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**CLD**<sup>TM</sup>  
CARE IN EVERY DROP

Water Recycling  
Systems

# THE COMPANY

CLD - Chemical Liners & Descalers are the pioneer in the field of water & waste water treatment having served this industry for the last 40 years with more than 50000 installations. It was founded by our MD Mr. Ashok Dayal- a **Chemical Engineer from IIT, Delhi** in the year 1978. We have worked on various projects in North India, where we have either provided equipment, services or built turn key plants. Our team has over 39 years of combined experience in water and wastewater treatment design, installation, commissioning and hand over. We are dedicated to provide optimum solutions to Industrial and Commercial segment clients. At CLD, every individual is committed to protect the environment, therefore all our equipment and designs are developed with the environment in mind. CLD is specialized in the designing and manufacturing of Electro Coagulation, Reverse Osmosis Plants, water treatment plants and domestic water treatment Plants, for which we are the sole agents in Northern India.

CLD also specialize in:

Full range of Electro Coagulation / MBBR / Bio Digester.  
Full range of filtration equipment. Replacement of existing Electro Coagulation Reactors from other manufacturers. Spare and Servicing Of Water Treatment Plants and their accessories.

## Why Sewage Recycle ?

Less than 1% world's fresh water is available for human consumption. With the water bodies increasingly getting contaminated and with the change in the precipitation patterns across the world, water is increasingly getting dearer. Further with metros, cities and the townships growing exponentially the existing water resources are inadequate to meet the increasing demand. This is more true for India where more than 80% of the rainfall happens in a span of 3-4 months in a year, resulting in the rain water flowing in the sea. This coupled with ineffective/outdated water management methods reduces inflows in to the storage areas and results in depleting ground water resources. With the municipalities restricting the water supply, the housing sectors has to look for alternate methods of water recycling.

One of the trusted and reliable methods of water recycling is sewage treatment. The recycled water can be used for Landscaping, Flushing and Washing vehicles.

The system is very efficient, effective and economical. Typical pay back period is 2 years.

## CLD Moving Bed Bio Reactor (MBBR)

The CLD MBBR is designed as a single tank unit, incorporating a bar screen chamber, specially developed synthetic media to facilitate attached growth process, oxygen transfer through diffused membrane aeration, a tube settler and chlorine contact tank for disinfection.



## Features

- Removes hydrocarbons and BOD/COD in contaminated water through an attached growth biological treatment technology.
- Uses oxygen transfer with a large protected biofilm attachment area to achieve high removal rates.
- Incorporates neutrally - buoyant Media Pac.
- Capable of treating a variety of flow rates and contaminants.
- The MBBR media Pac incorporates high surface area and large void spaces that are aggressively sloughed to eliminate biofilm growth and fouling.

## Advantages

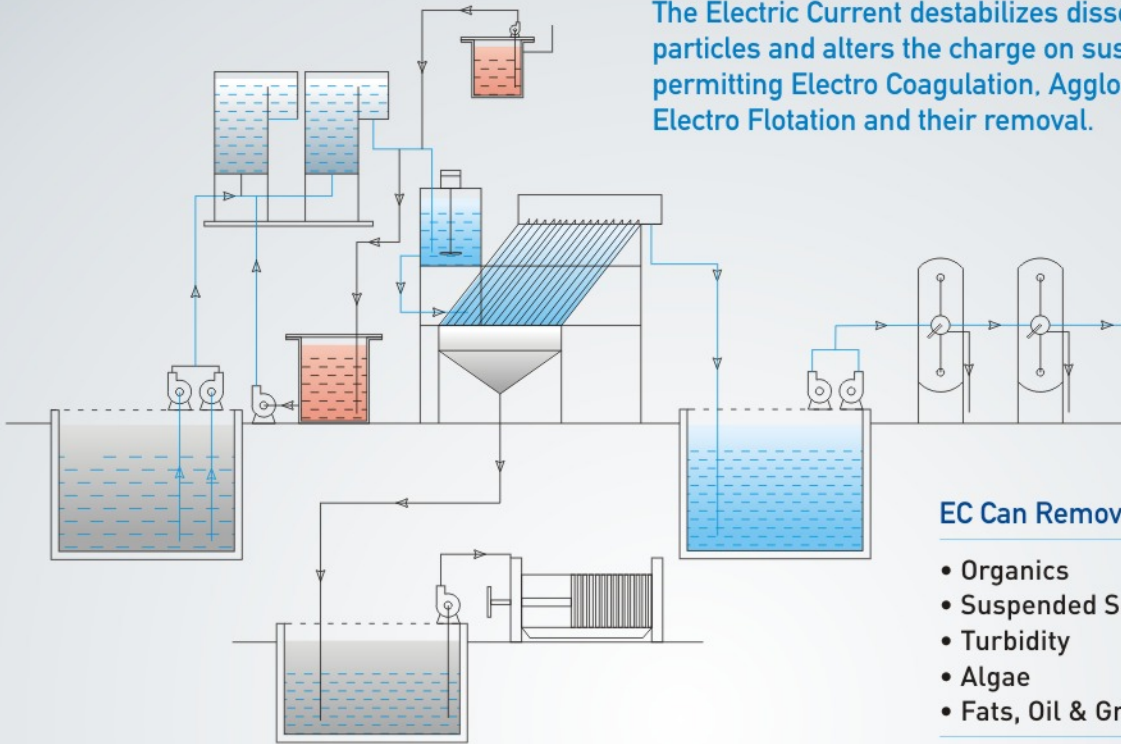
- Less Land Usage
- Less power and chemical requirement
- Less operating cost
- Less monitoring of Mixed Liquid suspended solids

## Treated Water Quality (Domestic Effluent)

Parameters	Inlet	Before Tertiary Treatment	Post Tertiary Treatment
BOD Mg/L	250-300	<50	<30
COD Mg/L	400-500	<200	<150
TSS Mg/L	150	<30	<5
Oil & Grease	<20	<10	<10

# Electro Coagulation Technology

EC is a technique involving the passage of Electricity through Water or Effluent to be treated.



The Electric Current destabilizes dissolved and colloidal particles and alters the charge on suspended matter permitting Electro Coagulation, Agglomeration, Electro Flotation and their removal.

## EC Can Remove

- Organics
- Suspended Solids
- Turbidity
- Algae
- Fats, Oil & Grease
- Heavy Metals
- Colour &
- Bacteria



## Features

- Non biological
- Accelerated start up
- Start and stop at will
- Low Carbon Foot print
- Small Civil foot print
- Packaged modular in construction
- Noiseless operation
- Environmental, operator and user friendly
- Custom designed, Easily expandable
- Conserves Water, Energy and Chemicals
- System designed for continuous or batch operation
- Can be retrofitted in the existing facility

## Typical Results

Parameter	Units	Inlet	EC-STP		Conventional STP	
			Result	Reduction	Result	Reduction
Turbidity	N.T.U.	30	1.7	95%	10	66%
S.S.	PPM	320	20	94%	55	83%
COD	PPM	400	60	85%	108	73%
BOD	PPM	250	25	90%	25	90%
D.O.	PPM	Nil	4	-	Nil	-
Oil & Grease	PPM	30	5	83%	No effective Removal	-
E. Coli		Present	Nil	100%	Present	-



# COMPARISON BETWEEN VARIOUS WASTE WATER TREATMENT TECHNOLOGIES

Sr. No.	Aspect	Conventional Technology	MBR Technology	Direct Current Ionization Technology
1	Fixed Cost	High fixed costs - civil + plant & machinery	Extremely high initial investments - civil+ plant and machinery	Cheaper than any other biological system taken as whole project cost including civil
2	Power and operating costs	High power cost, total operating cost is power + chemical+ consumable + sludge disposal = Rs 16/m <sup>3</sup> of sewage treated	Comparatively lesser power cost, total operating cost- power + chemical + consumables + sludge disposal = Rs 12/m <sup>3</sup> of sewage treated	Power is least among any biological system, operating cost--- power + chemical+ sludge disposal + consumables = 5-6 Rs/m <sup>3</sup>
3	Type of process	Biological	Biological	Non-Biological
4	Dependency on bacterial growth and maintenance	Complete dependence	Complete dependence	Totally independent
5	Blowers	Complete dependence	Complete dependence	No blowers required
6	Diffusers	Required	Required	Not Required
7	Treated water quality	BOD < 30, COD, 250 and Turbidity < 30 NTU. Highly dependent on strict process control.	BOD < 10, COD < 100, Turbidity < 5 NTU. Good water quality	BOD < 10, COD < 100, Turbidity < 5 NTU. Good water quality
8	Treated water sustainability	Slight variations in operating conditions will affect quality.	Slight variations in biological portion of the system affect treated water quality greatly. Lack of skilled manpower having experience and knowledge in operating MBR is a major drawback with this system.	The treated water is PATHOGEN free. E coli, coliform counts are NIL. Thus, sterility over long period of times is possible.
9	Foot print area	High	Medium	Very Low
10	Sludge production	High	Low	Very Low
11	Operating capacity	Plants can be started up and run effectively only if atleast 30% of the design capacity is available. Say, for 300 m <sup>3</sup> /day, the plant can be started only if 120 m <sup>3</sup> /day sewage is available	Plant can be run effectively only if atleast 40% of the design capacity is available	Plant can be run even 5% of the design capacity
12	Operating time	Plants need to be run for 24 hours, irrespective of the actual operating capacity.	Plants need to be run for 24 hours, irrespective of the actual operating capacity.	Switch on and off at will. For any capacity, plant can be operated for lesser hours and then switched off.
13	Daily start up	Not applicable. The system cannot be shut down on ' daily basis'	Not applicable. The system cannot be shut down on "daily basis"	Everyday, The system can be shut down and started up. Daily start up is only 15 mins
14	Flexibility	The main process takes place INSIDE civil structures. So, the basic functionality is not flexible	The main process takes place INSIDE civil structures. So, the basic functionality is not flexible.	Civil tanks play no part in the process. They are only for collection of raw sewage and collection of treated sewage. Hence, the plant is very flexible. We can have the tanks in one place and the STP in another place

"Moving Investment Decisions to Sustainable Solutions"



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