Environment Agency Permit Variation
Environmental risk assessment
Shropshire IVC
REF

May 2025

Pollution linkages				Judgement				Action (by permitting)	
Source	**Pathway**	**Receptor**	**Harm**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
- IVC -									
Release of particulate matter (dust) and micro-organisms (bioaerosols)	• Inhaled, ingested or inoculated • Deposited on garden fruit and vegetables and then ingested	• Anyone living or working close to the site (excluding operator and employees)	• Respiratory irritation and illness • Gastro-intestinal illness	Medium	Medium	Medium	• Composting activities produce and release bioaerosols, such as micro-organisms • There is potential for exposure to anyone living or working close to the site (excluding operator and employees) from any activities taking place in the open and from bio-filters and emission point sources • Most dust will be washed off by rain or during food preparation	• The facility is not situated within an Air Quality Management Area ‘AQMA’ • The closest receptor down gradient of the prevailing wind is X • Shredding of input material is carried out within a building under slight negative pressure • Sanitisation and stabilisation of waste takes place within concrete tunnels / vessels • External maturation is carried out using a forced air supply reducing the need for turning of windrows • An application bioaerosol risk assessment has been carried out and concludes The magnitude of risk identified across the five receptors identified within the screening distance is deemed to be ‘low’ or very low. • Bioaerosols monitoring will be carried out and the facility will comply with Technical Guidance Note M9 – Environmental monitoring of bioaerosols at regulated facilities bioaerosols monitoring requirements and action levels • The bio-filter or an equivalent abatement system shall be specifically designed, monitored and maintained to minimise the release of bioaerosols, micro-organisms and particulates • Weather conditions are monitored continuously and consideration is given to the impact at local receptors, with modification to activities if required • Materials treated and stored in the open shall be monitored to prevent high temperatures and dry conditions developing • The temperature and moisture of the material on site is controlled to prevent drying out • The windrows in the external maturation area are oriented so that the smallest possible area of composting mass is exposed to the prevailing wind, to reduce the dispersion of pollutants from the windrow surface and prevent wind stripping • Surfaces shall be kept free of debris and damped down using clean water during dry weather • Housekeeping shall take place to prevent build-up of dry dusty materials and rotting waste	Low

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Waste, litter and mud on local roads	• Wind transport • Loss from vehicles • Tracking on wheels	• Local residences • Roads • Amenity areas • Ecological habitats	• Nuisance • Loss of amenity • Road traffic accidents • Harm to wildlife	Medium	Medium	Medium	• There is a risk of creating unsafe road surfaces in wet weather • Local residents are often sensitive to mud on roads • The site access road is 200m long	As above plus: • All incoming and outgoing waste or material will be enclosed or sheeted • Roads to be swept and damped down if necessary • Vehicle wheels washed for ABPR purposes	Low
Odour	• Aerial transport	• Anyone living or working close to the site (excluding operator and employees)	• Nuisance • Loss of amenity	High	High	High	• Composting produces and is likely to release unpleasant odour and emissions if allowed to become anaerobic with the potential for exposure to anyone living or working close to the site (excluding operator and employees) • Local residents are sensitive to odour	• The facility is operated according to an odour management plan which minimises the potential for pollution off site including use of appropriate measures to reduce odour problems such as minimising storage times before processing • Odour dispersion modelling has shown that the maximum odour impact due to emissions from the biofilters will be well below the assessment criterion of 1.5 OUE/m^3. • Waste is only accepted at the site if there is storage and treatment capacity available • The annual throughput is limited to 50,000 tonnes per year • Static tonnages are limited within associated management plans (OMP, FPMP) • Waste is stored and treated under aerobic conditions during all stages of the composting process • Sanitisation of wastes takes place in a closed system incorporating a scrubber and bio-filter (designed by a qualified engineer for the capacity and volume of waste – to minimise the release of odour and ensuring it is fit for purpose) • Abatement systems are monitored and managed to prevent odorous conditions developing • Process controls are in line with a fully implemented management system which ensures operational conditions are optimised and maintained from waste acceptance and throughout the whole process, including an odour management plan • All waste stabilised outside is monitored and managed to prevent odorous conditions developing • Leachate is stored in enclosed tanks	Low
Noise and vibration	• Aerial transport	• Anyone living or working close to the site (excluding operator and employees)	• Nuisance • Loss of amenity for local residents and workplaces • Loss of sleep	Medium	Medium	Medium	• Local residents often sensitive to noise and vibration	• An application noise assessment has been carried out which According to BS4142: 2014+A1:2019 the resultant assessment would conclude that noise from the site would result in a low impact to below adverse impact. • The facility is managed in accordance with a noise management plan 'NMP' • A planned preventative maintenance system will be in place which will include noise generating equipment such as shredder / refiner / fans motors / mobile plant etc	Low
Scavenging animals and birds	• Migration from source into surrounding environment / increased population	• Anyone living or working close to the site (excluding operator and employees)	• Nuisance • Loss of amenity • Harm to human health from waste carried off-site and from faeces	Medium	Medium	Medium	• Permitted food wastes may attract scavenging animals and birds	• The site operates in accordance with a pest management plan which reduces the likelihood of pest infestations • A proactive / standing pest control contract will be in place at all times during the operational phase of the facility • waste is only accepted at the site if there is storage and treatment capacity available • waste shall be inspected on arrival for signs of infestation and rejected where necessary, pest infested waste is not permitted	Low

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								• waste shall only be tipped in an enclosed building and prepared and treated quickly, with typical storage times of 1-3 days and no longer than 7.. The short residence time interrupts insect life cycle and prevents increasing populations • The sanitisation process destroys pathogens providing a break in residence time from inputs to stabilisation • Food waste is composted within the vessels and is less attractive to pests during the stabilisation and maturation stages • Residence time during the stabilisation and maturation process is 3 weeks at which point windrows are cleared entirely leaving no available habitat for rats interrupting rodent life cycle • Use of an approved knock-down is allowed following associated guidelines • The site will operate in accordance with an APHA authorisation under ABPR. The APHA are principally concerned with spread of animal disease with control of pest being a priority • Permitted waste types include catering wastes and other wastes containing animal by-products are restricted by separate controls under the ABPR and by the standard rules permit which requires each composting batch to undergo sanitisation in a closed system	
Pests	• Migration from source into surrounding environment / increased population	• Anyone living or working close to the site (excluding operator and employees)	• Nuisance • Loss of amenity	Medium	Medium	Medium	• Permitted waste types attract pests, such as flies. They can multiply, particularly in the summer months when the waste is more odorous and attracts flies	As above plus: • Avoidance of anaerobic conditions • Infested material is rejected and removed • Use of authorised insecticides of knock-down sprays only • Implementing and maintaining a cleaning plan – storage areas cleaned and gullies cleared of debris at least weekly	Low
Contaminated water used for recreational purposes	• The human population is at risk of direct contact with or ingestion of contaminated waters. • There is a risk of contaminated water used for recreational purposes causing skin damage or gastro-intestinal illness.	• Users of water for amenity purposes	• Loss of amenity • Harm to human health	Low	Low	Low	• Any emissions to surface water from the process would be identified quickly	• There are no process water discharges from the facility • Process generated leachate and condensates are stored in tanks which are bunded in accordance with CIRIA736 • Penstock valve in place	Low
Flooding of the site	• Contaminated flood water migrating off site	• Anyone living or working close to the site • Ecological receptors	• There is a risk of waste washed off-site contaminating buildings, gardens and natural habitats downstream	Low	Low	Low	• The permitted waste types are non-hazardous and therefore the risk of contamination is not high • Leachate may have a high biological oxygen demand (BOD), ammonia and suspended solids	• Storage and treatment of wastes to take place on an impermeable surface with sealed drainage • Process generated leachate and condensates are stored in tanks which are bunded in accordance with CIRIA736 • Drainage systems are mapped and represented on a up to date plan	Low

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							• The site is not at risk of flooding from rivers, the sea, surface water or small watercourse or reservoirs. • Groundwater levels at the site are high		
Fire risk	• From arson and, or vandalism by spontaneous combustion from uncontrolled decomposition • Polluting materials (smoke or fumes) to travel through the air, water or over land • Spillages and contaminated firewater by direct run-off from the site and through surface water drains and ditches	• Anyone living or working close to the site (excluding operator and employees) • Ecological receptors	• Respiratory irritation, illness and nuisance to the local population • Injury to staff, firefighters or arsonists and vandals • Air, water or land pollution	Medium	Medium	Medium	• Rapidly decomposing material gives rise to self-heating • Material can become dry and increase combustibility	• The site operates in accordance with a fire prevention and management plan 'FPMP' plan which reduces the likelihood of a fire occurring and limits the impacts in the event an incident does occur • Permitted waste types are organic and non-hazardous • A robust waste acceptance procedure is in place • No burning of wastes is allowed on site • Compliance with the limits to the feedstock waste material and composting to the design capacity of the site • Monitoring and controls of composting moisture and temperature (preventing excessive temperatures), and the need to act swiftly if temperatures increase (includes stored finished material and oversize material) • Monitoring is undertaken to demonstrate a representative core temperature • CCTV coverage of internal and external site areas • Site security prevents arson • Water supplies to be available for fire fighting, including storage of fire-fighting water • Site drainage, including clean water drainage is identified and documented within the management system	
Litter on surrounding land and in final material	• Wind transport • Loss from vehicles	• Anyone living or working close to the site (excluding operator and employees) • Ecological receptors	• Nuisance • Loss of amenity • Harm to animal health • Reduction in land bank values due to contamination	Medium	Medium	Medium	• Local residents are sensitive to litter • Plastic contamination in compost reduces land values and economic market certainty • Plastic contamination can harm grazing animals and soil quality	• Only waste authorised by the permit will be accepted at the facility • Most waste is of a domestic origin and well characterised. Pre-acceptance processes will be in place for merchant waste including, waste enquiry forms, pictures, audits and site inspections. These processes will confirm contamination levels including non-compostable plastic and litter reducing the risk of accepting waste heavily contaminated with waste plastic • Heavily contaminated feedstock will be rejected and investigated with the waste producer / previous holder • Where practicable and necessary, contamination can be removed from input material after tipping to reduce non-compostable plastic and litter to as low as reasonably practicable as waste arrives and before processing • Litter picking is carried out around external windrow as required • Non conforming waste is separated from conforming waste and stored separately in covered skips • Assessing the effectiveness of plastic removal and the quality of the finished material • External windrows are forced aerated eliminating turning steps reducing the opportunity for compostable plastics to be mobilised by the wind • The refining plant has two wind sifting steps removing light fraction prior to completion of the composting process • There is a concrete wall to the west of the windrows in the prevailing wind pathway which provides shelter to the during high winds	Low

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Gaining unauthorised access to site	• Traversing across unsecured land	• Human health • Harm to livestock	• There is a risk of causing injury to humans or livestock.	Low	Low	Low	• Permitted wastes are non-hazardous • Management system includes procedures for worker and visitor safety	• Activities are managed and operated in accordance with all appropriate measures and a documented and implemented management system that stipulates all preventative measures and emergency responses should accidents occur (including site security measures to prevent unauthorised access) • Roles and responsibilities are clearly laid out and staff training is provided (will include site security measures to prevent unauthorised access) • Sitewide CCTV coverage is in place which is monitored 24/7 by a specialist security company • Emergency contact details are displayed at the site entrance • Pedestrian walkways are clearly marked • Visitors should receive a health and safety induction when visiting and must follow the site operator's instructions	Low
Surface water emissions - Risk of pollution causing acute effects	• There is a risk of pollution from spillage of liquids, leachate from waste, contaminated rainwater run-off from waste with high organic and ammonia content and suspended solids. Contamination can travel through direct run-off from site over the land, surface water drains and ditches.	• Ecological receptors	• Oxygen depletion • Fish kill • Algal blooms	Medium	Medium	Medium	• There is potential for contaminated rainwater run-off from waste operations, especially during heavy rain • Leachate may have a high BOD, ammonia and suspended solids • The permitted waste types are non-hazardous and are not sludges or liquids • The facility is not within a source protection zone	• Contaminated surface water is separately collected, the only surface water emission is clean uncontaminated water from the yard area • All liquids are stored in containers with secondary containment • All secondary containment where required, based on a site-specific risk assessment meeting CIRIA 736 • Storage and treatment of wastes to take place on an impermeable surface with sealed drainage • Drainage plans will be available on site • Emergency procedures will be clearly communicated to all site operatives • High level alarms are installed on storage tanks to prevent overfilling	Low
Surface water emissions - Risk of pollution causing chronic effects	• liquid spills • leachate from waste • contaminated rainwater run-off from waste with a high organic and ammonia content and suspended solids content • loss of containment from on-site storage	• Ecological receptors	• Oxygen depletion • Fish kill • Algal blooms	Low	Low	Low	• Pollution of this type is likely to be detected quickly.	• All liquids are stored in containers with secondary containment • Run-off is restricted by the 'emissions of substances not controlled by emission limits' condition (excludes odour) • Separation of clean and dirty water networks	Low

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Risk to water abstracted from a watercourse	• Liquid spills • Leachate from waste • Contaminated rainwater run-off from waste with high organic content • There is a risk of contaminants travelling through direct run-off from the site across ground surface, via surface water drains and ditches and finally through abstraction. This could have acute effects and cause the closure of abstraction intakes.	• These risks relate to watercourses downstream of a facility and to water for agricultural or potable use.	• There is a risk of causing injury to humans or livestock.	Low	Low	Low	• Potential for contaminated rainwater run-off from outside waste operations, especially during heavy rain	• As above	Low
Risk to groundwater	• Liquid spills • Leachate from waste • Contaminated rainwater run-off from waste with high organic and ammonia content	• There is a risk of contaminants travelling through soil and groundwater which can then be abstracted from a borehole. This could have a chronic effect resulting in the groundwater requiring treatment or causing closure of a borehole.	• Contamination of water supply	Low	Low	Low	• Potential for contaminated rainwater run-off or leachate from waste operations, especially during heavy rain. The consequence is based on the possibility of pollution not being detected for a long time.	• The facility is not within a source protection zone • The activities are not be carried out within a groundwater SPZ 1 and 2, or within 250 metres of any well, spring or borehole used for the supply of water for human consumption (including private water supplies) • All liquids are stored in containers with secondary containment • Periodic monitoring as required by the permit	Low
Risk to protected sites	• Multiple	• Ecological receptors	• Nutrient enrichment • Leachate contaminated surface water run off • Smothering, disturbance,	High	High	Low	• Waste composting operations may cause harm to and deterioration of nature conservation sites.	• Dispersion modelling has been carried out which demonstrates that airborne ammonia levels, nutrient deposition and acidification will not have a significant effect on local air quality. • Ammonia emissions are controlled by an abatement plant including an acid scrubber and biofilter with a proposed ELV of of 3.5 mg/m^3, exceeding BAT requirements.	

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Receptor - The things at risk and that need protecting. Receptors considered include atmosphere, land, surface waters, groundwater, humans, wildlife and their habitats. A single receptor may be at risk from several different sources and all must be addressed.

Source - The agent or process that has the potential to cause harm. A contaminant or pollutant (a hazard) that has the potential to cause harm. For example, the activity or operation taking place for which a particular hazard may arise.

Harm - The harmful consequence to the receptor if the hazard is realised.

Pathways - The route or means by which a defined hazard may affect a receptor.

Source-pathway-receptor linkage - There has to be a link between the source, pathway and receptor for there to be a risk.

Likelihood of exposure - This is the likelihood of the receptors being exposed to the hazard.

- high – exposure is probable – direct exposure is likely with no or few barriers between the hazard source and the receptor
- medium – exposure is fairly probable - feasible exposure is possible as the barriers to exposure are less controllable
- low – exposure is unlikely – several barriers exist between the hazard source and receptor to reduce exposure
- very low – exposure is very unlikely – effective, multiple barriers are in place to reduce exposure

Overall magnitude of potential consequence - This is the severity of the consequence if the hazard is realised and may cause actual or potential harm. This will have a high, medium, low or very low rating using attributes and scaling to consider ‘harm’.

Risk rating - We work out the risk rating by combining the likelihood of exposure with the magnitude of the potential consequences.

- high risk – requires additional assessment and active management
- medium risk – requires additional assessment and may need active management and, or monitoring (or both)
- low and very low risks will require a periodic review