

# CASE STUDY

Geosynthetic Clay Layer

Project: Whitford Landfill Cells 10A and 10B  
Date: January- February 2009  
Client: Waste Disposal Ltd  
Location: Manukau, Auckland



## ELCOSEAL

Whitford Landfill is owned and operated by Waste Disposal Services, a joint venture between Transpacific Industries Group (NZ) Ltd and Manukau City Council. The landfill is developed in cells, which are typically constructed annually or biannually. The site sought to conserve its natural materials (clays) and to shorten construction times by the use of HDPE and **ELCOSEAL** Geosynthetic Clay Liner in the lining system.

As with all new landfills the impact on the environment is paramount and an overriding factor in the design and construction of new landfill cells. The designers chose a combination of a HDPE membrane liner manufactured by GSE and **ELCOSEAL** GCL as the main barrier to reduce the risk of waste leachate permeating into the underlying ground water table and potentially contaminating fresh water streams. This tried and true combination of HDPE and **ELCOSEAL** GCL liners was employed to line the bottom and sides of the new cell. Heavy duty geotextile protection layers incorporating both Polyfelt TS70 & TS011 were placed directly over the HDPE liner followed by a layer of gravel to protect it from puncturing during the placement and compaction of the waste material.

Quality Assurance plays a huge roll in a project of this nature requiring the materials, supplied by Geofabrics, to have manufacturing certification and traceability and the selection of an experienced installer such as GR Environmental who has the skill to satisfy the on-site stringent QA/QC requirements put in place by the landfill designers.

The cells were completed in 2 stages with the GR Environmental team of 8 men able to install up to 2000m<sup>2</sup> of liner a day. Correct sub grade preparation is crucial before the liner can be installed as this can influence production levels. This was highlighted early on in the project when an unsuitable clay sub grade material was imported and combined with Auckland's inclement weather slowed down the initial laying of the liner system.



Before construction



Laying of HDPE, Polyfelt and ElcoSeal



Whitford Landfill in use

The information contained herein is general in nature. In particular the content herein does not take account of specific conditions that may be present at your site. Site conditions may alter the performance and longevity of the product. Actual dimensions and performance may vary. This document should not be used for construction purposes and in all cases we recommend that advice be obtained from a suitably qualified consulting engineer or industry specialist before proceeding with installation. © Copyright held by Geofabrics New Zealand Ltd. All rights are reserved and no part of this publication may be copied without prior permission.

QUALITY - SUPPORT - EXPERTISE

[GEOFABRICS.CO.NZ](http://GEOFABRICS.CO.NZ)

