



Solidification of contaminated sewage sludge - Luggie Glen

The Client: North Lanarkshire Council

The Challenge: Solidification and removal of approximately 4,700m³ of sewage sludge with elevated hydrocarbons, zinc, organics as well as quantities of bonded asbestos and other solids. Each tank measured 12m diameter by 9m depth (from ground level) with 2 tanks on a lower level and more difficult to access.

Following removal of the contaminated materials the tanks were to be backfilled with a lightweight aggregate and the area restored as mixed woodland.

The Solution: The diverse range of contaminants in the material prevented direct disposal, the composition of the material prevented segregation at source. An options appraisal was carried out with feedback from the regulator to identify viable and effective techniques.

The Best Environmental Technique (BET) identified from the appraisal was to use a drying solidification technique by adding cement type binding agents. This method was economically viable and a posed a low risk to the environment.

The sludge was mixed with the use of a long reach excavator, the process involved placing a specific volume of sludge into an empty tank along with the required mass of binding agent. This was mixed and moved into storage bunds adjacent to the tanks to allow the hydration process. Once material reached required strength, it was transported off site for disposal.

Tanks were backfilled with expanded clay aggregate in order to prevent subsidence which would have been caused using standard weight aggregates.

Duration: 23 weeks



SEWAGE SLUDGE PRIOR TO TREATMENT



EXTRACTION OF SCRAP FOUND IN 1 TANK



MATERIAL FOLLOWING STABILISATION



RESTORED AREA POST-WORKS



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