MEDLEG ENGINEERING LLC

ENVIRONMENTALLY FRIENDLY SOLUTIONS

TECHNOLOGY BROCHURE

INDUSTRIAL WASTEWATER SOLUTION

Sampling | Laboratory analysis | Process design | Equipment | Installation, commissioning



An engineering solution tailored to your plant

Medleg Engineering LLC collects samples from industrial wastewater and submits them for laboratory analysis, passes the results to our technology partner in China (PRC), has suitable treatment equipment manufactured to order, and takes part in installation, commissioning and start-up in Mongolia.

Based on the customer's actual data, we work with our technology partner to define a suitable solution and coordinate every stage of the project.

Tel: +976 99108845, +976 99990069 | E-mail: info@medleg-engineering.mn | Website: www.medleg-engineering.mn

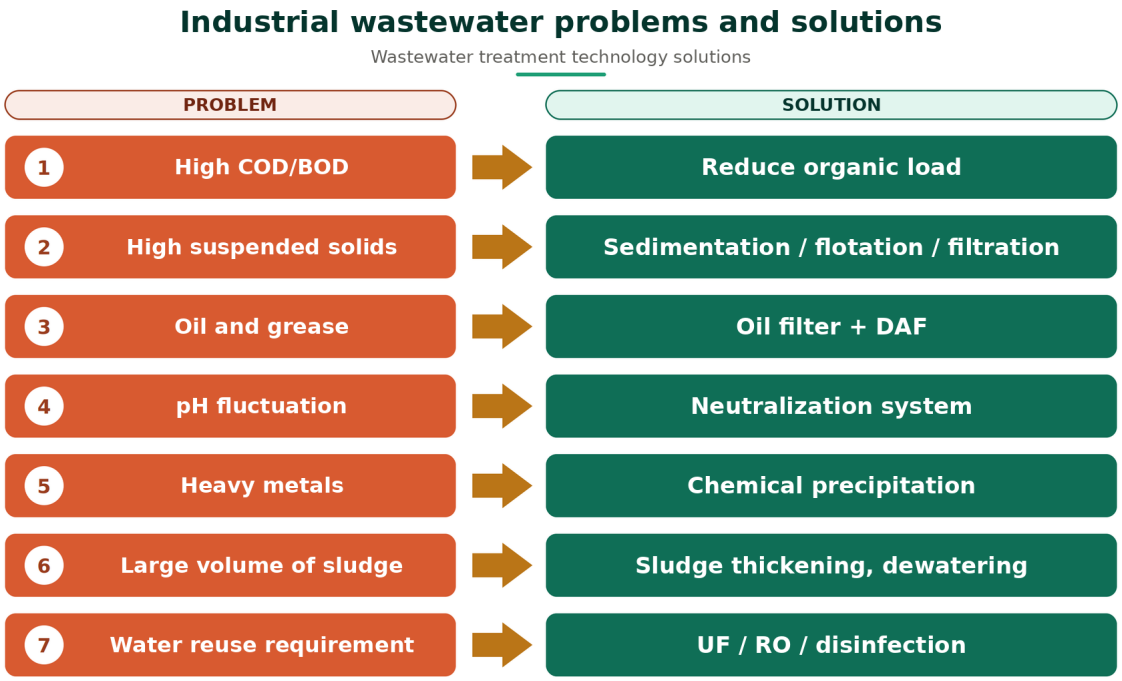
02 • CUSTOMER CHALLENGES

WHAT ARE YOUR PLANT'S WASTEWATER PROBLEMS?

The right solution starts with understanding the actual characteristics of your wastewater and your requirements.

Common problems faced by industrial plants

- Wastewater test parameters not meeting the requirements of the discharge point.
- The existing treatment facility operating unstably or failing to achieve the required results.
- Wastewater volume and composition changing with production shifts, products and raw materials.
- A lack of clear information on equipment capacity, selection and operating costs.
- Plant capacity expanding, new production lines being introduced, or a need to reuse treated water.



How can Medleg Engineering help?

We collect wastewater samples and submit them for laboratory analysis. We pass the analysis results and the production data received from the customer to our technology partner, and work together on equipment design and the technical solution.

> **Our principle**
>
> We do not select equipment based on general assumptions alone. We take into account wastewater analysis, flow rates, the required level of treatment and operating conditions.

03 • ASSESSMENT AND TECHNOLOGY SELECTION

HOW IS THE SOLUTION DEVELOPED?

Coordinated work between Medleg Engineering and our technology partner

1 — Collecting plant information

We collect information on the industry sector, process, wastewater volume, the existing treatment system and the problems encountered.

2 — Sampling and laboratory analysis

Medleg Engineering takes wastewater samples and has them analyzed in a laboratory. The scope of parameters and the sampling conditions are agreed according to the needs of the project.

3 — Passing results to the technology partner

Laboratory results and plant information are sent to our technology partner in China (PRC) and used to develop the technical solution.

4 — Process solution and equipment design

Based on the analysis results and requirements, the technology partner prepares the equipment design and technical configuration, and manufactures the equipment.

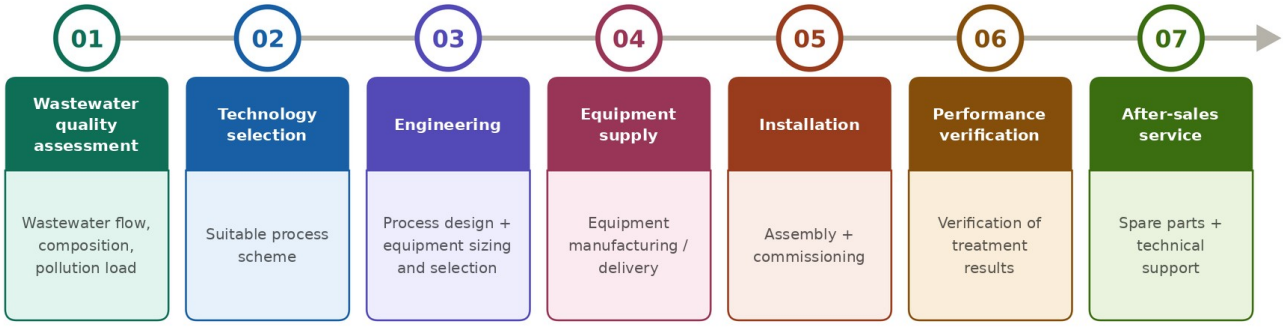
5 — Installation and commissioning

Once the equipment is manufactured, Medleg Engineering's engineer carries out installation and, together with the partner in China, takes part in commissioning and putting the system into operation.

Customer involvement

Providing complete information on plant operations, wastewater flow, the required effluent quality and any other available data is important for defining the right solution.

Our service stages



04 ● TECHNOLOGY SOLUTION

POSSIBLE WASTEWATER TREATMENT STAGES

The process scheme depends on the characteristics of each plant's wastewater.

Preliminary treatment

Large debris and solids are removed using screens, sieves and similar devices.

Equalization

Reduces fluctuations in flow and pollution load and helps stabilize the following stages.

Physico-chemical treatment

Where required, pH adjustment, coagulation-flocculation and dissolved air flotation (DAF) are used to remove oil, grease, suspended solids and certain pollutants.

Biological treatment

Where suitable, the activity of microorganisms reduces biodegradable organic pollution.

Additional treatment

Depending on the required effluent quality, filters, membranes, activated carbon and disinfection may be used.

Sludge treatment

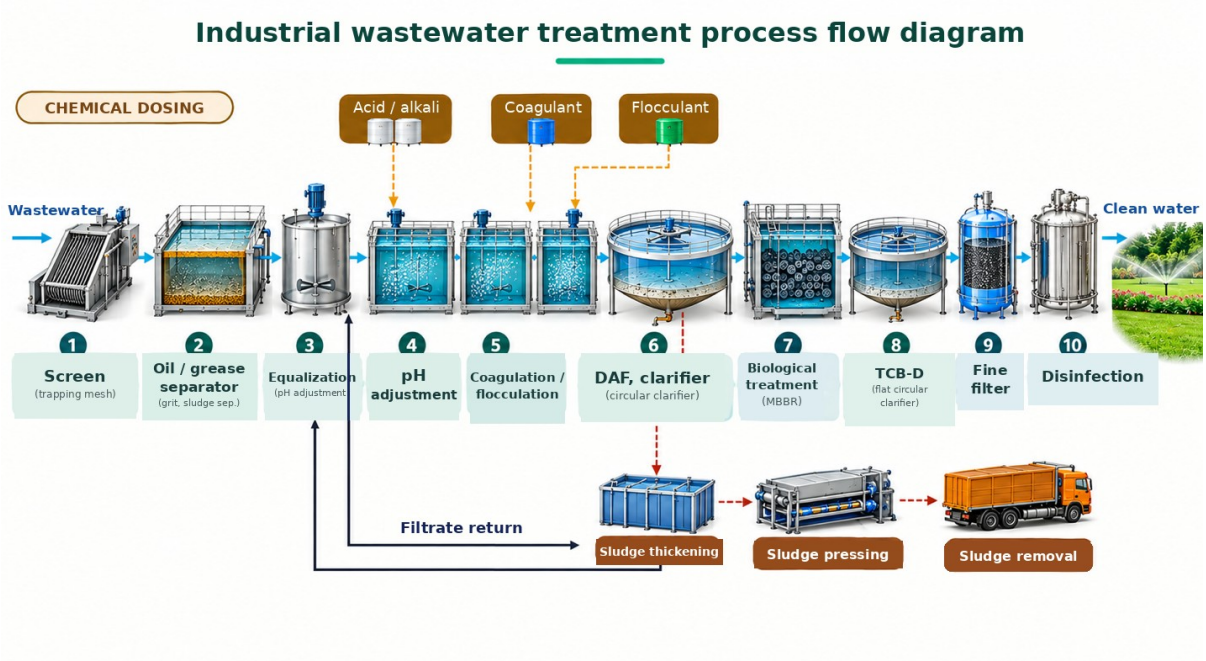
The sludge generated is thickened and dewatered, and its further proper management is planned.

Note

This does not mean that all of the above stages apply to every plant. The final technology is determined together with the technology partner, based on analysis results, flow rates, effluent requirements (MNS 6561:2024, MNS 6734:2025) and operating conditions.

PROCESS FLOW DIAGRAM

The technology is selected based on wastewater composition, flow rate, pollution load and the required effluent quality.



05 • EQUIPMENT

EQUIPMENT SUITED TO THE SOLUTION

Equipment solutions based on the technology partner's design and aligned with manufacturing

Mechanical equipment



Preliminary treatment

- Coarse/fine screens
- Cylindrical screen
- Screw filter
- Pumps

Equalization and mixing

- Equalization tank
- Mixer
- Aeration equipment

Physico-chemical treatment







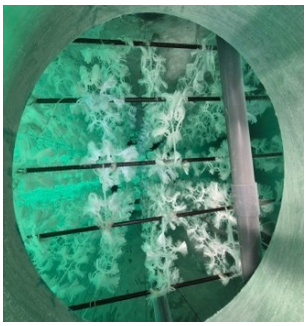
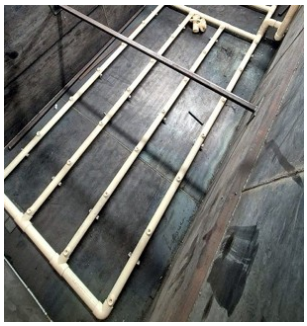


- pH adjustment system
- Chemical dosing system
- Coagulation/flocculation unit

- Dissolved air flotation (DAF)
- Lamella clarifier

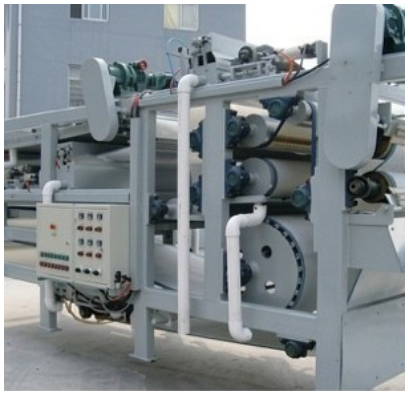
05 • EQUIPMENT (continued)

Biological treatment


- MBBR
- SBR
- MBR
- Aeration system
- Diffuser

Sludge treatment


- Sludge thickener
- Belt press
- Screw press
- Polymer dosing system

Water reuse





- Ultrafiltration (UF)
- Reverse osmosis (RO)
- Activated carbon
- Ultraviolet (UV) disinfection

The final type, capacity, configuration and technical specifications of the equipment are determined in accordance with the laboratory analysis, customer requirements and the technology partner's design.

06 • SCOPE OF SERVICES

WHAT SERVICES DOES MEDLEG ENGINEERING PROVIDE?

Within the scope agreed with the customer, we work together through the following stages.

Stage	Medleg Engineering's role	Deliverable to the customer
Samples and analysis	Collect wastewater samples and submit them for laboratory analysis	Laboratory analysis results
Technical information	Pass the results and plant information to the technology partner in China (PRC)	Data used to develop the technical solution
Design and manufacturing	Coordinate the partner's solution with the progress of equipment manufacturing	Agreed technical solution and equipment for the project
Delivery and installation	Medleg Engineering's engineer carries out installation of the equipment in Mongolia	Installed equipment
Commissioning	Take part in commissioning and start-up together with the technology partner in China	Commissioning results and operating instructions — as specified in the contract
Warranty period	Medleg Engineering and the technology partner jointly provide warranty service	1-year warranty in accordance with the Construction Law and the contract

Clarification

The detailed scope of work, handover documents, test criteria and warranty terms will be specified in the project contract.

SERVICE MODEL

We aim to be not just an "equipment supplier" but a "solution provider".

Together with qualified local engineers and the recommendations of our partner company, we provide remote technical support, on-site engineering services and a spare parts supply service.

TECHNICAL SUPPORT
Remote support

ENGINEERING SERVICES
On-site service

SPARE PARTS
Spare parts supply

07 • INSTALLATION AND WARRANTY

FROM INSTALLATION TO PUTTING THE EQUIPMENT INTO OPERATION

Engineering involvement in Mongolia and cooperation with the technology partner

01 **Plant information and samples**
Medleg Engineering collects plant information and submits wastewater samples for laboratory analysis.

02 **Technology partner's design**
The analysis results are passed to the partner in China, and the equipment design and manufacturing solution are coordinated together.

03 **Equipment manufacturing**
The technology partner manufactures the equipment according to the agreed technical solution.

04 **Equipment installation**
After the manufactured equipment arrives, Medleg Engineering's engineer carries out the installation work.

05 **Commissioning and start-up**
Medleg Engineering's engineer takes part, together with the technology partner in China, in commissioning the equipment and putting it into operation.

06 **Warranty service**
Medleg Engineering and the technology partner provide a one-year warranty in accordance with the Construction Law of Mongolia and the project contract.

WARRANTY TERMS

The warranty period, covered parts and work, the customer's operation and maintenance obligations, and warranty exclusions will be clearly specified in the contract.

Advantages of working with us

- Medleg Engineering is responsible for organizing sampling and installation work in Mongolia.
- We link laboratory analysis results with equipment design and manufacturing.
- We coordinate technical communication between the Mongolian customer and the technology partner in China.
- Commissioning and warranty-period services are carried out together with the partner.

08 • OUR STRENGTHS

Why Medleg Engineering?

TECHNOLOGY

Not only our foreign partner: qualified local engineers also work together on selecting technology suited to the wastewater type, and on installation and commissioning.

EQUIPMENT

Assembled in container form, suited to Mongolia's harsh climate and cold winters and easy to transport.







ENGINEERING

Process scheme, equipment selection and capacity calculations.

SERVICE

Installation, commissioning, technical support and spare parts.

PARTNER'S INTERNATIONAL EXPERIENCE

Our partner, an equipment manufacturer from neighboring China, has experience supplying complete treatment facilities both domestically and in Malaysia, Vietnam and African countries.

CERTIFICATES AND PATENTS

Our partner company holds the following certificates and patents:

ISO 9001 ISO 14001 ISO 45001

- Treatment equipment for acid-alkali neutralization of industrial wastewater
- "Settling and separation device with movable cover for chemical industry wastewater"
- "Contaminant removal device for pressure filters with flexible structure"
- "Integrated treatment equipment for oily wastewater from petrochemical plants"
- "Treatment equipment for removing muddy water from the lower part of oil-floating water"

MEDLEG ENGINEERING LLC

ENVIRONMENTALLY FRIENDLY SOLUTIONS

09 • CONTACT US

FOR YOUR PLANT'S WASTEWATER, LET'S DEFINE THE RIGHT SOLUTION TOGETHER

First step: contact us about your plant information and wastewater samples.

To begin the initial technical assessment, please send the following information as far as possible:

- Industry sector and main production process
- Wastewater volume (m^3/day) and, if available, peak flow
- Existing laboratory analysis results, if any
- Information on the current treatment facility and equipment
- Problems encountered and required quality of treated water
- Whether there is a goal of reusing water

Next step

Medleg Engineering will review your information, clarify the need for sampling and laboratory analysis, and, together with the technology partner, propose the next step in developing a technical solution.

PHONE	E-MAIL
+976 99990069, +976 99110123	info@medleg-engineering.mn
WEBSITE	ADDRESS
www.medleg-engineering.mn	Ulaanbaatar, Mongolia

Website