RJ SKIP HIRE LTD, GROVE FARM, BRENTWOOD

ENVIRONMENTAL RISK ASSESSMENT

This Environmental Risk Assessment has been prepared for the waste operations at RJ Skip Hire Ltd, Grove Farm, Basildon. The operators are submitting an application to vary the existing Standard Rules Environmental Permit (ref: EPR/BB3431) for a household, commercial and industrial waste transfer station, accepting 75,000 tonnes per annum of household commercial and industrial waste to Bespoke Environmental Permit, including an increased permit area, increased annual tonnage (to 110,000 tonnnes per annum) and waste screening and recycling facility.

Lustre Consulting were commissioned by GBE Environmental Solutions Ltd, on behalf of the applicant to prepare an Environmental Risk Assessment to support the permit variation application. This Environmental Risk Assessment should be read in conjunction with the Application Site Condition Report (SCR) (Ref: 3210: RJ Skip Hire Ltd, Grove Farm, Application Site Condition Report) which provides further information on the environmental setting.

The Environmental Risk Assessment has been carried out in accordance with the Environment Agency's Horizontal Guidance Note H1[1] and associated annexes[2].

Site Description

The site is located within the Grove Farm Industrial Estate, Brentwood, located adjacent to Junction 28 of the M25, as shown in Drawing 2309_001 of the SCR. The site currently comprises an active Waste Transfer Station, operational under permit EPR/BB3431.

The site is situated within the north western section of the industrial area and is bordered to the north and west by open land and to the south and east by industrial units. The land to the east of the site also includes the site access road, weighbridge and site office.

Proposed Bespoke Permitted Activities

The site requires a variation to the existing standard rules permit (SR2015 No.4 ref EPR/BB3431) to increase the annual tonnage of waste accepted at the site, increase the permit area and to include waste screening and recycling operations. The waste codes accepted at the site will remain the same as those currently permitted under the existing Standard Rules permit and are detailed in the EWC codes proposed for RJ Skip Hire LTD document.

Under the proposed bespoke Environmental Permit operations, the current waste recycling building will be used to deposited and inspect received wastes and will be renamed as the Waste Reception Building (herein referred to as Building 1). Wastes deposited within Building 1 will then be pre-sorted prior to transfer to a newly constructed waste recycling and sorting building (herein referred to as Building 2) for processing using a loading shovel. Within Building 2 the wastes will be manually and mechanically sorted into steel skips and storage bays prior to removal off-site. The wastes will be manual sorted using a MRF picking line and mechanically sorted using a hopper feed Trommel.

Under the proposed Bespoke Environmental Permit, the facility as a whole will have the capacity to store up to 500 tonnes of mixed wastes at any one time.

The site will continue to receive all waste collected by the company's fleet of HGV vehicles and all vehicles are weighted upon entry to the site at the weighbridge. Following the weighing of the vehicle and completion of the duty of care transfer notes the vehicles proceed to the waste reception building (Building 1) where

[1] Environment Agency, Horizontal Guidance Note H1, Overview Document, December 2011
[2] Environment Agency, H1 Annex A – Amenity and accident risks from installations and waste operations, December 2011, Annex F – Air, Emissions, December 2011, Annex G – Disposal or recovery of waste produced onsite, December 2011, Annex J – Groundwater, December 2011.

the vehicle is directed to tip the mixed waste. The vehicle then exits the building with the now empty skip or dustcart and proceeds to the weighbridge for completion of the documentation.

Following the deposit of the received mixed waste within Building 1, the load will then be pre sorted and transferred by a wheel loader and tipped into the hopper feeding a trommel and MRF picking line with Building 2 (waste sorting and recycling building). The waste types are sorted and recovered using the trommel and MRF picking line as follows (with storage locations shown on Drawing 3210-002 of the Application SCR):

- Soils – to be stored within Bay 1 within Building 2, with a maximum capacity of 8 tonnes.
- Card and paper – to be stored within Bay 2 within Building 2, with a maximum capacity of 2 tonnes.
- Mixed waste residues – to be stored within Bays 3 and 4 within Building 2, each bay with a maximum capacity of 4 tonnes.
- Ferrous and non ferrous metals – to be stored within Bay 5 within Building 2, with a maximum storage capacity of 5.5 tonnes.
- Wood - to be stored within Bay 6 within Building 2, with a maximum storage capacity of 4 tonnes.
- Hardcore / Concrete – to be stored within Bay 7 within Building 2, with a maximum storage capacity of 8 tonnes.
- Green waste – to be stored within an enclosed 4yd skip within Building 2, with a maximum capacity of 1.5 tonnes.
- Battery Box – to be located within Building 2, with a maximum capacity of 0.5 tonnes.
- Soil and Hardcore – to be stored externally within concrete lined storage bays located to the west of Building 1. The soil storage bay has a maximum storage capacity of 50 tonnes and the hardcore bay also has a maximum storage capacity of 50 tonnes.
- Any black bag waste shall be removed immediately from site on the next designated landfill skip.

When containers of recovered material are nearing capacity, a replacement is arranged by the site supervisor. If the site is nearing capacity the site ceases to accept waste until the storage levels are contained within the designated areas.

All waste removed from the site are accompanied by a waste transfer note. Any segregated waste residue or non-conforming wastes are stored within the Quarantine area for removal to a suitably licensed site and are accompanied by a waste transfer note.

Assessment Methodology

A qualitative environmental risk assessment has been undertaken in accordance with the Environment Agency' s Horizontal Guidance Note H1[3] in order to identify and assess the potential hazards and risks associated with the proposed activities.

The risk assessment follows a tiered, four staged approach:

1. Identification of the potential hazards and risks associated with the proposed activity;
2. Assessment of the risks to check they are acceptable;
3. Identification of suitable remedial measures to control the risks, if necessary;
4. Presentation of the assessment findings.

Each stage has been completed in turn, with the findings detailed below.

1) Identification of Hazards and Risks

The following hazards and risks are considered relevant to the proposed activities and permit application:

[3] Environment Agency, Horizontal Guidance Note H1, Overview Document, December 2011

- Fugitive emissions to land (e.g. leachate / surface runoff);
- Fugitive emissions to controlled waters (e.g. leachate / surface runoff);
- Fugitive emissions to air (e.g. dust, windblown litter);
- Waste;
- Odour;
- Noise;
- Pests;
- Accidents / Spills.

The following hazards and risks are not considered relevant to the proposed activities and permit application and as such have not been assessed further:

- Global warming potential;
- Controlled releases to air;
- Controlled discharges to surface water;
- Controlled discharges to groundwater.

The following receptors have been identified at the site, as shown in Drawing 3210_003 of the SCR:

- Land (e.g. shallow soils underlying the site);
- Shallow Groundwater within the Head superficial deposits;
- Surface water (within Weald Brook located approximately 100m north west of the site and which is hydraulic continuity with the River Ingrebourne, which is monitored by the Environment Agency under its River Basin Management Plans);
- Air;
- Future site users;
- Surrounding site users (within the wider industrial area and dwellings located approximately 250m to the south east of the site).
- Local Wildlife (only where viable potential pollutant pathways are present)

Other sensitive receptors including ecologically sensitive sites, groundwater abstractions and ancient woodland are not located within close proximity of the site and have therefore not been considered further. The closest ecologically sensitive site is located over 500m from the site.

Deep groundwater has not been considered further as a sensitive receptor as the bedrock geology comprises low permeability London Clay Formation. The London Clay Formation is a low permeability clay geology, with a very low porosity and permeability. As such this stratum is not anticipated to be a viable groundwater aquifer or capable of storing or transmitting significant quantities of groundwater. Any groundwater present will likely be held within discontinuous more granular lenses and be of limited value and low significance. The potential for significant mobilisation of contamination within this stratum is therefore very low. As such, the vertical mixing of shallow groundwater to deeper groundwater (Lambeth Group) can be discounted.

Assessment of Risks

The risk assessment is summarised in the Table below, focusing on the potential hazard, identified receptor and pathway. The purpose of the risk assessment is to assess these source – pathway – receptor linkages. The potential for a pollution event to occur is evaluated by determining how likely a problem is to occur (e.g. likelihood) and how serious the harm might be (e.g. consequence). The consequence is essentially a measure of the severity of a hazard and sensitivity of the receptor (e.g. aquifer type or end user). The risk assessment also takes into account the proposed risk management / control measure, thereby resulting in a residual risk.

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
ODOUR						
Smells from soil and hardcore stockpiles.	Site users and surrounding site users (industrial and dwellings) and local wildlife	Air	All wastes will be appropriately stockpiled within the permit and planning conditions. Long term storage is not anticipated with stock efficiently sorted and transferred to final destinations. Soil and hardcore are not considered to be odorous wastes and therefore can be stored externally. Any strongly odorous loads will not be accepted at the site, as per the sites Environmental Management Plan.	Unlikely	Odour annoyance may have more impact in summer months when temperatures are higher and people are outdoors.	Not significant
Smells from green wastes and mixed / household wastes.	Site users and surrounding site users (industrial and dwellings) and local wildlife	Air	All wastes will be appropriately stockpiled within the permit and planning conditions. Long term storage is not anticipated with stock efficiently sorted and transferred to final destinations. If required, site workers will wear appropriate PPE in order to minimise exposure to odours. Any loads collected with a strong odour emission will be reported by the driver collecting the load to the office and be redirected directly to landfill. All green wastes will be stored within an enclosed skip located within the waste sorting and recycling building, which will limit the potential for odorous emissions. Sorted mixed wastes will also be stored within the waste sorting and recycling building, which will limit the potential for odorous emissions and the waste will be condition with water sprinklers as required. All black bag waste will be removed from site on the next available landfill skip in order to minimize the potential for odours.	Low likelihood	Odour annoyance may have more impact in summer months when temperatures are higher and people are outdoors.	Not significant if carefully managed, particularly for site workers within the commercial and industrial building.

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
NOISE AND VIBRATION						
Engine noise and reverse warnings from site vehicles during deliveries and loading	Site users and surrounding site users (industrial and dwellings) and local wildlife	Surrounding sites are close enough for noise to be audible, however surrounding sites are noted to comprise a mixture of industrial and commercial activities only (nearest residential properties c. 250m S)	Plant and machinery shall be serviced and maintained to ensure the acceptable noise levels at the nearest sensitive receptor are adhered to. Operations that generate noise will only take place between 0700 hrs and 1800 hrs Monday to Friday and 0700 hrs and 1300 hrs on Saturdays in order to minimise disturbance. Site users will wear appropriate personal protective equipment (PPE) such as ear defenders and ear plugs as necessary. Any complaints will be investigated, recorded and appropriate action taken. Regulators will be informed.	Noise sources will be introduced as a result of activity, however predominantly limited to specified working hours and likely to be intermittent (during deliveries and loading)	Nuisance resulting from potential complaints, however surrounding land uses are predominately industrial with similar noise sources	Not significant
Noise associated with waste tipping and processing - tipping of hardcore and other wastes and operation of the trommell screen.	Site users and surrounding site users (industrial and dwellings) and local wildlife	Surrounding sites are close enough for noise to be audible, however surrounding sites are noted to comprise a mixture of industrial and commercial activities only (nearest residential properties c. 250m S)	Plant and machinery shall be serviced and maintained to ensure the acceptable noise levels at the nearest sensitive receptor are adhered to. Operations that generate noise will only take place between 0700 hrs and 1800 hrs Monday to Friday and 0700 hrs and 1300 hrs on Saturdays in order to minimise disturbance. Site users will wear appropriate personal protective equipment (PPE) such as ear defenders and ear plugs as necessary. All waste processing activities will take place within the site buildings in order to ensure that any noise generated is mitigated to an acceptable level at the site boundary. Any complaints will be investigated, recorded and appropriate action taken. Regulators will be informed. Waste drop heights will be kept low in order to minimize noise and vehicle speed limits will be capped at 5 mph when moving empty skips around the site.	Noise sources will be introduced as a result of activity, however predominantly limited to specified working hours and will be undertaken within the site buildings. Noise is likely to be continuous during operational hours.	Nuisance resulting from potential complaints, however surrounding land uses are predominately industrial with similar noise sources.	Not significant if management techniques are effective

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
Noise associated with mobile plant (one loading shovel with bucket and one 360 degree grab / excavator)	Site users and surrounding site users (industrial and dwellings) and local wildlife	Surrounding sites are close enough for noise to be audible, however surrounding sites are noted to comprise a mixture of industrial and commercial activities only (nearest residential properties c. 250m S)	Plant and machinery shall be serviced and maintained to ensure the acceptable noise levels at the nearest sensitive receptor are adhered to. Operations that generate noise will only take place between 0700 hrs and 1800 hrs Monday to Friday and 0700 hrs and 1300 hrs on Saturdays in order to minimise disturbance. Site users will wear appropriate personal protective equipment (PPE) such as ear defenders and ear plugs as necessary. Any complaints will be investigated, recorded and appropriate action taken. Regulators will be informed. Waste drop heights will be kept low in order to minimize noise and vehicle speed limits will be capped at 5 mph when moving empty skips around the site.	Noise sources will be introduced as a result of activity, however predominantly limited to specified working hours and likely to be intermittent – mobile plant will only be operational when required to sorted large bulky items or move waste streams once a suitable amount has been accumulated)	Nuisance resulting from potential complaints, however surrounding land uses are predominately industrial with similar noise sources.	Not significant

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
FUGITIVE EMISSIONS TO AIR						
Dust generated from waste stockpiles and general operational areas.	Site users and surrounding site users (industrial and dwellings)	Windblown dust	The following technical guidance actions will be taken to reduce dust: A mobile dust suppression system will be present to dampen any potential dust that maybe generated when loading out recycled soil / concrete and woodchip in areas outside of the main building. Within the main building a dust suppression mist system will control any dust generated by soil screening and the tipping and sorting of waste. Any dust settled by the dust suppression system will be swept to ensure there will be no deposits of residue outside the building on the hard surface or access roads. All external and internal roads will be swept as necessary by a road sweeper. Daily litter picking and dust level inspections will be undertaken by appropriately trained site operatives.	Dust could be generated onsite and potentially reach the surrounding site users	Nuisance – dust on cars, clothing etc however the surrounding land uses are predominantly industrial.	Low if management techniques are implemented.
	Local Wildlife			Dust could be generated onsite and potentially impact local wildlife, though closest ecologically sensitive site is present over 500m from the site.	Damage to habitat	Low if management techniques are implemented.
Windblown litter and soils	Site users and surrounding site users (industrial and dwellings)	Airborne transportation	All site boundaries will be inspected daily for windblown litter, woodchip etc. All storage operations to be kept within designated areas, the majority of which are located internally limiting the potential for the airborne transportation. Good level of housekeeping (e.g. road sweeping and litter picking if necessary) will minimise the source of litter and soils.	Litter and soils could be blown across the site and potentially reach immediate surrounding sites, however the majority of storage areas are located within onsite buildings which will limit the potential for airborne transportation.	Nuisance and aesthetic impact resulting in potential complaints, however surrounding land uses are predominantly industrial.	Low if management techniques are implemented.
	Local Wildlife				Damage to habitat	Low if management techniques are implemented.
Ground gases migrating into above ground structures due to the introduction of a waste recycling facility at the site. Site situated on the historical Grove Farm Landfill	Site Users and site buildings	Migration and accumulation of ground gases within confirmed spaces within above ground structures.	The historical onsite landfill is considered to pose a potential risk to the site, however this risk is considered to be acceptably low due to the time lapsed since the site was operational over which time the gassing potential is likely to have significantly decreased. In addition, the site was only licensed to accept inert wastes which have a low degradation potential. Large commercial waste buildings with good ventilation will reduce	Unlikely given the time lapsed since the last date of infilling (over 30 years) any significant gas generation phase is likely to have ceased.	Asphyxiation or explosion	Acceptably low given the unlikely probability of exposure.

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
		Inhalation and asphyxiation	the potential for the accumulation of ground gases.			

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
FUGITIVE EMISSIONS TO WATER						
Leachate / surface run – off from the waste storage areas including the chipped wood bay, soil bays, green waste bays, household waste bays, mixed waste bays and waste residue bays	Groundwater (Secondary Undifferentiated Aquifer)	Infiltration through shallow soils	All storage and operational areas will be located on impervious concrete hardstanding.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of shallow aquifer.	Not significant
	Surface Water (Weald Brook and River Ingrebourne)	Infiltration through shallow soils and migration via baseflow	All storage and operational areas will be located on impervious concrete hardstanding.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of controlled surface waters	Not significant
Spills and leakages from the onsite fuel storage tank	Groundwater (Secondary Undifferentiated Aquifer)	Infiltrations through shallow soils	The diesel tank will be located on impervious concrete hardstanding and will be suitably bunded with integrated fill point.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of shallow aquifer	Not significant if fuel storage is compliant with current technical guidance.
	Surface Water (Weald Brook and River Ingrebourne)	Infiltration through shallow soils and migration via baseflow	The diesel tank will be located on impervious concrete hardstanding and will be suitably bunded with integrated fill point.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of controlled surface waters	Not significant if fuel storage is compliant with current technical guidance.
Mobilisation of contaminants within the ground underlying the site associated with the historical Grove Farm landfill.	Groundwater (Secondary Undifferentiated Aquifer)	Infiltrations through shallow soils	The presence of impervious concrete hardstanding across the site and a sealed site drainage system will reduce the potential for infiltration across the site and therefore significantly reduce the mobilisation of any shallow contaminants within the underlying soils associated with the historical landfill.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of shallow aquifer.	Not significant
	Surface Water (Weald Brook and River Ingrebourne)	Infiltration through shallow soils and migration via baseflow	The presence of impervious concrete hardstanding across the site and a sealed site drainage system will reduce the potential for infiltration across the site and therefore significantly reduce the mobilisation of any shallow contaminants within the underlying soils associated with the historical landfill. Potential for the migration of contaminants via baseflow likely to be limited due to the low permeability of the Head deposits.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of controlled surface waters	Not significant

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
FUGITIIVE EMISSIONS TO LAND						
Leachate / surface run – off from the off from the waste storage areas including the chipped wood bay, soil bays, green waste bays, household waste bays, mixed waste bays and waste residue bays	Shallow soils	Infiltration through shallow soils	All storage and operational areas are to be situated on impervious concrete hardstanding. Surface water runoff will be directed to surface water drains with connections to sealed storage tanks. One petrol/oil interceptors (with shut off valves) preset onsite. Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit. Surface water runoff will therefore be controlled to comply with regulations and the sealed water tanks will be emptied by tanker to an appropriate licensed waste facility.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier) and controlled drainage.	Pollution of shallow soils	Not significant
	Local wildlife			Closest sensitive ecological site present over 500m from the site	Damage to habitat	Not significant
Spills and leakages from the onsite fuel storage tank	Shallow soils	Infiltration through shallow soils	The diesel tank will be situated on impervious concrete hardstanding and will be compliant with current technical guidance including the presence of a double bund with 110% storage capacity. All surface water run - off will be channelled via gulleys to a petrol / oil interceptor prior to discharge to a sealed water tank.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier) and controlled drainage.	Pollution of shallow soils	Not significant if fuel storage is compliant with current technical guidance.
	Local wildlife			Closest sensitive ecological site present over 500m from the site	Damage to habitat	Not significant
PESTS						
Flies maybe present associated with the storage of green wastes. These may migrate off site to surrounding industrial sites and dwellings. Food waste may attract other vermin.	Surrounding site users (industrial and dwellings)	Airborne Transportation	Green wastes will be stored internally within the main waste building limiting the potential to attract flies and other vermin. Wastes will be regularly removed from the site limiting the potential to attract vermin. Regular inspections for vermin and flies by nominated personnel.	Unlikely to impact surrounding sites as the wastes will be stored internally.	Potential to spread disease and adverse impact on human health.	Low if management techniques are implemented.
VISIBLE PUMES TO AIR AND WATER						
There are no visible impacts beyond the site boundary.	No further assessment required.					
ACCIDENTS						
Leaks from the above ground fuel storage tank escaping the containment.	Shallow soils	Infiltration via drainage system and cracks in surface cover.	Fuel spillage kit will be located nearby. Site workers will be trained in its use. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit.	Very unlikely if appropriate containment measures are used.	Pollution of shallow soils	Not significant

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
	Groundwater (Secondary Undifferentiated Aquifer)	Infiltrations through shallow soils	Fuel spillage kit will be located nearby. Site workers will be trained in its use. The tank will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit. Tank will be bunded in line with current technical guidance	Very unlikely if appropriate containment measures are used.	Pollution of shallow aquifer	Not significant
	Surface Water (Weald Brook and River Ingrebourne)	Infiltration through shallow soils and migration via baseflow	Fuel spillage kit will be located nearby. Site workers will be trained in its use. The tank will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit. Tank will be bunded in line with current technical guidance	Very unlikely if appropriate containment measures are used.	Pollution of controlled surface waters	Not significant
	Local wildlife	Infiltration through shallow soils and migration via baseflow	Fuel spillage kit will be located nearby. Site workers will be trained in its use. The tank will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit. Tank will be bunded in line with current technical guidance	Very unlikely if appropriate containment measures are used.	Damage to habitat and wildlife	Not significant
Fire in wood storage area and wood chip storage bay posing a hazard to site users, emissions to air and firewater discharge to drainage system.	Site users, surrounding site users and air and local wildlife	Direct contact, windblown ash, leaching of freshwater discharge.	Site will comply with the permitted Fire Prevention Plan, prepared in line with current EA guidance. If a fire starts emergency services will be contacted immediately. Plant and machinery will be stored away from the combustible waste stockpiles at the end of each working day to minimise risk of vandalism and intentional fire starting. The site will be appropriately secured outside of working hours to minimise risk of vandalism. In the case of the fire starting, a water supply will be available as well as small stock of inert material / sand to smoother the fire. An incident report will be carried out as result of any fire and control measures and procedures implemented to prevent reoccurrence. Refuelling will take place away from the combustible waste stockpiles and a no smoking policy will be operated onsite. Fire extinguishers will be kept onsite in case of a small fire. A fire assembly point will be outside of the main site entrance.	Fire could potentially be a significant hazard due to the storage of wood onsite and within the wood chip bay. However the management actions should prevent this from happening.	Fatalities, injury, pollution incidents, loss of wildlife	Low if Fire Prevention Plan is adhered to

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
			The site manager will be responsible for actions in the event of a fire and all staff will be trained on emergency and fire procedures as part of induction / safety training. The presence of hardstanding and the positive drainage system including water storage tanks will contain firewater and testing can be carried out if necessary prior to removal from site or discharge to foul sewer.			
Spills, leakages from plant / machinery within the operational area.	Shallow soils	Infiltration through shallow soils	All storage and operational areas will be situated on impervious concrete hardstanding with appropriate containment. Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit. All staff and plant operators to be appropriately trained and qualified. Plant and machinery will be maintained to manufacturer's standards to ensure emission levels are maintained and to minimise any leakages / spillages. In the event of breakdowns of machinery, it will be appropriately stored on hardstanding and recovery and repair arranged. A back up machine will be hired in. Emergency plan and spill kits will be available at all times.	Unlikely given the presence of hardstanding across the operational areas of the site (acting as a suitable barrier) and management actions.	Pollution of shallow soils	Not significant.
	Groundwater (Secondary Undifferentiated Aquifer)	Infiltration via shallow soils	All storage and operational areas will be located internally and on impervious concrete hardstanding. Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit. All staff and plant operators to be appropriately trained and qualified. Plant and machinery will be maintained to manufacturer's standards to ensure emission levels are maintained and to minimise any leakages / spillages. In the event of breakdowns of machinery, it will be appropriately stored on hardstanding and recovery and repair arranged. A back up machine will be hired in. Emergency plan and spill kits will be available at all times.	Unlikely given the presence of hardstanding across the operational areas of the site (acting as a suitable barrier) and management actions.	Pollution of shallow aquifer	Not significant

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
	Surface Water (Weald Brook and River Ingrebourne)	Infiltration through shallow soils and migration via baseflow	All storage and operational areas will be located internally and on impervious concrete hardstanding. Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit. All staff and plant operators to be appropriately trained and qualified. Plant and machinery will be maintained to manufacturer's standards to ensure emission levels are maintained and to minimise any leakages / spillages. In the event of breakdowns of machinery, it will be appropriately stored on hardstanding and recovery and repair arranged. A back up machine will be hired in. Emergency plan and spill kits will be available at all times.	Unlikely given the presence of hardstanding across the operational areas of the site (acting as a suitable barrier) and management actions.	Pollution of controlled waters	Not significant
	Local wildlife	Infiltration through shallow soils and migration via baseflow	All storage and operational areas will be located internally and on impervious concrete hardstanding. Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit. All staff and plant operators to be appropriately trained and qualified. Plant and machinery will be maintained to manufacturer's standards to ensure emission levels are maintained and to minimise any leakages / spillages. In the event of breakdowns of machinery, it will be appropriately stored on hardstanding and recovery and repair arranged. A back up machine will be hired in. Emergency plan and spill kits will be available at all times.	Unlikely given the presence of hardstanding across the operational areas of the site (acting as a suitable barrier) and management actions.	Damage to habitat and wildlife	Not significant
Vandalism resulting in damage to plant and machinery and potential leaks / spillages of fuels, within waste transfer station.	Shallow soils, Groundwater (Secondary Undifferentiated Aquifer), surface water (Weald Brook and River Ingrebourne), local wildlife	Infiltration via drainage system and cracks in surface cover.	Site will be appropriately secured with a 4 meter high steel mesh fence and steel security gates. The gates are locked outside of operating hours to prevent out of hours access. All plant and machinery to be stored in designated, secure areas at the end of each working day. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit.	Unlikely given security	Pollution of shallow soils, damage to habitats and local wildlife	Not significant

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
Arson resulting in damage to plant and machinery and fire, within waste transfer station.	Site users, surrounding site users and air, shallow soils, Groundwater (Secondary Undifferentiated Aquifer), surface water (Weald Brook and River Ingrebourne), local wildlife	Direct contact, windblown ash, leaching of freshwater discharge.	Site will be appropriately secured with 4 meter high steel mesh fence and steel security gates. The gates are locked outside of operating hours to prevent out of hours access. All plant and machinery to be stored in designated, secure areas at the end of each working day. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit. Site will comply with the permitted Fire Prevention Plan, prepared in line with current EA guidance. Flammable wastes will be stored appropriately, and are unlikely to be stored in very large quantities due to permit storage limits.	Fire could potentially be a significant hazard given the flammable nature of some of the waste materials stored onsite	Fatalities, injury, pollution incidents, loss of habitat and wildlife	Low if management measures are adhered to.
Blockages in site drainage system and overflow from water storage tank.	Shallow soils, Groundwater (Secondary Undifferentiated Aquifer), surface water (Weald Brook and River Ingrebourne), local wildlife	Infiltration via drainage system	The surface water management system will be maintained and checked daily to record levels and clear any debris that may impede the flow of water in the gulley drains that surround the site. When the water storage tank is ¾ full it will emptied by tanker to a suitably licensed facility following appropriate testing. The site will be continuously monitored by site management and a technically component person for compliance with visual inspection and daily records kept within the site log. Any necessary remedial action will be taken to ensure that the gullies within the site drainage system are kept clear.	Unlikely	Pollution of the shallow soils, loss of habitat and wildlife.	Not significant given the proposed management procedures.
WASTE						
Introduction or production of unauthorised waste streams containing potentially contaminative materials	Land and groundwater within the Secondary Undifferentiated Aquifer, controlled surface waters, local wildlife	Infiltration through shallow soils and run off	Only waste accompanied by the correct documentation in accordance with waste acceptance criteria and permit conditions shall be accepted onto site (see permitted activities). All loads entering the site shall be inspected, weighted and documented prior to offloading All unauthorised wastes will be rejected by the site and the regulator contacted. Any rejected waste will be recorded in the site diary.	Unchecked, unauthorised waste streams could be delivered to the site but management actions should prevent this happening	Pollution of the shallow soils and groundwater. Damage to habitat and wildlife.	Low if management techniques are implemented.

Conclusions

This Environmental Risk Assessment has identified a number of potential hazards and sensitive receptors associated with the proposed activity and permit application. However, the qualitative risk assessment set out in Table 1, shows all risks to be negligible (i.e. assessed as not significant) or low. This reflects the nature of the proposed activities, the limited potential for emissions, the presence of hardstanding across the site, controlled drainage measures and the odour, dust, noise and fire prevention management measures that will be in place.

Based on these findings, it is our opinion that further assessment, options appraisal or cost benefit analysis to justify the choice of risk management measures is not required.

We trust the Environmental Risk Assessment is satisfactory and provides the necessary level of information to support the application to vary the existing standard rules permit to a bespoke permit.