

**ATTACHMENT D3**  
**LINER SYSTEM**

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ENVIRONMENTAL PROTECTION  
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## ATTACHMENT D3 – LINER SYSTEM

### D3.a Provide Information to fulfil Annex 1 of the Landfill Directive

Information required by Annex 1 of the Landfill Directive, specifically relating to

- Location
- Water Control and Leachate Management
- Protection of Soil and Water
- Gas Control
- Nuisances and Hazards
- Stability
- Barriers

is provided in the Environmental Impact Statement in respect of the proposed remediation scheme, principally in Sections 1, 2, 5 and 6 and the associated Appendices thereto.

### D3.b What type of liner is specified?

The design of the proposed liner system for the remediation landfill exceeds the requirements for a residual non-hazardous biodegradable landfill set out by the Environmental Protection Agency in its publication 'Landfill Manuals : Landfill Site Design' and European Landfill Directive (Council Directive 1999/31/EC).

The proposed lining system comprises the following elements:

- geotextile separator
- leachate drainage
- geotextile protection layer
- 2mm thick HDPE geomembrane
- geosynthetic clay liner (GCL) and
- 1m thick clay liner of maximum permeability (k)  $1 \times 10^{-9}$  m/s.

Additional information is provided in Section 2.3.11 of the Environmental Impact Statement.

Details of the proposed liner are provided on Drawings D3.1 and D3.2.

Specification details for the liner system are provided in Appendix 2H of the Environmental Impact Statement.

### D3.c Has a Quality Control Plan been specified?

Quality Control issues are addressed by the Construction Quality Assurance Plan / Specification, a draft version of which is reproduced in Appendix 2H of the Environmental Impact Statement.

### D3.d Has a Quality Assurance Plan been specified?

Yes. Refer to Section 2.3.11 and Appendix 2H of the Environmental Impact Statement.

### D3.e Have independent, third party supervision, testing and controls been specified?

Yes. Refer to Section 2.3.11 and Appendix 2H of the Environmental Impact Statement.

Third party supervision will be provided by a degree qualified Civil / Environmental Engineer from SLR Consulting with a minimum of 5 years experience of landfill design and construction.

### D3.f Have basal gradients for all cells and access ramps to the cells been designed?

Refer to Section 2.3.8 of the Environmental Impact Statement and Drawings No. D3.1 and D3.2

### D3.g Has a leak detection survey been specified?

Yes. Refer to Section 2.3.11 and Appendix 2H of the Environmental Impact Statement.

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