

GEOLOGICAL AND HYDROGEOLOGICAL FACTORS IN THE SELECTION OF HAZARDOUS WASTE DISPOSAL SITES IN TRINIDAD, W.I: A REVIEW OF DESK AND FIELD ASSESSMENTS OF SIX SITES

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ABSTRACT

The current system of landfill solid waste disposal sites in Trinidad and Tobago does not cater for the disposal of hazardous wastes, as such. While the Forres Park sanitary landfill facility has been accepting some low-level hazardous waste for the industrial sector, a projected 18,000 tonnes of hazardous wastes, up from 16,000 tonnes in 1980 (and exclusive of spent chemical and pesticide containers, and of furnace dust from the iron and steel plant) may have to be disposed of in 1995. Disposal of the waste in a secure landfill, whether directly or following processing, is indispensable to its proper management.

Six sites were evaluated in a desk survey in terms of (1) general site geology including potential to contain leachate; (2) ground stability; and (3) hydrogeology, including development of ground water supplies. Sites at Guatapajaro (Gransauil clay, Springvale Formation - UTM34D), and Rivulet (Chickland clay, Springvale Formation - UTM43D) were ruled out at this stage, primarily for hydrogeological reasons. Cunaripa (Gransauil clay, Springvale Formation - UTM 35B), Longdenville (East) (UTM54A), and Iere Village/Corial Estate (Nariva Formation/Cipero Formation - UTM54A) were recommended for field evaluation, which was implemented for the last two sites. On this basis, Longdenville (East) was not considered suitable, while Iere Village was accepted for further evaluation.

The Guatapajaro, Longdenville (East), Longdenville (South), and Rivulet locations all lie within, or on the margin of, the Northern Basin (Caroni Syncline), and the disposal of hazardous waste at these sites could lead to contamination of groundwater supplies in the Pleistocene aquifers of the Northern Basin. Lining of the Iere Village site with suitable clay following excavation of weathered rock there should enable the containment of hazardous waste leachate. Deep weathering of the Nariva clay resulting in incompetent rock would require full subsurface investigation to ensure proper design of the facility.