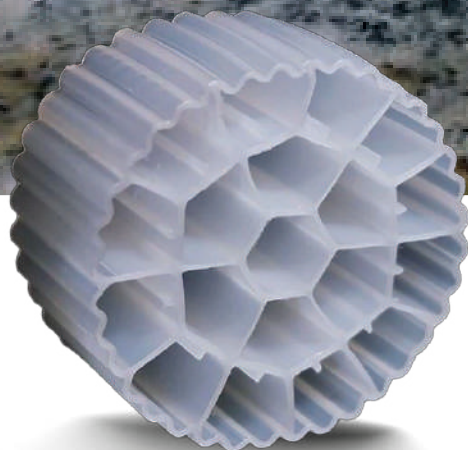
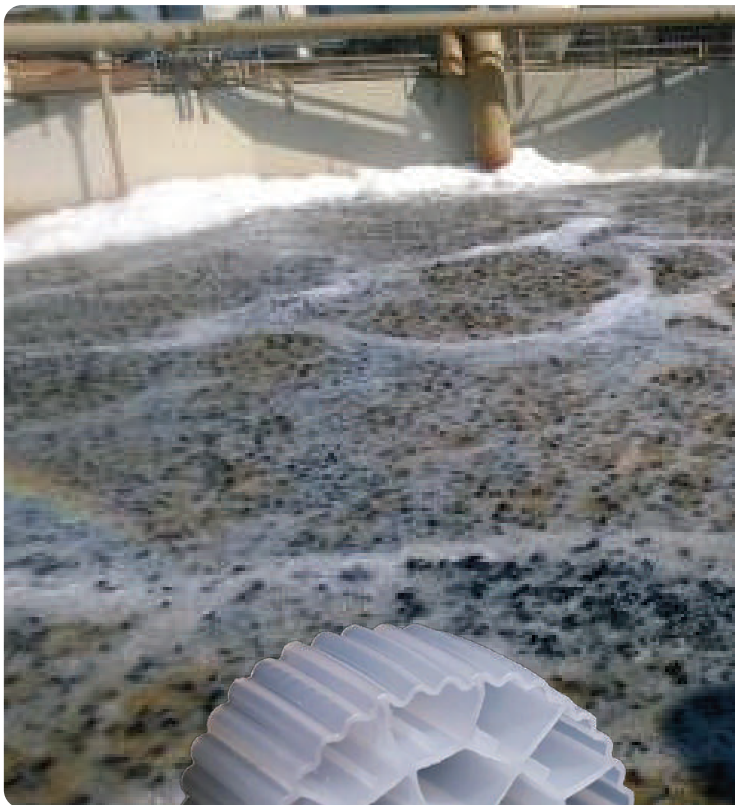
- **Extended Aeration System**

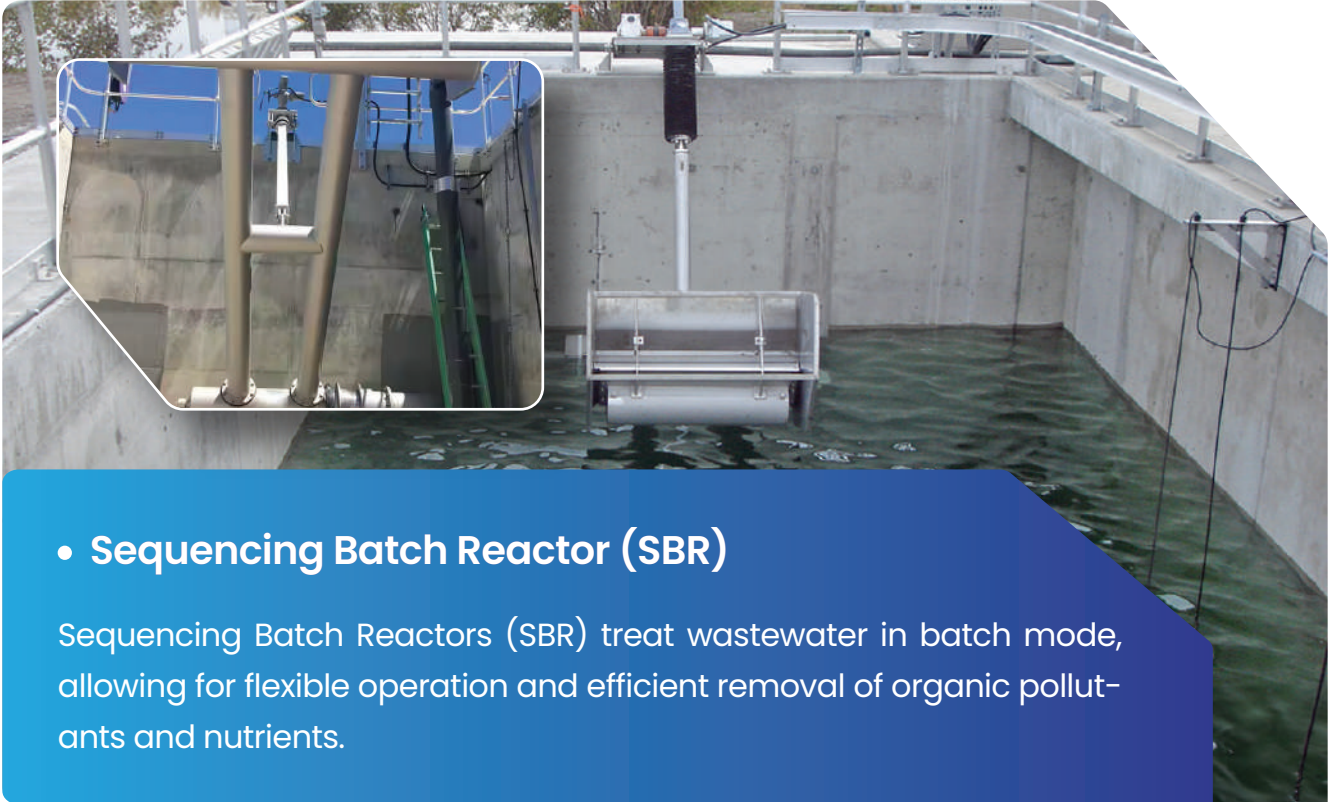
Extended Aeration Systems use prolonged aeration to stabilize wastewater and reduce biochemical oxygen demand (BOD) and total suspended solids (TSS). These systems are energy-efficient and suitable for small to medium-sized communities.



- **Moving Bed Biofilm Reactor (MBBR)**

MBBR systems use floating biofilm carriers within an aerated tank to enhance the biological treatment of wastewater. This technology is compact, efficient, and ideal for retrofitting existing plants.

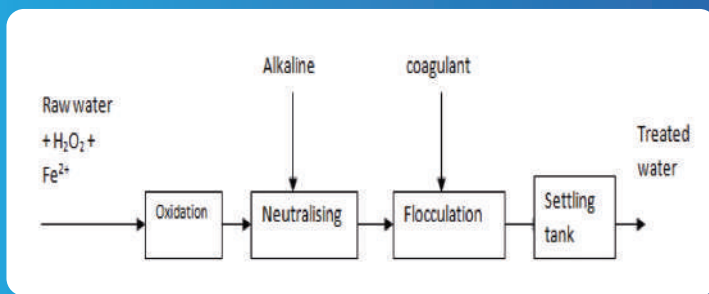




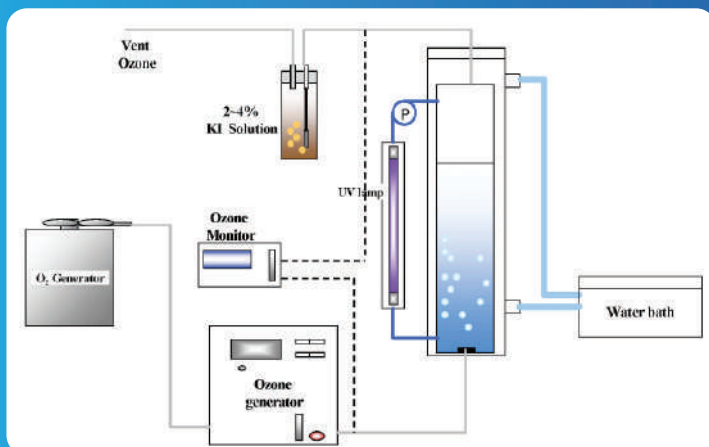
- **Sequencing Batch Reactor (SBR)**

Sequencing Batch Reactors (SBR) treat wastewater in batch mode, allowing for flexible operation and efficient removal of organic pollutants and nutrients.

- **Advanced Oxidation Process using Fenton/Ozone Treatment**



Fenton Processes



Advanced Oxidation Processes (AOP) such as Fenton and Ozone Treatment generate reactive radicals to degrade complex organic pollutants in wastewater, providing a high level of treatment for recalcitrant compounds.

- **Secondary Clarifiers**



Secondary Clarifiers settle biological solids after secondary treatment, producing clear effluent suitable for discharge or further treatment.

- **High Rate Solid Contact Clarifiers (HRSCC) and Enhanced HRSCC**



HRSCC systems rapidly mix and flocculate solids with chemical coagulants, producing clear effluent and dense sludge. Enhanced HRSCC systems offer improved performance and higher treatment capacities.



The important factor is it reduces the foot print as compared to a standard clarifier from 20-30%

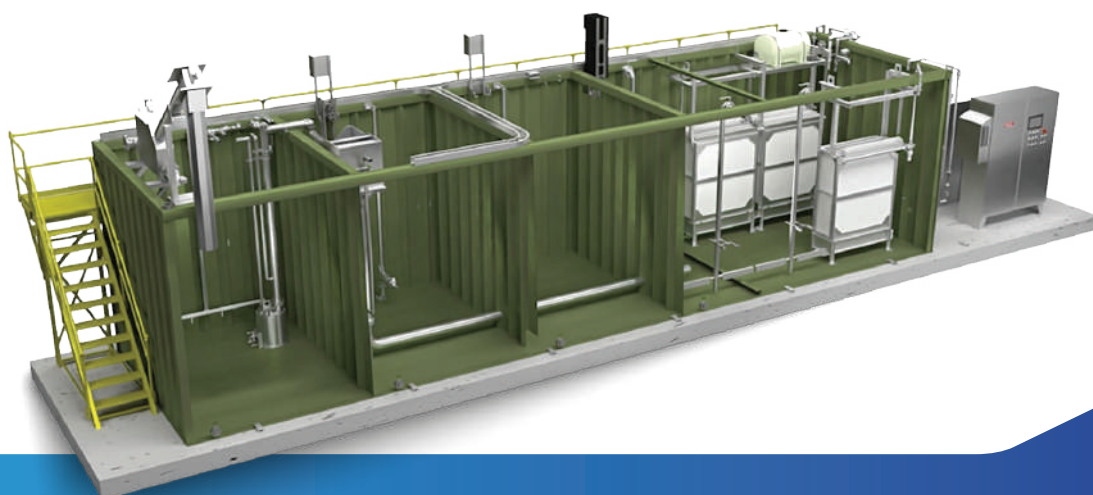
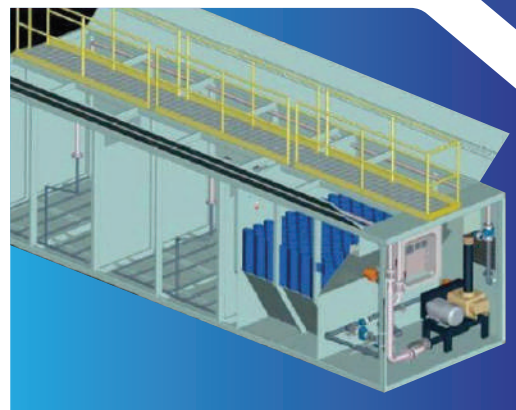
- **Sludge Systems**

Sludge Systems encompass various technologies for the treatment, dewatering, and disposal of sludge generated from wastewater treatment processes, ensuring efficient and sustainable management.

- **Packaged Plants in Container/Skids**

In line with our Experience. Customer. Service. initiative, PLS provides complete factory engineered packaged solutions. From initial concept and CAD design to modular skid packaging, PLS can produce complete solutions...not only provide loose components which require on-site installation and testing by our customers. Details matter. At PLS, we take into account every last detail from pipe size to reduce pressure drop to equipment placement to ensure proper flows and ease of routine service. If left to a mechanical contractor who is unfamiliar with the application and/or the equipment, problems could arise at start-up resulting in costly downtime or production delays. PLS packaged solutions are tested prior to shipment to limit problem situations at start-up. If any issues did arise, they are addressed in our facility, not in the field. The result? Customer satisfaction!

Our Packaged Plants for wastewater treatment in Container/Skids provide complete, portable solutions for treating wastewater in remote or temporary locations, ensuring compliance with environmental regulations.



Oil Water System

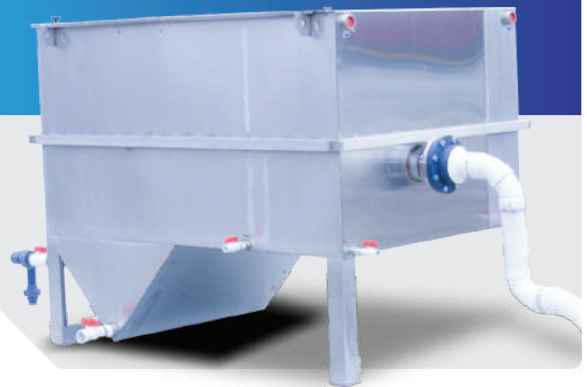
- **Dissolved Air Flotation (DAF)**



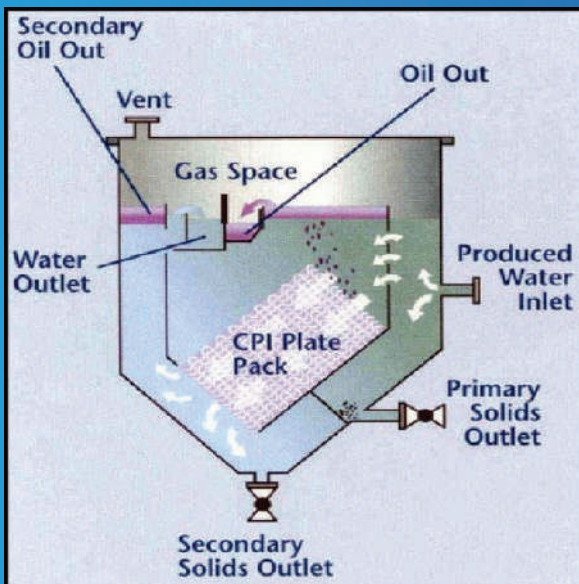
DAF systems remove oil, grease, and suspended solids from water by dissolving air in the water under pressure and then releasing it at atmospheric pressure, causing contaminants to float to the surface for removal.

- **American Petroleum Institute (API) Separators**

API Separators are gravity-based systems designed to separate oil and suspended solids from water, commonly used in the petroleum industry for primary treatment of oily wastewater.



- **Corrugated Plate Interceptor (CPI) Separators**



CPI Separators enhance oil-water separation through corrugated plates that increase the surface area for coalescing oil droplets, providing efficient removal of oil and suspended solids from wastewater.

Explore our advanced water treatment solutions to find the perfect fit for your needs. Our expert team is here to help you achieve optimal water quality and sustainability. Contact us today for more information and personalized assistance.

Special Engineered Products

Modular Chiller Package Integration

Our Modular Chiller Package Integration services offer customized, energy-efficient solutions tailored to your cooling needs. Designed for flexibility and scalability, our modular chiller systems provide optimal performance and reliability, making them ideal for a wide range of industrial and commercial applications.



Pump Skids Fabrication & Assembly

We specialize in the fabrication and assembly of cooling & Heating skid packages, providing turnkey solutions that include design, engineering, and installation. Our pump skids are built to meet the highest standards of quality and performance, ensuring efficient fluid handling for various processes. We specialize in pump skids, offering them as key components of our portfolio



▶ Pneumatic Operated Chemical Metering Pump Skids

Many chemicals are critical in protecting the pipelines transporting the crude oil or gas. These lines need to be dosed sometimes all the times against high pressures. The chemical like corrosion Inhibitors etc are dosed using pneumatically operated pumps or sometimes electrically operated pumps pumping fluids at an extreme high pressure. They are useful for installation onshore and off shore oil/gas platforms.



▶ Chemical Injection Skids



Chemical injection skids are system for injecting chemicals into various systems. The skids are designed specifically to meet the industrial standards and customers' requirements and specifications. The system comprises of equipment that are capable for accurate dosing. Oil and gas industries uses this equipment for applications like Well cleaning, protect from corrosion in pipelines , as scale inhibitor, thus increasing efficiency for oil recovery.

Expert Care for Reliable Systems

The Service team of Powerline Solutions provides maintenance, repair, and operational support to ensure efficient functioning of water treatment plants and engineered systems. They handle routine inspections, emergency repairs, and system optimization to maintain high standards of water quality and compliance with environmental regulations.



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