Ground Characterisation and Risk Evaluation of Windhoek class three municipal solid waste disposal sites; Windhoek, Namibia.

Sindila Mwiya -Ph.D, Pr. Eng

ABSTRACT

This paper outlines the results of a detailed site investigation and a simple risk evaluation that was undertaken on six class three municipal solid waste disposal sites. The sites are located in and around Windhoek the capital city of Namibia. This case study is part of the nation-wide research programme amid at developing a knowledge – based guidelines system for different regions in Namibia. The knowledge – based guidelines system will cover waste disposal site selection, development, operation, restoration and aftercare with respect to arid and semiarid environment. According to the classification scheme used by the Windhoek City Council on waste disposal sites, a class three site is specifically developed and designed for handling only building rubble and garden waste. A technical conceptual model based on variable climatic, environmental and ground model data sets was used at all the stages of the site investigation.

Although the sites were developed for handling building rubble and garden waste, it was found that they posses very high risks to the environment (air, water, fauna, flora and people). The risks are due the location, management and the type of other contaminant waste being disposed on the sites. The results of the investigation has demonstrated that it is possible to select, develop, operate and restore a safe and economic waste disposal site that can meet technical factors such as the ground condition, financial and environmental aspects of most developing countries like Namibia. The successes in solid waste disposal site selection, investigation, development, operation, restoration and aftercare in developing countries like Namibia will only be realised if governments and the private sector allocate funds for conducting detailed research that will integrate, assess and evaluate all the externalities that can contribute positively or negatively to a waste disposal site project.