

Generic Risk Assessment for Fixed Conditions Licence

Waste facility type:	Composting in Closed Vessels (including animal by-products)
Licence Holder:	Applies to all potential licence holders.
Location:	Applies to all potential locations.
Location of environmentally sensitive sites (km):	Greater than 1 km (see below).
Risk assessment carried out by:	Environment Agency.
Date:	10/04/2006

The scope of the fixed conditions licence is defined by the following parameters:

- Parameter 1 Licensed activities - Storage of waste prior to composting (R13), composting including shredding etc (R2)
- Parameter 2 Licensed waste types - Non-hazardous and source segregated, comprising biodegradable wood, vegetable matter, animal manures and cooked food waste and animal waste covered by the Animal By-Products Regulations.
- Parameter 3 Quantity of waste accepted onto site: less than 5,000, 25,000 or 75,000 tonnes per annum. (3 fixed conditions licences available).
- Parameter 4 Site must be at least 250 metres away any residential property or workplace (to protect against bioaerosols)
- Parameter 5 Waste must be stored or treated on impermeable pavement with sealed drainage
- Parameter 6 The only discharges to controlled waters are surface water from the roofs of buildings and from areas of the site not used for the storage of wastes.
- Parameter 7 Site must be outside groundwater protection zones 1 (outer) or 2 (inner) and more than 250m from any water abstraction point (to protect drinking water supplies).
- Parameter 8 The location is not within 1km of a European site (protected habitat).
- Parameter 9 The location is not within 1km of a Site of Special Scientific Interest (SSSI) designated as acid grassland/heath (to protect against ammonia deposition)

Abbreviations: FP - fixed permit FPC - fixed permit condition

Data and information				Judgement				Action (by permitting)	
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).

GRA Composting in Closed Vessel

Local human population	Bioaerosols generated from composting or maturation in closed vessels	Respiratory irritation and illness	Inhalation of bioaerosols	High	High	High	Potential for frequent and long term exposure if anyone is living or working close to the site (apart from the licence holder/operator and employees)	Composting or maturation carried out in enclosed vessels fitted with bio-filters, located inside buildings fitted with bio-filters. FP not allowed if anyone is living or working within 250m of site (apart from the licence holder/operator and employees). Requires a bespoke licence.	Either assessed to be low, with extra licence conditions as required, or assessed as high/medium and licence application refused
	Bioaerosols generated from maturation of compost in windrows (indoors or outdoors)	Respiratory irritation and illness	Inhalation of bioaerosols	High	High	High	Potential for frequent and long term exposure if anyone is living or working close to the site (apart from the licence holder/operator and employees)	If windrows are indoors then the building must be fitted with a bio-filter. FP not allowed if anyone is living or working within 250m of site (apart from the licence holder/operator and employees). Requires a bespoke licence.	Either assessed to be low, with extra licence conditions as required, or assessed as high/medium and licence application refused
	Bioaerosols generated from all composting processes: composting in closed vessels, maturation of compost in open windrows etc.	Respiratory irritation and illness	Inhalation of bioaerosols	High	High	High	Exposure will be infrequent and at low concentration if nobody is living or working close to the site (apart from the licence holder/operator and employees)	FP allowed if nobody is living or working within 250m of site (apart from the licence holder/operator and employees). FPC for fugitive releases.	Low
Local human population	Airborne particulates (dusts)	Respiratory irritation and illness	Inhalation of particulates and/or micro-organisms	High	High	High	As for bioaerosols (see above).	FP if nobody at <250m, as for bioaerosols (see above).	Low
		Gastro-intestinal illness	Ingestion of particulates, micro-organisms and bioaerosols deposited on garden fruit/vegetables.	Medium	Medium	Medium	Most dust will be washed off by rain or during food preparation. Consequence will be mild and short term.	FP if nobody at <250m, as for bioaerosols (see above).	Very low
		Nuisance - dust on cars, clothing etc.	Deposition from air	High	Low	Medium	As for bioaerosols (see above).	FP if nobody at <250m, as for bioaerosols (see above).	Very low

GRA Composting in Closed Vessel

Local and distant human population	Airborne dusts/particulates	Gastro-intestinal illness	Ingestion of particulates, micro-organisms and bioaerosols deposited on commercial/wild fruit/vegetables	Low	Medium	Medium	Proportion of diet from this source will be low. Most dust will be washed off by rain or during food preparation. Consequence will be mild and short term	FPC to minimise dust releases. FPC to notify Agency of any adverse environmental effect.	Low
Local human population	Noise from machinery	Nuisance, loss of amenity, loss of sleep.	Air transport	Medium	Low	medium	Local residents often sensitive to noise, and likely to complain, especially if it is a new site	FP if nobody will be at <250m as for bioaerosols (see above). FPC requires annoyance from noise to be prevented/minimised	Low
Local human population	Fugitive releases, litter	Nuisance, loss of amenity	Air transport	Medium	Low	Medium	Local residents often sensitive to litter, and likely to complain, especially if it is a new site	FP if nobody will be at <250m as for bioaerosols (see above). FPC requires litter to be prevented/minimised	Low
Local human population	Fugitive releases, waste, litter and mud on local roads	Nuisance, loss of amenity. Road safety - mud on road	Vehicles entering and leaving site	Medium	Medium	Medium	Local residents often sensitive to mud on roads, and likely to complain, especially if it is a new site	FPC requires litter and mud on roads to be prevented/minimised	Low
Local human population	Odour from composting operations	Nuisance, loss of amenity	Air transport	High	Medium	Medium	Local residents often sensitive to odour and likely to complain	FP if nobody will be at <250m as for bioaerosols (see above). FPC requires annoyance from odour to be prevented/minimised	Low
Local human population	Smoke from a compost fire	Nuisance, loss of amenity, loss of sleep, respiratory irritation and illness.	Air transport	Medium	Medium	Medium	Local residents often sensitive to odour and likely to complain. Fires can be deliberate or accidental.	FPC requires an accident management plan that will cover consequences and control of fires. Licensed activities do not include burning of waste.	Low
Local human population	Scavenging birds and animals	Nuisance, loss of amenity	Air transport and over land	Medium	Medium	Medium	Although composting will be carried out in closed vessels inside a building, other processes may be take place outdoors.	FPC requires appropriate measures to prevent/minimise scavenging birds and animals.	Low

GRA Composting in Closed Vessel

	Pests (e.g. flies)	Nuisance, loss of amenity	Air transport and over land	Medium	Medium	Medium	Insect pests can multiply on permitted waste types, particularly in summer months.	High temperature during composting in closed vessels will destroy any insect pests present in the wastes. FPC requires pests to be prevented/minimised	Low
Local human population	Flooding of site if located in floodplain	Compost washed off site may contaminate buildings/gardens/habitats downstream.	Flood waters	Low	Low	Low	Wastes are non-hazardous. Waste from site unlikely to worsen the local post-flood clean up workload.	FPC requires accident management plan that will include flood risk management	Low
		Compost remaining on site may rot anaerobically causing odour and/or pests (see above)	Air transport	Low	Low	Low	Wastes are non-hazardous. Waste on-site unlikely to worsen the post-flood clean up workload.	FPC requires accident management plan that will include flood risk management	Low
Unauthorised access by local population and/or livestock	All on-site hazards - particularly relating to waste handling & storage activity.	People/livestock coming into contact with hazards.	Direct physical contact.	Medium	Medium	Medium	Waste types are non-hazardous therefore only a moderate risk.	FPC requires site security measures to prevent unauthorised access	Low
		Arson and/or vandalism causing the release of polluting materials	Arson - air. Liquids polluting watercourses and/or groundwater.	Medium	Low	Medium	Waste types are non-hazardous therefore only a moderate risk.	FPC requires site security measures to prevent unauthorised access. FPC requires impermeable pavement and sealed drainage	Low
Surface waters adjacent to site. All River Quality Objective categories and SSSIs.	Leachate with high organic content	Acute effects: oxygen depletion, deterioration in water quality, fish kill, algal blooms	Direct run-off from site, across ground surface, via surface water drains, ditches etc.	Medium	Medium	Medium	Potential for large leachate spill into low flow watercourse. Harm is temporary & reversible.	FPC requires impermeable pavement and sealed drainage. FPC does not allow any point source emissions to water. FPC requires fugitive emissions to be prevented/minimised	Low
		Chronic effects, deterioration of water quality	Indirect run-off via the soil layer.	Medium	Low	Low	Likely to be small quantities of leachate reaching watercourse. Harm is temporary & reversible.	FPC requires impermeable pavement and sealed drainage. FPC does not allow any point source emissions to water. FPC requires fugitive emissions to be prevented/minimised	Low

GRA Composting in Closed Vessel

Abstraction from watercourse downstream of site (for agricultural or potable use).	Leachate with high organic content	Acute effects, closure of abstraction intakes	Direct run-off from site, across ground surface, via surface water drains, ditches etc.	Low	Medium	Medium	Watercourse must have medium/high flow for abstraction to be permitted. Leachate will be diluted.	FPC requires impermeable pavement and sealed drainage. FPC does not allow any point source emissions to water. FPC requires fugitive emissions to be prevented/minimised	Low
Groundwater	Leachate from composting material with high organic content	Contamination of groundwater. Treatment required for use as drinking water supply	Soil to groundwater to borehole.	High	High	High	If site located within groundwater source protection inner zone (1)	FP not allowed. Requires a bespoke licence	High. Application for licence likely to be refused in zone 1
							If site located within groundwater source protection outer zone (2)	FP not allowed. Requires a bespoke licence	Either assessed to be low, with extra licence conditions as required, or assessed as high/medium and licence application refused
							If site located within 250m of any private/unlicensed water abstraction.	FP not allowed. Requires a bespoke licence.	Either assessed to be low, with extra licence conditions as required, or assessed as high/medium and licence application refused
				Medium	Low	Medium	If site located outside groundwater source protection zones 1 & 2 and more than 250m from any private/unlicensed water abstraction.	FPC requires impermeable pavement and sealed drainage. FPC does not allow any point source emissions to water. FPC requires fugitive emissions to be prevented/minimised	Low
Groundwater and surface waters	Fire on site leading to run-off from polluted fire fighting waters,	Contamination of groundwater and aquatic ecosystems	Direct and indirect run-off	Medium	High	Medium	Fires can be deliberate or accidental	FPC requires an accident management plan that will cover consequences and control of fires. Licensed activities do not include burning of waste	Low

GRA Composting in Closed Vessel

European site (protected habitat - SPA or SAC) within 1 km of site	Any	Potential deterioration of designated habitat	Any	High	High	High	Composting has releases to air and potential releases to water & groundwater.	FP not allowed. Requires a bespoke licence.	Either assessed to be low, with extra licence conditions as required, or assessed as high/medium and licence application refused
Site of Special Scientific Interest (SSSI) (Acid grassland/heath)	Ammonia emissions into the air	Nitrogen deposition causing damage to plants on acid heaths	Air transport	High	High	High	Studies using air dispersion modelling have identified potential damage if composting site is within 1km acid grassland/heath SSSI	FP not allowed . Requires a bespoke licence.	Either assessed to be low, with extra licence conditions as required, or assessed as high/medium and licence application refused
				Low	Low	Low	If site is at least 1 km away from acid grassland/heath SSSI	FP allowed if site is at least 1 km away from acid grassland/heath SSSI	Low

Notes: Red triangle indicates comment containing supporting information

Yellow columns contain drop down menus that allow automatic evaluation of risk in green column