

Slurry Cut-off Wall with HDPE membrane

Derrinumbera

Near Castlebar, County Mayo, Ireland



Mitigation of leachgate migration from existing landfill

General Information

The site was located 6 miles from the town of Castlebar in County Mayo, Republic of Ireland.

The cut off wall solution was adopted to overcome the problem of refuse leachate migration into salmon rich rivers in the vicinity of the tip. The inclusion of the HDPE membrane enabled the finished wall to act as a barrier against both gas and leachate fluid movement from the tip and into the surrounding countryside.

Ground Profile / Conditions

The alignment of the slurry wall meant that a large portion of the excavation was carried out on sloping ground. This posed two main problems; firstly the slurry had to be banded at regular interval to maintain a level profile and secondly a stable platform had to be formed to facilitate the movement of plant (45T excavator, 80T service crane). The type and depth of strata encountered varies as the excavation proceeded. In general though the top 3-4 m of ground consisted of heavy peat which overlaid a narrow clay layer which in turn overlaid weathered sandstone.



BSL mixing plant area

| | |
|----------------------|-------------------------------|
| CLIENT: | Mayo County Council |
| MAIN CONTRACTOR: | Ascon Ltd (part of hbg Group) |
| CONSULTING ENGINEER: | Tobins |
| DURATION OF WORKS: | 5 months |

WORKS QUANTITIES

4200m² of HDPE / cut off wall (1150 LM)
Max depth = 7.5m, average depth = 4.5m
Circa 5000m³ slurry pumped





Preparing piling platform



Map of NW Ireland

Contract Works

The work was carried out in a joint venture between BSL and Ascon Ltd who are a major contractor in the Republic of Ireland. All of the excavation was done 'in-house' with only minor specialist works such as gas venting carried out by subcontractors.

Design Solution

The cut off wall solution was adopted to overcome the problem of refuse leachate

migration into salmon rich rivers in the vicinity of the tip. The inclusion of the HDPE membrane into the design solution enabled the finished wall to act as a barrier against both gas and fluid movement from the tip and into the surrounding countryside.

Safety Management

No reportable accidents were recorded over the duration of the works, in fact the site won the BSL Safe Site award for May 2001.

Sampling

The testing of both the slurry and HDPE membrane was carried out by Weeks Laboratories in the UK. No non-conformances were recorded and all samples found to be within the contract specification.



Insertion of HDPE membrane into Slurry Wall