

Piggery 2

Effluent is Crystal Clear, Excess Sludge is Composted

This company runs integrated pig farming from breeding to fattening with a capacity of about 100 sows. It has built a piggery wastewater treatment plant in compliance with "Act on Animal Waste Management." To minimize the facility size and achieve superior effluent quality, the company opted for the Membrane BioReactor (MBR) using KUBOTA Submerged Membrane Unit™.

To stabilize the operation against fluctuating influent, a unique control system was introduced. This system has succeeded in eliminating any trouble which needs removal of Units for inspection or replacement of Membrane Cartridges for more than seven years.

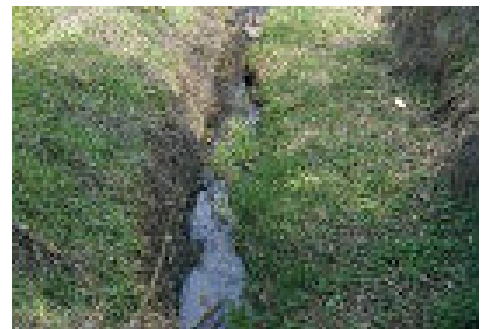
(This facility was constructed as a lease project half subsidized by "Livestock Industry's Environmental Improvement Organization")



Overview of Treatment Plant



Membrane Unit



Discharge Channel

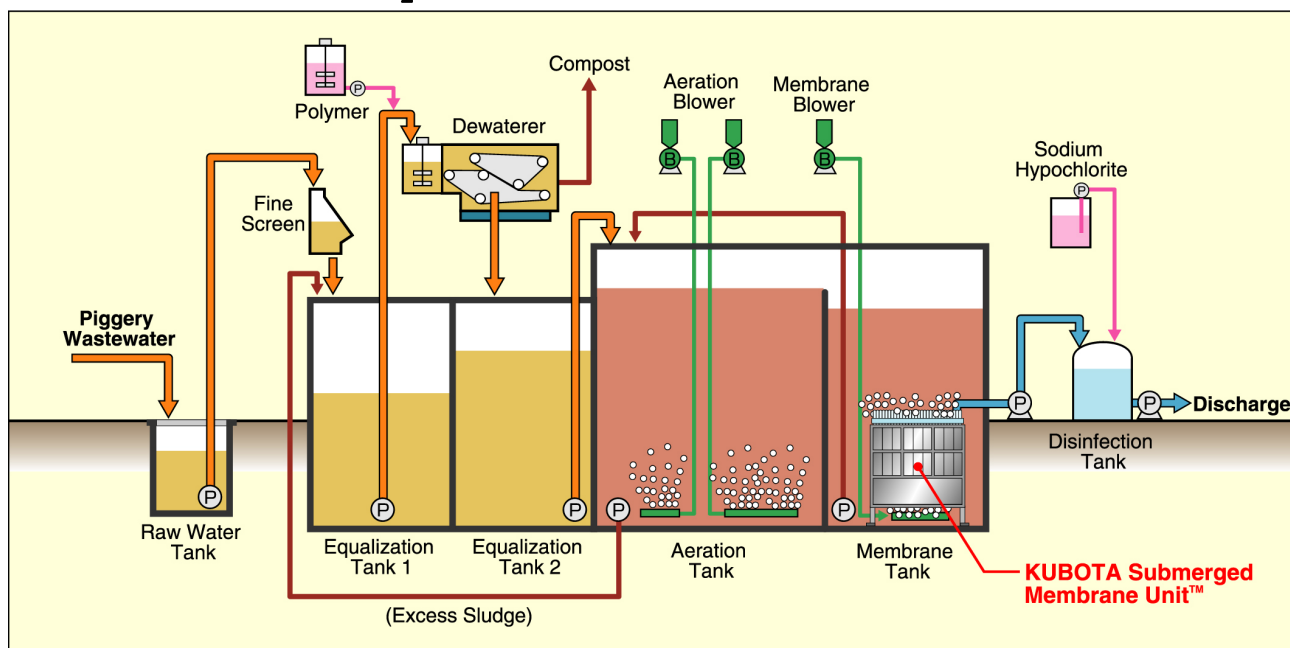
【Outline of the Facility】

Name of the facility :	Wastewater Treatment Facility of a Pig Farming Company
Location :	Saga Prefecture, Japan
Type of wastewater :	Swine Manure
Flow :	12 m ³ /d
Commissioned :	March, 2002

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- Piggery wastewater after urine-feces separation passes through a fine screen and is stored in the Equalization Tank 1.
- The raw water in the Equalization Tank 1 is processed by a dewatering equipment for solid-liquid separation to reduce and stabilize the load to the downstream process.
- In the Aeration Tank, intermittent aeration is conducted to decrease nitrogen and reduce running cost.
- The Membrane separation helps keeping high MLSS concentration and eliminates the need for a settling tank to make overall facility compact. The dewatered sludge is discharged to be composted.

【MBR Process Flow Sheet】



【Design Parameter and Measured Data】

Parameter	Influent		Effluent	
	Design	Measured	Design	Measured
BOD (mg/L)	3,333	4,800	< 50	10
COD (mg/L)	-	1,000	-	130
SS (mg/L)	5,333	2,100	< 5	< 1
T-N (mg/L)	-	1,300	-	60
T-P (mg/L)	-	120	-	10

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