



Non-hazardous and inert waste: appropriate measures for permitted facilities

July 2020 consultation draft

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We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

We can't do this alone. We work as part of the Defra group (Department for Environment, Food & Rural Affairs), with the rest of government, local councils, businesses, civil society groups and local communities to create a better place for people and wildlife.

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Introduction

1. We have produced this guidance to help you understand the appropriate measures that are relevant to regulated facilities permitted to treat or transfer non-hazardous and inert waste.

2. This guidance applies to permitted waste management facilities such as:

- household waste recycling facilities (civic amenity sites)
- waste transfer stations
- [materials facilities](#)
- inert waste, aggregate and soil treatment facilities
- treatment facilities for processing waste such as wood, tyres, plastics and mattresses

3. Exempt facilities which store or treat non-hazardous or inert waste must follow this guidance.

4. This guidance does not apply to all non-hazardous and inert wastes. It does not apply to:

- animal wastes, carcasses or manures
- sewage
- extractive waste

It also does not apply to certain processes which may involve non-hazardous or inert waste, such as:

- chemical treatment
- producing recycled paper and card
- using waste-derived fuel
- waste incineration or (co-)incineration (including incinerator bottom ash), pyrolysis and gasification
- landfill of waste, or deposit-for-recovery activities
- treating landfill leachate
- in-situ remediation of contaminated soil
- mobile plant

5. Storing and treating the following kinds of waste is (or will be) covered in separate guidance specific to that industry sector:

- biowaste, including food waste
- healthcare, including hygiene and offensive waste
- hazardous waste, including asbestos
- waste electrical and electronic equipment
- batteries
- metal

6. In this guidance, the term 'handling' covers all site-based activities relating to waste, except for storage. Handling includes treatment as well as transfer activities like loading, unloading and moving waste within the facility.

When appropriate measures apply

7. There is a lot of overlap between best available techniques (BAT) for waste installation facilities and necessary measures for waste operation facilities. The Environment Agency uses the term 'appropriate measures' to cover both sets of requirements.

8. Appropriate measures are the minimum standards that operators must meet to comply with their environmental permit requirements. This guidance sets out what you must consider when you assess the appropriate measures for your facility. It is not definitive and it does not replace your obligation to assess appropriate measures fully.

9. Some measures may not be suitable or relevant for your operation. Appropriate measures will depend on the:

- activities being carried out
- size and nature of the activities
- location of the facility

10. For installations there are additional requirements for using energy and raw materials (including water) efficiently. These are called process efficiency measures.

11. Where a measure is not suitable or relevant, an operator can propose alternative measures that achieve the same level of environmental protection. Or they can provide an explanation of why the specific measure is not relevant.

12. In certain situations, a higher standard of environmental protection may be needed, for example:

- where there are local sensitive [receptors](#)
- if the facility is having an effect on the local environment or human health despite using appropriate measures
- if there is a risk that an Environmental Quality Standard is breached

Implementing appropriate measures at new and existing facilities

13. The appropriate measures in this guidance apply to both new and existing facilities that treat, transfer or store non-hazardous or inert waste.

14. For new facilities the appropriate measures must be in place before operations start.

15. For existing facilities, if the cost of complying with the appropriate measures is disproportionate to the environmental benefit, immediate compliance may not be reasonable. Through permit reviews, the Environment Agency will assess the current operating techniques of existing facilities against the relevant appropriate measures. Where an operator is not using appropriate measures, we will expect them to provide improvement plans and timetables for implementing the relevant appropriate measures. We will review these proposals and set formal timescales for making the improvements needed. We will do this by varying the environmental permit to include improvement conditions.

16. Improvements at existing facilities are likely to fall into one of the following two categories.

Standard good practice requirements

17. Where these improvements are relatively low cost, operators should implement them as soon as possible and in any event within 12 months of the date of publication of this guidance. For example, these could be:

- updated management systems
- waste pre-acceptance, acceptance and handling techniques
- measures to prevent fugitive or accidental emissions
- appropriate monitoring equipment
- waste, water and energy efficiency measures

More capital-intensive improvements

18. Operators should complete these improvements as soon as reasonably possible and in any event within 3 years of the date of publication of this guidance. For example:

- installing significant abatement and emission monitoring equipment
- the significant redesign of facility layout, including the installation of new buildings or treatment or abatement plant

19. Local environmental impacts (for example, having sensitive receptors or an air quality management area close by) may mean an operator has to take action more quickly than the timescales provided here.

20. By August 2022, unless we approve a [derogation](#), existing installations must comply with relevant BAT Associated Emission Levels (AELs). These are set out in the published [Waste Treatment BAT Conclusions document](#).

21. New installations (including new or replacement plant at existing facilities) must comply with any relevant BAT AELs from when operations begin, unless a derogation is approved.

Site design and suitability

22. You should consider the potential impacts of climate change when selecting a site especially:

- flood risk
- drought
- extreme temperatures
- extreme weather events

23. You should have enough space on site to manage wastes and to make sure that you minimise potential pollution impacts on nearby receptors. For example, you should have enough space for appropriate fire breaks between stockpiles of combustible waste, and to allow access for fire-fighting. The storage and handling of waste on site must be located as far as technically and economically possible from sensitive receptors and watercourses, while minimising unnecessary handling. Access doors should be on the side of buildings opposite to sensitive receptors.

24. You must have enough space on site to operate your plant and equipment safely, and to segregate waste to prevent cross-contamination.

25. Environmental permits set limits on the amount of waste an operator can bring onto site on an annual basis. The permit may also set other capacity limits, for example the maximum quantity of a particular waste type at any one time. The physical capacity of your site may not be large enough to safely handle, without causing pollution, the amount of

waste your permit allows. You must make sure that the quantities of waste at your facility are manageable at all times and do not exceed your capacity to store and treat waste.

26. At the design stage you should consider:

- how you will monitor emissions from your site
- the access to waste treatment processes so you can take representative samples

General management appropriate measures

Management system

27. You must have an up-to-date written [management system](#), and activities at your facility must follow it. Your management system must incorporate the following features.

28. You have:

- management commitment, including from senior managers
- an environmental policy that is approved by senior managers and includes the continuous improvement of the facility's environmental performance, so you can identify pollution risks and minimise them through appropriate measures

29. You plan and establish the resources, procedures, objectives and targets needed for environmental performance alongside your financial planning and investment.

30. You implement your environmental performance procedures, paying particular attention to:

- staff structure and relevant responsibilities
- staff recruitment, training, awareness and competence
- communication (for example of performance measures and targets)
- employee involvement
- documentation
- effective process control
- maintenance programmes
- management of change
- emergency preparedness and response
- making sure you comply with environmental legislation

31. You check environmental performance and take corrective action, paying particular attention to:

- monitoring and measurement
- learning from incidents, near misses and mistakes, including those of other organisations
- records maintenance
- independent (where practicable) internal or external auditing of the management system to confirm it has been properly implemented and maintained

32. Senior managers review the management system to check it is still suitable, adequate and effective at least annually. Improvements should be carried out within a reasonable time.
33. You review the development of cleaner technologies and their applicability to site operations.
34. When designing new plant, you make sure that you assess the environmental impacts from the plant's operating life and eventual decommissioning. You must make sure that new plant is authorised by your environmental permit.
35. In order to track and control the process of change, you must have a written procedure for proposing, considering and approving changes to procedures or infrastructure that are related to the storage or treatment of waste or pollution control.
36. You consider the risks that a [changing climate](#) poses to your operations. You have appropriate plans in place to assess and manage future risks.
37. You compare your facility's performance against relevant sector guidance and standards on a regular basis, known as sectoral benchmarking.
38. You carry out appropriate [waste stream management](#).
39. You have and maintain the following documentation as part of your management system:
- inventory of [emissions to air and water](#)
 - [residues management plan](#)
 - [accident management plan](#)
 - [site infrastructure plan](#)
 - [site condition report](#) for new facilities or where you are increasing the facility's area
 - [odour management plan](#), if required
 - [noise and vibration management plan](#), if required
 - [dust management plan](#), if required
 - [pest management plan](#), if required
 - [fire prevention plan](#), unless your facility does not handle combustible waste
 - [climate change risk assessment](#), if required
40. Your management system must include a schedule of inspection and maintenance for all pollution control infrastructure, including for example the:
- impermeable surfacing and drainage system
 - gas ducts of abatement systems
41. You must have a document control procedure that clearly describes how and when you will periodically review documentation and maintain version control.
42. Your management system must clearly set out the actual physical capacity of your facility to store and handle waste, which may be less than the quantity limits allowed by your permit. You must specify limits for the maximum:
- waste storage capacity at any one time
 - daily and annual throughputs
 - residence time for waste

43. When doing this, you must take into account the characteristics of your facility, the waste types and the pollution risks, for example fire and odour.

44. Your limits must also reflect the constraints of the available space and processes. You must include factors like seasonal changes in supplies of inputs, and markets for outputs. Further information on determining capacity is available in our [RGN 2](#) guidance.

Staff competence

45. Your facility must be operated at all times by an adequate number of staff with appropriate [training, qualifications and competence](#). You must keep records of training, qualifications and relevant experience.

46. If you operate a 24-hour process, you must have:

- remote or telemetric systems to make sure an alarm would be raised in the event of an incident during unmanned hours
- appropriate personnel on call to deal with these incidents

You must adequately explain these procedures in your management system.

47. The design, installation and maintenance of infrastructure, plant and equipment must be carried out by competent people.

48. You must have appropriately qualified managers for your waste activity who are members of a government approved [technical competence scheme](#).

49. Staff undertaking waste acceptance checks, including sampling and analysis of waste, must be appropriately trained and competent to

- classify and characterise waste properly,
- identify whether it is suitable for your facility
- manage any loads that do not conform to waste acceptance criteria

Accident management plan

50. As part of your written management system you must have a plan for [dealing with any incidents or accidents](#) that could result in pollution, including near misses.

51. The accident management plan must identify and assess the risks the facility poses to human health and the environment. Particular areas to consider may include:

- waste types
- transferring substances, for example filling (including overfilling) or emptying of vessels and containers
- preventing incompatible substances coming into contact with each other
- failure of plant and equipment, for example over-pressure of vessels and pipework, or blocked drains
- failure of containment, for example bund failure or drainage sumps overfilling
- making the wrong connections in drains or other systems
- failure to contain firefighting water
- failure of abatement systems
- hazardous atmospheres in confined spaces
- failure of main services, for example power, steam or cooling water

- checking the composition of effluents before their emission
- vandalism and arson
- operator error
- accessibility of control equipment in emergency situations
- extreme weather conditions, for example flooding or very high winds

52. You must assess the risk of accidents and their possible consequences. Risk is the combination of the likelihood that a hazard will occur and the severity of the impact resulting from that hazard. Having identified the hazards, you can assess the risks by addressing six questions:

- how likely is it that the accident will happen?
- what may be emitted and how much?
- where will the emission go - what are the pathways and receptors?
- what are the consequences?
- what is the overall significance of the risk?
- what can you do to prevent or reduce the risk?

53. The depth and type of accident risk assessment you carry out will depend on the characteristics of your facility and its location. The main factors to take into account are the:

- scale and nature of the accident hazard presented by the facility and its activities
- risks to areas of population and the environment (the receptors)

54. Through your accident management plan, you must also identify the roles and responsibilities of the staff involved in managing accidents. You must provide them with clear guidance on how to manage each accident scenario, for example, whether to use containment or dispersion to extinguish fires, or let them burn.

55. You must appoint one facility employee as an emergency coordinator who will take lead responsibility for implementing the accident management plan.

56. You must train your employees so they can perform their duties effectively and safely and know how to respond to an emergency.

57. You must also:

- establish how you will communicate with relevant authorities, emergency services and neighbours, as appropriate, before, during and after an accident
- implement emergency procedures, including for safe plant shutdown and site evacuation
- implement post-accident procedures that include undertaking an assessment of the harm that may have been caused by an accident and the remediation actions you will take
- consider the impact of accidents on the function and integrity of plant and equipment
- have contingency plans to relocate or remove waste from the facility, and suspend incoming waste
- test the accident management plan by carrying out emergency drills and exercises

58. Following a flooding event you must inspect and assess the integrity of affected plant and equipment, in particular infrastructure that may have been in contact with floodwater or groundwater. Tank inspections may include non-destructive testing methods to verify their integrity.

59. You must take the following measures, where appropriate, to prevent events that may lead to an accident. You must have appropriate procedures set out in your accident management plan.

Preventing accidental emissions

60. You must make sure that you contain the following (where appropriate) and route to the effluent system (where necessary and lawful):

- process waters
- site drainage waters
- emergency firefighting water
- chemically contaminated waters
- spillages

61. You must have a provision to contain surges and storm water flows. You must provide enough buffer storage capacity to make sure that you can achieve this. You can define this capacity using a risk based approach, for example, by taking into account the:

- nature of the pollutants
- effects of downstream waste water treatment
- sensitivity of the receiving environment

62. You can only discharge waste water from this buffer storage after you have taken appropriate measures, for example, to control, treat or re use the water. You must make sure your permit authorises you to discharge waste water from your site into the environment.

63. You must implement spill contingency procedures to minimise the risk of an accidental spill entering watercourses or sewers or contaminating land.

64. You must take account of additional firefighting water flows or firefighting foams, in accordance with our [fire prevention guidance](#). You may need infrastructure like emergency storage lagoons to prevent contaminated firefighting water from reaching a receiving water body.

65. You must consider and, if appropriate, plan for the possibility that you may need to contain or abate accidental emissions from:

- overflows
- vents
- safety relief valves
- bursting discs and seals
- tank wall penetrations

If this is not advisable on safety grounds, you must focus attention on reducing the probability of the emission.

Security measures

66. You must have security measures (including staff) to prevent unauthorised access to your facility, thereby preventing:

- harm or injury
- damage to equipment
- theft
- illicit dumping and fly-tipping
- arson

67. Facilities must use an appropriate combination of the following measures:

- security guards
- total enclosure (usually with fences)
- controlled entry points
- lighting
- warning signs
- 24 hour surveillance, such as CCTV

Fire prevention

68. If your permit allows you to store or treat combustible waste, you must have a [fire prevention plan](#) that meets the requirements of our guidance.

Other accident prevention measures

69. You must maintain plant control in an emergency using one or a combination of the following measures:

- alarms
- trips and interlocks
- automatic systems based on microprocessor control and valve control
- tank level readings such as ultrasonic gauges, high level warnings, process interlocks and process parameters

70. You must:

- make sure that all the measurement and control devices you would need in an emergency are easy to access and operate in an emergency situation
- maintain plant in a good state through a preventive maintenance programme and a control and testing programme
- use techniques such as suitable barriers to prevent moving vehicles damaging equipment
- implement procedures to avoid incidents due to poor communication between operating staff - during shift changes and following maintenance or other engineering work
- where relevant, use equipment and protective systems designed for use in potentially explosive atmospheres

Record keeping and procedures

71. You must:

- keep an up to date record of all accidents, incidents, near misses, changes to procedures, abnormal events, and the findings of maintenance inspections
- carry out investigations into accidents, incidents, near misses and abnormal events and record the steps taken to prevent their reoccurrence
- maintain an inventory of substances which are present (or likely to be) and which could have environmental consequences if they escape

72. You should notify the Environment Agency without delay if you detect any of the following events and they are causing, or may cause, significant pollution:

- a malfunction
- a breakdown or failure
- an accident
- emission of a substance not controlled by an emissions limit
- breach of an emissions limit

Contingency plan and procedures

73. You must implement a [contingency plan](#) which makes sure that you:

- comply with all of your permit conditions and operating procedures during maintenance or shutdown at your facility, including disruption at other facilities affecting supplies to your facility, or removing waste from it
- do not exceed limits in your permit and you continue to apply appropriate measures for storing and handling waste
- stop accepting waste unless you have a clearly defined method of recovery or disposal and enough permitted capacity

74. You must have contingency procedures to make sure that, as far as possible, you know in advance about any planned shutdowns at waste management facilities to which you send waste.

75. You must make your customers aware of your contingency plan, and of the circumstances in which you would stop accepting waste from them.

76. You must consider whether the sites or companies you rely on in your contingency plan:

- can take waste at short notice
- are authorised to do so in the quantities and types likely to be needed, in addition to carrying out their existing activities

77. You must not discount alternative disposal or recovery options on the basis of extra cost or geographical distance if doing so means you could exceed your permitted limits or compromise your storage or handling procedures.

78. You must not include unauthorised capacity in your contingency plan. If your contingency plan includes using temporary storage for additional waste at your facility, then you must make sure that your facility is authorised for this storage and you have the appropriate infrastructure in place.

Contingency measures for treatment only

79. Your management procedures and contingency plan must:

- identify your technology's known or predictable malfunctions and the procedures, spare parts, tools and expertise needed to deal with them - so you can minimise predictable malfunctions and fix them quickly
- include a record of spare parts held, especially critical spares, or state where you can get them from and how long it would take
- have a defined procedure to identify, review and prioritise items of plant which need a preventative regime
- include all equipment or plant whose failure could directly or indirectly lead to an impact on the environment or human health
- identify non-productive or redundant items such as tanks, pipework, retaining walls, bunds, reusable waste containers, ducts, filters and security systems and implement a programme of decommissioning and removal
- make sure you have the spare parts, tools, and competent staff needed before you start maintenance

80. If you produce an end-of-waste material, your contingency planning must consider storage capacity for end-of-waste products, and materials that fail the end-of-waste specification.

81. Your management system must include procedures for auditing your performance against all of these contingency measures and for reporting the audit results to the site manager.

Facility decommissioning

82. You must consider the decommissioning of the facility at the design stage and make suitable plans to minimise risks during decommissioning.

83. For existing facilities where potential risks are identified, you must implement a programme of design improvements. These design improvements must make sure that you:

- avoid using subsurface tanks and pipework
- drain and clean out vessels and pipework before dismantling
- use insulation which you can remove easily without dust or hazard
- use recyclable materials, taking into account operational or other environmental objectives

84. You must maintain a decommissioning plan to demonstrate that:

- plant can be decommissioned without causing pollution
- the site will be returned to a satisfactory condition

85. You should follow our guidance on [how land and groundwater should be protected at permitted facilities](#). You should plan for producing a site condition report, if needed to surrender your permit.

Waste pre-acceptance, acceptance and tracking

Waste pre-acceptance

86. You must implement waste pre-acceptance procedures so that you know enough about a waste (including its composition) before it arrives at your facility. You need to do this to assess and confirm that the waste is technically and legally suitable for your facility. If you accept the waste, you must keep records to justify your decision. Your pre-acceptance procedures must follow a risk-based approach, considering:

- the source and nature of the waste
- potential risks to process safety, occupational safety and the environment (for example from odour and other emissions)
- knowledge about the previous waste holder(s)

87. When you receive a customer query, and before the waste arrives at your facility, you must obtain enough information from the waste producer to satisfy yourself that the waste has been properly assessed and classified in accordance with [WM3](#). (This does not apply if the waste comes from an occupier of a domestic property and is waste produced on that property.) As a minimum, you must get the following information in writing or electronic form:

- details of the waste producer including their organisation name, address and contact details
- a description of the waste
- the waste's List of Wastes Regulations code (European Waste Classification code)
- the source of the waste (the process that gives rise to the waste)
- information on the nature and variability of the waste production process
- information about the history of the donor site if it may be relevant to the classification of the waste (for example soils and other construction and demolition arisings from a site contaminated by previous industrial uses)
- the waste's physical form
- the waste's composition (based on representative samples if necessary)
- a description of the waste's odour
- the waste's age, that is [when it first became waste](#)
- the type of packaging
- whether the waste is mixed or segregated by List of Wastes code
- an estimate of the quantity you expect to receive in each load and in a year

88. For mirror entry List of Wastes codes, you must also get the following (unless the waste comes from the occupier of a domestic property and is waste produced on that property) in writing or electronic form:

- information about the pollutants that could be present
- an assessment of the waste's hazardous properties (this may involve sampling and analyses or, in some cases, a safety data sheet)
- where sampling has been used, there must be evidence to demonstrate that the samples are representative of the waste (this should be set out in a sampling plan)
- an assessment of the sampling results to determine whether the waste has hazardous properties

- confirmation of the correct List of Wastes code, based on the assessment

89. You may decide to accept a customer's mirror entry waste without sample information if the origin of the waste is reliably understood and it clearly demonstrates that the waste is non-hazardous. However, just a visual assessment will not be enough to assess whether mirror entry waste is hazardous or not.

90. If the waste is a mirror entry and has not been properly assessed, you must assume it is the hazardous entry as a precautionary measure. This is likely to mean that you cannot accept it at your facility. You should verify the pre-acceptance information by contacting or visiting the producer. Dealing with staff directly involved in waste production can help to fully characterise a waste.

91. Analysis of pre-acceptance samples must be carried out by laboratories who are UKAS or MCERT accredited for the prescribed test

92. After a waste has been properly assessed and classified, you must technically assess the waste's suitability for storage or treatment at your facility to make sure you can meet your permit conditions. You must make sure that the waste complies with your facility's treatment capabilities and you are permitted to take that waste.

93. You must keep pre-acceptance records for at least 3 years, in a [computerised waste tracking system](#), following receipt of the waste. If an enquiry does not lead to receipt of the waste, you do not need to keep records.

94. You must reassess the information required at pre acceptance if the:

- waste changes
- process giving rise to the waste changes
- waste received does not conform to the pre acceptance information

In all cases you must reassess the information required at pre-acceptance on an annual basis.

95. When you agree that you will accept waste from a customer, you should decide and record what parameters you will check at the acceptance stage. The checks could be visual, physical, chemical and odour-based parameters. You must also record the criteria for non-conformance or rejection. The person checking the waste for acceptance can also decide on their own additional parameters.

Waste acceptance

96. You must implement waste acceptance procedures to check that the characteristics of the waste received matches the information you obtained during waste pre-acceptance. This is to confirm the waste is as expected and that you can accept it. If the waste does not conform to the pre-acceptance information, you may still be able to accept the waste, but you must confirm first that your permit allows it and that your facility can handle it appropriately. Otherwise, you must reject the waste.

97. Your procedures should follow a risk-based approach, considering:

- the source, nature and age of the waste
- potential risks to process safety, occupational safety and the environment (for example, from odour and other emissions)
- the potential for self-heating
- knowledge about the previous waste holder(s)

98. You must only receive pre-booked wastes onto site that have been adequately pre-accepted and that are consistent with the pre-acceptance information. This does not apply in an emergency (for example, taking waste resulting from an emergency incident clean-up) or to household waste recycling facilities.

99. When deciding whether to accept waste, you must also check that the relevant storage areas (quarantine, reception and general) and treatment processes in your facility have the physical capacity needed to handle the waste. You must not accept waste if this capacity is not available, or if you would breach your permit by doing so.

100. You must visually check wastes and verify them against pre acceptance information and transfer documentation before you accept them on site. The extent of the initial visual check is determined by the waste type and how it is packaged.

101. You must check and validate all transfer documentation and resolve discrepancies before you accept the waste. If you believe the incoming waste classification or description is incorrect or incomplete, then you must address this with the original waste producer during waste acceptance. You must record any non-conformance. If you have assessed the waste as acceptable for on-site storage or treatment, you must document this.

102. You must have clear criteria that you use to identify non-conforming wastes and wastes to be rejected. You must also have written procedures for recording, reporting and tracking non-conforming and rejected wastes. These must include:

- using quarantine storage
- notifying the relevant customer or waste producer
- recording a summary of your justification for accepting non-conforming waste in your [computerised waste tracking system](#)

You must take measures to prevent recurrence.

103. Where you reject hazardous waste, you must follow the [requirements of the Hazardous Waste \(England and Wales\) Regulations 2005](#).

104. You must weigh each load of waste on arrival to confirm the quantities against the accompanying paperwork, unless alternative reliable and representative systems are available (for example, based upon density and volume). You must record the weight in your [computerised waste tracking system](#), so you can monitor available capacity at your facility.

105. The person carrying out waste acceptance checks must be trained to effectively identify and manage any non-conformances in the loads received, so you comply with your [Duty of Care for waste](#) and your permit conditions.

106. Your procedures must make sure that your staff watch waste being unloaded from tipper lorries, so you can quarantine the waste if necessary before it is mixed with other material.

107. Offloading, reception and quarantine areas must have an impermeable surface with self-contained drainage, to prevent any potentially polluting liquid from escaping off site. This requirement does not apply if your facility's permit allows only inert wastes and does not require impermeable surfacing with self-contained drainage.

Quarantine

108. Your facility must have a dedicated waste quarantine area which you use to temporarily store waste being rejected, or non-conforming waste whilst it is being assessed.

109. Quarantine storage must be separate from all other storage and clearly marked as a quarantine area.

110. You should store the waste in quarantine in closed containers or cover it to prevent emissions if appropriate. For example, you should sheet quarantined soil or store it in a covered skip to prevent rainfall or wind from mobilising pollutants.

111. You must have written procedures for dealing with wastes held in quarantine, including a maximum storage volume. Quarantine storage must not exceed five working days. Your procedures should make sure you remove quarantined waste from your facility in less than five working days if it is causing (or poses a risk of causing) significant pollution off-site.

Waste sampling and analysis

112. You may need to take samples of waste to assess and classify it against the pre-acceptance information and your waste acceptance procedures. For example, if you accepted waste in an emergency or waste which you now suspect is inconsistent with pre-acceptance information. You may also need to sample waste to inform decisions about appropriate treatments, or to test the specification of outputs.

113. If you take samples, they must be representative. A representative sample is one that takes account of the full variation and any partitioning of the waste so you can account for worst case scenarios.

114. Before sampling waste, you must have sampling procedures. When developing your procedures, you should consider [EN 14899 Characterization of waste - Sampling of waste materials - Framework for the preparation and application of a Sampling Plan](#). Your sampling procedures must:

- produce representative samples for analysis
- enable decisions about waste acceptance and treatment
- be risk-based, depending on the type of waste, knowledge of the waste producer and their process, and possibilities for treatment

115. You must customise your sampling procedures for:

- bulk liquid
- bulk solids
- large and small containers or vessels (the number of samples increases with the number of containers or vessels and the variability of the waste)

116. In the case of containerised liquids, you must obtain a representative sample by taking a core sample down to the base of the container. You must make sure that you replace lids, bungs and valves immediately after sampling. You can make a composite sample of liquid from multiple containers if each container holds the same waste and you know the waste is not variable.

117. You must determine and record the following information in your [computerised waste tracking system](#):

- the sampling regime for each load, together with your justification for selecting each option
- a suitable location for the sampling points
- the capacity of the sampled vessel (for samples from containers, an additional parameter would be the total number of containers)

- the number of samples and degree of consolidation
- the operating conditions at the time of sampling

118. If you decide not to sample waste subject to a mirror entry hazardous waste code, you must record your justification in your computerised waste tracking system.

119. You must have waste samples tested against the parameters decided at pre-acceptance. You must record the results of the tests in your [computerised waste tracking system](#). You must note and investigate any discrepancies.

120. Sample analysis must be carried out by laboratories who are UKAS or MCERT accredited for the prescribed test.

Acceptance of bulk wastes

121. You must only offload bulk loads after they have been fully verified as compliant with your permit. You must not accept a non-compliant bulk load for interim storage except in an emergency. Verification testing must include checking:

- consistency with the pre-acceptance information
- compatibility with the contents of any receiving vessel

122. Deliveries in a bulk road tanker must be accompanied by a 'wash out' certificate or a declaration of the previous load so that contamination by this route can be checked.

123. Wherever possible you should take samples from tankers representatively by taking a core sample from the top hatch and from a suitable gantry. You must sample from each compartment where the tanker is divided into multiple compartments. If you have to take a sample from the back valve, you must take precautions to avoid spillages.

Waste tracking

124. You must use a computerised waste tracking system to hold up-to-date information about the available capacity of different parts of your facility, for example reception, quarantine, treatment and bulk storage. You must use a pre-booking system to make sure that you have enough waste storage and process capacity for the incoming acceptable waste.

125. Your computerised waste tracking system must hold all the information generated during:

- pre acceptance
- acceptance
- non-conformance or rejection
- storage
- repackaging
- treatment
- removal off site

This information must be readily accessible.

126. You must create records and update them to reflect deliveries, on-site treatment and despatches. Your tracking system will also operate as a waste inventory and stock control system, including both wastes and end-of-waste materials produced at your facility. It must include this information as a minimum:

- the date the waste arrived on site
- the original producer's details (or unique identifier)
- a unique reference number
- waste pre acceptance and acceptance information
- the package type and size
- the intended treatment or disposal route
- the nature and quantity of wastes held on site
- where the waste is physically located on site
- where the waste is in the designated recovery or disposal process
- identifying the staff who have taken any decisions about accepting or rejecting waste streams and who have decided on recovery or disposal options
- details that link waste to relevant transfer notes
- details of any non-conformances and rejections, including consignment notes for waste rejected because it is hazardous

127. The computerised waste tracking system must be able to report for each of List of Wastes code:

- the total quantity of waste present on site at any one time
- a breakdown of the waste quantities you are storing pending on-site treatment or awaiting onward transfer
- where a batch of waste is located based on a site plan
- the quantity of waste on site compared with the limits in your management system and permit
- the length of time the waste has been on site compared with the limits in your management system and permit

128. The computerised waste tracking system must also be able to report the total quantity of end-of-waste materials on site at any one time, and where that material is located based on the site plan.

129. You must store back-up copies of these computer records off site. These records must be readily accessible in an emergency.

130. You must keep acceptance records for a minimum of 2 years after you have treated the waste or removed it off site. You may have to keep records for longer if they are required for other purposes, for example hazardous waste consignment notes.

Waste storage

131. You must have waste storage and handling procedures. You must store and handle waste in a way that makes sure you prevent and minimise pollution risks by using appropriate measures.

132. You must store waste in locations that minimise the unnecessary handling of waste. Waste handling must be carried out by competent staff using appropriate equipment. You must use mechanical unloading technologies where it is possible, safe and practicable to do so.

133. Where possible, you should locate storage areas away from watercourses and sensitive perimeters, for example those close to public rights of way, housing or schools. You must store all waste within the security protected area of your facility to prevent unauthorised access and vandalism.

134. You must clearly document in your management system the maximum storage capacity of your facility and its designated storage areas. You must regularly monitor the quantity of stored waste against the allowed maximum capacities, and not exceed them. You must define capacity in terms of, for example:

- maximum tank or vessel capacities
- cubic metres or tonnage
- numbers of skips or other containers

135. You should clearly mark all waste storage areas and provide signs indicating the type of waste stored there.

136. You must not accumulate wastes. You must treat wastes or remove them from the site as soon as possible. You must prioritise the treatment or off-site transfer of waste based on:

- its type
- its age on arrival
- the date of arrival
- the duration of storage on site

137. Except for inert waste, you must follow the first-in-first-out principle, unless you need to prioritise more recently received wastes because they pose a higher risk of pollution.

138. You must thoroughly clean storage bays and containers used for non-inert waste on a regular basis to prevent the build-up of aging waste, which will be a source of odour and attract vermin.

139. All waste containers must be fit for purpose, that is:

- in sound condition
- not corroded, if metal
- have well-fitting lids
- suitable for the contents
- with caps, valves and bungs in place and secure
- within the manufacturer's designed lifespan, particularly for plastic containers

140. You must inspect storage areas, containers and infrastructure regularly to make sure there is no loss of containment. You must deal with any issues immediately. You must keep written records of the inspections. You must rectify and log any spillages of waste.

141. You must not carry out activities that represent a fire risk within any waste storage area. Examples of these activities include:

- grinding
- welding or brazing of metalwork
- smoking
- parking of mobile plant and normal road vehicles except while unloading

- recharging forklift truck and other mobile plant batteries

Segregation

142. You should keep different types of waste segregated if contamination would hamper the recovery of the waste.

143. Where paper, plastic, metal or glass have been separately collected, they must not be mixed with other waste or material. This duty applies where [keeping waste separate is required](#) and to facilitate or improve recovery of the waste.

RDF or SRF storage

144. Bales of refuse derived fuel (RDF) and solid recovered fuel (SRF) must be securely wrapped with high-density polyethylene (HDPE) membrane or equivalent. This is to prevent the ingress of water, access by pests and odour release. You should inspect bales regularly and rewrap any that are damaged. If wrapped securely, they can be stored outside (unless your permit forbids this). If you store bales outside, your fire prevention plan must manage risks from solar heating during hot weather.

145. You must minimise RDF and SRF storage duration. You must implement an auditable bale identification system so that you can remove bales in date order.

146. You must have a contract for the end use of your RDF or SRF before you export it abroad. You should not stockpile RDF or SRF whilst you try to agree a contract. You must comply with the limits set out in your approved fire prevention plan at all times. This means that you must implement contingency measures if you cannot secure a contract for the recovery of RDF or SRF within the relevant time, for example by sending old stock to a UK waste incinerator or landfill.

Bulk storage

147. You must use tanks and associated equipment that are suitably designed, constructed and maintained. You must carry out a risk assessment to validate the design and operation of bulk storage systems. Before you use new tanks and equipment you must check that they are working correctly.

148. Tanks should be designed to deal with routine pressure variations. Pressure relief systems should be designed to be used for emergency venting.

149. You should vent bulk storage tanks and silos through suitable abatement.

150. Bulk storage systems must conform to the following guidance:

- [CIRIA 535 Above ground proprietary prefabricated oil storage tank systems](#)
- [CIRIA 736 Containment systems for the prevention of pollution](#)

151. You must locate bulk storage vessels on an impermeable surface which is resistant to the material being stored. The surface must have self-contained drainage to prevent any spillage from entering the storage systems or escaping off site. Impermeable surfaces must have sealed construction joints.

152. You must bund all tanks containing liquids that could be harmful to the environment if spilled, following the requirements to prevent [fugitive emissions to land and water](#).

153. You must control sludge build-up and the emergence of foams in tanks, for example by regularly sucking out the sludge and using anti foaming agents.

154. You must equip storage and treatment tanks with an automatic level monitoring system and an associated alarm or trip system. These systems must be robust enough

(for example, be able to work if sludge and foam are present) and regularly maintained. You must fit tanks with suitable overflow protection.

155. You must be able to close all connections to vessels, tanks and secondary containment using suitable valves. You must fit a valve close to the tank if you have bottom outlets, and have at least 2 isolation points in case of valve failure.

156. You must direct overflow pipes to a contained drainage system (for example the relevant secondary containment) or to another vessel where suitable control measures are in place.

157. Tanks, pipework and fittings must be examined by a competent person, following a written scheme. A competent person must also determine the scope and frequency of the examination. You must work out how often to carry out these internal examinations using a risk assessment approach. This should be based on:

- tank service
- maintenance history
- known and potential damage mechanisms and their rates of attack

158. You should also carry out intermediate external examinations. You must act on the results of the examinations and carry out any repairs needed to make sure the tanks remain fit for service. You must keep records of the results of examinations and repairs.

159. You must have systems in place to make sure that loading, unloading and storage are safe, considering any associated risks. This can include:

- having piping and instrumentation diagrams
- using ticketing systems
- using key locked coupling systems
- having colour coded points, fittings and hoses
- using specific coupling or hose sizes for certain waste transfers

160. You should not use open topped tanks, containers, vessels or pits to store or treat liquid wastes.

161. All pipes, hoses, connections, couplings and transfer lines must be fit for purpose and resistant to the wastes being stored. You must use a suitable pipework coding system (for example RAL European standard colour coding).

162. Your staff must supervise loading and unloading activities, either directly or via CCTV.

Waste treatment

163. Waste treatment must have a clear and defined benefit. You must fully understand, monitor and optimise your waste treatment process to make sure that you treat waste effectively and efficiently. The treated output material must meet your expectations and be suitable for its intended disposal or recovery route. You must identify and characterise emissions from the process and take appropriate measures to control them at source.

164. You must sort incoming waste to prevent unwanted material from entering subsequent waste treatment processes.

165. You must have accurate and up-to-date written details of your treatment activities, and the abatement and control equipment you are using. You should include information

about the characteristics of the waste to be treated and the waste treatment processes, including:

- simplified process flow sheets that show the origin of the emissions
- descriptions of process-integrated techniques and waste water or waste gas treatment at source, including their performances
- diagrams of the main plant items where they have environmental relevance, for example, storage, tanks, treatment and abatement plant design
- details of physical processes for example separation, compaction, shredding, heating, cooling or washing
- details of effluent treatment, including a description of any flocculants or coagulants used
- an equipment inventory, detailing plant type and design parameters, for example, time, temperature, pressure
- waste types to be subjected to the process
- the control system philosophy and how the control system incorporates environmental monitoring information
- process flow diagrams (schematics)
- the hourly processing capability of waste treatment equipment
- venting and emergency relief provisions
- a summary of operating and maintenance procedures
- process instrumentation diagrams

The extent of the information about your treatment activities will depend on the nature, scale and complexity of your facility and the range of environmental impacts it may have. It is also determined by the type and amount of wastes processed.

166. You must have up-to-date written details of the measures you will take during abnormal operating conditions to make sure you continue to comply with permit conditions. Abnormal operating conditions include:

- unexpected releases
- start-up
- momentary stoppages
- shutdown

167. You must install pressure and vacuum relief valves on all vessels where there is a risk of pressurisation. You must have an automated system that monitors and records the date, time and duration of pressure relief, with appropriate alarms. You must make sure that pressure relief valves reseal correctly.

Liquid waste

168. You must seal all tanks used for the treatment of liquid-based waste. Air from within the tanks must be contained, collected and treated in a suitably designed and engineered abatement system or gas recovery system.

169. You must not heat any waste to a temperature above its flash point. You must not mix or blend waste with other wastes or products at a temperature at or above the waste's flash point.

Soils and inert waste

170. Your proposed treatment method must be appropriate for the contaminants in the soil being treated so that you can properly recover the soil for reuse.

171. Soil washing is a physico-chemical treatment (not a separation or sorting activity) and you must categorise the outputs accordingly following WM3.

Waste treatment outputs, including fines

172. You must not make assumptions about the nature of the outputs from your waste treatment processes. You must make sure that you appropriately classify the outputs following [WM3](#). Failure to do so may breach your [Duty of Care for waste](#) and constitute an offence under the Environmental Protection Act 1990.

This is particularly important for fines arising from shredding and trommelling processes, which generally:

- require disposal at cost
- contain a range of contaminants
- are likely to be subject to a mirror entry code in the List of Wastes, for example 19 12 11* versus 19 12 12

173. Any hazardous waste taken from your facility must be consigned following our guidance [Dispose of hazardous waste](#).

174. If an output is not waste, for example because [end-of-waste criteria](#) have been met or the material has been produced in accordance with a Quality Protocol, then you do not need to store the output within your permitted area. However, non-waste materials are still able to cause pollution, for which you remain liable. You must implement appropriate measures to prevent and minimise risks of pollution from non-waste and waste materials.

Waste treatment for landfill

175. You must normally treat waste before it is sent to landfill. Your treatment must follow our guidance [Treat waste for landfill](#).

Emissions control

176. You must identify, characterise and [control emissions](#) from your activities that may cause pollution.

Enclosure within buildings

177. Enclosing activities within buildings is an appropriate measure for preventing and minimising emissions of pollution. For waste treatment activities, we consider this to be the default control measure, given that an appropriately designed building will reduce a range of types of pollutants.

178. If your waste treatment activity is likely to cause pollution at sensitive receptors, or if pollution has been substantiated, then you must carry out that waste treatment activity within an enclosed building. This is unless you can demonstrate to us that alternative measures are equally effective or better.

179. You must also carry out non-treatment activities, such as storing and transferring waste, including loading and unloading, in enclosed buildings if they produce significant emissions that you cannot effectively control by alternative measures.

180. An enclosed building means a construction designed to provide sheltering cover and minimise emissions of noise, particulate matter, odour and litter. It must be enclosed on all sides. Its doorways must be as small as practical, and covered with fast-acting doors which default to the closed position. Its windows must be kept closed unless they are required for ventilation. Dirty air must pass through appropriate abatement before being emitted from the building.

181. Material transfer and storage systems and equipment (for example conveyors, hoppers, containers and tanks) can extend outside the building so long as they are also fully enclosed.

182. You must regularly assess your building's integrity. You should consider using BS EN ISO 9972:2015 to demonstrate building containment. This method is based on fan pressurisation. You should carry out a smoke test at least annually.

183. Enclosed buildings must be ventilated to provide a safe working environment for employees. Your building's ventilation system must be properly designed and effective in order for the building to provide adequate containment and prevent fugitive emissions and noise breakthrough. The engineer designing the ventilation system must be appropriately qualified. In order to validate the size of supply points (louvers), and the volume of dirty air that needs to be extracted, the engineer must understand and consider:

- the needs of the occupants working in the building
- heat release
- the volume of moist gas emissions that will be generated

You should reference the engineering report in your management system.

184. The air inside the building must be maintained under negative pressure, or you must install a localised extraction system that extracts dirty air from sources of pollution within the building. Sources that could potentially benefit from localised extraction include:

- shredders and trommels
- waste loading and unloading areas
- odorous stockpiles

185. You must regularly assess the integrity of your building for damage that could result in fugitive emissions including noise breakthrough. You must prevent and minimise damage by implementing a maintenance programme.

186. You must implement a policy controlling door opening, to make sure that the engineered ventilation system works as effectively as possible. It must direct emissions to the abatement system, rather than letting them escape as fugitive emissions through doors or windows. If you use negative pressure, it must be maintained when doors are opened, and you must monitor the pressure to demonstrate its effectiveness. Additional measures to minimise fugitive emissions may be required in some cases, for example installing an airlock entry system.

187. To reduce emissions of noise and vibration, the building must have an appropriate minimum surface density. You must install acoustic seals on doors and windows, following advice from an acoustic specialist.

Point source emissions to air (channelled emissions)

188. You must use appropriate measures to make sure that you collect, extract and direct all process emissions to an appropriate abatement system for treatment before release.

189. You must identify the main chemical constituents of your facility's point source emissions as part of your inventory of emissions to air. You must include the speciation of volatile organic compounds (VOCs) if you have identified them in the inventory and it is practicable to do so. You must characterise your emissions sufficiently to make sure that your chosen abatement systems are effective.

190. You must make an assessment of the fate and impact of the substances emitted to air, following the Environment Agency's [risk assessment guidance](#).

191. To reduce point source emissions to air (for example dust and odorous compounds) from the treatment of waste, you must use an appropriate combination of abatement techniques. Or you must demonstrate to us that your alternative abatement is equally effective or better. The appropriate combination of abatement techniques would include one or more of the following:

- adsorption
- biofiltration, biotrickling or bioscrubbing
- cyclone
- fabric filter
- water injection (into a shredder)

192. You must assess and design vent and stack locations and heights to make sure dispersion capability is adequate and noise pollution is prevented. You may need to carry out [dispersion modelling](#) to establish whether the height of the vent or stack allows emissions to disperse appropriately, preventing any impacts on receptors.

193. Where monitoring is required, including for odour, you must install suitable monitoring points which meet the [sampling standard](#) for the relevant pollutants.

194. You must have procedures to make sure that you correctly operate, monitor and maintain abatement equipment. For example, monitoring and maintaining:

- appropriate liquor flow and concentration in wet scrubbers
- the handling and disposal or regeneration of spent scrubber or filter medium

195. Your monitoring should demonstrate the effectiveness of the abatement, so that you can take preventative or corrective action as necessary.

196. You should implement contingency measures for abatement system down-time and for any abnormal events, for example biofilter media change. These should include suspending operations until the site is back under control, or having standby abatement available.

197. You should design and operate abatement systems to minimise water vapour plumes.

Fugitive emissions to air

198. You must use appropriate measures to prevent and minimise fugitive emissions to air, including [dust, mud and litter](#), [odour and noise and vibration](#).

199. You must use your waste pre-acceptance, waste acceptance and site inspection checks and procedures to identify and manage wastes that could cause, or are causing, fugitive emissions to air. When you identify any such wastes you must:

- take appropriate risk-assessed measures to prevent and control emissions
- prioritise their treatment or transfer

200. Where necessary to prevent fugitive emissions to air from the storage or handling of wastes, you should use a combination of the following measures:

- store and handle the waste within an enclosed building
- use fully enclosed material transfer and storage systems and equipment outside buildings, for example conveyors, hoppers, containers, tanks and skips
- keep doors closed except when access is required
- keep enclosed buildings and equipment under adequate negative pressure with an appropriate abated air circulation or extraction system, locating air extraction points close to potential emission sources
- use fast-acting or 'airlock' doors that default to closed

201. You must have an appropriate, regular maintenance programme covering all buildings, plant and equipment. It must help prevent emissions or minimise them. Your maintenance programme must include:

- a leak detection and repair programme to promptly identify and mitigate any fugitive emissions of organic compounds from treatment plant and associated infrastructure (for example, pipework, conveyors or tanks)
- regular inspection and cleaning of all waste storage and treatment areas and equipment (including conveyor belts) to avoid large scale contamination activities
- preventing plant and equipment from corroding (for example, conveyors or pipes) – including selecting and using appropriate construction materials, and lining or coating equipment with corrosion inhibitors

202. You should monitor and log weather conditions – temperature, wind speed and direction, and describe any precipitation (for example none, drizzle, heavy rain, snow). You can use this information to identify when dispersion conditions are poor (that is, periods of warm, calm weather with wind blowing towards sensitive receptors). You can also use it to inform decisions to implement additional short-term pollution control contingency measures. You should carefully position your weather station, for example do not place it in between buildings. There is guidance in the [World Meteorological Organization's Guide to Meteorological Instruments and Methods of Observation](#).

203. Relying on dispersion and wind direction to minimise pollution at sensitive receptors must be a last resort and you must not use it instead of measures that prevent and reduce pollution.

Other measures for dust, mud and litter

204. If your activities are likely to produce dust and particulates, mud or litter that could cause pollution at sensitive receptors, or if such pollution has been substantiated, you must implement and regularly review a dust, mud and litter management plan. You must do this following our guidance. Your [dust, mud and litter management plan](#) must explain how you will prevent and minimise emissions of dust, mud and litter from your facility.

205. Measures such as litter fencing and micro-netting should be located as close as possible to areas where you load and unload light-weight loose waste, if this activity is done outdoors. You should not rely on fences and screens at the perimeter of your facility to stop litter escaping.

206. Measures such as mist sprays should be located as close as possible to point source emissions of dust, for example at conveyors, trommels, shredders, and at building entrances – except where this would increase odour from biodegradable waste.

207. If measures such as using hoses and road sweepers do not prevent mud escaping onto the public highway, you must take further measures and you must consider installing a high pressure wheel wash. Regardless of the measures you use, you must make sure that you minimise water consumption, and that contaminated water does not escape from your facility, unless you can lawfully discharge it.

Other measures for odour

208. If your activities are likely to produce odour pollution at sensitive receptors, or such pollution has been substantiated, you must implement and regularly review an [odour management plan](#), following our guidance. This includes [H4 Odour Management](#). Your odour management plan must explain how you will prevent and minimise odorous emissions from your facility.

209. You must reject waste that is highly odorous as part of your pre-acceptance and waste acceptance procedures. This is unless you can handle and treat these wastes within an enclosed building, with appropriate odour control measures including extraction via odour abatement. Otherwise, you should liaise with the waste supplier to prevent recurrence. You should avoid receiving aged waste, for example by refusing to accept waste from other transfer stations that do not have strict inventory controls and documented holding times.

210. You must make sure that odorous waste arrives at and leaves your facility in covered or enclosed vehicles. Mesh covers are not adequate to control odour.

211. You should make sure that delivery and collection routes avoid residential streets when possible.

212. You should make sure that your facility is operating within capacity so vehicles do not have to queue to enter or leave. This includes liaising with suppliers to time deliveries to avoid queuing. This is particularly important for vehicles transporting highly odorous waste.

213. You should minimise how long potentially odorous waste is kept at your facility, in particular under anaerobic conditions. Making smaller stockpiles increases natural aeration, reducing the risk of anaerobic biodegradation which can cause odour.

214. You should wash empty vehicles before they leave your facility, to remove any residues which may be or become odorous. You must make sure that the run-off from this process is contained and not directed to surface water sewer.

215. You should not allow contaminated liquids to pool for prolonged periods, as they can be a source of odour. If you do not have a drainage system inside the building that can collect the leachate or dirty water, then you will need other appropriate measures. You should take action to avoid ponding or pooling. Industrial vacuum cleaners can be used to suck up liquids.

216. You must make sure that you seal concrete, and other semi-porous surfaces, in areas where you handle potentially odorous waste to prevent the absorption of odour-producing residues.

217. You should clean any spillages immediately.

218. You must cover odorous or potentially odorous waters or liquids or keep them in enclosed tanks or containers.

219. Using masking agents (for example dry nano systems, ozone systems and ionisation systems) is a way of attempting to disguise an odour problem. If you understand and process wastes efficiently then you will not need to use masking agents. We do not consider this technology an appropriate measure.

Other measures for noise and vibration

220. If your activities are likely to produce noise or vibration pollution at sensitive receptors, or such pollution has been substantiated, you must implement and regularly review a [noise and vibration management plan](#), following our guidance [H2 part 2 noise assessment and control](#). Your noise and vibration management plan must explain how you will prevent and minimise emissions of noise and vibration from your facility.

221. For noise, your noise and vibration management plan must be informed by a Noise Impact Assessment carried out following the methodology of BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'.

222. For vibration, your noise and vibration management plan must be informed by a Vibration Impact Assessment carried out following the methodology of BS 6472-1:2008 'Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting'.

Point source emissions to water (including sewer)

223. You must identify the main chemical constituents of your facility's point source emissions to water and sewer as part of your inventory of emissions.

224. You must assess the fate and impact of the substances emitted to water and sewer following the Environment Agency's [risk assessment guidance](#).

225. Discharges to water or sewer must comply with the conditions of an environmental permit and trade effluent consent.

226. Relevant sources of waste water include:

- runoff from all waste storage and handling areas, including loading and unloading areas
- process water
- condensate collected from treatment process
- waste compactor runoff
- vehicle washing
- washing of containers and vessels
- soil washing effluent
- vehicle oil and fuel leaks
- spills and leaks
- rainwater from bunds around containers and tanks

227. To reduce emissions to water and sewer, if you need to treat waste water before discharge or disposal, you must use an appropriate combination of treatment techniques. Or you must demonstrate to us that your alternative treatment is equally effective or better. An appropriate combination of treatment techniques includes one or more of the following:

- preliminary or primary treatment – for example, equalisation, neutralisation or physical separation
- physico chemical treatment – for example, adsorption, distillation or rectification, precipitation, chemical oxidation or reduction, evaporation, ion exchange, or stripping
- biological treatment – for example, activated sludge process or membrane bioreactor
- nitrogen removal – for example, nitrification and denitrification

- solids removal – for example, coagulation and flocculation, sedimentation, filtration or flotation

228. You must segregate uncontaminated water streams (for example clean runoff from roofs) from those that require treatment.

229. You must separate contaminated water streams based on pollutant content and treatment required. For example, you may need to collect and treat separately contaminated surface runoff water and process water.

Fugitive emissions to land and water

230. You must use appropriate measures to control potential fugitive emissions and make sure that they do not cause pollution. See the guidance on [emissions to water](#) and [leaks from containers](#).

231. You must design appropriate surfacing and containment or drainage facilities for all operational areas, taking into account:

- collection capacities
- surface thicknesses
- strength and reinforcement
- falls
- materials of construction
- permeability
- resistance to chemical attack
- inspection and maintenance procedures
- relevant standards of construction
- end use, for example by tracked or wheeled vehicles or vehicle weight

232. Your drainage infrastructure must:

- prevent incompatible wastes coming into contact with each other
- make sure that fire cannot spread

233. You must store and treat all waste on an impermeable surface with contained drainage that meets [CIRIA 736](#) or an equivalent approved standard. The impermeable surfaces must have sealed construction joints. These requirements do not apply in designated areas where the waste being stored or handled does not pose any significant risk of contaminating surface water or ground water. You must appropriately isolate these designated areas from other operational areas so that there cannot be any flows between them, including in the event of an accident, for example a fire.

234. You must provide bunds for all tanks containing liquids (whether waste or otherwise) that could be harmful to the environment if spilled. Bunds must meet the CIRIA 736 standard and:

- be impermeable, stable and resistant to the stored materials
- have no outlet (that is, no drains or taps) and drain to a blind collection point
- have pipework routed within bunded areas with no penetration of contained surfaces
- be designed to catch leaks from tanks or fittings
- have an appropriate capacity

- have regular visual inspections - any contents must be pumped out or otherwise removed under manual control after checking for contamination
- be fitted with a high level probe and an alarm (as appropriate) if not frequently inspected
- have tanker connection points within the bund (where possible), and if not possible you must provide adequate containment for spillages or leakage
- have programmed engineering inspections (extending to water testing if structural integrity is in doubt)
- be emptied of rainwater regularly to maintain the containment capacity

235. All above-ground tanks containing liquids (whether waste or otherwise) that could be harmful to the environment if spilled must be kept on an impermeable surface with contained drainage that meets [CIRIA 736](#) or an equivalent approved standard. You must fit the tanks with alarms and cut-out systems to detect and prevent leaks and spills.

236. You must minimise using subsurface equipment and infrastructure, and decommission it where possible. For subsurface structures, you must:

- establish and record the routing of all site drains and subsurface pipework
- identify all subsurface sumps and storage vessels
- engineer systems to minimise leakages from pipes and make sure they can be detected quickly if they do occur
- provide secondary containment or leakage detection for subsurface pipework, sumps and storage vessels – vessels must be fitted with alarms and cut-out systems to detect and prevent spills when filling
- establish an inspection and maintenance programme for all subsurface structures, for example, pressure tests, leak tests, material thickness checks or CCTV

237. You must provide secondary containment that meets [CIRIA 736](#) or an equivalent approved standard, for all drums and other mobile containers which:

- are greater than 200 litres in capacity and are kept outside
- contain liquids (whether waste or otherwise) that could be harmful to the environment if spilled

238. You must assess whether groundwater is sufficiently well protected from discharges from your lagoons using our guidance [Protect groundwater and prevent groundwater pollution](#). Lagoons used for storing liquids whose release could be harmful to the environment must meet [CIRIA 736](#) or an equivalent approved standard. If a lagoon is uncovered, you must maintain a minimum level of 750mm free-board at all times and use an automated alarm system that will warn you if this minimum level is exceeded.

239. You must comply with the [Oil Storage Regulations](#). These apply to non-hazardous wastes such as vegetable and cooking oil, as well as to biofuels and mineral oils.

240. You must provide appropriate buffer storage capacity at your facility to store waste waters, taking into account:

- potential abnormal operating scenarios and incidents
- the nature of any polluting substances and their impact on the downstream waste-water treatment plant and receiving environment

241. You must have appropriate measures to monitor, treat and reuse the water held in the buffer storage before discharging.

242. You must take appropriate measures to prevent emissions from washing and cleaning activities, including:

- containing and directing spray, liquid effluent and wash-waters to foul sewer or collecting them in a sealed system for offsite disposal – you must not discharge them to surface or storm drains
- where possible, using biodegradable and noncorrosive washing and cleaning products
- storing all detergents, emulsifiers and other cleaning agents in suitable bunded or containment facilities, within a locked storage area, or in a building away from any surface water drains
- preparing cleaning or disinfection solutions in contained areas of the site and never in areas that drain to the surface water system or groundwater

243. You must produce and implement a spillage response plan and train staff to follow it and test it.

244. Your procedures and associated training must make sure you deal with spillages immediately. You should follow the manufacturer's health and safety advice for any products or substances involved.

245. You must keep spill kits at locations close to areas where a spillage could occur and make sure relevant staff know how to use them. You must make sure kits are replenished after use.

246. You must stop spillages from entering drains, channels, gullies, watercourses and unmade ground. You must make available proprietary sorbent materials, sand, booms or drain mats for use when required.

247. You must make sure your spillage response plan includes information about how to recover, handle and correctly dispose of waste produced from a spillage.

248. You must have a documented inspection and maintenance programme for impermeable surfaces and containment facilities, and keep records to demonstrate its implementation.

Pests

249. You must manage waste in a way that prevents pests. For example, if you do not manage flies, rats and birds they can affect operations, be a nuisance to neighbours and pose an environmental and health hazard as a potential vector for pathogens. Guidance on [fly management](#) is available.

250. If you expect pests will cause pollution, hazard or annoyance at sensitive receptors, or if this has been substantiated, you must create, use and regularly review a [pest management plan](#), following our guidance.

251. Your pest management plan must include procedures for:

- the inspection and control of pests
- rejecting loads of infested waste
- treating pest infestations promptly, and removing waste if necessary
- storing, handling and using approved pest control products – you can get information on [using chemicals at work](#) from the Health and Safety Executive

Emissions monitoring and limits

252. We may set emission limits and monitoring requirements in your permit, based upon your treatment process, emissions inventory and [environmental risk assessment](#). An emissions inventory means a complete and detailed list of all waste waters and waste gases that you handle or produce at your facility.

253. If your environmental permit requires you to monitor emissions, you must do so following our [monitoring guidance](#). You may need monitoring infrastructure to meet the [relevant standards](#).

Emissions to air

254. Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to air, such as the:

- average values and variability of flow and temperature
- average and peak concentration and load values of relevant substances and their variability
- flammability, lower and higher explosive limits and reactivity
- presence of other substances that may affect the waste gas treatment system or plant safety, for example, oxygen, nitrogen, water vapour, dust

255. If your facility's permit does not specify emissions limits for point source emissions to air, you should still identify appropriate numerical limits, for example for:

- odour
- particulates
- chemical constituents

You should monitor against these limits to demonstrate the performance of your abatement, and to establish trigger levels for action before pollution arises. You should describe your monitoring programme in your management system, or the appropriate emissions management plan. Your monitoring programme should follow our guidance, and should set out the relevant numerical limits and the actions you take if they are breached.

256. Guidance on [monitoring stack emissions](#) is available.

257. You must monitor fugitive emissions of dust and particulates if they are likely to cause pollution at sensitive receptors, or if this has been substantiated. You must describe your monitoring programme in your dust management plan. Visual monitoring is not effective for assessing the risk of emissions of fine particulates, for example PM10. You should use dust and particulate monitors with trigger alarms instead. You should set alarm trigger levels to alert site staff when short-term particulate concentrations are elevated, so that you can review site practices or increase your mitigation measures. They can also provide evidence to demonstrate that your facility is not the cause of complaints, when combined with weather data. You should use a particulate limit of 75 µg/m³ to 100 µg/m³ (over a 5 minute average) for PM10 as an initial trigger for action, and reduce this after the system has been in place for some time.

Emissions to water and sewer

258. Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to water or sewer, such as:

- average values and variability of flow, pH, temperature, and conductivity

- average concentration and load values of relevant substances and their variability, for example, Chemical Oxygen Demand (COD) and Total Organic Carbon (TOC), nitrogen species, phosphorus, metals, priority substances or micropollutants
- data on bio-eliminability, for example, Biochemical Oxygen Demand (BOD), BOD to COD ratio, Zahn-Wellens test, biological inhibition potential (for example, inhibition of activated sludge)

259. For relevant emissions to water or sewer identified by the emissions inventory, you must carry out monitoring of key process parameters (for example, waste water flow, pH, temperature, conductivity or BOD) at key locations. For example, these could either be at the:

- inlet or outlet (or both) of the pre treatment
- inlet to the final treatment
- point where the emission leaves the facility boundary

Process efficiency appropriate measures

260. For your facility, you must monitor and review the annual quantity of:

- water, energy and raw materials used
- residues and waste water produced

You must do this at least once every year.

Energy efficiency (installations only)

261. You must create and implement an energy efficiency plan at your facility. This must:

- define and calculate the specific energy consumption of the activity (or activities) you carry out and waste stream(s) you treat
- set annual key performance indicators, for example specific energy consumption (expressed in kWh/tonne of waste processed)
- plan periodic improvement targets and related actions

262. You must regularly review and update your energy efficiency plan as part of your facility's management system.

263. You must have and maintain an energy balance record for your facility. This must provide a breakdown of your energy consumption and generation (including any energy or heat exported) by the type of source (electricity, gas, conventional liquid fuels, conventional solid fuels, and waste). You should provide Sankey diagrams or energy balances to show how energy is used in your waste treatment processes.

264. You must regularly review and update your energy balance record as part of your facility's management system, alongside the energy efficiency plan.

265. You must have operating, maintenance and housekeeping measures in relevant areas, for example:

- air conditioning, process refrigeration and cooling systems (leaks, seals, temperature control, evaporator or condenser maintenance)
- the operation of motors and drives
- compressed gas systems (leaks, procedures for use)

- steam distribution systems (leaks, traps, insulation)
- space heating and hot water systems
- lubrication to avoid high friction losses
- boiler operation and maintenance, for example, optimising excess air
- other maintenance relevant to the activities within the facility

266. You must have measures in place to avoid gross energy inefficiencies. These should include for example:

- insulation
- containment methods (such as seals and self-closing doors)
- avoiding unnecessary discharge of heated water or air (for example, by fitting simple control systems such as timers and sensors)

267. You should implement additional energy efficiency measures at the facility as appropriate, following our [guidance](#).

Raw materials (installations only)

268. You must maintain a list of the raw materials used at your facility and their properties. This includes auxiliary materials and other substances that could have an environmental impact.

269. You must regularly review the availability of alternative raw materials and use any suitable ones that are less hazardous or polluting. This should include, where possible, substituting raw materials with waste or waste-derived products.

270. You must justify the continued use of any substance for which there is a less hazardous alternative.

271. You must have quality assurance procedures to control the content of raw materials.

Water use (installations only)

272. You must take measures to make sure you optimise water consumption to:

- reduce the volume of waste water generated
- prevent or, where that is not practicable, reduce emissions to soil and water

273. Measures you must take include:

- implementing a water saving plan (involving establishing water efficiency objectives, flow diagrams and water mass balances)
- optimising the use of washing water (for example, dry cleaning instead of hosing down, using trigger control on all washing equipment)
- recirculating and reusing water streams within the plant or facility, if necessary after treatment
- reducing the use of water for vacuum generation (for example, using liquid ring pumps with high boiling point liquids) where relevant

274. You must carry out a regular review of water use (a water efficiency audit) at least every 4 years.

275. You must also:

- produce flow diagrams and water mass balances for your activities

- establish water efficiency objectives and identify constraints on reducing water use beyond a certain level (usually this will be site specific)
- identify the opportunities for maximising reuse and minimising use of water
- have a timetabled improvement plan for implementing additional water reduction measures

276. To reduce emissions to water, you should apply these general principles in sequence:

- use water efficient techniques at source where possible
- reuse water within the process by treating it first if necessary – if this is not practicable, use it in another part of the process or facility that has a lower water quality requirement
- if you cannot use uncontaminated roof and surface water in the process, you should keep it separate from other discharge streams – at least until after you have treated the contaminated streams in an effluent treatment system and have carried out final monitoring

277. You should establish the water quality requirements associated with each activity and identify whether you can substitute water from recycled sources. Where you can, include it in your improvement plan.

278. Where there is scope for reuse (possibly after some form of treatment) you should keep less contaminated water streams, such as cooling waters, separate from more contaminated streams.

279. You must minimise the volume of water you use for cleaning and washing down by:

- vacuuming, scraping or mopping in preference to hosing down
- reusing wash water (or recycled water) where practicable
- using trigger controls on all hoses, hand lances and washing equipment

280. You must directly measure fresh water consumption and record it regularly at every significant usage point, ideally on a daily basis.

Waste minimisation, recovery and disposal

281. You must have and implement a residues management plan that:

- minimises the generation of residues, that is solid waste arising from the treatment of waste
- optimises the reuse, regeneration, recycling or energy recovery of residues, including packaging
- makes sure you properly disposal of residues where recovery is technically or economically impractical

282. Where you must dispose of waste, you must carry out a detailed assessment identifying the best environmental options for waste disposal.

283. You must review on a regular basis options for recovering and disposing of waste produced at the facility. You must do this as part of your management system to make

sure that you are still using the best environmental options and promoting the recovery of waste where technically and economically viable.

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