HARTCLIFFE HOUSEHOLD REUSE AND RECYCLING CENTRE

Environmental Permit Application

Environmental Risk Assessment

Prepared for: Bristol Waste Company Limited

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1.0 Introduction

Bristol Waste Company Limited (Bristol Waste) has instructed SLR Consulting Limited (SLR) to prepare an Environmental Permit (EP) application for the Hartcliffe Household Reuse and Recycling Centre (HRRC) in Bristol, under the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

1.1 Methodology

This Environmental Risk Assessment (ERA) is an assessment of the risks to the environment and to human health that may be associated with the proposed operations at the site.

The assessment has been completed in accordance with the Environment Agency (EA) Technical Guidance *'Risk Assessments for your Environment Permit'* dated May 2018. The aim of the assessment is to identify any significant risks and demonstrate that the risk of pollution or harm will be acceptable by taking the appropriate measures to manage these risks.

This ERA uses the following approach for identifying and assessing the risks from the proposed operation:

Step 1 Identify risks and sources of risk from your activity.

Step 2 Where risks are identified from Step 1 then identify the receptors that could be affected

Step 3 Identify potential pathways between the sources of risk and receptors

Step 4 Assess the risks and check that they are acceptable. Justify appropriate measures to control your risks, if necessary.

Step 5 Submit your assessment.

Section 2.0 of this document is a screening step to identify the risks requiring consideration as part of this assessment.

Section 3.0 identifies people or parts of the environment that could be harmed (at potentially significant risk) by the activity. The ERA for an EP application requires all receptors that are near the site and could reasonably be affected by the activities to be identified and considered as part of the assessment.

For the purposes of this ERA a 2km radius from the site's EP boundary has been adopted in reviewing potentially sensitive receptors of ecological importance along with features such as sites of cultural and natural heritage. A radius of 500m from the site's EP boundary has been adopted for all other potentially sensitive receptors (for example, residential, commercial, industrial, agricultural and surface water receptors).

Section 4.0 of this document presents the assessment and demonstrates that any risks of pollution or harm will be mitigated to manage the risk.

This ERA should be read in conjunction with the following documents submitted with this EP application:

- Non-Technical Summary;
- Associated Drawings;
- Working Plan;
- Site Condition Report;
- Fire Prevention Plan; and
- Noise Impact Assessment.

2.0 Identifying the Risks

Step 2 is a screening step to identify the potential risks to the environment from the development. The following are generally considered to require assessment for bespoke operations:

- Amenity and Accidents;
- Site Waste;
- Global Warming Potential;
- Odour;
- Noise; and
- Point source emissions to air, water and land.

There will be no point source emissions to surface water, groundwater, air or land resulting from the HRRC and neither will there be any global warming potential. A separate Discharge Consent to Sewer is being applied for to manage foul water on site. Site waste arising's only require assessment for installations.

Therefore only 'Amenity and Accidents', remains applicable for assessment in this instance, and includes the consideration of odour, noise and vibration, fugitive emissions (including dust, mud, litter and pests) and accidents.

3.0 Site Setting and Receptors

3.1 Site Setting

The site is situated in Bedminster Down approximately 3km South of Bristol City Centre. The National Grid Reference (NGR) for the site is ST 58141 69727.

The area to the north of the site is predominantly commercial/industrial premises with open ground immediately to the east. The closest residential area of Headley Park is located approximately 70m to the west. Hartcliffe Way (A4174) runs in a north-south direction parallel to the western site boundary. Local Wildlife Sites (LWS), deciduous woodland and protected species have been identified within close proximity to the site. The EP boundary and the site's location are illustrated on Drawing 001.

The surrounding land uses, local receptors within 500m and cultural and natural heritage receptors within 1km are identified on Drawing 003.

A summary of the site's immediate surrounding land uses is identified in Table 3-1 below.

Table 3-1
Surrounding Land Uses

Boundary	Description
North	Several industrial premises including Honeyfield Business Park and a depot of the Avon Fire and Rescue Service. This is followed by a residential area.
East	Immediately to the east lies woodland, followed by open ground and the residential area of Knowle West.
South	An area of woodland followed by open ground designated as Pigeonhouse Stream Meadows. This is followed by Greenfield Primary school and the residential area of Headley Park. Further commercial/industrial premises are located beyond this.
West	Pigeonhouse Stream runs parallel to the western site boundary followed by Hartcliffe Way (A4174) which runs in a north-south direction. This is followed by commercial premises and the Headley Park residential area. Beyond this, there is Manor Woods Valley which is a local nature reserve.

The immediate surrounding land uses are described in further detail below.

3.1.1 Industrial/Commercial Premises

Commercial premises are found on the north and west sides of the EP boundary. The closest premises are as follows:

- North: ETM Group (15m); and
- West: Bristol Fish Project (67m).

3.1.2 Residential Properties

There are residential properties located to the north, east and west of the site. The Headley Park residential area is the closest which lies approximately 60m to the west and to the east the area of Knowle West lies 90m from the boundary. To the north the closest residential area is Wimborne Road, located approximately 300m from the site.

3.1.3 Educational Premises

The closest school is Knowle DGE which is located approximately 430m east of the site. Approximately 450m south east lies Greenfield Primary School.

3.1.4 Healthcare/Community Centres

A health centre is located approximately 490m north east of the site.

3.1.5 Local Transport Network

Adjacent to the west of the site Hartcliffe Way (A4174) runs in a north-south direction. To the north, east and west small roads provide local access to residential and industrial areas.

3.1.6 Surface Water Features

Pigeonhouse Stream lies adjacent to the site's western boundary. The River Malago is located approximately 25m north of the site.

3.1.7 Open Ground

Areas of open ground are found on all sides of the site. The closest area is located approximately 65m to the east.

3.2 Geology

A review of the British Geological Survey (BGS)[1] map reveals that the site is underlain by a bedrock of Mercia Mudstone Formation indicative of an environment previously dominated by hot deserts. Along the western site boundary there is localised Alluvium.

There are no records of superficial geology recorded at the site.

3.3 Hydrogeology

3.3.1 Aquifer Designations

The bedrock geology is classified as a Secondary (B) Aquifer on the Multi-Agency Information for the Countryside (MAGIC)[2] website. These are described by the EA as "predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering".

The superficial geology beneath the site is classified by the EA as Unproductive Strata, however the site's western boundary lies adjacent to secondary A superficial deposits described by the EA as "permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers".

3.3.2 Source Protection Zones

The site is not situated within a groundwater source protection zone (SPZ).

[1] British Geological Survey – Available at: http://mapapps.bgs.ac.uk/geologyofbritain/home.html, accessed June 2020
[2] Multi-Agency Information for the Countryside – Available at: http://magic.gov.uk, accessed June 2020

3.4 Hydrology

The Groundwater Vulnerability layer on the MAGIC[2] map reveals the site lies within an area known for groundwater vulnerability classified as high with soluble rock risk.

3.4.1 Flooding

EA mapping[3] indicates the site is situated in Flood Zone 1 and therefore has a low probability of flooding. Limited areas in the west of the site, adjacent to Pigeonhouse Stream, are located in Flood Zone 2 and 3 and are therefore considered susceptible to fluvial flooding.

3.5 Ecology

The following information has been assessed in order to determine the ecological site setting:

- MAGIC website; and
- The EA's Nature and Heritage Conservation Report (included as Appendix 01 to the NTS).

3.5.1 Site of Special Scientific Interest (SSSI)

There are no SSSI's within 2km of the HRRC.

The closest SSSI, Ashton Court, lies 2.8km to the north west.

3.5.2 Local Nature Reserve (LNR)

The Manor Woods Valley LNR is located approximately 90m west of the site's boundary and the Northern Slopes LNR is located approximately 870m north east.

3.5.3 Local Wildlife Sites

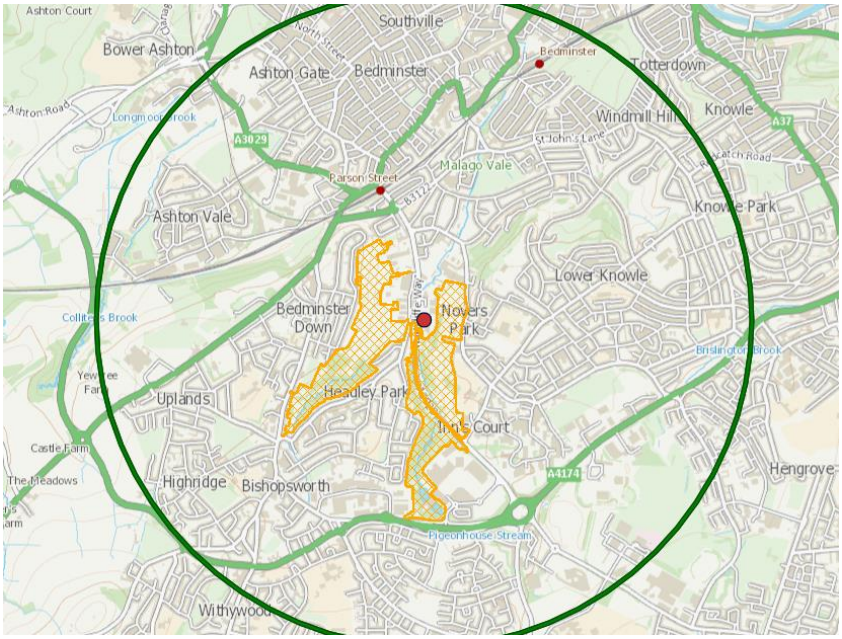
Three local wildlife sites have been identified within 200m of the site's boundary.

- Pigeonhouse Stream and Adjacent Meadows;
- Malago Valley; and
- Crox Bottom.

The closest area is situated adjacent to the site's western boundary, illustrated on Figure 1 below, sourced from the EA's Nature and Hertitage Conservation Report.

[3] Flood Map for Planning – Available at: https://flood-map-for-planning.service.gov.uk/, accessed June 2020

Figure 1 Location of Local Wildlife Site's within 200m



3.5.4 Protected Habitats

Multiple pockets of deciduous woodland protected habitat are located within 1km. The closest area lies adjacent to the site's south western boundary.
The searches on MAGIC confirmed that there are none of the following within 2km of the site's boundary:

- Special Areas of Conservation (SAC);
- RAMSAR sites;
- Special Protection Areas (SPA);
- Ancient Woodland
- Areas of Outstanding Natural Beauty;
- National Nature Reserves; and
- National Parks.

3.6 Cultural and Heritage

The review of MAGIC revealed that there are several listed buildings within 1km of the site's boundary as illustrated on Drawing 003. The closest of these is the Grade II* listed 'Holy Cross Inns Court Vicarage', which lies approximately 810m south east. Approximately 930m north west of the site in the Grade II listed Robin House and 980m west is the Grade II listed Church of St Oswald.

The search on MAGIC confirmed that the following features do not lie within 1km of the site:

- National Parks;
- Scheduled Monuments;
- National Parks;
- World Heritage Sites;

- Registered Battlefields; and
- Registered Park and Garden.

3.7 Identified Receptors

Table 3-2 and Drawing 003 identify the receptors which are considered to be potentially sensitive and could reasonably be affected by activities at the site.

Table 3-2
Identified Receptors

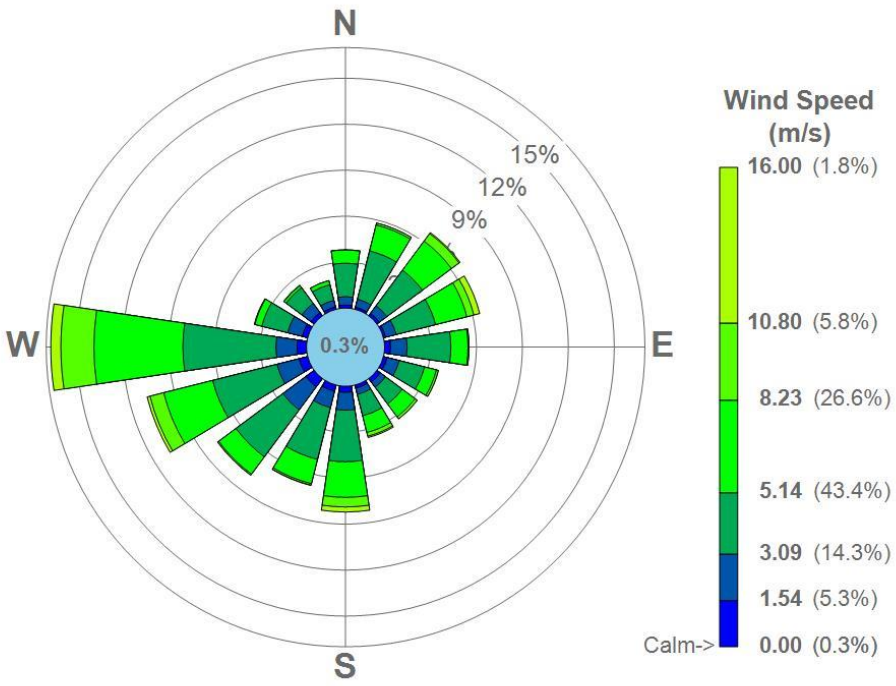
Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Local receptors within 500m and ecological, cultural and natural heritage receptors located within 1km of the EP boundary as shown on Drawings 003			
Secondary (B) Aquifer	Secondary Aquifer	N/A	N/A
Hartcliffe Way (A4174)	Local Transport network	West	Adjacent
Pigeonhouse Stream	Surface Water Feature	West	Adjacent
Local Wildlife Site	Local Wildlife Site	West	Adjacent
Deciduous Woodland	Protected Habitat	South West	Adjacent
ETM Group	Industrial/Commercial	North	15m
The Malago River	Surface Water Feature	North	25m
Open Ground	Open Ground	East	65m
Bristol Fish Project	Industrial/Commercial	West	67m
Headley Park	Residential Properties	West	70m
Knowle West	Residential Properties	East	90m
Manor Woods Valley	Local Nature Reserve	West	90m
Wimborne Road	Residential Properties	North	300m
Knowle DGE	Educational Premises	East	430m
Greenfield Primary School	Educational Premises	South east	450m
Health Centre	Healthcare/Community Centres	North east	490m
Holy Cross Inns Court Vicarage	Listed Building	Southeast	810m
Northern Slopes	Local Nature Reserve	Northeast	870m
Robin House	Listed Building	Northwest	930m

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Church of St Oswald	Listed Building	West	980m

3.8 Windrose

Figure 3-1 shows the wind patterns in 2018 as identified by the Bristol Airport meteorological station. The most prominent wind direction is from the west to the east. Winds from the north, east and south are relatively infrequent.

Figure 3-2
Bristol Airport Meteorological Station, 2018



4.0 Environmental Risk Assessment

The following tables in this section assess the site in terms of potential hazards posed, receptors and pathways, along with management and assessment of the identified risks.

As detailed in Section 2, only the risks associated with the HRRC will be assessed as part of this application.

The probability of exposure is the likelihood of the receptors being exposed to the hazard, and is defined as low, medium or high. These terms are qualified as follows;

- Low: exposure is unlikely, barriers in place to mitigate against exposure.
- Medium: exposure is fairly probable, barriers to exposure less controllable.
- High: exposure is probable, direct exposure likely with few barriers.

The methodology outlined in Section 1.1 of this report is the basis on which it is determined whether the proposed operations will lead to significant impacts on the surrounding environment. Where a conclusion of 'not significant' has been reached, it is proposed that the mitigation and management measures that will be in place at the site will be sufficient to ensure that there will be no impact at the surrounding environment.

Table 4-1 Odour Risk Assessment and Management Plan

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Odour **Receipt and handling of waste at the HRRC** **Storage of waste**	Receptors as identified in Table 3-2, including Pigeonhouse Stream, surrounding commercial/industrial premises, the residential areas of Headley Park, Knowle West and Wimborne Road and Manor Woods and Northern Slopes Local Nature Reserves. See Drawing 003.	Air	The majority of the land surrounding the site is occupied by industrial/commercial premises. The closest residential receptors are situated approximately 70m west of the site, opposite to the prevailing wind direction, and are buffered by vegetation, a small stream (Pigeonhouse Stream) and Hartcliffe Way (A4174). Only waste delivered in private vehicles by the general public will be accepted on site. Consequently, there is no requirement for transfer notes or other Duty of Care provisions, and members of the public can deliver whatever wastes they generate at their homes. Therefore, pre-acceptance and acceptance procedures are not required. To control access to the site, a height barrier will be provided at the entrance to the HRRC to limit entry to just small vehicles. The recyclables which the site will accept are generally regarded to have a low odour potential (inoffensive and low intensity odour) due to the low organic content of the material. Therefore, it is considered unlikely that any material received at the site will be of sufficient magnitude to cause unacceptable odour outside of the site boundary because household waste is not generally considered to be	Low	Odour Nuisance	**Not Significant**

			odorous. Furthermore, long-term experience from the operator has demonstrated that the generation of off-site malodours is uncommon. Whilst odour production is unlikely, the site supervisor will remain alert to this potential nuisance and the following odour management techniques will be used on site to further minimise odour production: All skips/bays will be clearly labelled to ensure the segregation of waste. Should any particularly odorous materials be received, they will be isolated and promptly removed from site. Potentially odorous wastes will be stored for minimal periods of time. The site supervisor and site operatives will monitor, via a sniff-test, to determine whether a particularly malodourous load requires removal from the site during the next available collection. Timeframes for the storage of waste will be low, as no treatment, apart from bulking up, will occur at the HRRC. Once the specific skip is filled it will be transferred to an appropriate waste transfer station (WTS) for further treatment. The skip will be replaced at the same time. Waste comprising of, or containing, putrescible materials will be removed from the HRRC within 48 hours of receipt throughout the normal working week, but, may be stored for up to 72 hours over the weekend. The site supervisor and site operatives are responsible for visually monitoring and noting the placement of received material to ensure that older material is processed as a priority. Waste stored in bays will be periodically emptied and the bay swept down before further waste is deposited. This will avoid older material building up and degrading, potentially releasing odours. Regular monitoring, cleaning and general good housekeeping will be undertaken on site.			

			Operational areas, site haul roads and drainage channels will be cleaned regularly to minimise odour generation from degrading residual waste materials on these surfaces. To ensure a 'good neighbour' approach to local residents a telephone number will be provided and visible on the site board at the entrance to allow residents to contact Bristol Waste. The public will be informed should odour problems be anticipated, and they will be informed of progress, remedial measures and timescales. Following the receipt of a complaint Bristol Waste would contact the complainant to provide feedback on actions taken to both assess the event and convey remedial actions. Following an odour complaint a trained member of staff will undertake a sniff test and, if an odour is encountered, the source of the odour will be investigated by site management. Investigations will include the likely source and cause of the odour and a review of the meteorological data. The site supervisor will record daily weather conditions in the site diary. This will allow the location where boundary monitoring should be focussed to be determined and predictions to be made as to where odour impacts could occur. Extreme meteorological conditions could promote the generation of odour and inhibit its effective dispersion, specifically high temperatures and stable conditions may result in increased risk of odour. During these conditions, the site supervisor will increase olfactory monitoring (sniff testing) around the boundary of the HRRC and diverting incoming material to an alternative permitted facility will be considered. A site supervisor will undertake daily olfactory monitoring (sniff testing) around the boundary of the HRRC. The presence or otherwise of any offensive odours will be recorded in the site diary and corrective action taken to overcome its source.			

			The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.			

Table 4-2 Noise Risk Assessment and Management Plan

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Noise **Delivery of waste by the general public** **Deposit of waste in skips and bays** **Mobile plant moving waste, and the movement/replacement of skips**	Receptors as identified in Table 3-2, including Pigeonhouse Stream, surrounding commercial/industrial premises, the residential areas of Headley Park, Knowle West and Wimborne Road and Manor Woods and Northern Slopes Local Nature Reserves. See Drawing 003.	Air	The site is situated within a busy commercial/industrial area where noise nuisance is not normally considered an issue. The Noise Impact Assessment, included in Section 7 of this EP application, concluded that there would likely be a negligible risk of adverse impact from noise generated by the proposed development at the nearby sensitive receptors. The following noise management measures will be implemented on the site to mitigate noise emissions: Only household waste delivered in private vehicles by the general public will be accepted on site. • No commercial or industrial waste will be accepted. There will be minimal HGV movements at the HRRC. It is anticipated that there would be up to two HGV movements per hour.	Low	Nuisance and health risk to human receptors during daytime hours.	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			• The Noise Impact Assessment determined that there would be a negligible impact on nearby potentially sensitive receptors because of changes to offsite traffic. • It is anticipated that the main noise sources would be from the large open top containers and the smaller closed top containers. • Drop heights will be kept to the minimum practical (height of empty receiving container as a maximum). • Site operations will be restricted to reasonably sociable hours as specified in the planning consent. • Speed limits will be implemented for vehicles using the site with traffic calming measures to enforce the speed limits. • Site access and operational areas will be maintained and repaired to minimise emissions of noise due to uneven and poor surfacing. • If horns or alarms or beepers on reversing HGVs and fork-lifts are deemed to cause			

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			unacceptably high levels of noise, alternative technologies will be explored and implemented. • Plant will be selected & operated to minimise noise and will be fitted with noise silencers where possible. • All site plant and machinery will be operated and maintained in accordance with the manufacturer's specifications. • Auditory inspections will be carried out daily & in response to complaints. • Any complaints will be responded to immediately, and should any noise problem or complaints persist, its amelioration, will be discussed with the Agency. The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.			

Table 4-3 Fugitive Risk Assessment and Management Plan

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
To Air:						
Dust **Vehicle movements** **Deposit of waste and storage**	Receptors as identified in Table 3-2, including Pigeonhouse Stream, surrounding commercial/industrial premises, the residential areas of Headley Park, Knowle West and Wimborne Road and Manor Woods and Northern Slopes Local Nature Reserves. See Drawing 003.	Air	Household waste will be delivered to site by the general public in enclosed vehicles, prior to discharge into the relevant skip or bay. No commercial or industrial waste will be accepted on site. A speed limit will be implemented on site to minimise the mobilisation of dust particles from traffic movements. All vehicles and mobile plant will be subject to a programme of planned preventative maintenance and will be maintained in accordance with the manufacturer's recommendations. The impermeable concrete surfacing will be maintained in good condition to minimise the mobilisation of dust particles. The site will be subject to periodic clean downs to minimise the build-up of dusty particles. Daily visual monitoring will be carried out by all members of staff throughout their shift with any potential emissions of dust reported to the Site Manager.	Low	Dust nuisance	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			If dust becomes an issue, or complaints are received, an investigation to establish the cause will be undertaken and action taken accordingly, e.g. if the problem is caused by a particular waste type, cease accepting that waste until a suitable method statement detailing how the waste is handled, has been prepared and implemented. The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.			
To Water						
Runoff from the site	Surface water and groundwater.	Run off and percolation.	All waste will be stored on impermeable surfacing, or within a sealed skip. The site will benefit from a sealed drainage system, with subsequent discharge to sewer. All asbestos waste will be stored in an enclosed lockable container with a maximum storage limit of 10 tonnes at any one time. Waste engine oils will be decanted to a bunded bulk storage tank. All areas of the site where the storage of waste occurs, benefits from a sealed drainage system. Runoff produced on site flows, via drains, to an interceptor before discharge to sewer.	Low – due to preventative management measures in place and the waste types accepted on site.	Contamination of surrounding land and water.	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.			
Pests						
Birds, vermin and pests	Receptors as identified in Table 3-2, including Pigeonhouse Stream, surrounding commercial/industrial premises, the residential areas of Headley Park, Knowle West and Wimborne Road and Manor Woods and Northern Slopes Local Nature Reserves. See Drawing 003.	Land (vermin) and Air (flies).	All skips/bays will be clearly labelled to ensure the segregation of waste. Timeframes for the storage of waste will be low, as no treatment, apart from bulking up, will occur at the HRRC. Once the specific skip is filled, it will be transferred to an appropriate WTS, for further treatment. The skip will be replaced at the same time. Waste comprising of, or containing, putrescible materials will be removed from the HRRC within 48 hours of receipt throughout the normal working week, but, may be stored for up to 72 hours over the weekend. If required, a specialist contractor will be employed to provide preventative measures across the site. The site will be inspected daily for signs of pest infestations. If an infestation becomes an issue, or complaints are received, an investigation to establish the cause will be undertaken and action taken accordingly, e.g. if the problem is caused by a particular waste type, the site will	Low – due to the preventative management measures in place.	Nuisance to human and commercial receptors.	**Not significant – due to the proactive preventative measures that will be implemented on site.**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			cease accepting that waste until a suitable method statement detailing how the waste is handled, has been prepared and implemented. The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.			
Mud/Litter						
Mud from vehicle movements	Receptors as identified in Table 3-2, including Pigeonhouse Stream, surrounding commercial/industrial premises, the residential areas of Headley Park, Knowle West and Wimborne Road and Manor Woods and Northern Slopes Local Nature Reserves. See Drawing 003.	Land	The site will benefit from good housekeeping and all areas of the site will be cleaned on a daily basis. Only waste brought to the site by the general public will be accepted on site. No HGV's will deliver waste at the HRRC. All site vehicles leaving operational areas will be inspected to ensure that they are clear of loose waste. All surfaces of the facility are of impermeable structure hence the tracking of mud or debris out onto the highway is rare. Daily visual inspection of the site by site management will identify any problem with mud which will be cleaned up as soon as possible. Where necessary road cleaning equipment will be deployed.	Low	Mud on road, road safety.	**Not significant.**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.			
Litter from waste acceptance, deposit and storage	Receptors as identified in Table 3-2, including Pigeonhouse Stream, surrounding commercial/industrial premises, the residential areas of Headley Park, Knowle West and Wimborne Road and Manor Woods and Northern Slopes Local Nature Reserves. See Drawing 003.	Air	Only waste delivered in private vehicles by the general public will be accepted on site. Consequently, there is no requirement for transfer notes or other Duty of Care provisions, and member of the public can deliver whatever wastes they generate at their homes. Therefore, pre-acceptance and acceptance procedures are not required. To control access to the site, a height barrier will be provided at the entrance to the HRRC to limit entry to just small vehicles. All waste will be stored in skips/bays and will be clearly labelled to ensure the segregation of waste. All wastes are containerised or bunded and filled containers are covered over as necessary (by sheeting or netting) and handled with care when moved. Particular attention is paid to this during periods of high wind. Timeframes for the storage of waste will be low, as no treatment, apart from bulking up, will occur at the HRRC. Once the specific skip is filled, it will be transferred to a WTS, for further treatment. The skip will be replaced at the same time.	Low	Nuisance from litter.	**Not significant.**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			All areas of the HRRC will be swept clean every day and any spilt waste deliveries will be removed. Bins will be provided on site around welfare areas for the use of site visitors and personnel. The site and its immediate surroundings will be inspected daily and action will be taken to maintain the area free of significant accumulations of litter and debris. Any excessive litter material at the facility or on the highways will be cleared using a mechanical sweeper and/or litter picker if required. The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.			

Table 4-4 Accidents Risk Assessment and Management Plan

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Spillage and Leakage	Local land quality, surface water and groundwater.	Runoff and percolation through ground.	The HRRC benefits from impermeable concrete surfacing throughout (where all waste acceptance and storage are undertaken) and a sealed drainage system and will have the capability to contain any spillages or leaks. Tanks used for the storage of fuel and maintenance oil, will be constructed so that any leaks/spillages will be contained. Tanks will be surrounded by a leakage containment bund capable of containing at least 110% of the volume of the largest tank within the bund or 25% of the total tank volume within the bund, whichever is the greater. Storage tanks will be constructed to the appropriate British Standard. Tanks will be inspected visually on a daily basis by the site staff to ensure the continued integrity of the tanks and identify the requirement for any remedial action. All equipment used on the site will be operated and maintained to prevent leaks or spillages.	Low	Contamination of land, groundwater and surface water.	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			Materials suitable for absorbing and containing minor spillages will be maintained on site. Minor spillages will be cleaned up immediately, using sand or proprietary absorbent to clean up liquids and placed in alternative containers. Site staff will undertake daily monitoring for evidence of spillage and leakage. In the event of a major spillage, immediate action will be taken to contain the spillage and prevent liquid from entering surface water drains. The spillage will be cleared immediately and placed in containers for off-site disposal and the EA will be notified. The Site Manager will be responsible for implementing risk management measures in conjunction with Working Plan.			

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Fire	Receptors as identified in Table 3-2, including Pigeonhouse Stream, surrounding commercial/industrial premises, the residential areas of Headley Park, Knowle West and Wimborne Road and Manor Woods and Northern Slopes Local Nature Reserves. See Drawing 003.	Air (smoke) Ground (spillages and firewater).	The Site will be managed in accordance with the approved Fire Prevention Plan (402.08721.00003/FPP).	Medium	Harm and nuisance.	**Not significant – due to the mitigation and management methods outlined in the Fire Prevention Plan.**
Vandalism/Security	Harm to Human Receptors, Ecological Receptors, Commercial/industrial receptors, Land and Water.	Land and air.	The HRRC benefits from security measures, which include; • A 1.8m minimum height fencing around the perimeter of the wider facility; • Gates which will be locked outside of operational hours;	Low	Theft, plant failure, harm to human health.	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
	See Drawing 003.		• A comprehensive Lighting system; and • A CCTV system. Access to the site will be via a lockable gate. Security infrastructure will be inspected daily by the operations staff to identify deterioration and the need for any repairs. In the event that damage is identified, unauthorised access will be prevented and temporary repairs will be made by the end of the working day. Permanent repairs will be made as soon as practicable. All visitors (other than those delivering waste to the reception areas) to the site will be required to register in the visitor's book and sign out again on exit. This minimises the risk of unauthorised visitors being present at the site. The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.			

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Flooding	Surface water, soils, groundwater and site personnel.	Flood waters over land.	The majority of the site lies within flood zone 1 and therefore has a low probability of flooding. Limited areas in the west of the site, adjacent to Pigeonhouse Stream, are located in Flood Zone 2 and 3 and are therefore considered susceptible to fluvial flooding. An evacuation plan will be implemented in the unlikely event of a flood. The Site Manager will be responsible for implementing risk management measures in conjunction with the Working Plan.	Low	Contaminated flood waters impacting land in residential, ecological and commercial areas.	**Not significant**

5.0 Conclusion

This ERA has been undertaken in accordance with EA guidance. The assessment is provided as part of the application for an EP application for the Hartcliffe Way HRRC.

This qualitative risk assessment has considered noise, fugitive emissions, dust, releases to water, litter, and potential for accidents and incidents. The assessment concludes that with the implementation of the risk management measures described above, potential hazards from the HRRC are not likely to be significant and no further assessment is required.

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