



EIL CAPABILITY

WATER AND WASTE WATER MANAGEMENT





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INTRODUCTION

Engineers India Limited (EIL) was established in 1965 mainly "To establish, provide, maintain and perform engineering and related technical and consultancy services for petroleum projects including, but not limited to, petroleum refineries, oil field development, oil and gas pipelines, petrochemical complexes, chemical intermediates production and other types of industrial projects".

In addition to providing services in petroleum refining sector, with which it started initially, EIL, over a period of time, has diversified and excelled in providing services to other areas such as Petrochemicals, Oil/Gas Processing, Pipelines, Ocean Engineering, Ports & Harbours, Fertilisers and Non-ferrous Metallurgy, Cement and Pulp & Paper, **Water and Waste Water Management etc. Engineers India Limited today uses the latest international engineering practices, design codes, safety standards and environmental emission norms in its engineering design and project execution work. It provides a complete range of concept to commissioning services in these fields and has emerged as South Asia's leading design and engineering Company.**

EIL is capable of providing the entire range of Environmental services like **water treatment plants, waste water treatment plants, zero liquid discharge schemes, desalination plants, water supply, sewerage and drainage system, environment impact assessment studies, solid and hazardous waste management, environment audit and water foot print analysis.**





The following major industries and municipal sectors in India and abroad are serviced:

- Petroleum Refining
- Petrochemicals
- Oil & Gas Processing
- Metallurgy
- Chemicals
- Government Municipal Bodies
- Paper and Pulp
- Chemicals
- Food Processing & Dairy
- Distillery
- Fertilizers
- Thermal Power Plants
- Textile & Leather

WATER TREATMENT PLANTS

EIL has implemented more than 50 large water treatment systems from concept to commissioning. These units range from simple side stream filtration to complex multi step treatment plants to meet specific design conditions. The ranges of water treatment plants implemented include:

- Large size raw water intake and treatment systems
- Demineralization Plants
- Condensate Polishing Plants
- Desalination Plants
- Advanced Technology Solutions for Recycle/reuse
- Cooling Water Systems
- Potable Water Systems
- Softening Plants
- Water Injection Plants
- Ultra Pure Water Systems

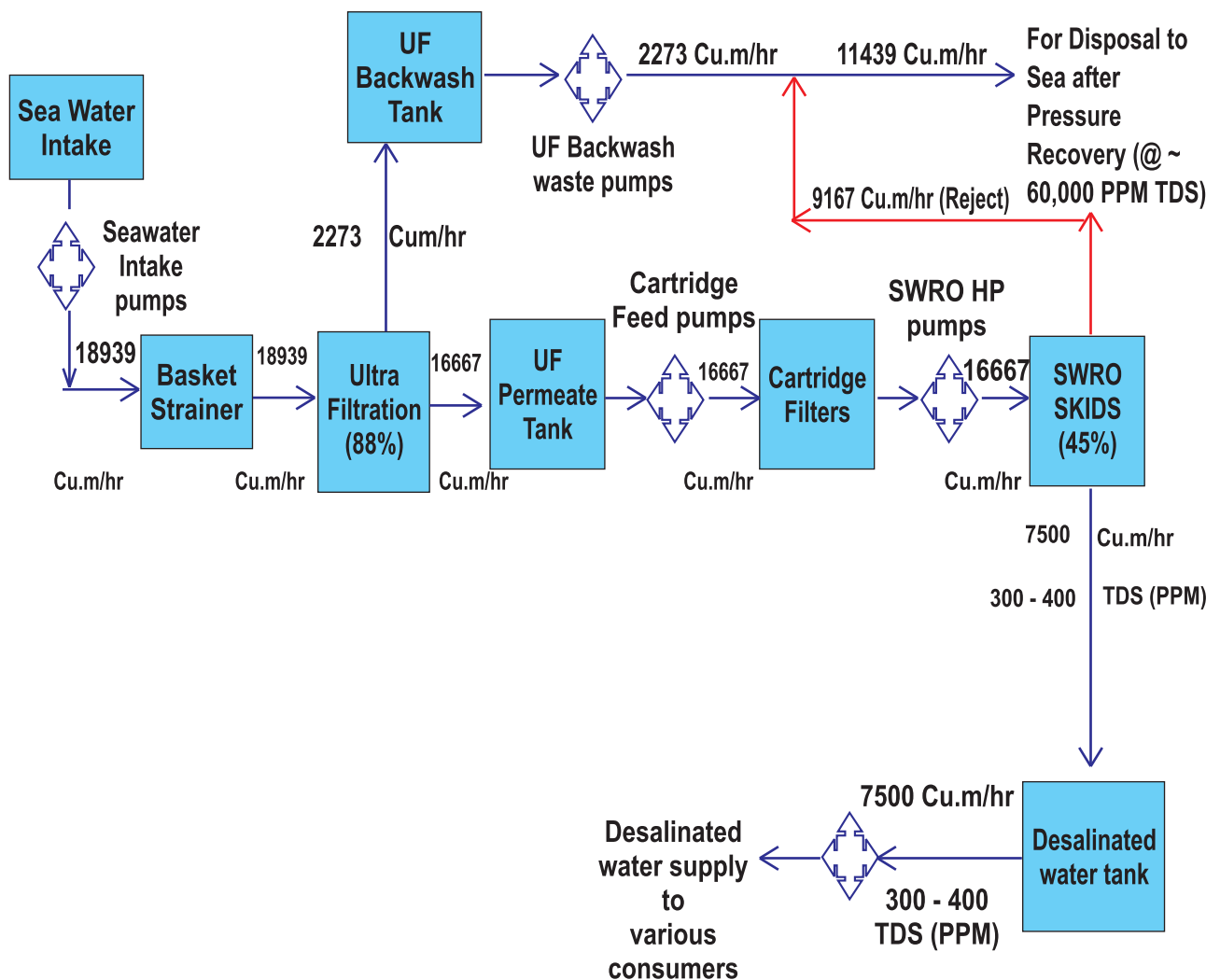
For Desalination plants, EIL has developed basic engineering for four standard modules of 30 MLD, 60MLD, 120MLD, 180 MLD. The modular approach ensures repeatability and in turn reduction in the project schedule.

The basic engineering carried out includes the following:

- Water Balance
- Equipment List
- Electrical Load List & Plant Layout



Typical flow diagram of 180 MLD Desalination Plant





WASTE WATER TREATMENT PLANTS

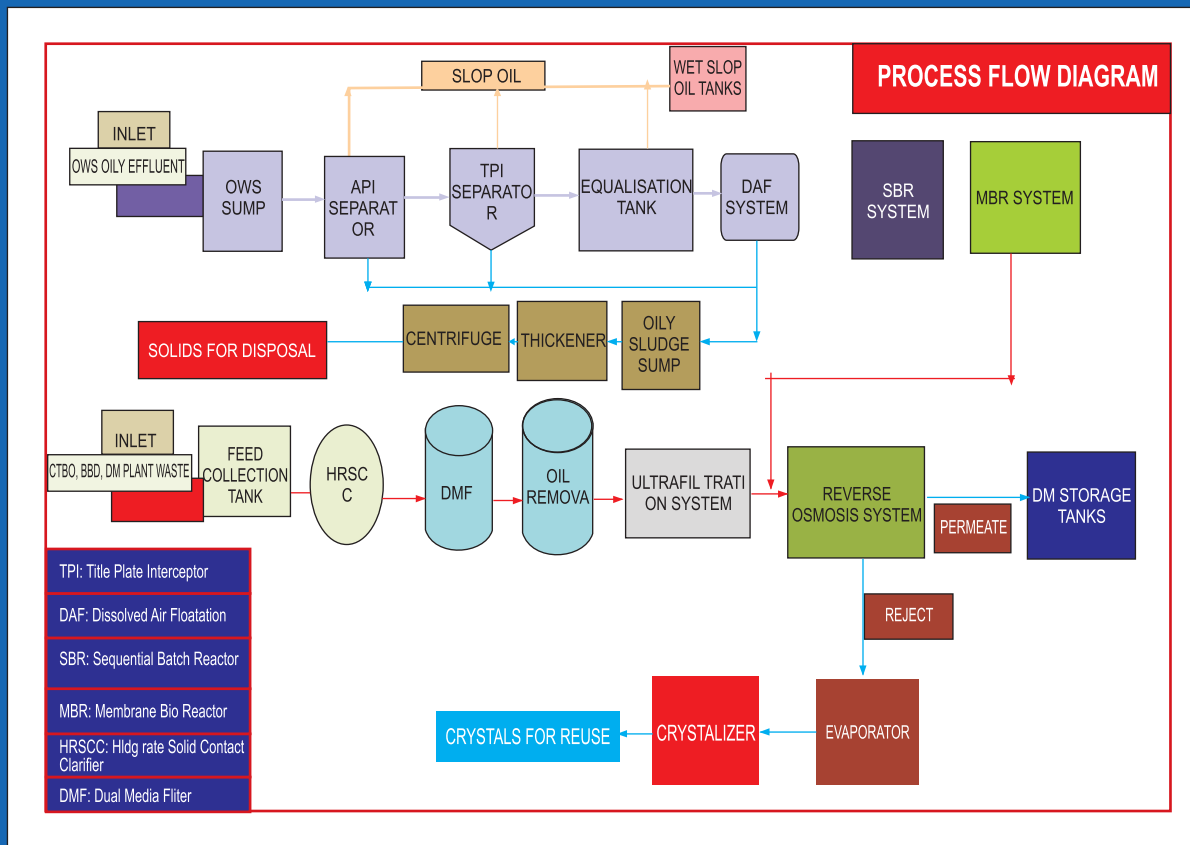
EIL has design experience of numerous waste water systems each designed to use technologies that are appropriate and sensitive to site specific concerns. Facilities designed range from one step treatment system to complex integrated systems that use multiple treatment technologies.

EIL provides the following technologies for the treatment of wastewater:

- Produced water and ballast water treatment
- Physical/chemical treatment systems
- Biological systems
- Heavy metals removal and recovery
- Oil removal and treatment
- Spent caustic treatment
- Sludge de-watering and disposal
- Tertiary treatment systems
- Sewage treatment systems



EFFLUENT TREATMENT AND TERTIARY TREATMENT PLANT (REUSE and RECYCLE)





MUNICIPAL SEWAGE TREATMENT

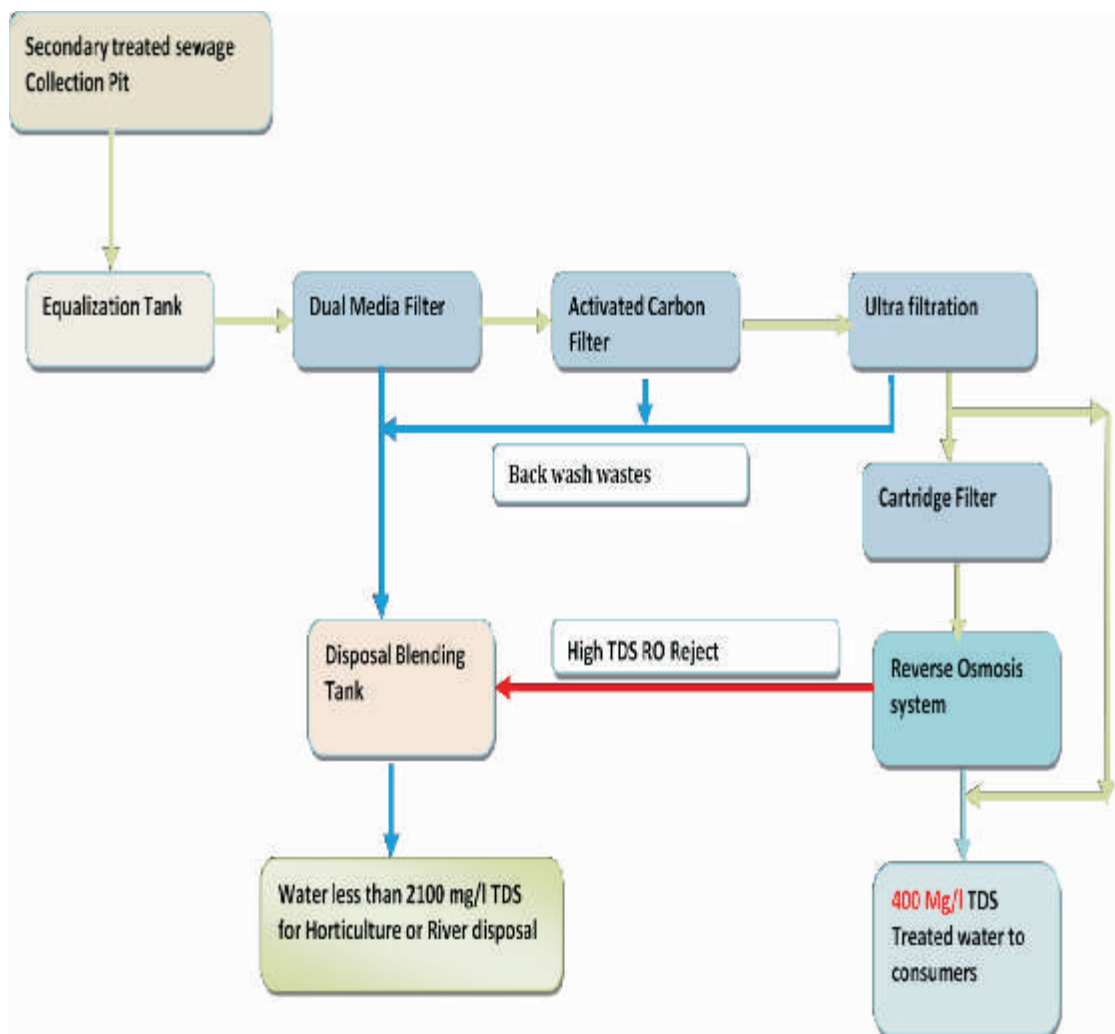
Basic engineering for four standard modules of 30 MLD, 60MLD, 120MLD, 180 MLD has been evolved by EIL for Municipal Sewage Treatment Plants (STP) + Recycle and Standalone Recycle Plants. The basic engineering includes:

- Water Balance
- Equipment List
- Electrical Load List
- Plant Layout

EIL has been entrusted with providing Project Management Consultancy (PMC) services for a landmark project in India i.e for abatement of pollution in the river Yamuna, on whose banks the capital city of India, Delhi, is located. The project involves the laying of interceptor sewers (58 km) major drains in Delhi for abatement of pollution in River Yamuna. The main objective of the project is to provide a commercially/technically viable and feasible solution to collect the sewage, which is currently being discharged untreated into the river, and brings it to sewage treatment plants to provide a reliable and effective basis for abatement of pollution in the River Yamuna and improve its water quality.



FLOW SCHEME- MUNICIPAL SEWAGE RECYCLE.





THIRD PARTY INSPECTION (TPI) SERVICES

EIL also offers services for Third Party Inspection (TPI) to various water supply/pipeline projects. Services offered as TPI in case of Mild Steel (MS) pipeline related projects includes:

- Preparation and approval of quality documents for the project
- Testing of pipes at factory
- Testing of all incoming construction material
- Testing and inspection of Mild Steel (MS) pipe fabrication
- Inspection of civil & electrical works
- Preparation of Quality Assurance (QA)/Quality Control (QC) report



ENVIRONMENTAL IMPACT ASSESSMENT STUDIES

In line with the direction of Ministry of Environment & Forests (MoEF), Government of India, **EIL is accredited by Quality Council of India (QCI) for carrying out EIA studies in the following sectors:**

- Mining of Minerals
- Metallurgical Industries
- Jetties only
- Petroleum Refining Industry, Petrochemical Complexes
- Airports
- Thermal Power Plants
- Townships and Area Development
- Oil & Gas Transportation Pipelines

EIL has carried out more than 160 EIA studies for diverse sectors of industry and for several of the projects falling in the categories of petroleum refineries, complex chemical plants, petroleum product pipelines, jetties, Single Buoy Moorings (SBMs), power plants, mining and non-ferrous metallurgy, beside regional Environmental Management for industrial areas. **Besides projects in India, EIL has rich experience in working in Middle East especially for Impact Assessment projects.**





SOLID AND HAZARDOUS WASTE MANAGEMENT

EIL has been active in the field of Solid & Hazardous Waste Management in India and has completed several assignments. EIL has provided services to numerous hydrocarbon sector clients in the development and implementation of their waste management facilities. Apart from these hydrocarbon sector related industrial waste projects, **EIL has also executed several other challenging projects in the Municipal Hazardous Waste Management Area.**



REPRESENTATIVE REFERENCE LIST OF PROJECTS EXECUTED BY EIL IN WATER SECTOR

S. No.	Client/Location	Capacity	Year of Completion
Water Supply, Sewerage and Drainage Systems			
1	Remodeling of main outfall in Yamuna Vihar –Delhi	-	2010
2	Guru Gobind Singh Refinery Complex for HMEL- Bhatinda	-	2012
3	Redevelopment of Connaught Place, New Delhi	-	2012
4	Laying of Interceptor Sewers for Delhi Jal Board at Delhi for abatement of pollution in river Ganga	-	2012
Effluent Treatment Plants			
1	Indian Oil Corporation Limited, Panipat	Refinery/ 975 m ³ /h	2007
2	HPCL, Mumbai	Refinery/300 m ³ /h	2010
3	BINA Refinery, BINA	Refinery/600 m ³ /h	2010
4	HPCL-Mittal Refinery Bhatinda	Refinery/1000 m ³ /h	2012
5	ONGC Opal & BPCL-Kochi	Refinery/1000 m ³ /h	Under Progress
Desalination			
1	M/s Cairn Energy Ltd	Feasibility Study/ 2000 m ³ /h (8000ppm TDS)	2003
2	M/s Fajr Petrochemical	Process Design /5070 m ³ /h (20000ppm TDS)	2004
3	M/s. HPCL, Visakh	Process Design/ 300 m ³ /h (40000ppm TDS)	2007
4	M/s. HPCL, Mumbai	Process Design/ 350 m ³ /h (40000ppm TDS)	2009
Injection Water Treatment			
1	Oil and Natural Gas Commission, Santhal, Gujarat	PMC Service / 240 m ³ /h	2005
2	Hindustan Petroleum Corp. Limited, Visakhapatnam, A.P.	PMC Service / 2200 m ³ /h	2005
3	Oil India Limited, Duliajan Assam	PMC Service / 21 m ³ /h	Under Progress
Water Treatment Plants			
1	Tabriz Petrochemical Company	RWTP/250 m ³ /h	1996
2	Indian Oil Corporation Limited, Panipat	RWTP/5600 m ³ /h	2006
3	HPCL-Mittal Energy Ltd	RWTP/5400 m ³ /h, DMP/850 m ³ /h, CPU/150 m ³ /h	2012
4	Mangalore Refinery & Petrochemicals Ltd	RWTP/1200 m ³ /h, DMP/900 m ³ /h, CPU/160m ³ /h	Under Progress
5	Gail India limited, Vijaipur	RWTP/1000 m ³ /h, DMP/185m ³ /h, CPU/45m ³ /h	Under Progress
Environment Impact Assessment Studies			
1	Qatar Petroleum, Qatar	Additional Tank ages & Pipeline project	2004
2	Indian Oil Corporation Limited, Mathura Refinery	FCC Revamp	2005
3	Gail India Limited, Vijaipur & Pata	Expansion of Petrochemical Complex	2012
4	Nuclear Power Corporations Limited, Gujarat	Power Park	Under Progress
5	National Petroleum Construction Company, NPCC.	HSEIA Study	Under Progress





Delivering Excellence Through People

Are you experiencing any
problem in water chain



EIL HAS A SOLUTION

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