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Original

Volume Reduction of Contaminated Soil by Physical and Chemical Migration of Radioactive Cesium

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Summary

A large amount of soil over 20 million m^3 have been discharged by decontamination work in Fukushima Prefecture and it is necessary to reduce the volume of contaminated soil. In order to reduce the volume, we have proposed the method consisting of three processes; wet classification, chemical and physical cesium migration and magnetic separation. In this method, firstly radioactive cesium was migrated into the silt and clay by ion exchange and polishing, and then the soil was separated into low-dose sand gravel and high-dose silt and clay, and lastly the 2:1 type clay minerals are selectively separated by high gradient magnetic separation. In this paper, we focused on chemical and physical cesium migration and wet classification as a preprocessing for the magnetic separation.

Key Words: Volume reduction, Wet classification, Ion exchange, Soil polishing, Magnetic separation