Abstract

[Project Information]

Project Title :	Study on Stabilization of Sea Area Landfill Sites and Decomposition of Residual Chelate
Project Number :	JPMEERF20223M04
Project Period (FY) :	2022-2024
Principal Investigator :	Higuchi Sotaro
(PI ORCID) :	
Principal Institution :	NPO Environmental Technical Support Network 504,No.2 Suzukann 4-29-13 Koutoubashi Sumida-ku Tokyo,JAPAN Tel: +81366592435 E-mail: higuchis@rj8.so-net.ne.jp
Cooperated by :	Fukuoka University, Graduate School of Engineering
Keywords :	Sea Surface Disposal Site, Air lift Pump, Electrolysis, pH, Residual Chelate

[Abstract]

The current sea-based disposal site lacks bottom drainage pipes and facilities for collecting leachate from the base, necessitating a redesign of the structure. Therefore, a new landfill structure is proposed, incorporating a system in which leachate from below the water surface is pumped up using an airlift pump and circulated together with excess water. (2) Regarding the issues of residual chelating agents and chelate-derived COD and T-N, research and development were conducted on electrolysis as a new water treatment method suitable for the quality of the excess water. To this end, simulated landfill experiments were conducted in 12 different cases using two types of desulfurizing agents (highly reactive lime and sodium bicarbonate), three types of fly ash stabilizers (PIP-type chelating agent, DTC-type chelating agent, and inorganic phosphorus-based stabilizer), and two types of landfill structures (conventional type and airlift circulation type). Research and development were carried out for an early-stabilizing sea-based disposal site and a wastewater treatment facility using electrolysis. Furthermore, proposals were made for flue gas desulfurizing agents and fly ash stabilizers suitable for sea-based disposal."