

CASE HISTORY: SEWAGE LAGOON LINER WITH GEOSYNTHETIC CLAY LINER (GCL), BENTOFIX EC SERIES.



Picture taken during the Spring of 2005, GCL being installed in the background on the expansion sewage pond.
Photo by Bruno Herlin, P.Eng., GCL Project Engineer.

LOCATION: Freelon, ON (City of Hamilton).

PROJECT: FAILED COMPACTED CLAY LINER (CCL) INSTALLED IN 2001.

SOLUTION: GEOSYNTHETIC CLAY LINER (GCL) INSTALLED IN 2004. 10,000 SQ.M.

EXPANSION: NEW SEWAGE POND BEING DONE IN 2005 AGAIN WITH A GCL.

BACKGROUND: In 2001, the project engineer at the time determined that the site's soil conditions could in fact be compacted properly to achieve an acceptable liner as a compacted clay liner (CCL) with a low permeability of 1×10^{-6} cm/sec. Numerous freeze/thaw and wet/dry cycles rendered the CCL into a silty clay unable to retain water. Research after research have shown that GCLs are able to withstand these cycles, in fact lowering its permeability during these cycles. The development property was purchased in 2004 and facing a deadline with environmental regulations, the new owner hired an experienced engineering firm who promptly selected a Geosynthetic Clay Liner to repair the existing silty clay and offer the owner with a proven liner approved by environmental regulations. The GCL, Bentofix EC Series, not only provided a low permeability of 1×10^{-9} cm/sec but also provided the owner with a "EC"onomical liner. Various GCLs are available, however the Bentofix EC Series provides clients with an affordable liner while providing engineers with a proven liner able to be used in slopes at 5:1 and where the subgrade is of a smooth nature such as was the case in this project.

Since the late 1980s, GCLs have been specified and used by design engineers, agencies and owners as an alternative to soil barriers in various applications. For further information on GCLs in sewage lagoons and/or other lining applications such as ponds please contact our GCL engineer at 416.674.0363 or visit us at www.bentofix.com or at www.terrafixgeo.com