SR2024 No 2: Generic Risk Assessment - Using unbound incinerator bottom ash aggregate (IBAA) in construction as a deposit for recovery operation

The risks covered in this generic risk assessment are those which are associated with the activity covered in Standard rules set SR2024 No 2. The risk assessment covers the source, harm and pathway of the risk. The judgement of the risk and the risk management covered in the permit to reduce the magnitude of the risk. Any residual risk after management of the risk will be controlled by compliance.

The standard rule set can be viewed here.

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Risk Assessment

1. Local human population

**1.1.** The release of particulate matter (dusts), which travel through the air and can be inhaled.

The harmful consequences if things go wrong is the harm to human health (respiratory irritation and illness). The Environment Agency has assessed the:

* likelihood of this contact to be medium
* overall severity of potential consequence to be medium
* overall risk rating to be medium
* magnitude of this risk after management to be low

The permitted waste types have a low potential to produce bioaerosols. The activities may produce dust from movement of vehicles and tipping operations especially in dry and also windy weather. To manage the risk, activities shall be managed and operated in accordance with a management system that includes measures to prevent and reduce risk of dust being produced and where it is produced from leaving the site boundaries. Rules can be invoked to require a particulate management plan. Activities are not permitted within a specified air quality management area (AQMA) for particulate matter of 10 microns or less (PM10).

**1.2**. The release of particulate matter (dusts) which travel through the air and then deposit on surfaces.

The harmful consequences if things go wrong is nuisance (dust on cars, clothing etc). The Environment Agency has assessed the:

* likelihood of this contact to be medium
* overall severity of potential consequence to be low
* overall risk rating to be medium
* magnitude of this risk after management to be low
* The activities may produce dust from movement of vehicles and tipping operations especially in dry and windy weather. Activities shall be managed and operated in accordance with a management system that includes measures to prevent and reduce risk of dust being produced and where it is produced from leaving the site boundaries. Rules can be invoked to require a particulate management plan.

**1.3**. Waste, litter and mud on local roads from vehicles entering and leaving the site. The harmful consequences if things go wrong are nuisance, loss of amenity and road traffic accidents. The Environment Agency has assessed the:

* likelihood of this contact to be low
* overall severity of potential consequence to be low
* overall risk rating to be low
* magnitude of this risk after management to be low

Waste types if compliant with the rules will have a low risk of litter from contraries in the waste. To manage the risk, emissions of substances not controlled by emission limits in the standard rules should be minimised in the management system.

**1.4.** Odour which travels through the air and can be inhaled. The harmful consequence if things go wrong are nuisance and loss of amenity. The Environment Agency has assessed the:

* likelihood of this contact to be very low
* overall severity of potential consequence to be very low
* overall risk rating to be very low
* magnitude of this risk after management to be very low

The permitted waste types have a low potential to produce odour. The management system should contain procedures to prevent non-permitted wastes being deposited at site and to deal with rogue loads if they do occur. There is a dormant Rule that can be utilised if odour should be a problem.

**1.5**. Noise and vibration which travel through air and vibration through the ground. The harmful consequences if things go wrong are nuisance, loss of amenity and loss of sleep. The Environment Agency has assessed the:

* likelihood of this contact to be medium
* overall severity of potential consequence to be medium
* overall risk rating to be medium
* magnitude of this risk after management to be low

Noise and vibration shall be minimised and not cause nuisance. A noise and vibration management plan may be required.

**1.6.** Pests (including scavenging animals, birds and other pests for example, flies) which travel through the air and over land. The harmful consequences if things go wrong are harm to human health, nuisance and loss of amenity. The Environment Agency has assessed the:

* likelihood of this contact to be very low
* overall severity of potential consequence to be very low
* overall risk rating to be very low
* magnitude of this risk after management to be very low

The permitted waste types will not attract pests. Risk limited by permitted waste types and good onsite management practices detailed in management system of non-conforming wastes.

**1.7.** Flooding of the site from flood waters. The harmful consequences if things go wrong is the potential for waste to be washed off site and contaminated buildings, gardens, natural habitats downstream. The Environment Agency has assessed the:

* likelihood of this contact to be low
* overall severity of potential consequence to be low
* overall risk rating to be low
* magnitude of this risk after management to be low

Activities are not permitted within proximity to a watercourse or to be deposited sub-water table. The written management system should identify and minimise risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances.

**1.8.** Arson and vandalism causing the release of polluting materials to air (smoke or fumes), water or land. This can cause smoke to travel through the air, spillages and contaminated firewater to run-off from the site and through surface water drains and ditches. The harmful consequences if things go wrong are respiratory irritation, illness and nuisance to local population. It could lead to injury of staff, firefighters or arsonists and vandals as well as pollution of water or land. The Environment Agency has assessed the:

* likelihood of this contact to be low
* overall severity of potential consequence to be medium
* overall risk rating to be low
* magnitude of this risk after management to be low

Permitted waste types have a very low-risk of combustion. Site machinery and fuels and oils are more of a risk but quantities would typically be low. The written management system should identify and minimise risks from unauthorised access and site security measures identified to prevent such access. The system should also describe how any polluting liquids or materials will be stored safely.

**1.9.** Accidental fire can cause polluting materials to travel through the air (smoke or fumes) water or land. Spillages and contaminated firewater can run-off site through surface water drains and ditches. The harmful consequences if things go wrong are respiratory irritation, illness and nuisance to local population. It could lead to injury of staff, firefighters as well as pollution of water or land. The Environment Agency has assessed the:

* likelihood of this contact to be low
* overall severity of potential consequence to be medium
* overall risk rating to be low
* magnitude of this risk after management to be low

Permitted waste types have a very low-risk of combustion. Site machinery and fuels and oils are more of a risk but quantities would typically be low. The written management system should identify and minimise risks from unauthorised access and site security measures identified to prevent such access. The system should also describe how any polluting liquids or materials will be stored safely.

1. All surface waters close to and downstream of site.

**2.1.** Spillage of liquids and contaminated rainwater run-off can travel from the site across ground surface. This leads to surface water drains and ditches and indirect run-off via the soil layer. The harmful consequences if things go wrong is the deterioration of water quality. The Environment Agency has assessed the:

* likelihood of this contact to be low
* overall severity of potential consequence to be low
* overall risk rating to be low
* magnitude of this risk after management to be low

No liquid waste types can be accepted under the standard rules set.

To manage the risks all liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures. No point source emissions are allowed.

Emissions of substances not controlled by emission limits should be minimised in the management system.

**2.2.** Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste (for example, containing suspended solids) can cause direct run-off from the site. This travels across ground surface, surface water drains and ditches. The harmful consequences if things go wrong has acute effects: oxygen depletion, fish kill and algal blooms. The Environment Agency has assessed the:

* likelihood of this contact to be low
* overall severity of potential consequence to be medium
* overall risk rating to be low
* magnitude of this risk after management to be low

No liquid waste types can be accepted under the standard rules set.

To manage the risks all liquids in containers, whose emissions to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures.

Emissions of substances not controlled by emission limits should be minimised in the management system.

**2.3.** Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste (for example, containing suspended solids) can cause indirect run-off through the soil layer. The harmful consequences if things go wrong has chronic effects: deterioration of water quality. The Environment Agency has assessed the:

* likelihood of this contact to be low
* overall severity of potential consequence to be medium
* overall risk rating to be low
* magnitude of this risk after management to be low

No liquid waste types can be accepted under the standard rules set.

To manage the risks all liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures. Emissions of substances not controlled by emission limits should be minimised in the management system.

1. Abstraction from watercourse downstream of facility (for agricultural or portable use)

**3.1.** Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste (for example, containing suspended solids). There is a risk of contaminants travelling through direct run-off from the site across the ground surface, through surface water drains and ditches, and finally through abstraction. This could have acute effects and cause the closure of abstraction intakes. The Environment Agency has assessed the:

* likelihood of this contact to be medium
* overall severity of potential consequence to be medium
* overall risk rating to be medium
* magnitude of this risk after management to be low

Watercourses must have medium/high flow for abstraction to be permitted, which will dilute any contaminated run-off.

To manage the risks all liquid containers, whose emission to water or land which could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures. Emissions of substances not controlled by emission limits should be minimised in the management system.

1. Groundwater

**4.1.** Spillage of liquids, leachate from waste, contaminated rainwater run-off transported through soil and groundwater then extraction at borehole. The harmful consequences if things go wrong is the contamination of public or private water supplies requiring treatment of water or closure of the borehole. The Environment Agency has assessed the:

* likelihood of this contact to be medium
* overall severity of potential consequence to be medium
* overall risk rating to be medium
* magnitude of this risk after management to be low

No liquid waste types are allowed under the standard rule set.

The rules do not allow deposit in a groundwater Source Protection Zones 1 or 2 or if a source protection zone has not been defined then not within 250 metres of any well, spring or borehole used for the supply of water for human consumption. This includes private water supplies. The waste must also not be deposited in any controlled or surface waters or sub-water table. A mandatory waste acceptance procedure rule has been imposed to make sure a minimum standard is set. Mandatory operating techniques further limit the use of wastes. The management system should set out any additional stringent waste acceptance procedures to ensure only waste listed in the Rules are deposited on site. The procedures must also set out how to deal with rogue or non-conforming loads.

1. Protected sites (European sites and SSSIs)

**5.1.** Harm to protected sites from any source such as toxic contamination, nutrient enrichment, smothering, disturbance and predation from any pathway such as air, land or water. The Environment Agency has assessed the:

* likelihood of this contact to be low
* overall severity of potential consequence to be medium
* overall risk rating to be medium
* magnitude of this risk after management to be low

The rules do not allow activities to take place within 500 metres of a European Site or a Site of Special Scientific Interest (SSSI); or 250 metres within the presence of Great Crested Newts where it is linked to the breeding ponds of the newts by good habitat; 50 metres of a site that has species or habitats protected under the Biodiversity Action Plan that the Environment Agency considers at risk to this activity; and 50 metres of a National Nature Reserve (NNR), Local Nature Reserves(LNR), Local Wildlife Site (LWS), Ancient woodland or Scheduled Ancient Monument.

Guidance

1. Receptors to consider should include atmosphere, land, surface waters, groundwater, humans, wildlife and their habitats. A single receptor may be a risk from several different sources and all must be addressed.
2. The source of the hazard will be the activity or operation taking place for which a particular hazard may arise.
3. Harm may arise when a specific hazard is realised.
4. Pathways are the routes or means by which defined hazards may potentially realise their consequences at the receptors.
5. The probability of exposure is the likelihood of the receptors being exposed to the hazard. Example definitions;

* High - exposure is probable: direct exposure likely with no/few barriers between hazard source and receptor.
* Medium - exposure is fairly probably: feasible exposure possible- barriers to exposure less controllable.
* Low - exposure is unlikely: several barriers exist between hazards source and receptors to mitigate against exposure.
* Very low- exposure is very unlikely: effective, multiple barriers in place to mitigate against exposure.

1. The consequences of a hazard being realised may be actual or potential harm. This will include being on a high/medium/low/very low score using attributes and scaling to consider ‘harm’.
2. The magnitude of the risk is determined by combining the probability with the magnitude of the potential consequences.

* High risks require additional assessment and active management.
* Medium risks require additional assessment and may require active management/monitoring.
* Low and very low risk require periodic review.

1. Risk management involves breaking or limiting the source-pathway- receptor linkage to reduce risk.