

Investigation on the Introduction of Mobile Dewatering Vehicles to Area-wide Sewage Sludge Treatment

Whole term

1994.2 ~ 1994.3

(Purpose)

Application of mobile dewatering vehicles for sewage sludge treatment processes has been attracting attention in recent years. These vehicles can be used not only for the treatment at small scale plants, but also for the treatment at middle scale plants during the initial period of the operation. In fact, it is economically more viable to use these mobile dewatering vehicles rather than to install fixed dewatering facilities during the initial period of the operation, when the sludge generation rate is lower than its finally designed capacity, thus saving the initial investment capital. This study compiled the characteristics, applicability and the points to be attended on the occasion of introducing the mobile dewatering machines at the middle scale plants as to each kind of the vehicles, based on a questionnaire survey conducted on manufacturers which currently deal in mobile dewatering vehicles.

(Results)

The questionnaire survey was conducted on manufacturers which currently deal in mobile dewatering vehicles. In the survey it was assumed that OD (oxidation ditch) excess sludge (0.7% sludge) is treated initially and then thickened sludge (4.0% sludge) is treated afterwards, using mobile dewatering vehicles of the required treatment capacity up to 10m³/hr or vehicles having the highest capacity among the manufacturers.

The following information was obtained through the survey.

Basic treatment flows were classified into three types, one with centrifugal dewatering and two with belt press dewatering.

When a relatively high treatment capacity is required for the thickened sludge treatment at the level of 10m³/hr, centrifugal dewatering machines turned out to be more suitable.

When a high treatment capacity is not required, there was almost no difference in their performances between centrifugal and belt press dewatering machines, thus the applicability should be judged in accordance with individual situations.

The number of the staff required for the maintenance was one or two, and the required time for the preparation and clearing up of the operation varied from 20 minutes to 4 hours.

Comparing the standard prices, belt press dewatering machines were a little cheaper, but centrifugal dewatering machines were found to have lower maintenance costs.

In addition, the points to be considered regarding the introduction of mobile dewatering machines were compiled.

Collaborators: Saitama Prefecture

Japan Institute of Wastewater Engineering Technology

Researchers: Kazuaki Sato, Hideo Kuroda, Tadashi Fukao

Keywords

Mobile dewatering vehicle, sewage sludge treatment during initial period, centrifugal dewatering machine, belt press dewatering machine