

HYDROTHERMAL TREATMENT SYSTEM

Abstract

The hydrothermal treatment system (1) includes: a hydrothermal treatment device (10) which performs a hydrothermal reaction of waste containing organic matter; an adjustment tank (11) which wets a hydrothermal treatment product obtained from the hydrothermal reaction; a first transport device (21) which transports the wetted hydrothermal treatment product; a pressure-separation device (12) which applies pressure to the transported hydrothermal treatment product to separate the transported hydrothermal treatment product into hydrothermal treatment liquid and residue; a solubilization tank (13) which stores and heats up the separated hydrothermal treatment liquid; a second transport device (22) which transports the heated up and solubilized hydrothermal treatment liquid back to the adjustment tank (11); a methane fermentation device (14) which generates methane gas and digestate by utilizing the hydrothermal treatment liquid stored in the solubilization tank (13); a dehydrator (15) which separates the digestate into dewatered sludge and separated liquid; and a waste liquid treatment device (16) which performs nitrification and denitrification of the separated liquid to generate recycled water. The second transport device (22) transports the hydrothermal treatment liquid to the methane fermentation device (14) when the concentration of organic matter contained in the hydrothermal treatment liquid stored in the solubilization tank (13) is at a predetermined concentration.

(Fig. 1)