Environmental Risk Assessment

Crayford Materials Recycling Facility

6th January 2026

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Crayford Materials Recycling Facility

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1. INTRODUCTION

As part of an application for an environmental permit Operators must assess the risk to the environment and human health from the activities they seek to permit. This Environmental Risk Assessment (ERA) has been undertaken in accordance with the online guidance for undertaking environmental risk assessments and is presented in Table 3.1 below.

Environmental risks relevant to the proposed activities are:

- Emissions to Air;
- Emissions to Water;
- Emissions to Land;
- Odour;
- Noise;
- Litter;
- Pests;
- Vandalism;
- Fire;
- Climate Change; and
- Incompatible Wastes.

For each of the above environmental criteria the approach to the assessment has followed the following four stage process:

- Identify the risks;
- Assess the risks (assuming the control measures proposed are in place);
- Choose appropriate further measures to control these (if required); and
- Present the assessment.

In all cases, the overall risk assessment associated with the site concludes that the site presents a low risk.

2. SITE DETAILS

The site is currently permitted under Environmental Permit EPR/KB3806FD/V002 as a Waste Operation to accept up to 350,000 tonnes per annum of mixed waste streams. A permit variation was submitted in April 2024to increase the tonnage to 420,000 tonnes and to update the existing permit to more accurately reflect the existing site operations and waste types accepted by site. The application was duly made on 18th August 2025 and has only just been allocated for determination.

N+P is making this application to carry out a variation of their existing permit under The Environmental Permitting (England and Wales) (Amendment) Regulations 2018 in order to install a new Solid Recovered Fuel (SRF) plant. The existing mini MRF on site will be upgraded and converted into a SRF line. This will allow N+P to convert a high percentage of their end-of-life materials, coming from other water processing lines on site, into an SRF material which will then be exported off site for use as a fuel.

N+P are also proposing to increase the Installation Boundary to include additional land which will be used for Welfare Facilities and additional bale storage.

As a result of the variation, due to the proposed SRF plant processing more than 75 tonnes per day to produce SRF for use as a fuel, the proposed plant meets the definition of an 'Installation' and will therefore be permitted under the following Scheduled Reference:

- Section 5.4 ' Disposal, recovery or a mix of disposal and recovery of non-hazardous waste' Part A(b) (ii) – pre-treatment of waste for incineration or co-incineration.

The rest of the site activities carried out on site will remain permitted as a 'Waste Operation'.

2.1 Site Location

The site is located at Crayford Materials Recycling Facility, Century Wharf, Crayford Creek, Crayford, Dartford, Kent, DA1 4HQ.

The site location is provided in Figure 2.1 below. The existing Installation Boundary and proposed Installation Boundary is provided below in Figure 2.2 and 2.3.

2.2 Site Setting

The site is located along the River Cray within a heavy industrial area with the railway to the northwest, and industrial properties to the south and west. The nearest residential dwellings are located along Thames Road and Iron Mill Lane approximately 400m to the southwest of the site. Table 2.1 below provides information regarding the surrounding site.

Table 2.1 Site Settings

Direction	Description
North	Open land and residential properties and River Thames beyond
North East	Open land and the River Thames beyond
East	The River Cray and the A206

South East	Industrial properties and residential properties beyond
South	Industrial properties and residential properties beyond
South West	Industrial and residential properties
West	Industrial properties and residential properties beyond
North West	Railway line, Slade Green Train Station and residential properties beyond

2.3 Sensitive Receptors

Environment Agency (EA) H1 and H5 guidance states that the potential impacts of the site should be assessed for the following habitat sites within 10km of the site:

- Special Areas of Conservations (SACs) and candidate SACs (cSACs) designated under the EC Habitats Directive;
- Special Protection Areas (SPAs) and potential SPAs designated under the EC Birds Directive; and
- Ramsar Sites designated under the Convention of Wetlands of International Importance.

It is also stated that within 2km of the Source:

- Sites of Special Scientific Interest (SSSI) established by the 1981 Wildlife and Countryside Act;
- National Nature Reserves (NNR);
- Local Nature Reserves (LNR);
- Local Wildlife Sites (LWS), County Wildlife Sites (CWS) and potential wildlife sites (PWS);
- Sites of Importance for Nature Conservation (SINC); and
- Ancient Woodland.

Information from the Multi Agency Geographic Information for the Countryside (MAGIC) website (http://magic.defra.gov.uk/) has been used to obtain the above information.

The only relevant designated site is the Wansunt Pit SSSI located 2km to the northwest.

The site is within the Bexley jurisdiction of the London Green Belt.

2.4 Emissions to Controlled Water

There are no process emissions to controlled waters as a result of this permit variation.

The drainage system will be updated to capture the runoff from the proposed new storage area.

The remaining drainage network on site will remain as currently permitted, with two surface water emission points (Emission Point W1 and W2).

A detailed site drainage plan is provided within Annex A – Site Plans.

2.5 Emissions to Sewer

The site has an existing connection to main foul sewer, consented via a Trade Effluent Discharge Consent which is provided within Annex H – Trade Effluent Discharge Consent.

This captures surface water run-off from the areas north and west of the Baler Shed which flows to a below ground chamber before being pumped to foul sewer (Emission Point S1).

There will be no changes to the emissions to sewer as a result of this permit variation.

A detailed site drainage plan is provided within Annex A – Site Plans.

2.6 Wind Direction

A windrose from London City station, for a period from May 1988 until July 2025, providing the frequency of wind speed and direction is provided in Figure 2.1 below. The windrose shows that winds from the south-westerly quarter are more frequent with winds from the southeast occurring less often.

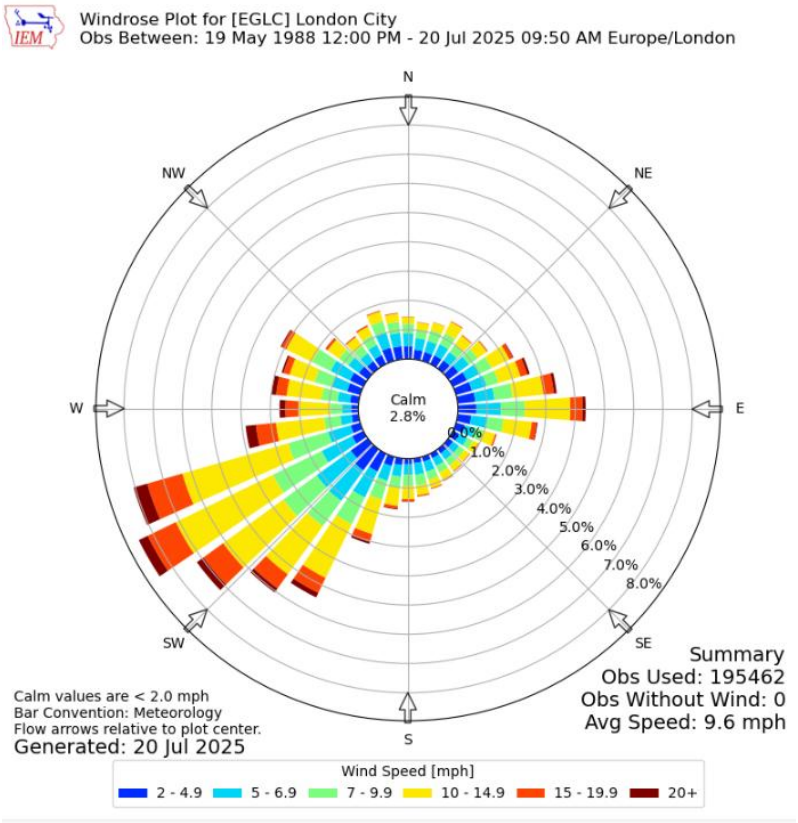

Figure 2.1 London City Windrose

2.7 Flood Risk

The nearest surface water feature is the River Cray which is located 35m to the south of the site.

The site is located within Flood Zone 2 and 3. Flood Zone 2 means that there is a 0.1% chance of flooding each year and flood zone 3 means that there is a 1% or greater chance of flooding from rivers each year and a 0.5% or greater chance of flooding each year from the sea.

The site is considered to be in an area of high sensitivity with regard to surface water due to the proximity of the River Clay.

Figure 2.2 Site Location

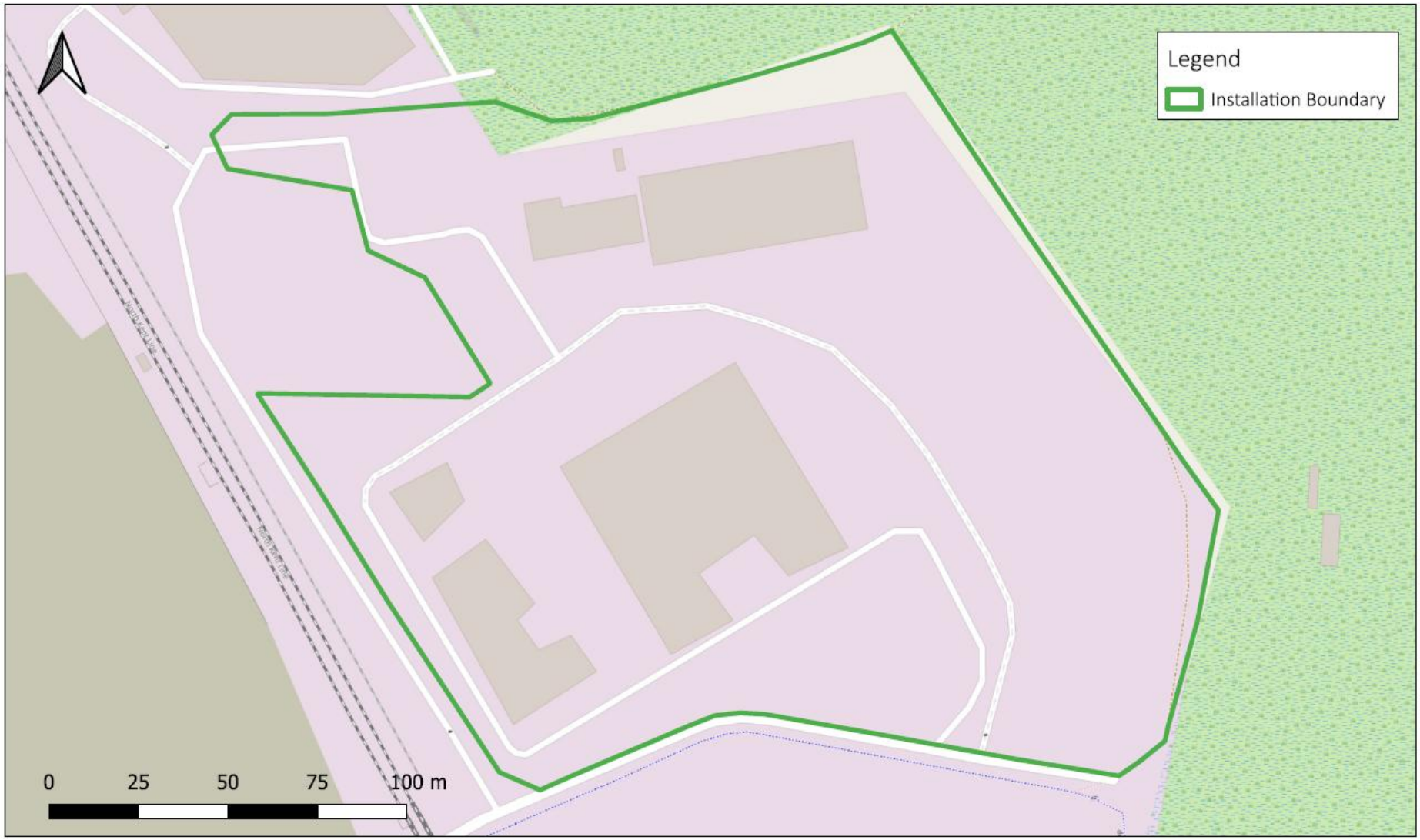

Figure 2.3 Existing Installation Boundary

Figure 2.4 Proposed Installation Boundary

3. RISK ASSESSMENT METHODOLOGY

The Environmental Risk Assessment has adopted a risk assessment approach to the potential hazards by combining the probability and magnitude of the potential risk to give an estimation of the risk prior to any mitigation measures. The risk management measures, which are designed to reduce the likelihood of occurrence, are then detailed, followed by an estimation of the actual risk post-mitigation (Residual Risk Rating).

The DEFRA guide to risk assessment[1] and the EA's guidance indicates the approach of subjectively classifying the magnitude of potential consequences into four categories depending upon the degree of the impact that the potential risk could have and the context in which the risk is being assessed. The classification is used as a guide in this Risk Assessment.

The four categories are as follows:

- Severe: exposure may result in serious damage;
- Moderate: exposure may result in damage that is not severe and is reversible;
- Mild: Minor consequences where damage is not apparent though reversible adverse impacts possible;
- Negligible: The effects are negligible.

The matrix shown below considers the probability of the potential risk against the magnitude of the potential impact, thereby giving an estimation of the resulting likelihood of the risk occurring.

Probability of potential Risk	Magnitude of Potential Impact			
	Severe	Moderate	Mild	Negligible
High	High	High	Medium/Low	Near Zero
Medium	High	Medium	Low	Near Zero
Low	Medium	Medium	Low	Near Zero
Negligible	Medium	Medium/Low	Low	Near Zero

The risk assessment below has been based on the matrix outlined above.

The final stage of the risk assessment is the judgment of the severity of the residual risk following implementation of the mitigation measures.

Based on the outcomes of the risk assessment, the EA document provides guidance on further requirements for different risks. These are summarised as follows:

- High risk – additional assessment and active management required;
- Medium risk – likely to require further assessment and may require either active management or monitoring; and
- Low risk – only requires periodic review.

[1] A Guide to Risk Assessment and the Risk Management for Environmental Protection, 1995.

4. ENVIRONMENTAL RISK ASSESSMENT

Table 4.1 Environmental Risk Assessment

Hazard	Receptor	Pathway	Risk Management Techniques	Probability of Exposure	Consequence	Overall Risk (following mitigation)
Point Source / Emissions to Air	Atmosphere	Airborne	• The site currently has no point source emissions to air and there will be no process emissions to air arising from the proposed variation on site. • To ensure any potential dust and litter emissions are controlled on site, a Dust and Litter Management Plan has been produced and is provided in Annex F – Dust and Litter Management Plan	VERY LOW	Air Pollution	Negligible
Emissions to Water	Groundwater / Geology / Surface Water	Waterborne	• There will be no direct process emissions to controlled waters arising from the proposed variation on site. • All activities will be conducted on impermeable hardstanding with a sealed drainage system to prevent any potentially contaminated runoff to soil, surface water or groundwater. • The site has two surface water emission point (Emission Point W1 and W2). The surface water drainage system is equipped with a three stage (Class 1) interceptor to enable the removal of	LOW: all runoff is controlled on site, therefore the probability of exposure is low.	Contamination	VERY LOW due to the proposed management techniques and drainage arrangements on site.

			solid and trace oil contamination prior to release to controlled waters. • Both emission points are equipped with isolation valves with Emission Point W2 permanently closed. • Surface water run-off from areas north and west of the Baler Shed located in the centre of the site flow to a below ground chamber before being pumped to foul sewer (Emission Point S1). • Emissions to foul sewer via Emission Point S1 will be managed and monitored in accordance with the sites effluent discharge consent (Ref: TLOR0C13). A copy of the consent is provided within Annex H – Trade Effluent Discharge Consent. • In the event of a significant site fire, the facility has been designed to fully contain any firewater run-off. In the event of a fire within the buildings, any water from the suppression system will be contained internally. The buildings have a bunding system to stop any potentially contaminated firewater escaping.			
Emissions to Land	Groundwater / Geology	Spills/leaks	• There will be no emissions to land arising from the proposed variation. • The entire site is covered by impermeable hardstanding. • Spill kits will be strategically located around site.	**LOW:** Spills / leaks could potentially contaminate the ground /	Contamination	**VERY LOW** due to the proposed management techniques.

			• Minor spills will be cleaned up immediately, using spill kits. Resultant materials to be placed in container for off-site disposal to appropriate facility, if necessary. • Immediate action to be taken in event of any major spills. Spillage to be cleared immediately and placed in containers for offsite disposal. EA to be informed.	groundwater underneath the site.		
Noise	Sensitive Receptors in close proximity	Airborne	• The site is within a predominantly industrial/agricultural area and is not considered unduly sensitive in regards to noise. • The majority of the equipment will be enclosed within the existing building. • The site has a number of large industrial neighbours, major trunk roads (A206) and nearby railway lines, and does not have any sensitive residential and habitat receptors located in the near vicinity of the facility. • N+P operate the following measures to mitigate any potential noise emissions: - Appropriate preventative maintenance will be provided for the various elements of the installation. This will ensure no deterioration of plant or equipment that would give rise to increases in noise. -Appropriate location of equipment and buildings.	**LOW:** due to the nature of the activities, and location of site, noise emissions from the site are deemed minimal	Nuisance	**LOW:** due to the proposed risk management techniques

			-Equipment is operated by trained and experienced staff. - Site operational times are adhered to. -White noise reversing alarms are utilised where necessary. • The processing plant and associated equipment has been designed in accordance with best practice and to ensure that internal noise does not present an issue to the employees at the site under the Control of Noise at Work Regulations and to ensure that noise breakout does not lead to noise nuisance at the identified sensitive receptors. • The facility will not give rise to reasonable cause for annoyance. In the unlikely event that complaints are received measures described in the integrated management system will be put in place.			
Odour	Sensitive Receptors	Airborne	• The wastes that are accepted and processed on site are not odourous wastes. • Due to the nature of the incoming waste, namely devoid of food or organic fines, there is a very low potential for odour generation through the site activities. • The site has stringent waste pre acceptance and acceptance procedures which will ensure that no excessively odorous waste will be accepted	**LOW:** the occurrence of odour emissions from site is possible	Nuisance	**NEGLIGIBLE:** due to the proposed risk management techniques

			onto site. Therefore the potential for offsite odour impacts is considered negligible. • Any potentially excessively odorous waste loads are immediately rejected upon arrival in accordance with the sites waste rejection procedures. Should any odorous waste be mistakenly accepted, it will be transferred to the quarantine area and removed at the earliest opportunity. • Odour on site is assessed during the daily site inspection and recorded in the daily site log.			
Dust	Sensitive Receptors	Airborne	• Due to the types of waste that the existing activities on site handle, dust is not an issue on site. • The existing waste stream accepted on site (mixed recyclable waste, plastic waste, glass, metals and paper and cardboard) are not dusty wastes and will not create emissions to air of dust. • The SRF produced by the proposed new plant will be derived from clean Dry Mixed Recycling (DMR) which is a product from the existing activities on site. No additional wastes will be accepted by the site as a result of the new plant.	**LOW:** the occurrence of dust emissions migrating offsite is low	Nuisance	**VERY LOW** due to the proposed management techniques.

			• Enclosure of the existing processing activities in the mini MRF building and plastic processing plant building. • The majority of the SRF treatment process in the existing mini MRF building will be enclosed. • External conveyors will be enclosed to prevent emissions of litter or dust. • The plant is designed to ensure the drop heights into the feed hoppers are minimised. • Partial enclosure of the two feed hoppers (one hopper for the recycled residual sub 50mm material and one hopper for the recycled residual >150mm material) using a steel hood to minimise material escape. • Daily cleaning schedule to prevent dust and litter escape from the hoppers which includes the site and equipment is cleaned twice on each 12 hour shift. Two cleaning sessions are completed during each shift in addition to a minimum 30 minute clean at the end of each shift. • Road sweeper utilised on site and operational each morning and additionally throughout a shift if required. • Daily visual inspections to ensure that any potential diffuse / litter emissions are identified and action taken to prevent reoccurrence.			

			• A dedicated site operative (already employed) will complete site inspections to ensure litter is retrieved and prevented from escaping the site boundary. • Once the plant is operational, additional controls measures will be considered such as dampening with a mist or fogging system. • Vehicle speeds will not exceed 10mph on site which is a recognised method of controlling dust. • All incoming / departing loads will be appropriately sheeted or tipped in designated areas. • Site drainage, containment systems and associated infrastructure will be regularly cleared and maintained as required to ensure they are working correctly. • The facility will not give rise to reasonable cause for annoyance. In the unlikely event of any complaints, these will be dealt with in accordance with the sites complaints procedures. • The site will operate in accordance with the Litter and Dust Management Plan provided in Annex F – Litter and Dust Management Plan.			
Litter	Sensitive Receptors	Airborne	• The material on site is not dusty in nature but there is a potential risk of litter.	**MEDIUM/ LOW:** the	Nuisance	**LOW:** due to the proposed

			• Enclosure of the existing processing activities in the mini MRF building and plastic processing plant building. • The majority of the SRF treatment process in the existing mini MRF building will be enclosed. • External conveyors will be enclosed to prevent emissions of litter or dust. • The plant is designed to ensure the drop heights into the feed hoppers are minimised. • Partial enclosure of the two feed hoppers (one hopper for the recycled residual sub 50mm material and one hopper for the recycled residual >150mm material) using a steel hood to minimise material escape. • Daily cleaning schedule to prevent dust and litter escape from the hoppers which includes the site and equipment is cleaned twice on each 12 hour shift. A 30 min clean is undertaken within the first half of the shift and a 30 minute to one hour long clean towards the end of the shift. • Road sweeper utilised on site and operational each morning and additionally throughout a shift if required. • Daily visual inspections to ensure that any potential diffuse / litter emissions are identified and action taken to prevent reoccurrence.	occurrence of litter on site is deemed minimal		risk management techniques

			• A dedicated site operative (already employed) will complete site inspections to ensure litter is retrieved and prevented from escaping the site boundary. • Once the plant is operational, additional controls measures will be considered such as dampening with a mist or fogging system. • Vehicle speeds will not exceed 10mph on site which is a recognised method of controlling dust. • All incoming / departing loads will be appropriately sheeted or tipped in designated areas. • Site drainage, containment systems and associated infrastructure will be regularly cleared and maintained as required to ensure they are working correctly. • The facility will not give rise to reasonable cause for annoyance. In the unlikely event of any complaints, these will be dealt with in accordance with the sites complaints procedures. • The site will operate in accordance with the Litter and Dust Management Plan provided in Annex F - Litter and Dust Management Plan.			

Pests	Local Residents	Airborne and migration	• The site will employ commercially available products and services to control pests if deemed necessary. • The site is inspected weekly for the presence of pests which is recorded in the daily log should any activity be revealed. • A specialist contractor will visit the site periodically which will be recorded in the pest control log.	**LOW:** the occurrence of pests on site is highly unlikely	Nuisance	**VERY LOW:** due to the proposed management techniques.
Vandalism	Operator	The site could be subject to intentional vandalism and damage by intruders / trespassers who could cause damage or harm to the site or cause fires.	• The site has CCTV monitoring and is manned 24/7. • The site will be well lit and secured by a perimeter fence. • Fencing is maintained and repaired to ensure its continued integrity. If damage is sustained, repair will be made within the same working day. If this is not possible, suitable measures will be taken to prevent unauthorised access to the site and permanent repairs will be affected as soon as is practicable. • All visitors to the site are required to register in the visitor's book and sign out again on exit, thereby minimising the risk of unauthorised visitors on the site.	**LOW:** the occurrence of vandalism taking place on site is highly unlikely	Nuisance, damage or fire	**VERY LOW:** due to the proposed management techniques.
Fire on Site	Operator / Residential Properties	Windborne	• Arson by intruders is controlled via CCTV monitoring and site being manned 24/7.	**LOW:** the occurrence of a fire taking	Fire	**VERY LOW:** due to the proposed

			• The site is well lit and secured by a perimeter fence. • PYROsmart panoramic early detection thermal imaging cameras are installed on site which scan the storage areas for temperature irregularities. • The system is complete with an automatic water cannon suppression system. • The system is designed to provide localised suppression via the automatic water cannon system. The site has a regular inspection and maintenance programme which will identify any electrical or mechanical machinery faults which could result in a machinery fire. • The Fire and Rescue service visit the site annually and are aware of the fire mitigation measures on site. • Machinery is regularly cleaned to remove any dust, etc. • All relevant equipment on site is equipped with dedicated fire suppression. • A number of fire extinguishers are placed at strategic locations around the plant. • The risk of damaged or exposed electrical cables are controlled via the regular inspection and maintenance programme. • Staff are appropriately trained on the necessary actions to take on discovery of a fire	place on site is highly unlikely		management techniques.

			• Staff and visitors are only permitted to smoke within the designated smoking area with no smoking within the operational areas on site. • The site operates in accordance with a Fire Prevention Plan that ensures that any potential offsite risks are minimised. A copy of the Fire Prevention Plan is provided within Annex G – Fire Prevention Plan.			
Incompatible Feedstock	Operator / Residential Properties	If incorrect waste is accepted on site it could result in adverse emissions	The following methods are implemented to ensure that incompatible feedstocks do not compromise the safe operation of the plant: • All waste is subjected to 'pre-acceptance' and 'acceptance' checks in accordance with established waste acceptance procedures; • Any non-conforming waste is removed prior to acceptance in accordance with established waste acceptance and rejection procedures. • Non-conforming waste that has been off-loaded and cannot be reloaded will be stored in the designated quarantine area. • Records of incidents involving incompatible waste are kept on site together with a summary of the remedial action taken.	**LOW:** off-site receptor impacts	Nuisance / adverse emissions	**VERY LOW:** due to the proposed management techniques.
Climate Change Factors including,	Controlled Waters	Site is partially located in a Flood Zone 3 and is	• The site is considered to be at risk of climate change due to the proximity of the River Cray and its partial location within Flood Zone 3.	**MEDIUM:** The control of runoff during a flood event is	Controlled water / personnel	**MEDIUM/LOW:** due to the proposed risk

Rising river levels; Site flooding; Increased temperatures; Extreme cold weather		therefore at a high risk of flooding. Increased rainfall and flash flood runoff due to climate change have the potential to impact the site causing flooding and potential contamination of the River Cray.	• Given the type of waste that is accepted and processed on site,, the risk of odour, fire and dust as result of Climate Change is considered negligible.	difficult. Any water that enters buildings and waste storage areas has the potential to mobilise waste and/or contaminate the water. Safe access of the site personnel is considered paramount.		management techniques