

A NO WASTE WATER PLANT WITH MINIMUM CITY WATER SUPPLY UTILIZING AND RECYCLING RAIN WATER

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In 1994, the company of the four authors was experiencing a difficulty in supplying their plant in Thailand with industrial water. At that time the authors were planning to install a cleaning system of lubricating oil(LO) at the plant. The LO cleaning system is called kidney system which enables it to use LO semi-permanently with no waste oil and no oil renewal. The system has been working well in many workshops as well as many marine and cogeneration diesel engines. Therefore the authors decided to try to solve the water problem. The followings were planned and put into practice. (1) A pond for water reservoir and an artificial river around the plant were made. (2) All the rain water at the plant was lead to the pond and river. The water has been circulated along the river so that it may be cleaned. (3) An electric unit was installed to clean some of the circulating water for special use, for example, drinking. (4) Also, the kidney system was installed. The actions have lead to the following results. (1) The water problem has been solved. (2) Most of the industrial water is now supplied from the artificial river. (3) The drinking water and cooling water are produced by cleaning the river water to the degree required respectively. (4)The cleaning water is directly taken from the river. (5) Kinds of LO are greatly reduced. Originally, 49 kinds of LO were supposed to be used which are now reduced only to 6 kinds.

As a result, a plant with minimum supply of city water, with no waste water and no waste lubricating oil is now realized. There is another plan to introduce the same system of water and LO in the neighbouring plant. The system reported is based on the "borrow water philosophy of Sumimoto Scientific Institute".