Environment Agency Permit Variation
Environmental risk assessment
Acton Composting Site
EPR EB3007MG

June 2022

Context: Permit variation application to increase annual throughput

Pollution linkages				Judgement				Action (by permitting)	
Source	**Pathway**	**Receptor**	**Harm**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
- Composting -									
Release of micro-organisms (bioaerosols).	● Inhaled, ingested or inoculated ● Deposited on garden fruit and vegetables and then ingested	Local human population.	● Respiratory irritation and illness ● Gastro-intestinal illness	Low	Medium	Medium	● Composting activities produce and release bioaersosols, such as micro-organisms ● there is potential for exposure to anyone living or working close to the site (excluding site staff) ● The site is in a rural setting with the closest residential receptor being 320m. ● The site is not within an AQMA ● Bioaerosol monitoring carried out during 2017 - 2021 do not indicate pollution associated with bioaerosol emissions is occuring.	● Routine bioaerosol monitoring indicates control measures in operation at the site are effective. ● Turning of active windrows is undertaken the minimum number of times required to ensure a high grade end product. ● Wind direction is considered when undertaking turning and can be delayed in conditions where even with controls in place off site impacts could be unacceptable. ● Shredder operates at slow speed to prevent release of dust. ● Vehicular speed restrictions are in place at the site to minimise disturbing fugitive emissions. ● Waste acceptance procedures are in place with conditioning (moisture control) of inputs. ● Monitoring of moisture content during the composting process and hydrating the windrows if required to avoid the formation of a dry fraction susceptible to transport by wind. Temperature and moisture readings determine when the windrows will need additional dampening. Steaming of windrows will be reduced by ensuring the compost pile is within the correct temperature range. ● Regular cleaning of the compost pad is undertaken to avoid formation of dry crust / residue from which loose material can be liberated during vehicular movements or wind friction and transported off site. ● The risk of fire which could release bioaerosols is controlled by a Fire Prevention Plan including pile sizes, separation distances and storage conditions.	Low

								• Equipment involved in the shredding and screening activities will be subject to planned preventative maintenance and cleaning. • Routine visual assessments of dust levels are carried out with a process in place for corrective actions. • Activities on site are undertaken in line with appropriate guidance and best practice to produce PAS100 and QP certified end product. • A bowser is permanently stationed on the site and can be used for dampening down local roadways during exceptionally dry periods if required.	
Releases of particulate matter (dusts).	Air transport then inhalation.	Local human population.	• Respiratory irritation and illness	Low	Medium	Medium	• Composting activities produce and release dust • There is potential for exposure to anyone living or working close to the site (excluding site staff) • The site is in a rural setting with the closest residential receptor being 320m. • The site is not within an AQMA. The nearest AQMA is over 2km away • Permitted waste types do not include dusts, powders or loose fibres and this is managed through waste acceptance procedures.	• Daily yard cleaning. • Waste acceptance checks. • A cleaning rota is in place to manage dust and debris. • Deep clean takes place a minimum of twice per annum. • Regular maintenance of all hardstanding. • All loads of waste entering and exiting the site will be sheeted or otherwise contained. • Shredder only operate at slow speed to prevent release of dust. • Vehicular speed restrictions. • Every load tipped has visual inspection with clearly defined acceptance criteria. • Waste to be stored on hardstanding. • Visual inspection of dust levels on a daily basis.	Low
As above.	Air transport then deposition.	Local human population.	Nuisance - dust on cars, clothing etc.	Medium	Low	Medium	As above.	As above.	Low
Waste, litter and mud on local roads.	Vehicles entering and leaving site.	Local human population.	• nuisance • loss of amenity • road traffic accidents	Low	Medium	Low	• There is a risk of creating unsafe road surfaces in wet weather • Local residents are often sensitive to mud on roads • The private site access road is approximately 1.2km in length reducing the likelihood of residual dust being tracked onto the public highway.	• Routine housekeeping. • Sheeting / containment of vehicles containing waste. • Vehicular speed restrictions. • Use of road sweeper • A bowser with a deflector plate is permanently stationed on the site and can be used for dampening down of local roadways during exceptionally dry periods if required.	Low

Odour	Air transport then inhalation.	Local human population.	• nuisance • loss of amenity	Low	High	Medium	• Composting produces and is likely to release unpleasant odour and emissions if allowed to become anaerobic • Potential for exposure to anyone living or working close to the site (excluding operator and employees) • Local residents are sensitive to odour • The site is in a rural setting with the closest residential receptor being 320m. • There have been no odour reports for the last 5 years under current operation and the increase in throughput is modest.	• The activity is managed in accordance with an Odour Management Plan (OMP). • The site operates in accordance with a maximum static tonnage (FPP). • Minimisation of residence times. • Surface water / leachate storage tanks are enclosed underground. • Process control measures are in place to ensure optimisation of aerobic treatment. • Avoidance of conditions leading to anaerobic conditions within the windrow. • Procedures are in place to address odorous inputs. • Turning of piles prevents anaerobic decomposition with odours associated with a reducing chemistry. Frequency managed / optimal (no over turning). • Assessment of meteorological conditions when turning (wind direction) etc. • Management of the piles to achieve BS PAS 100 QP requires process monitoring and consistency. • Yard checked for cleanliness daily and cleaning takes place as required. • All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place.	Low
Noise and vibration.	Noise through the air and vibration through the ground.	Local human population.	• nuisance • loss of amenity for local residents and workplaces • loss of sleep	Low	Medium	Low	• Local residents often sensitive to noise and vibration • Noise generating activities include intermittent mechanical handling, shredding and screening (shredding activities use a low speed Komtech Crambo which have lower noise emissions compared to high speed shredding). • No activities are carried out are likely to cause any perceptible vibration beyond the operational envelope of associated plant and machinery.	• PPM regime in place for all equipment. All plant and machinery will be maintained in accordance with the manufacturers specification. • Regular maintenance of hardstanding to prevent uneven surfaces. • Vehicular speed restrictions. • Daily checks of equipment for abnormal operation. • Annual noise monitoring undertaken in accordance with planning condition requirements. • All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place.	Low
Scavenging animals and scavenging birds.	Air transport and over land.	Local human population.	• nuisance • loss of amenity • harm to human health from waste carried off-site and from faeces	Low	Low	Low	• Permitted wastes may attract scavenging animals and birds. • Food waste is not accepted at the site.	• Waste is only accepted to site when there is available treatment capacity. • Waste acceptance procedures are in place to ensure pest infested waste is quarantined / rejected. • Routine site inspections by the site operations team identify any increased scavenging animals and birds. • The composting process undergoes sanitisation in accordance with the PAS 100 standard. • Proactive pest control deployed as required. • The composting process undergoes sanitisation in	Low

								accordance with the PAS 100 standard.	
Pests (e.g. flies).	Air transport and over land.	Local human population.	• nuisance • loss of amenity • harm to human health	Medium	Medium	Medium	• Insect pests can multiply on permitted wastes, particularly in summer months or when waste is odourous and attracts flies	• The process is managed effectively to avoid anaerobic conditions. • Minimisation of residence time. • Waste acceptance procedures are in place to ensure pest infested waste is quarantined / rejected. • Waste inputs are shredded and processed with minimal residence time in input piles. • The sanitisation process is sufficient to denature any eggs, pupa or larval stages.	Low
Contaminated water used for recreational purposes	The human population is at risk of direct contact with or ingestion of contaminated waters.	Local human population.	• skin damage • gastro-intestinal illness	N/A	N/A	N/A	• Restricted use of recreational waters. • There are no direct or indirect discharges from the site to recreational waters.	N/A	N/A
Flooding of site	Flood waters.	Local human population and local environment.	• If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Low	Medium	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 • The site is not in an area which is known to be at risk of any of the following mechanisms of flooding: ○ Fluvial ○ Pluvial ○ Groundwater ○ Reservoir ○ Drainage network • Flood risk in the wider area is also limited meaning there will be no wider implications for site access.	• No additional controls required.	Low
Fire risk from stockpiles,arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Local human population and local environment.	• 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 is in a low risk rural setting and the risk of smoke impacting nearby receptors is low. • The site is located on a principal aquifer but the drainage system is isolated so contaminated fire water should be retained on site.	• The facility will be operated in accordance with a Fire Prevention Plan which includes limits on maximum pile sizes, separation distances and storage conditions. • Representative temperature monitoring of waste piles is carried out including oversized stockpile. • Waste acceptance procedures are in place to reject non conforming waste. • Burning of wastes is not permitted. • Site does not exceed manageable capacity. • Site security system in place to manage the likelihood of arson.	Low

Litter on surrounding land and in final material			• nuisance • loss of amenity • harm to animal health • reduction in land bank values due to contamination	Low	Low	Low	• 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	• Activities on site are undertaken in line with appropriate guidance and best practice to produce PAS100 and QP certified end product. • Waste acceptance procedures are in place to reject non conforming waste. • Removing non-compostable plastic and litter to as low as reasonably practicable as the waste arrives before processing. • Ricking litter in windrows and affected areas • Safe storage of waste to prevent cross-contamination from non-conforming waste. • Assessing the effectiveness of plastic removal and the quality of the finished material.	Low
Gaining unauthorised access to site			• risk of causing injury to humans or livestock	Low	Low	Low	• Permitted wastes are non-hazardous • Standard rules permit does not allow unpermitted entry • Management system includes procedures for worker and visitor safety	• Emergency contact details are be displayed at the site entrance. • Visitors receive a health and safety induction when visiting and must follow the site rules. • The composting the site has a CCTV system which comprises a network of three camera arrays which extend coverage to the entire site. These CCTV cameras are monitored 24 / 7. • The site is fenced and is protected from vehicle access by means of gates which are closed out of operating hours. Out of site operating hours the site buildings are all locked.	Low
Risk to surface waters close to and downstream of site [Acute effects]	Direct run-off from site over the land, surface water drains and ditches.	All surface waters close to and downstream of site.	• oxygen depletion • fish kill • algal blooms	Very low	Medium	Very Low	• 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 do not include sludges or liquids • There are no direct or indirect discharges from the site to recreational waters. The closest controlled waters (Meece Brook) is >500m from the site boundary.	• Storage and treatment of wastes to take place on an impermeable surface with sealed drainage • Levels in leachate collection tanks are checked daily • The site has an on site weather station (Skyview). The system records data to a 30 min resolution including temperature, wind direction, windspeed, pressure, cloudcover, rainfall. The system can be accessed remotely from off site. • Emergency procedures will be clearly communicated to all site operatives	Very Low
Risk to surface waters close to and downstream of site [Chronic effects]	• direct run-off from site over the land, through surface water drains and ditches • indirect run-off through soil	All surface waters close to and downstream of site.	• Deterioration to water quality.	Low	Low	Low	• Pollution is likely to be detected quickly and the effects are temporary and reversible. • There is a high potential for contaminated rainwater run-off from waste operations outside especially during heavy rain. • Consequence is low because pollution is likely to be detected quickly and effects are temporary and reversible. The width of the Thames as it passes the	• Permitted waste types do not include sludges or liquids. • Activities take place on a sealed drainage system comprising a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to two underground storage tanks. A raised kerb of minimum 100mm prevents any water leaving the site. The drainage system is isolated so there are no direct or indirect discharges.	Low

							site location is > 900m meaning high dilution.	• There are two fuel tanks on site these are stored with secondary containment. • Spill kits are situated on site for use in the event of any loss of containment. • Site inspections and defect reporting system in place.	
Risk to groundwater	Transport through soil/groundwater then extraction at borehole.	Groundwater	• Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Low	Low	Low	• Leachate will be generated from open windrow composting activities. • 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 site is in an 'SPZ' 3 (Total Catchment), approximately 675m from the associated SPZ 2 (Outer Protection Zone) and 1000m from the associated SPZ1.	• Activities take place on a sealed drainage system comprising a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to two underground storage tanks. A raised kerb of minimum 100mm prevents any water leaving the site. The drainage system is isolated so there are no direct or indirect discharges. • There are two fuel tanks on site these are stored with secondary containment. • Site inspections and defect reporting system in place. • Tanks checked daily, pre-emptive ordering of tankers if prolonged heavy rain is forecast.	Low
Risk to protected sites	Any	Protected sites - European sites and SSSIs protected species/habitats and other nature conservation sites.	• nutrient enrichment • leachate • contaminated surface water run off • smothering • disturbance • predation	Medium	Low	Low	• Waste composting operations may cause harm to and deterioration of nature conservation sites. • There are no SSSI within 2km of the site and no SAC, SPA, or RAMSAR sites within 5km of the site. • There is a protected broadleaved deciduous woodland adjacent to the northern boundary of the site. This site is up / cross directional from the prevailing wind direction.	• FPP reduces the risk of fire, any impact that did occur would be short in duration (<4hours). • Site drainage system and associated controls should remove any pathway from site activity to root uptake. • Vehicle speed restrictions reduces the impact of dust on local vegetation.	Low