

Environmental assessment at CDW disposal sites in Vietnam: Case study in Thanh Tri landfill, Hanoi

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In the last recent decade, Vietnam has become one of most developing countries within South East Asia. Due to a rapid increasing of economic and industrial, the amount of construction and demolition waste (CDW) in Vietnam also increasing fast and becoming one of the biggest issue for the surrounding environment. According to MONRE, in 2015, Vietnam produced 1.9 million tons of CDW, while the recycling rate was only accounted for 1 –2%. In particularly, 30% of total solid waste generated in Hanoi was reported as CDW during the period of 2010 –2014. Currently, most of generated CDW from construction and demolition sites is reused on-/off sites without any quality control of materials and dumped at disposal sites along with collected waste from town cleaning (e.g., sludge and soil). At CDW disposal site, there is a potential risk of accepting hazardous and scheduled waste together with non-hazardous waste due to lack of management and control of waste acceptance. Therefore, in order to have environmental risk assessment of CDW disposal sites in Vietnam, it is important to identify the current environmental status of CDW dumping sites according to an appropriate monitoring program. In this study, we assessed qualities of water, gas, and fine residues (soil and fines of dumped CDW) inside the disposal site and its surrounding at Thanh Tri Landfill CDW disposal site in Hanoi as a case study. The final goal of study is to develop a standard monitoring/operating procedure for environmental assessment of CDW disposal sites in Vietnam. The field monitoring of surface gas emission and the sampling of internal gas, water, and fine residues, and investigation of dumped scheduled waste at the site were carried out on December 2018. The internal gas samples were collected at six different points from 0.5 - 1m depth and a flux chamber method applied to determine surface gas emission. The groundwater sample was taken from a well inside the disposal site. Results showed very low concentration of methane (CH₄) and Carbon Dioxide (CO₂). In the meantime, groundwater quality showed that the amount of Ferrous and Arsenic became higher than Vietnam technical regulation on drinking water (QCVN 01:2009/BYT) and Vietnam technical regulation on domestic water (QCVN 02:2009/BYT).

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