

Landfill Hazardous Waste

Learning Outcome	Assessment Criteria	Source
1. Understand the legislative and regulatory requirements for a hazardous landfill	1.1 Describe the legislative requirements, regulations, codes of practice and guidance applicable to a hazardous landfill in terms of: <ul style="list-style-type: none"> - Design - Construction - Operation - Closure - Aftercare 	https://www.gov.uk/government/publications/environmental-permitting-guidance-the-landfill-directive https://naturalresources.wales/media/1216/understanding-the-landfill-directive-lfd-1.pdf?lang=en https://www.gov.uk/guidance/landfill-operators-environmental-permits/close-your-landfill-site https://naturalresources.wales/permits-and-permissions/environmental-permits/guidance-to-help-you-comply-with-your-environmental-permit/?lang=en https://naturalresources.wales/media/2111/how-to-comply-with-your-environmental-permit-additional-guidance-for-landfill-epr-502.pdf
	1.2 Describe the principles of financial provision for landfill (including when to take an assessment, the timeframe and financial costs associated with aftercare)	https://www.legislation.gov.uk/ukxi/2016/1154/schedule/10/made https://www.gov.uk/government/publications/landfill-epr-502-and-other-permanent-deposits-of-waste-how-to-surrender-your-environmental-permit/landfill-and-deposit-for-recovery-aftercare-and-permit-surrender#aftercare
	1.3 Explain the relationship between permit conditions and operating techniques	
2. Understand the requirements for site engineering at a hazardous landfill	2.1 Describe the principles of containment	Landfill operators: environmental permits - Guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Manage landfill gas - Guidance - GOV.UK (www.gov.uk)
	2.2 Describe the characteristics of liner and capping designs	https://www.gov.uk/guidance/landfill-operators-environmental-permits/calculate-your-financial-provision
	2.3 List the elements of site construction that require regulatory approval	https://naturalresources.wales/media/1216/understanding-the-landfill-directive-lfd-1.pdf?lang=en



		https://cdn.cyfoethnaturiol.cymru/media/695428/regulatory-guidance-note-5-operator-competence.pdf https://naturalresources.wales/media/2111/how-to-comply-with-your-environmental-permit-additional-guidance-for-landfill-epr-502.pdf https://www.gov.uk/guidance/landfill-operators-environmental-permits/develop-and-maintain-management-plans https://www.gov.uk/guidance/landfill-operators-environmental-permits/design-and-build-your-landfill-site GOV.UK - Using Geomembranes in landfill engineering LFE5 https://www.gov.uk/guidance/landfill-operators-environmental-permits/construction-quality-assurance-cqa
3. Understand the waste reception procedures for a hazardous landfill	3.1 Define hazardous waste in relation to landfill activities.	Landfill operators: environmental permits - Guidance - GOV.UK (www.gov.uk) Wales – How to comply with your environmental permit additional guidance for Landfill
	3.2 List the types of waste banned from a hazardous landfill	Dispose of waste to landfill - GOV.UK (www.gov.uk) Regulatory Guidance Series, No LFD 1 Understanding the landfill directive
	3.3 Describe the legislative requirements, codes of practice and guidance applicable to the reception of hazardous waste at a hazardous landfill.	https://www.gov.uk/dispose-hazardous-waste/consignees Hazardous waste: consignment note guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Accept the right waste - Guidance - GOV.UK (www.gov.uk) EU Council Decision annex
	3.4 Describe the regulatory requirements and organisational procedures for dealing with unauthorised wastes.	https://www.gov.uk/guidance/dispose-of-waste-to-landfill Hazardous waste: rejected loads guidance - GOV.UK (www.gov.uk) The Hazardous Waste (England and Wales) Regulations 2005 http://www.wastesupport.co.uk./hazard-codes/assess-and-describe-all-waste
	3.5 Describe the waste inspection, identification procedures and handling requirements for the types of hazardous waste received on site (including asbestos).	Standard Industry Classification (SIC) code find EWC codes in appendix A of the waste classification technical guidance find the hazard code in appendix C of the waste classification technical guidance banned waste



	<p>3.6 Describe the uses, purposes and processing requirements for documents relating to the reception and validation of hazardous waste received on the site.</p>	<p>Wales – moving hazardous waste</p>
	<p>3.7 Describe the records required by legislation and by organisational procedures relating to the reception, inspection, and validation of hazardous wastes.</p>	
<p>4. Understand how to manage a hazardous landfill</p>	<p>4.1 Describe the procedures for managing vehicles on a landfill site</p>	<p>HSE: Workplace Transport Safety Landfill operators: environmental permits - Monitor and report your performance - Guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Design and build your landfill site - Guidance - GOV.UK (www.gov.uk) Wales – How to comply with your environmental permit additional guidance for Landfill GOV.UK - Using Geomembranes in landfill engineering LFE5 carry out a cylinder test using non-woven protector geotextiles in landfill engineering (LFE7). landfill gas management plan odour management guidance</p>
	<p>4.2 Describe the implications of 'settlement' and 'compaction' for:</p> <ul style="list-style-type: none"> - Restoration plan - Gas and leachate management 	
	<p>4.3 Describe the recommendations for managing landfill stability</p>	
	<p>4.4 Explain when landfill stability may be a problem</p>	
	<p>4.5 Explain why it is important to cover waste with suitable materials</p>	
	<p>4.6 List the types of waste that might damage landfill liners and restoration layers</p>	



	<p>4.7 Describe the procedures for controlling:</p> <ul style="list-style-type: none"> - Mud and other debris - Noise - Dust - Odour - Litter 	
<p>5. Understand the procedures for managing landfill gas from a hazardous landfill</p>	<p>4.8 Explain why it is important to plan the phasing of filling operations</p> <p>5.1 Explain why it is important to manage landfill gas</p> <p>5.2 List the information that should be included in a landfill gas management plan</p> <p>5.3 List the information that should be included in a landfill gas monitoring and sampling plan</p> <p>5.4 Outline the actions to take if a perimeter borehole contains landfill gas components (methane, CO₂) at a range of levels (Including above a compliance limit)</p> <p>5.5 Explain why it is important to collect, utilise and treat landfill gas</p> <p>5.6 Explain why it is important to control landfill gas emissions and manage gas field balancing</p>	<p>EA EP171 (publishing.service.gov.uk) GOV.UK – Guidance on the management of landfill gas, LFTGN03 Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk)</p>



	5.7 Describe the procedures for dealing with deep and shallow fires within a hazardous landfill	
6. Understand the procedures for managing leachate from a hazardous landfill	6.1 Describe the requirements for managing leachate	pres 17 (publishing.service.gov.uk) Landfill operators: environmental permits - Monitor and report your performance - Guidance - GOV.UK (www.gov.uk) PPC Technical Guidance for the treatment of Landfill Leachate (publishing.service.gov.uk) Landfill operators: environmental permits - Manage leachate - Guidance - GOV.UK (www.gov.uk)
	6.2 Explain why leachate levels must be maintained below a limit	
	6.3 Describe the procedure for dealing with: <ul style="list-style-type: none"> - Leachate above control levels - A breach of compliance limit occurring 	
	6.4 Describe the principles of leachate treatment and the associated pollution risks	
	6.5 Describe when a leachate re-circulation system may be permitted and any requirements for its use	
7. Understand how to monitor groundwater and surface water at a hazardous landfill	7.1 Explain why monitoring groundwater and surface water is needed at a hazardous landfill site	Monitoring of Landfill leachate, groundwater and surface water: LFTGN 02
	7.2 Differentiate between monitoring for: <ul style="list-style-type: none"> - Operational performance - Permit compliance limits 	
8. Understand the procedure for closure and aftercare of a hazardous landfill	8.1 Explain why it is important to develop a restoration and aftercare scheme for a hazardous landfill.	Landfill and deposit for recovery: aftercare and permit surrender - GOV.UK (www.gov.uk) Wales – How to surrender your environmental permit- additional guidance for landfill



	8.2 Describe the records required in relation to the closure and aftercare of landfill sites.	Landfill operators: environmental permits - Close your landfill site - Guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk) Wales – How to comply with your environmental permit additional guidance for Landfill
	8.3 Describe the process of surrendering an environmental permit for a hazardous landfill.	
9. Understand the main causes of accidents in relation to hazardous landfill activities and how to prevent them	9.1 Identify the causes of accidents in relation to hazardous landfill activities	Landfill operators: environmental permits - Guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk) HSE: DSEAR for the waste management industry The Dangerous Substances and Explosive Atmospheres Regulations 2002 - Fire and explosion (hse.gov.uk) HSE: Landfill fires – controlling the risk
	9.2 Identify the methods used to prevent accidents in relation to hazardous landfill activities	
	9.3 Describe the dangerous substances and areas of explosive atmospheres that may exist on a landfill site	
	9.4 Outline the operator's responsibilities for area classification and marking zones	
	9.5 Explain how to control ignition sources to reduce fire risk at a hazardous landfill site	

