

Generic risk assessment for standard rules set number 16

Standard Facility:

Waste Operation: Composting in Open Windrows

Location:

Applies to all potential locations.

Location of environmentally sensitive sites (km / m):

Greater than 1km (see below)

Risk assessment carried out by:

Environment Agency

Date:

26-Feb-09

The scope of the permit and associated rules is defined by the following risk criteria:

- Parameter 1 Permitted activities - The storage of waste prior to composting (R13) and composting including shredding etc. (R3)
- Parameter 2 Permitted waste types - Non-hazardous, comprising biodegradable wood, vegetable matter and animal manure (excluding catering waste or animal waste covered by the Animal By-Products Regulations)
- Parameter 3 Quantity of waste accepted at the facility: <75,000 tonnes per annum.
- Parameter 4 All waste shall be stored and treated on an impermeable surface with sealed drainage system.
- Parameter 5 The only point source discharges to controlled waters are surface water from the roofs of buildings and from areas of the facility not used for the storage or treatment of wastes.
- Parameter 6 The activities shall not be carried out within groundwater protection zones 1 (inner) or 2 (outer).
- Parameter 7 The activities shall not be carried out within 250 metres of a water abstraction point.
- Parameter 8 The activities shall not be carried out within 250m of any residential property of workplace.
- Parameter 9 The activities shall not be carried out within 1km of a European Site (candidate or Special Area of Conservation, proposed or Special Protection Area or Ramsar site) or a Site of Special Scientific Interest (SSSI).

Abbreviations:

SR - standard rule

SR (fugitive emissions) - fugitive emissions of substances shall not cause pollution....., with appropriate measures:
 Composting.... on an impermeable surface with sealed drainage system;composting.... not in enclosed reactor vessel
 andcomposting....under anaerobic conditions shall be prevented, or where that is not practicable, minimised.

| Data and information | | | | Judgement | | | | Action (by permitting) | |
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| Receptor | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management | Residual risk |
| What is at risk? What do I wish to protect? | What is the agent or process with potential to cause harm? | What are the harmful consequences if things go wrong? | How might the receptor come into contact with the source? | How likely is this contact? | How severe will the consequences be if this occurs? | What is the overall magnitude of the risk? | On what did I base my judgement? | How can I best manage the risk to reduce the magnitude? | What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment). |

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| Local human population | Release of micro-organisms (bioaerosols) | Harm to human health - respiratory irritation and illness | Air transport then inhalation | High | High | High | Composting produces and is likely to release micro-organisms. There is potential for exposure if anyone living or working close to the site (excluding operator and employees). | SR - activities shall not be carried out within 250 metres of a residential property or workplace. SR (fugitive emissions). SR (if required) - fugitive emissions management plan. | Low |
| Local human population | Releases of particulate matter (dusts). | As above. | Air transport then inhalation. | High | Medium | High | Permitted waste types do not include dusts, powders or loose fibres but composting produces and is likely to release particulates. There is potential for exposure if anyone living or working close to the site (excluding operator and employees). | As above | Low |
| Local human population | As above | Nuisance - dust on cars, clothing etc. | Air transport then deposition. | High | Low | Medium | As above | As above | |
| Local human population | Releases of particulate matter (dusts) and micro-organisms (bioaerosols). | Gastro-intestinal illness | Air transport then deposition on garden fruit/vegetables and then ingestion. | Medium | Medium | Medium | Most dust will be washed off by rain or during food preparation. Illness likely to be mild and short term | As above | Very Low |
| Local and distant human population | As above | As above. Includes eating crops grown within 250 metres of the site. | Air transport then deposition on commercial/wild fruit/vegetables then ingestion. | Medium | Medium | Medium | As above. Proportion of diet from this source will be low. | SR (fugitive emissions). SR (if required) - fugitive emissions management plan. | Very low |
| Local human population, livestock and wildlife. | Litter | Nuisance, loss of amenity and harm to animal health | Air transport then deposition | Medium | Medium | Medium | Local residents often sensitive to litter. | As above. Appropriate measures could include clearing litter arising from the activities from affected areas outside the site. | Low |
| Local human population | Waste, litter and mud on local roads | Nuisance, loss of amenity, road traffic accidents | Vehicles entering and leaving site | Medium | Medium | Medium | Local residents often sensitive to mud on roads. | As above. Appropriate measures could include clearing waste, litter and mud arising from the activities from affected areas outside the site. | Low |

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| Local human population | Odour | Nuisance, loss of amenity | Air transport then inhalation | High | High | High | Composting produces and is likely to release odour. There is potential for exposure if anyone living or working close to the site (excluding operator and employees). Local residents often sensitive to odour. | SR - activities shall not be carried out within 250 metres of a residential property or workplace. SR (fugitive emissions). SR - emissions shall be free from odour at levels likely to cause annoyance outside the site.... SR - The operator shall maintain and implement an odour management plan..... | Low |
| Local human population | Noise and vibration | Nuisance, loss of amenity, loss of sleep | Noise through the air and vibration through the ground. | Medium | Medium | Medium | Local residents often sensitive to noise and vibration. | SR - emissions shall be free from noise and vibration..... SR (if required) - noise and vibration management plan. | |
| Local human population | Scavenging animals and scavenging birds. | Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity. | Air transport and over land | Medium | Medium | Medium | Permitted wastes may attract scavenging animals and birds. | Permitted waste types do not include catering wastes and other wastes containing animal by-products. SR - fugitive emissions of substances (including those from scavenging animals, scavenging birds and other pests) shall not cause pollution. | Low |
| As above | Pests (e.g. flies) | Harm to human health, nuisance, loss of amenity. | Air transport and over land | Medium | Medium | Medium | Insect pests can multiply on permitted wastes, particularly in summer months | As above | Low |
| Local human population and local environment | Flooding of site | If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream | Flood waters | Low | Medium | Medium | Permitted waste types are non-hazardous so any waste washed off site will add to the volume of the local post-flood clean up workload, rather than the hazard. | SR - accident management plan (will include flood risk management). | Low |
| Local human population and / or livestock after gaining unauthorised access to the waste operation | All on-site hazards: wastes; machinery and vehicles. | Bodily injury | Direct physical contact | Medium | Medium | Medium | Permitted waste types are non-hazardous therefore only a medium magnitude risk is estimated. | SR - activities shall be managed and operated in accordance with a management system (will include site security measures to prevent unauthorised access). | Low |
| Local human population and local environment | Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of water or land. | Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches. | Low | Low | Low | Waste is normally damp so not readily combustible. Permitted waste types are organic and non-hazardous therefore only a low magnitude risk is estimated. | As above. SR - accident management plan (will include fire and spillages). | Low |

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| Local human population and local environment. | Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land. | As above. | Low | Low | Low | As above | As above. Permitted activities do not include the burning of waste. | Low |
| All surface waters close to and downstream of site. | Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste with high organic content. | Acute effects; oxygen depletion, fish kill and algal blooms | Direct run-off from site across ground surface, via surface water drains, ditches etc. | High | Medium | High | There is a high potential for contaminated rainwater run-off from waste operations outside especially during heavy rain. | SR - All liquids shall be provided with secondary containment.... (applies to non wastes such as fuels). Permitted waste types do not include sludges or liquids. SR - no point source emissions to water. Run-off restricted by SR (fugitive emissions). | Low |
| All surface waters close to and downstream of site. | As above | Chronic effects; deterioration of water quality | As above. Indirect run-off via the soil layer | High | Low | Medium | There is a high potential for contaminated rainwater run-off or leachate from waste operations outside. Consequence is low because pollution is likely to be detected quickly and effects are temporary and reversible. | As above | Low |
| Abstraction from watercourse downstream of facility (for agricultural or potable use). | As above | Acute effects, closure of abstraction intakes. | Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction. | High | Medium | High | There is a high potential for contaminated rainwater run-off from waste operations outside especially during heavy rain. Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contamination so consequence is medium. | As above | Low |

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| Groundwater | As above | Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole. | Transport through soil/groundwater then extraction at borehole. | High | High | high | There is a high potential for contaminated rainwater run-off or leachate from waste operations outside. Consequence is high because pollution may continue for a long time before it is detected. | As above. SR - the activities shall not be carried out within groundwater protection zones 1 (inner) or 2 (outer) or 250 metres of a water abstraction point. | Low |
| Local human population | Contaminated waters used for recreational purposes | Harm to human health - skin damage or gastro-intestinal illness. | Direct contact or ingestion | Low | Medium | Medium | Unlikely to occur, but might restrict recreational use. | SR (fugitive emissions). SR (if required) - fugitive emissions management plan. | Low |
| Protected sites - European sites and SSSIs | Any | Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc. | Any | Medium | Medium | Medium | Waste composting operations may cause harm to and deterioration of nature conservation sites. | SR - activities shall not be carried out within 1km of a European Site or SSSI. (Distance criteria as agreed with Natural England/ Countryside Commission for Wales). | Low |

Notes: Red triangle indicates comment containing supporting information
 Yellow columns contain drop down menus that allow automatic evaluation of risk in green column