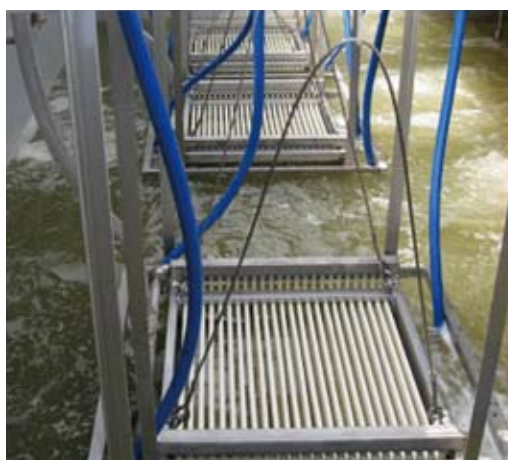


STERAPORE™ 5000 Series

H O L L O W F I B E R M E M B R A N E M O D U L E S T E R A P O R E

Industrial wastewater treatment plant in Korea

CASE



Location
Korea

Furnished by
CJ Korea Express Co.

Capacity
1,000m³/day

Application
Industrial Wastewater (Dairy Plant)

Operation started
2008

Product
STERAPORE™ 5000

Challenge

Reduce or eliminate sludge carry-over to the final effluent dealing with significant fluctuations in the inlet water composition.

Solution

Retrofit the existing conventional activated sludge process with Membrane Bioreactor (MBR) featuring the Mitsubishi Rayon hollow fiber membrane.

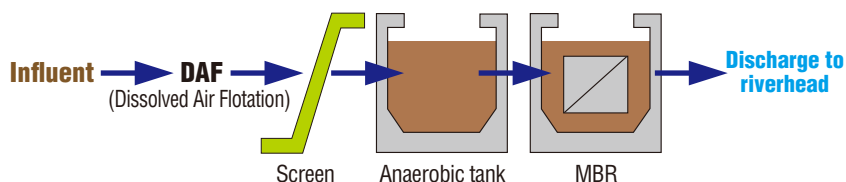
Benefits

Realize hassle-free STP operation and maintenance while getting the better quality final effluent especially in terms of BOD and SS.

Water analysis

| | | Influent | DAF treated water | MBR treated water |
|-------------------|------|----------|-------------------|-------------------|
| pH | | 5-10 | 5-10 | 5-10 |
| BOD ₅ | mg/L | 1,500 | 500 | <2 |
| COD _{Mn} | mg/L | 600 | 220 | <10 |
| SS | mg/L | 800 | 200 | <1 |
| T-N | mg/L | 100 | 49 | <5 |
| T-P | mg/L | 30 | 14 | <1 |
| n-H | mg/L | 30 | 10 | <5 |

Process flow diagram



Membrane Department Aqua Division
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H O L L O W F I B E R M E M B R A N E M O D U L E S T E R A P O R E

Wuxi Xincheng wastewater treatment plant

06
CASE

Location

Jiangsu Province, China

Furnished by

Jiangsu Origin Water Technology Co., Ltd.

Capacity

30,000m³/day

Application

Sewage (30% of Domestic Wastewater and 70% of Industrial Wastewater)

Operation started

2011

Product

STERAPORE™ 5000

Challenge

On June 5, 2008, the newly revised Taihu Lake Water Pollution Prevention Regulation was brought into effect. However, the footprint of this facility was too small to comply with the stringent regulation by increasing of the existing conventional activated sludge process capability without overloading.

Solution

Apply membrane bioreactor (MBR) to meet the effluent standard with the limited land.

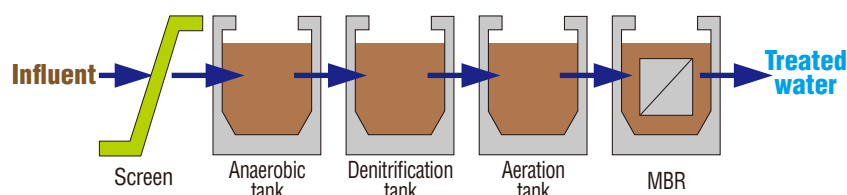
Benefits

Compliance with the standard with no overload concern and less manual operation.

Water analysis

| | | Influent | Treated water |
|--------------------|------|----------|---------------|
| COD _{Cr} | mg/L | 360 | 33.2 |
| SS | mg/L | 400 | <5 |
| T-P | mg/L | 5 | 0.3 |
| NH ₃ -N | mg/L | 38 | 1.3 |
| T-N | mg/L | 43 | 11.1 |

Process flow diagram and water quality



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H O L L O W F I B E R M E M B R A N E M O D U L E S T E R A P O R E

Industrial WWTP upgrade in Japan

08
CASE

**Location**

Hiroshima, Japan

Furnished by

Nippon Rensui Co.

Capacity

2,000m³/day

Application

Industrial Wastewater

Operation started

2013

Product

STERAPORE™ 5000

Challenge

Increase the processing capacity of the existing WWTP by 68.5% without footprint expansion

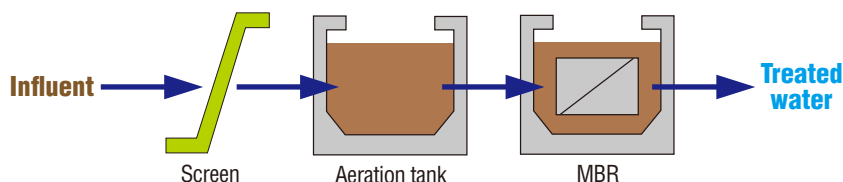
Solution

Installation of an MBR system through the use of one of the existing aeration tanks to boost the WWTP capacity with no overload, additional settling tank

Benefits

The target was successfully achieved having an extra 25% MBR capacity for future expansion

Process flow diagram



STERAPORE™ 5000 Series

H O L L O W F I B E R M E M B R A N E M O D U L E S T E R A P O R E

Electronics industry wastewater treatment plant in Vietnam

CASE

Challenge

This facility is located in a industrial park, Vietnam.
Need to construct the integrated wastewater treatment facility in the industrial park due to lack of capacity. Treated water directly discharge to the river. The criteria is BOD<24mg/L, COD<41mg/L.

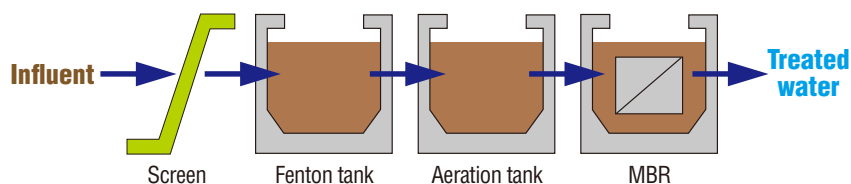
Solution

A treated water high quality is a critical factor for this project. Membrane Bio Reactor (MBR) can adhere the strict effluent standards of this river.

Benefits

The treated water by MBR directly discharge into the river for protecting the environment.

Process flow diagram



Location
Vietnam

Furnished by
Goshu Kohsan Co., Ltd.

Capacity
500m³/day

Application
Electronics Industry Wastewater

Operation started
2012

Product
STERAPORE™ 5000



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H O L L O W F I B E R M E M B R A N E M O D U L E S T E R A P O R E

High COD effluent treatment at a chemical plant

10
CASE

Location
Japan

Furnished by
Swing Corporation

Maximum Capacity
700m³/day

Application
Chemical Wastewater

Operation started
2012

Product
STERAPORE™ 5000

Challenge

The raw wastewater is mixed effluent from chemical and pharmaceutical plants.
The wastewater treatment facility cannot stop because the plant is running all year.
The existing settling tank agitator has damaged by aging facility.

Solution

Without stopping the existing facilities, adding a membrane tank, remodifications were carried out. Membrane Bio-Reactor (MBR) was been equipped.

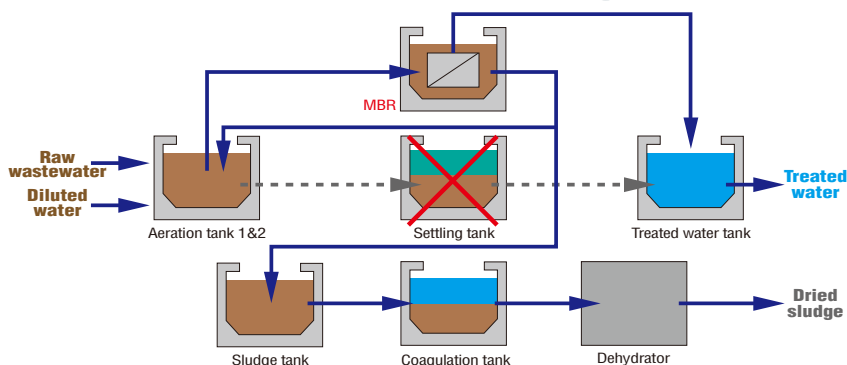
Benefits

MBR does not require settling tank and it also raised load. The water quality of the MBR process is very good and stable. Our client said that 'wastewater treatment by MBR is the best choice'.

Water analysis

| | | Raw wastewater | Diluted wastewater | MBR treated water |
|------|-------------------|----------------------|--------------------|-------------------|
| Flow | m ³ /h | 4.0 (2.5~8.0) | 16 | — |
| COD | mg/L | 8,000 (1,000~15,000) | 2,000 | 4.9 |
| T-N | mg/L | 500 (0~1,000) | 125 | — |
| pH | | 8.0 (6.5~9.0) | 8.0 | — |
| SS | mg/L | — | — | 1.2 |

Process flow diagram



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