



Environmental Engineering Solutions

AL KHALILI UNITED ENTERPRISES LLC

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About Us

Al Khalili Group is a prominent, diverse business entity headquartered in Muscat, Sultanate of Oman. Established in 1976, it has progressively diversified into various business verticals such as building materials, hardware, power tools, construction machinery, paints and chemicals thereby becoming a trusted partner to all major building contractors in Oman.

The Al Khalili Group aims to deliver maximum value and make tangible differences to the success of clients, communities, and Oman's economy through leveraging its cumulative strength of products and services.

Vision

In line with the mission of the group, Al Khalili Projects Solutions team endeavors to contribute towards sustainability & environment conservation initiatives. We strive to deliver unrivalled quality, unbeatable value, rigorous adherence to our obligations with innovative and economical solutions

Al Khalili Project Solutions department of Al Khalili United Enterprises LLC), a part of Al Khalili Group, provides complete turnkey solutions in Wastewater treatment (STP, WTP & ETP) for Industrial & commercial sectors.

We carry out detailed engineering surveys & investigations, supply, assembly of civil & mechanical instrumentation works, installation, testing, commissioning, and stabilized operation of the plant.

Our products range from packaged MBBR, MBR, SBR, STP, ETP, Oil Skimmer, DAF, Lamella Clarifier, Surface Aerators, Oil Separators, and Online Mixing Systems, etc.

Additionally, Comprehensive Operations & Maintenance contracts for the STP & WTP are also provided to our esteemed clientele.



Why Choose Us?

- We aim to provide technical and maintenance options to support your day to day operations.
- We have the operational and financial capability to deliver professional services to the clients.
- 2500+ reliable, professional team that operates extensively.
- We provide round the clock, fast and efficient hard and soft services with the highest standards.
- Dedicated and efficient team to respond to any queries.
- We are ISO and OHSAS certified that enable us to work in the most challenging environments.

Our Team

It comprises of experienced professionals who have extensive skills in water and waste water management. Our management team and services teams understand the specialist nature of our customer's requirements and have a strong customer service reputation. We are committed to our work and passionate to deliver and exceed the expectations for every project. Our combination in technical and industry knowledge leads us to excel in everything we do

How We Deliver

- Understanding our customer's requirements and providing flexible customised solutions, packaging our services to best suit the needs, KPI's and expectations of our customers.
- Ensuring any team member interacting with our customers is professionally trained to deliver on the customer's specific requirements.
- Establishing performance measurement criteria and developing ISO certified quality management process to monitor and deliver on the agreed outcomes, as part of Al Khalili group.
- In-depth and professional reporting processes that are independently verified, to ensure contract performance.
- By ethical negotiating practices and partnering with the best value for money service providers.



Environmental Engineering Solutions

Environmental Engineering Solutions by Al Khalili provides a full range of services for the entire water cycle, from early-stage evaluation to design, construction, and delivery, as well as ongoing support and optimization of water-related assets. In collaboration with ISO 9001-certified partners, we are prepared to take on any projects in the water and wastewater sector in accordance with project requirements.

A Gestalt of Strenuous Expanses

- Treatment of sewage and effluent (STP & ETP)
- Treatment of water (sea water, brackish water, grey water)
- Technique for treating industrial wastewater in its entirety
- Plants for packaged MBR and MBBR
- Biological Digesters (Low Rate, UASB, and Hybrid)
- Utilizing aeration technology, aerobic systems (extended, 2-stage, MBR, SBR, Jet)
- Exceptional Lamella Clarifier
- DAF system
- Systems for Coarse and Fine Filtration
- Systems for ultra-filtration
- Systems for dewatering sludge
- Systems for Reverse Osmosis (skid and container mounted)
- Ion Exchange Techniques
- Systems that turn waste into energy produce power.
- H₂S Elimination System
- System for Vacuum Sewerage
- Underground drainage system
- Automation and Instrumentation for water and wastewater systems
- Ozone generators
- Swimming Pools.

Several of Our Clientele are



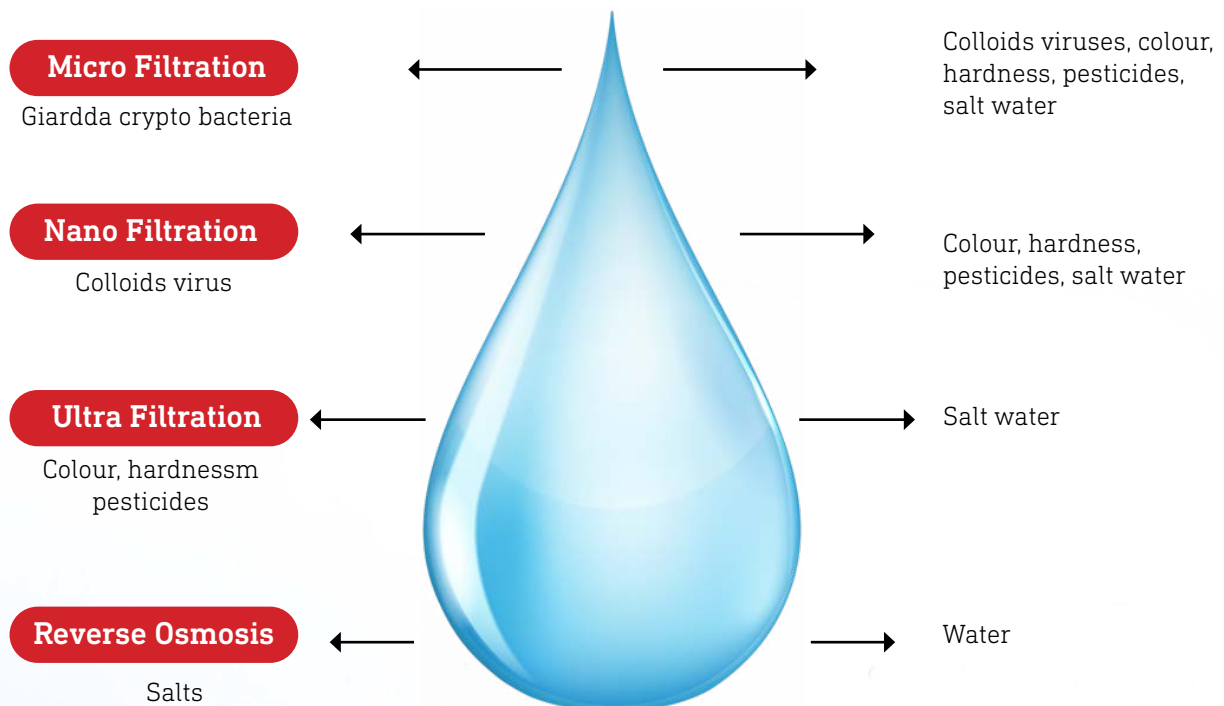
Our Services

- We undertake all related jobs of water and wastewater management.
- We do design, consultancy, engineering and construction.
- O&M Service of water and wastewater treatments systems.
- Our distribution channels are strong enough to accept part sales/ spares enquiries.
- (Resin/Media/Equipment)

Water Treatment Plants

EES can design, supply, install, and start up the following water treatment systems on a piecemeal or turnkey basis.

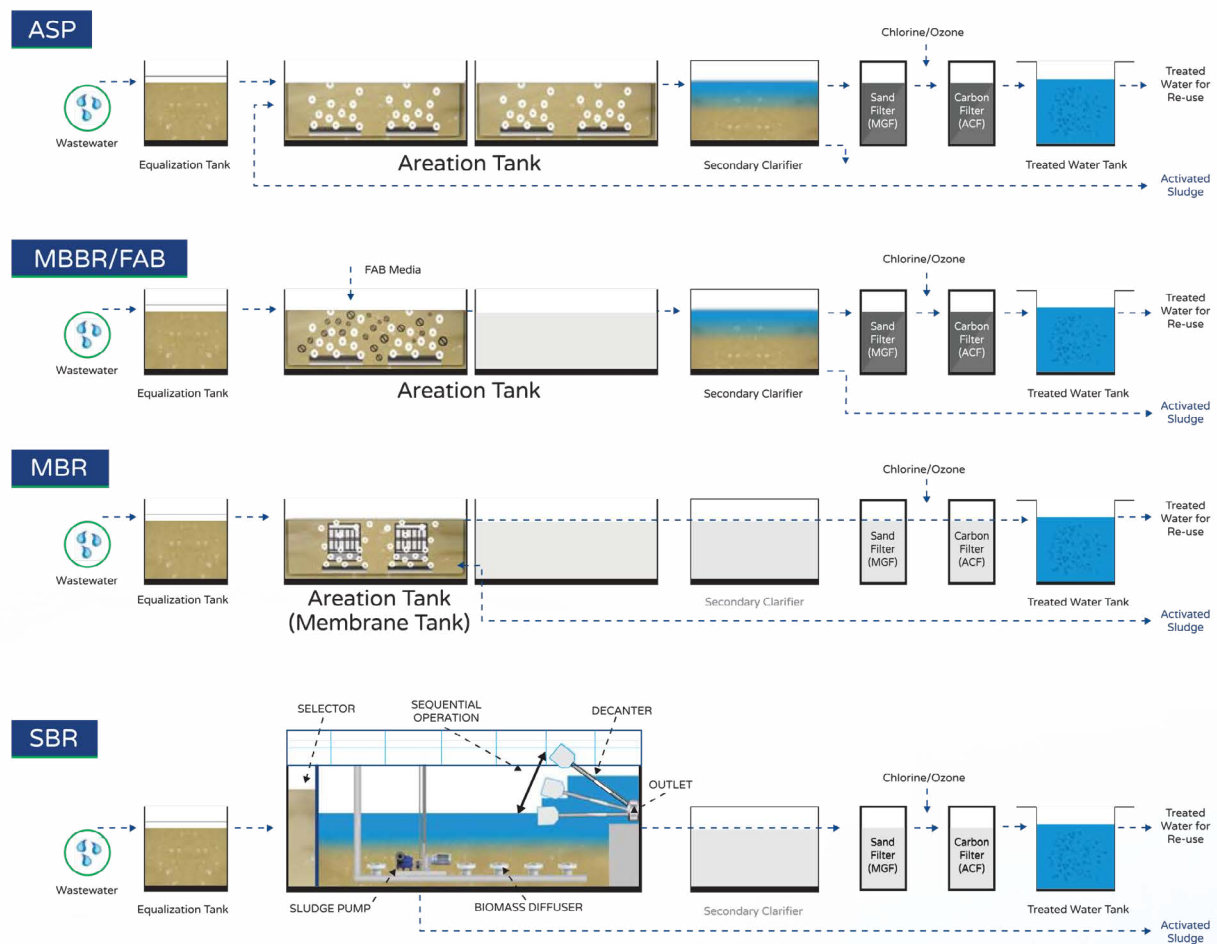
- Pressure Sand Filters for Suspended Solids
- Activated carbon filters for the removal of colour, odor, and trace organics
- Iron filter: for iron removal
- Arsenic filter for arsenic removal
- Softener Plants: for removal of hardness
- DM Plants for Producing De-Mineralized Water
- Membrane separation systems.



Sewage Treatment Plant

EES has a broad range of Sewage treatment technologies.

- Up flow Anaerobic Sludge Blanket Reactor (UASBR)
- Activated Sludge Process (ASP) and its process modifications.
- Submerged Aerobic fixed Film process (SAFF)
- Moving Bed Bio Reactor process.(MBBR)
- Membrane Bio Reactor (MBR)
- Sequential Batch Reactor (SBR)
- Rotating Biological Contactor (RBC)
- Bio- Toilets
- Bio Filter (Standalone STP)





Effluent Treatment Plants

Effluent can be treated in 4 stages depending on the requirement of the process. Projects are taken on piece meal or on turnkey basis:

A. Primary Treatment comprises of:

- Physical Treatment which further comprising of:
 - Screens
 - Grit Removal Mechanisms
 - Oil Separation Systems (TPI and CPI)
- Physio - Chemical Treatment which comprising of:
 - Chemical Preparation and Dosing System
 - Flash Mixer, Flocculate, Clariflocculator, Lamella settler, Tube-deck
 - Settler, DAF (Dissolved Air Floatation system)

B. Secondary Treatment comprises of:

- All types of biological systems individually or in combination (UASBR,
 - Bio-tower, MBBR, MBR, SBR, ASP and others)

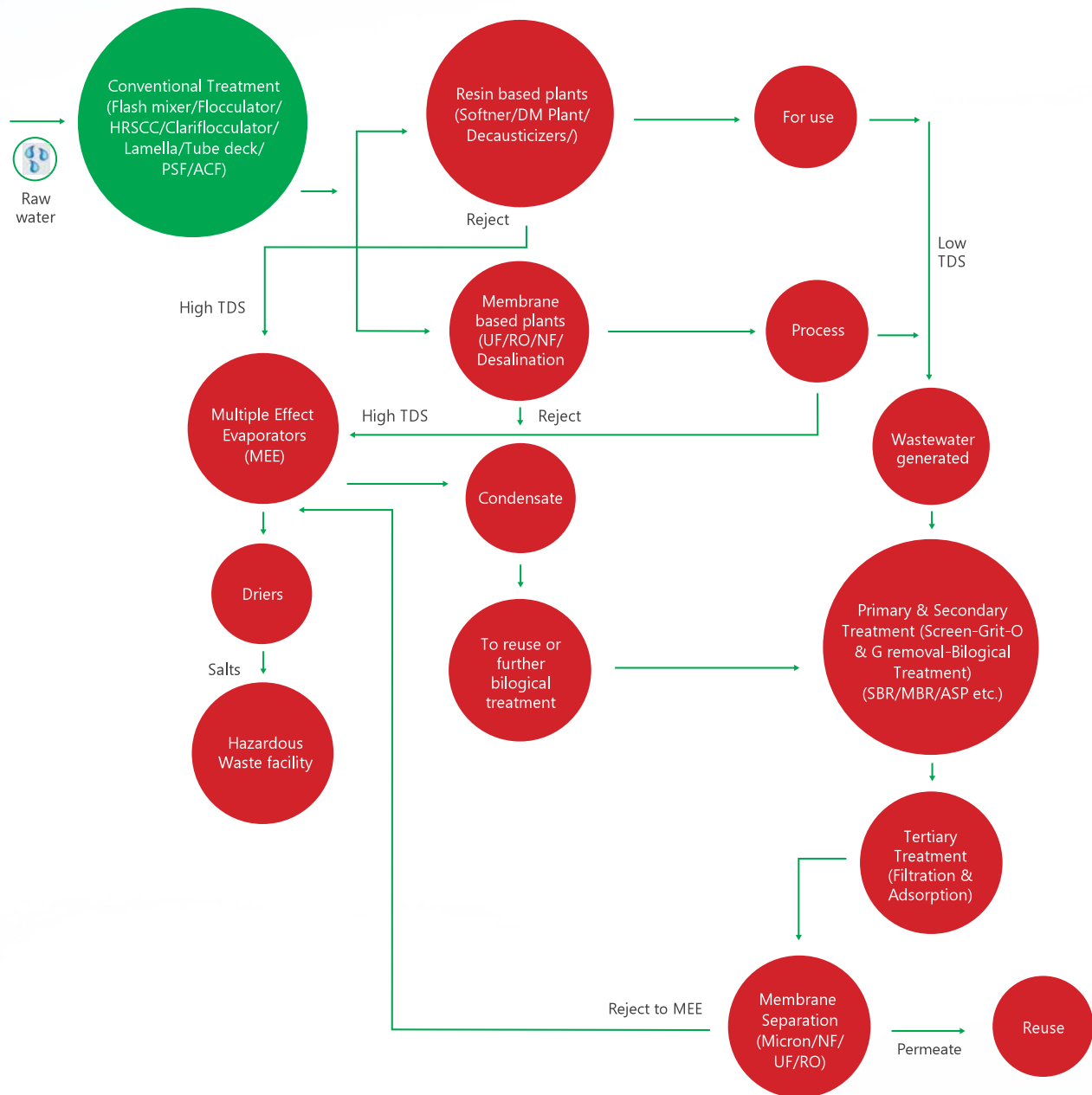
C. Tertiary Treatment comprising of:

- Physio-Chemical treatment
- Advanced Oxidation Technologies (O₃+UV /O₃+H₂O₂/UV+H₂O₂)
- Filtration and Adsorption
- Membrane Technologies (UF/NF/RO)

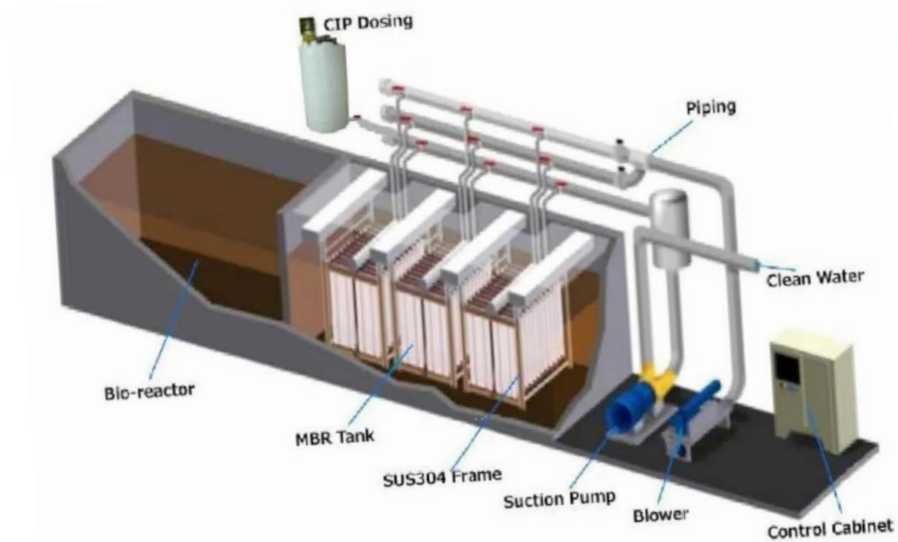
D. ZLD (Zero Liquid Discharge) Systems:

- MEE and Driers (Multiple Effect Evaporators and Driers)

Flow Chart of Effluent Treatment Plants



Hydrox Ultra MBR Technology



A high efficiency membrane-based technology called Hydrox Ultra Series combines MBBR and MBR for greater BOD removal (**90-95%**) in containerized packaging plants. Both models offer more treatment capacity because they are built for both indoor and outdoor environments.

Hydrox Ultra is a compact, completely automated device that uses either flat sheet or hollow fiber membranes that are immersed.

Features

Fully Automatic

High Efficiency

Compact Modular

Superior Product Water

Easy to Relocate

MEMBRANE BIO REACTOR SERIES

HYDROX ULTRA SERIES

Model	Hydrox Ultra 20	Hydrox Ultra 50	Hydrox Ultra 100	Hydrox Ultra 200	Hydrox Ultra 300	Hydrox Ultra 400	Hydrox Ultra 500
Capacity	20	50	100	200	300	400	500
Population	100	250	500	1000	1500	2000	2500
Inlet BOD, mg/lit	300	300	300	300	300	300	300
Outlet BOD, mg/lit	<10	<10	<10	<10	<10	<10	<10
Length, meter	4.5	5.5	7.5	11.5	15	18	24
Width, meter	2	2	2.25	2.25	2.25	2.25	2.25
Height, meter	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Power Consumption, HP	3	5	8	12.5	26.25	31	39
Approx. Empty Weight, Kg	3000	5500	6300	7000	9000	12000	16000
Approx. Operating Weight, kg	18200	24000	35800	55500	70000	79500	128500

Hydrox

MBBR Technology



The Hydrox System is based on the Moving Bed Bio Reactor and Tube settling technologies, and is unique due to its compactness and performance with respect to volumetric efficiency. These technologies are combined in prefabricated, skid mounted standardized tank system with variable length, suitable for overseas transportation. The overall size of the plants are based on the ISO freight containers.

Our Containerized Plant offers a number of standard model ranging from 5-500 m³/day. Hydrox Series, introduces High Rate Bioreactors for efficient BOD removal (85- 95%), incorporated into a small compact pack.

Features

Modular Design

Low Footprint

100% Recycle with UF

Mobile STP

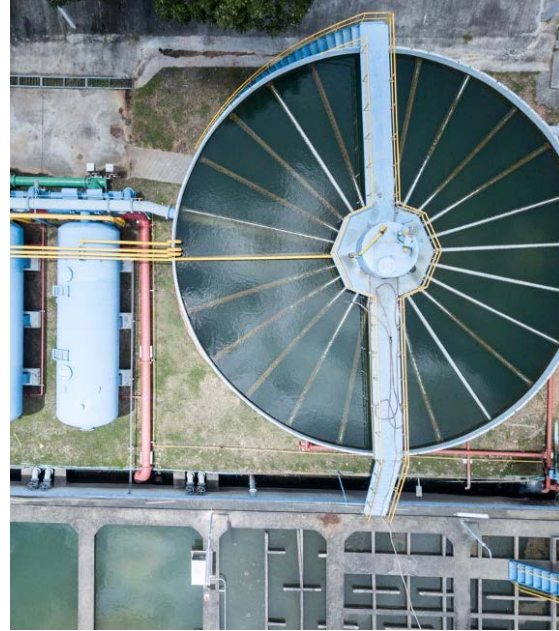
Fully Containerized

MOVING BED BIO REACTOR SERIES

HYDROX SERIES

Model	Hydrox Ultra 20	Hydrox Ultra 50	Hydrox Ultra 100	Hydrox Ultra 200	Hydrox Ultra 300	Hydrox Ultra 400	Hydrox Ultra 500
Capacity	20	50	100	200	300	400	500
POPULATION	100	250	500	1000	1500	2000	2500
Inlet BOD, mg/lit	300	300	300	300	300	300	300
Outlet BOD, mg/lit	<15	<15	<15	<15	<15	<15	<15
Length, meter	3.7	4.5	6.4	10.5	13.5	15	21
Width, meter	2	2	2.25	2.25	2.25	2.25	2.25
Height, meter	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Power Consumption, HP	3	5	8	12.5	26.25	31	39
Approx. Empty Weight, Kg	2500	3500	4500	6300	7500	9000	14000
Approx. Operating Weight, Kg	17300	22000	33300	53550	68250	76500	108500

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.

- All series treatment ability
- Water residence time 3-5 Min.
- Ion Bubble diameter 3-7 μ m
- Oil/SS Removal Rate Over 90-95%
- Highly efficient

Main Applications

Oil Refinery

Food & Beverage

Pharmaceutical

Printing & Dyeing

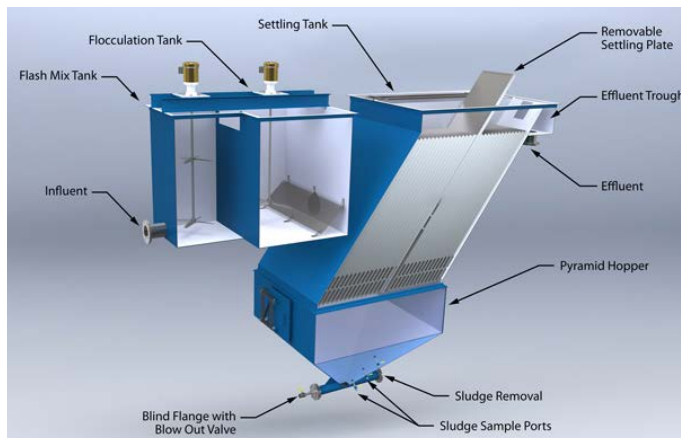
Paper Mills & Dairy

Electro Plating

Oil/Solid Separator

Lamella Clarifier

The Lamella Plate Vertical Clarifier is designed to provide low cost, high efficient solids removal from a wide range of waste and process liquids. The inclined plate design allows the total gravity settling area to be as much as ten times more than the actual floor space occupied by the clarifier. Integral chemical mixing and flocculation tanks are available, as well as options for enhanced sludge thickening



Features

Better Effluent Quality

Superior Solids Handling

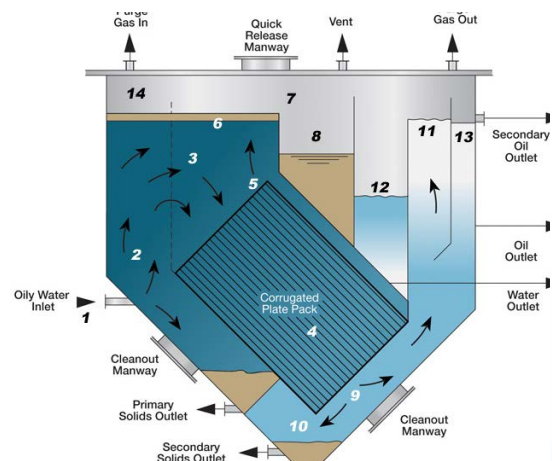
Low Maintenance

Design Meets API Standards

Easy to Relocate

Corrugated Plate Interceptor - CPI Separator

Neotech CPI allows the separation in the oily water treatment of the suspended solids and of the oil globules from water by gravity separation principle that is based on the difference of specific gravity between the phases (oil, solid, water). CPI is often used for a preliminary water treatment in order to process the waste water before the flotators.



Screw Type Sludge Dehydrator



The Screw sludge dewatering machine is integrating with auto-control cabinet, sludge thickening and dewatering body liquid collection tank. Therefore, the high efficiency flocculation, continuous sludge concentration, dewatering and filtrate collection can be automatically completed all in one, the collected liquid will be reflux or emissions finally.

Working Principle

The Sludge is pushed into the filter cartridge from the feed inlet and then moves to the sludge cake outlet under the pushing of the helical axis blades. Because the gaps between the helical axis blades will gradually become smaller, so the pressure to the sludge is becoming bigger. Under the differentiations of pressure, water comes out from the gaps between the fixed and moving plates.

Features

Energy Efficient

Compact Design

Easy in Operation

Low electricity

Simple Process

Applications

Petro Refining

Leather Making

Painting & Dying Papers

Biochemical Pharmacy

Food processing

Brackish Water Reverse Osmosis

50 cum/day - 1000 cum/day



Skid mounted or containerized brackish R.O. plants are suitable for producing drinking water from water sources like rivers, borewells etc

Brackish Water Standard Models*

Model	AKBW-50	AKBW-100	AKBW-200	AKBW-500	AKBW-1000
PERMEATE (Cum/day)	50	100	200	500	1000
FEED (CUM/day)	72	142	286	715	1430
RECOVERY - %	70	70	70	70	70
FEED - TDS (MAX)	10000	10000	10000	10000	10000
Permeate - TDS	<500	<500	<500	<500	<500

Brackish Water Reverse Osmosis

50 cum/day - 1000 cum/day

Basic Features

- Cartridge filter : 5 micron
- High pressure pump : SS 316 L
- R.O.pressure vessel : GRP
- Membrane : Hydronoutic / GE
- HMI : 6" with Simplex PLC

Instruments

- Flow meter : Permeat and Reject
- Conductivity : permeat
- pH : Feed
- Pressure switch : High pressure suction and discharge

Optional

- Dual media Filter
- SCADA
- Storage Tanks (Glass Fused steel tanks)

Sea Water Reverse Osmosis

100 cum/day - 1000 cum/day



Skid mounted or containerized Sea water R.O. Plants are suitable for producing drinking water from sea by sea shore bore well and direct intake.

Sea Water Standard Models*

Model	AKBW-50	AKBW-100	AKBW-200	AKBW-500	AKBW-1000
PERMEATE (Cum/day)	100	150	250	500	1000
FEED (Cum/day)	250	375	625	1250	2500
RECOVERY - %	40	40	40	40	40
FEED - TDS (Max)	45000	45000	45000	45000	45000
Permeate - TDS	<500	<500	<500	<500	<500

* We can also manufacture the plants based on client's requirements.

Sea Water Reverse Osmosis

100 cum/day - 1000 cum/day

Basic Features

- Cartridge Filter : 5 Micron
- High Pressure Pump : Duplex Stainless Steel / Ss 316 L
- R.o. Pressure Vessel : Grp
- Membrane : Hydronautics / GE
- Energy Recovery System: Px
- Low Pressure Pipes : Upvc
- High Pressure Pipe : Super Duplex Stainless Steel
- HMI : 6" With Simplex Plc

Instruments

- Flow Meter : Permeate and Reject
- Conductivity : Permeate
- PH : Feed
- Pressure Switch : High Pressure Suction and Discharge

Optional

- Dual Media Filter
- SCADA
- CIP and Flushing system
- Storage Tanks (Glass Fused steel tanks)

Grey Water Treatment System



Al Khalili Grey water treatment system is a pre-engineered packaged treatment plant to treat the grey water from home/mosque or public places. The grey water may include soaps, waste water from dish washer, and the leftover liquids from the wash basins.

The scheme utilized is a packaged skid mounted system with a special feature utilizing sand filter manufactured from reinforced polyester that offers exceptional features with the enhanced high filtration sand bed in order to obtain up to 25% more filtration capacity than commonly used standard filters. The filtered water then passed through a secondary carbon filter which will remove the colour and odour from the water.

The filters to be considered for back wash on predetermined time duration or every one day operation the backwash in the system is basically performed by utilizing the same pump operated by means of control valves. The treatment scheme is so designed that high quality treated water is achieved in outlet of the filter, to control the possibility of carryover of pathogenic organisms system is provided with the chlorine dosing system by means of dosing skid and tanks.

The complete unit is assembled in a skid for the easy transportation and installation.

Some of **Our Products**



Mixture Agitator



Pressure Filter



HD Disc Diffuser



Dosing Pump



Ultra Filtration System



Step Screen



Sewage Pumps

Other Wastewater Treatment Equipments



**Belt Type
Oil Skimmer**



**Tube Type
Oil Skimmer**



**Disc Type
Oil Skimmer**



Static Mixer



Booster Pumps



Fixed Surface Aerator



Floating Surface Aerator



**NeoTech
Water Solutions**

Our Associates



شهادة انتساب Membership Certificate

Oman Chamber of Commerce Industry hereby certifies that the		تشهد غرفة تجارة وصناعة عُمان بأن الخليلي للانشاءات ش م م	
CR No	1039784	1039784	رقم السجل
Registered in the grade	Excellent	الممتازة	سجلت بالفئة
OCCI No	106	106	رقم الغرفة
Date of issue	02/12/2020	02/12/2020	تاريخ الإصدار
Date of expiry	31/12/2022	31/12/2022	تاريخ الانتهاء
Head Office	Muscat	مسقط	المقر الرئيسي



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AL KHALILI GROUP

WAY NO.4006, BUILDING NO.433, BOUSHER, MUSCAT
P.O. BOX. 1869, P.C. 112, RUWI
SULTANATE OF OMAN

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

TRADING OF ELECTRICAL, BUILDING MATERIALS, HARDWARE, SALES AND
INSTALLATION OF IT PRODUCTS, EXECUTION OF CIVIL ENGINEERING PROJECTS
LIKE RESIDENTIAL & COMMERCIAL BUILDINGS

Original cycle start date:	15-09-2012
Expiry date of previous cycle:	14-09-2021
Certification / Recertification Audit date:	02-09-2021
Certification / Recertification cycle start date:	11-11-2021
Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on:	14-09-2024
Certificate No.: OM002098	Version: 1 Issue Date: 11-11-2021



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Certification Body Address: 5th Floor, 66 Prescott Street, London, E1 8HG, United Kingdom

Local Office: Bureau Veritas Middle East LLC, Office 6A, 6th Floor, Coral Building, Al Khuwair, P.O.Box 110, P.C.134, Muscat, Sultanate of Oman

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: +968 2496 8000



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