NEWHURST ENERGY RECOVERY FACILITY

EPR/TP3036KB

Fire Prevention Plan

Prepared for: Biffa Waste Services Limited

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1.0 Introduction

1.1 Report Context

Biffa Waste Services Limited (Biffa) has commissioned SLR Consulting Limited (SLR) to prepare a Fire Prevention Plan (FPP) for their Energy Recovery Facility (ERF) in Newhurst in support of an Environmental Permit Variation Application, details of which are included in the Non-Technical Summary (SLR Ref: 413.00034.00562).

This report follows the Environment Agency (EA) guidance for FPPs[1] and details the required mitigation and management methods to prevent a fire of combustible materials stored on site.

The information contained within this FPP aims to meet the 3 main objectives of the EA FPP Guidance:

- Minimise the likelihood of a fire happening;
- Aim for a fire to be extinguished within 4 hours; and
- Minimise the spread of fire within the Site and to neighbouring sites.

1.2 Environmental Permit and Basis of the Update

The original Environmental Permit (EP) (EA Ref: EPR/TP3036KB) was issued to Biffa on 8th October 2011. An EA driven variation to the permit to reflect the implementation of the Industrial Emissions Directive (IED) was issued on 13th December 2013.

At the time of writing, the facility has not been constructed and the final design of the ERF has not been finalised. Biffa and Covanta (a partner in the development of the Newhurst project) through a procurement process are in ongoing discussions with a number of technology providers. Therefore, this FPP has been written to be consistent with the tender documentation available at the time of writing, with the intention that the FPP will be updated once the facility has been constructed and is commissioned.

1.3 Site Location

Newhurst Quarry is located in Shepshed, Leicestershire, and forms part of the Charnwood Quarry Complex located on the northern edge of Charnwood Forest adjacent to the M1 motorway, immediately south of Junction 23. The site location is illustrated on Drawing 001. The conceptual site layout and EP boundary is illustrated on Drawing 002. The location of the site and nearby receptors is illustrated on Drawing 003 Sources, Pathways and Receptors and Drawing 004 Cultural and Natural Heritage included as part of this ERA.

The Charnwood Quarry Complex consists of two linked quarries, both of which are currently inactive:

- Newhurst Quarry, located on the west side of the M1 Motorway; and
- Longcliffe Quarry, on the eastern side of the Motorway (which is accessed through Newhurst Quarry and under the motorway).

The ERF is located at National Grid Reference (NGR) SK 489 181, approximately five kilometres west of the centre of Loughborough. The site is accessed from the A512 Ashby Road East located approximately 60m north of the site, some 300 metres west of Junction 23 on the M1.

[1] Fire Prevention Plans, November 2016.

1.3.1 Residential properties

The nearest residential property is Cowhill Lodge approximately 100m north of the site's permit boundary. Further residential properties are Ingleberry Lodge Farm, located approximately 300m to the south west and Ingleberry Cottages / Ingleberry House Farm, located approximately 400m to the south-west. Hurst Farm is located approximately 390m to the east of the site, beyond the M1 Motorway.

Other nearby properties includes those located in Shepshed town. These are located approximately 500m and beyond to the north west of the site, across an area of industrial use and the A512.

The main urban development of Loughborough commences approximately 1.2km east of the site.

1.3.2 Industrial and Commercial Premises

Hanson Contracting Regional office and associated parking and services areas are located north of the Newhurst Quarry and immediately to the south of the main access road and weighbridge for the quarry.

Along the eastern side of the site are the former quarry materials, storage, stockpiling and loading areas.

Along the A512, in particular west of the M1, there are a substantial number of industrial sites, including TBD Morris at the junction of the A512 and the B591 Ingleberry Road, immediately adjacent to the Quarry and approximately 200m from the ERF facility.

Industrial and commercial premises are highlighted on Drawing 003. The closest are industrial properties, which border the site immediately to the north-west. Commercial premises are located 100m to the north of the permit boundary.

1.3.3 Areas for Public Use

The closest public footpaths are those associated with the A512 Ashby Road, located approximately 80m from the site boundary.

The Longcliff Golf Course is located approximately 200m to the south-east of the site, across the M1 motorway. There are no other areas of areas for recreational / public use within the assessed area surrounding the site. The Council owned allotment gardens serving Shepshed are located approximately 760m to the north-west of the site.

1.3.4 Other Receptors

The closest school, Newcroft Primary Academy, is located within the main conurbation of Shepshed and is located approximately 860m to the north-west of the site.

The closest hospital is located within the main conurbation of Loughborough approximately 3.6km to the north east of the site.

No other potentially sensitive receptors have been identified within the assessed area surrounding the site.

1.4 Ecology

Nature conservation designations have been assessed within a 2km radius of the site. Searches on the Multi-Agency Geographic Information for the Countryside (MAGIC) website[2] confirm the following;

[2] www.magic.gov.uk – Accessed November 2017

1.4.1 European / International Sites

It has been established that there are no European or international statutory nature conservation designations within a 2km radius of the site.

1.4.2 Sites of Special Scientific Interest (SSSI)

There are no ecological designations located within the permit boundary. However there are two SSSI's within the vicinity of the site, the locations of which are illustrated on Drawing 004.

Newhurst Quarry, located adjacent to the ERF site, is designated as a geological SSSI and a Regionally Important Geological Site (RIGS), with particular interest relating to the mineralisation, unconformity and wadi features. It has previously been confirmed in discussions with English Nature that the features of particular interest for the SSSI are located in the north face of the Quarry.

St Ives SSSI is located approximately 1140m south west of the site at NGR SK 47839 17183. It is designated for its unique Precambrian geology.

1.4.3 Local Nature Reserve (LNR)

Morley Quarry LNR, located at NGR SK 476 179, lies approximately 1040m to the west of the site boundary. This site is primarily an important geological site; however, it is also of local importance for wildlife, heathland habitat, and hosts a good mixture of bryophytes. The location of this site is illustrated on Drawing 004.

1.4.4 Ancient Woodland

Searched conducted on the MAGIC website[1] confirm there are four areas of ancient and semi-natural woodland; including Outwood located approximately 2km to the south-east, Whitehorse Wood located approximately 1.9km to the west, Holywell Wood located approximately 1.6km to the east and Burleigh Wood located approximately 1.6km to the east of the site; the locations are illustrated on Drawing 004.

There are also pockets of land designated in the national inventory of woodland and tree sites to the north of the site.

1.5 Hydrology and Hydrogeology

The closest surface water feature to the permit boundary consists of a surface water lagoon created as a result of the activities associated with the neighbouring Newhurst Quarry site. At its closest point the lagoon lies 150m west of the site.

There are three surface watercourses in the vicinity of the application site; the Black Brook and Wood Brook (being tributaries of the River Soar) are located approximately 5km north-east and the Shortcliff Brook south-east respectively (approximately 70m at its closest point).

Shortcliff Brook flows generally eastwards parallel to the southern and eastern boundaries of the site. Shortcliff Brook flows through a culvert beneath an internal haul road to the south of the site boundary from which it flows under a second culvert beneath the M1.

Searches conducted on the EA's website[3] shows the site is not located within a flood plain.

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[3] www.environment-agency.gov.uk – Accessed November 2017

The ERF is underlain by a Precambrian non-aquifer of insignificant groundwater resource potential. On the application site, Triassic strata unconformably overlie the Precambrian and are classified as a major aquifer by the EA. It should be noted however that RPS (2007) argue that the Triassic strata have insignificant resource potential due to their low permeability and discontinuous distribution and therefore do not warrant major aquifer status.

Review of the EA website (accessed on 12th August 2009) shows that the site is not located within a Source Protection Zone (SPZ). SPZs associated with abstractions near Coalville and Whitwick are present to the south-west of the site, with the closest extent of the SSPZ (Zone III – Total Catchment) lying approximately 1.7km to the south west.

1.6 Cultural Heritage

A search conducted on the Charnwood Borough Council Website[4] and the English Heritage website[5] shows that there are listed buildings located within the vicinity of the site, which indicate that listed and historic buildings are also located within the residential development of Shepshed located from 500m to the north-west of the site. The closest listed buildings to the development are White Lodge, located approximately 960m to the north-east and Lodge to Garendon Park located approximately 990m to the east. It should be noted that those located within Shepshed are primarily based in the northern part of the town.

Searches conducted on the MAGIC website also confirm the site does not lie within 2km of the following;

- Natural Areas;
- National Trust Properties; and
- World Heritage sites.

The site contains no designated archaeological sites and forms no part of a designated archaeological area.

No Scheduled Monuments have been identified within 2km of the site.

1.7 Receptors

Drawings 003 and 004 illustrate the locations of receptors that have been identified as being potentially sensitive and could reasonably be affected by the ERF development. The receptors identified are summarised in Table 1-1 below.

Table 1-1
Identified Receptors

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (at nearest point)
Identified receptors within 1km of the EP Boundary as shown on Drawing 003.			
Residential properties including Cowhill Bungalow, Ingleberry Lodge Farm, Ingleberry Cottages / Ingleberry House Farm, Hurst Farm, Shortcliffe Farm, Bodkin Farm,	Residential Premises	South-west, east and north	From 100m

[4] www.charnwood.gov.uk – Accessed November 2017
[5] www.english-heritage.org.uk – Accessed November 2017

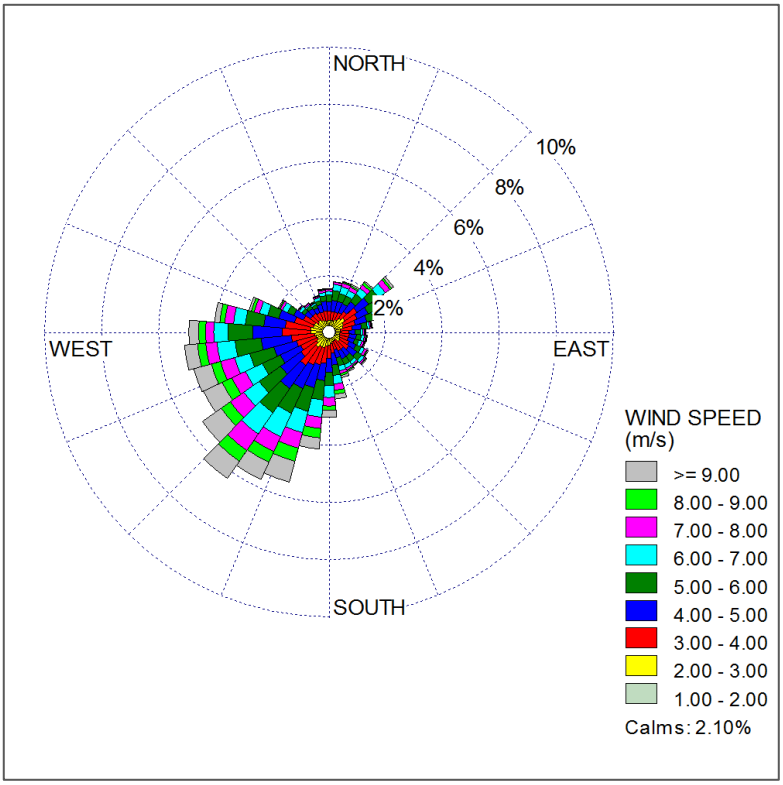
Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (at nearest point)
Morley Farm, White Lodge and unnamed properties.			
Residential Properties located within Shepshed Town.	Residential Premises	North-west	From 500m
Industrial premises, including the Hanson Contracting Regional office. Industrial sites located off the A512, including TBD Morris waste management services at the junction of the A512 and the B5330 Ingleberry Road.	Industrial	North and north-west	From adjacent
Commercial premises including GLW Feed, Charwood Snack Shop on northern side of Ashby Road East and Bodywork Solutions to the west.	Commercial	North	From 100m
Footpath and tracks	Public footpaths / tracks	North, north-east and east	From adjacent
Newcroft Primary Academy	Schools	North-west	From 860m
Allotment Gardens	Allotments	West north-west	From 800m
Longcliff Golf Course and Club House	Commercial / area for public use	South-east	From 200m
Newhurst Quarry, Charnwood Quarry, and unnamed clay pit and landfill site	Quarries, clay pit and landfill	West and south-east	From adjacent
M1 Motorway.	Transport Network	East	100m
Public roads, including the A512, Ingleberry Road and Iveshead Lane.	Transport Network	North, west and south-west	From 80m
Newhurst Quarry SSSI.	SSSI	West	Adjacent
Areas of open space / agricultural land.	Areas of open space	All	From adjacent
Surface water management lagoon	Surface water feature	West	100m
Shortcliff Brook.	Surface water feature	South-east	70m
Identified receptors of ecological importance within 2km of the EP Boundary as shown on Drawing 004.			
Morley Quarry Local Nature Reserve.	Local Nature Reserve	West	1700m
Ives SSSI	SSSI	South-west	1140m
Listed buildings, including White Lodge.	Listed buildings	North-east	960m

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (at nearest point)
Ancient woodland including Holywell Woods, Burleigh Woods, Outwoods and the Whitehorse Woods	Ancient woodland	East, south-east and west	From 1.6km
Newhurst Quarry SSSI	SSSI	West	Adjacent
Unnamed woodlands	National Inventory of Woodland and Trees	North and north north-east	From adjacent
Garendon Park	Registered Park and Gardens	North-east	From 400m

1.8 Wind Rose

A wind rose of the data from East Midlands Airport Meteorological Station (2009-2013) is presented as Figure 1-1 below. As is apparent from this wind rose, the predominant wind direction is from the west/south-west. Wind from the north and south-east occur relatively infrequently. The wind direction and frequency should be considered when looking at the impact of emissions on receptors.

Figure 1-1
East Midlands Airport Meteorological Station (2009-2013)



1.9 Site Type

The activities at the site are regulated under Section 5.1, Part A, (1) (b) of the Environmental Permitting Regulations 2016 (as amended). The activities include;

'The incineration of non-hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity exceeding 3 tonnes per hour'

The EP, under a Directly Associated Activity (DAA), also allows for the generation of electrical power using a steam turbine from energy recovered from the flue gas. The electricity will be exported to the National Grid.

The facility will accept up to 350,000 tonnes per annum (tpa) of non-hazardous municipal, commercial and industrial waste and refused derived fuel (RDF).

A full list of individual waste types categorised in accordance with the European Waste Catalogue (EWC) codes is available in Appendix 01 sourced from EP Table S.2.2.

The site layout is illustrated on Drawing 002.

1.10 Waste Types, Quantities and Storage

The site will store the following waste types which are defined as combustible materials in the FPP Guidance:

- Paper and cardboard;
- Plastics;
- Rags and textiles;
- Scrap metals;
- Mixed waste;
- Rubber; and
- Wood.

The site will be permitted to process up to 350,000 tonnes per annum.

The site will be designed to have a five day storage capacity of municipal, commercial and industrial waste and Refuse Derived Fuel (RDF) within the bunker at any one time, which equates to approximately 5,200 tonnes.

1.11 Site Access

The site is accessed from the A512 Ashby Road East located approximately 60m north of the site, some 300 metres west of Junction 23 on the M1.

The closest Fire Station is located on Charnwood Road, Loughborough to the north. Using Google directions[6] and mapping, the drive time is approximately seven minutes and approximately 1.4 miles between the site and the Fire Station.

The site will benefit from 2.4m tall security fencing along the site perimeter which restricts unauthorised access into the facility. There will be 3 access gates. CCTV cameras will be utilised in strategic locations around the site. In addition to these security measures, site operatives will be manning operations on a 24 hour/7 days a week basis.

[6] www.maps.google.co.uk accessed November 2017

1.12 Environmental Management System

The site will be managed in accordance with an approved Environmental Management System (EMS) that will cover all aspects of the ERF operation. The site will be accredited to ISO 14001 within a year following the completion of commissioning.

The Integrated Management System Plan is included as Appendix 02.

2.0 Fire Prevention Measures

2.1 Waste Pre Acceptance / Acceptance / Rejection

The site will follow strict waste acceptance and rejection procedures to ensure that no non-conforming waste is accepted on site. The pre-acceptance, acceptance and rejection procedures will be contained within the management system.

2.2 Fire Detection

Biffa will have suitable procedures in place to detect a fire in its early stages, in order to reduce its impact. Appropriate automated systems will be implemented and all design, installation and maintenance will be covered in accordance with BS5839-1 2013 category P1.

Examples of successful detection systems used on other ERF sites include the following:

- Infra-red camera scanning systems;
- Optical smoke & heat detectors;
- Gas detection;
- Thermal imaging cameras; and
- Very Early Smoke Detection Apparatus (VESDA).

These detection systems are in the process of being considered and the most appropriate system for the site will be chosen once the design of the facility is confirmed.

2.3 Inspections and Amenity Monitoring

The site will be manned 24 hours a day 7 days a week (24/7) by site operatives. Site operatives will remain vigilant at all times and look out for signs of fire throughout the site. This 24/7 presence will ensure rapid detection of fires or fire hazards.

Staff will be trained in the identification of fires and fire hazards on site. Staff will also receive training on the selection and use of appropriate fire extinguishers, site shut down procedures, fire safety and site evacuation. Training will ensure that staff are made aware of how to respond to abnormal conditions and the procedure for contacting relevant authorities.

All waste arriving on site will be thoroughly inspected to ensure compliance with the permit and reduce the potential for incompatible wastes or hot loads being accepted onto site.

The waste bunker will undergo periodic turnover to prevent the build-up of waste, dust and debris and will be monitored 24/7 by site operatives for hot spots or signs of fire. Further details are provided in section 2.5 below.

Daily and weekly monitoring will be recorded in line with the requirements of the Environmental Permit and the EMS.

Further inspections and monitoring on site are detailed in the below sections.

2.4 Pile Management

Stockpile sizes and waste storage times will not exceed those stated in Table 2-1 below. The table shows the storage time and dimensions associated with the waste bunker.

Table 2-1
Waste Bunker Storage

Max Storage Capacity	Length (m)	Width (m)	Height (m)	Max Storage Volume (m^3)	Max Tonnage (t)
5 Days	35	20	28	16,200	5,200

2.4.1 Waste Bunker Design

The location of the waste bunker is illustrated on Drawing 002. Vehicle drivers will deposit waste either on the floor for inspection or in one of seven tipping bays within the waste bunker.

At the estimated dimensions of the waste bunker to store waste, it will be capable of holding 16,200$m^3$of material as indicated above, which equates to approximately five days of waste storage[7].

The waste bunker walls will be constructed of reinforced concrete. The specification of the concrete conforms to BS 8500-2 – Concrete, which ensures the structure and composition of the concrete is of a high standard.

At the edge of the bunker, there will be seven 6m wide tipping bays which allow seven vehicles to deposit waste into the bunker at any one time.

2.5 Management of Hotspots within Stockpiles

2.5.1 Waste Bunker

Monitoring of hotspots within the waste bunker will be managed by an infra-red camera scanning system. The temperature of the waste within the bunker will be monitored on a constant basis. If a hotspot is identified, the waste will be lifted and turned until the temperature decreases. Water cannons installed as part of the suppression system will be initiated and directed at the hotspot in the event that the temperature does not sufficiently decrease.

The most appropriate system for the site will be chosen and implemented prior to commissioning. The system chosen will be designed, installed and maintained in accordance with a UKAS accredited third party certification scheme.

2.6 Plant and Equipment on Site

The following items of mobile plant are likely to be held on site. The full list will be detailed prior to commissioning:

- Loading shovels;
- Telehandlers; and
- Mobile Elevating Work Platforms (MEWPs).

The use of each piece of mobile plant will be maintained in line with manufacturers' recommendations.

All mobile plant and vehicles will be fitted with a fire extinguisher.

The site will be operational 24 hours a day therefore mobile plant will be continuously in use. If required, mobile plant will be temporarily stored in a safe area at least 6m from any combustible waste or hazardous material storage, likely to be within the main ERF building.

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[7] Based on waste storage dimensions of 35 m by 20 m by 14 m below the tipping floor (9,800 m^3) and 35 m by 14m by 18m (6,370 m^3) above the tipping floor within the bunker

2.7 Training

All staff will receive training on the selection and use of fire extinguishers, fire safety, shut down procedures and site evacuation. Staff will be trained to identify fires and fire hazards and to contact emergency services when appropriate.

There will always be at least one trained fire marshal working on site at any one time.

All staff and contractors working on site will be made aware of the contents of the FPP and the procedures that are in place in the event of a fire on site.

Biffa will conduct refresher training, in addition to maintaining a copy of this FPP in the Facility manager's office, to ensure that that all staff members' knowledge is current and up to date. Biffa will test the FPP on an annual basis to ensure staff understanding.

2.8 Security Measures

The site will be monitored 24/7 by a CCTV system. The CCTV cameras will benefit from external lighting and will detect breaches of the boundary line by recording the external areas.

The site perimeter will be lined by 2.4m high security fencing and the gates locked shut outside of waste acceptance hours.

The constant presence of site operatives will ensure that fires are detected rapidly and the relevant authorities are contacted.

2.9 Fire Sources and Prevention Measures

Table 2-2 below provides a summary of the potential causes of fire on site and associated preventative measures and is taken from the FPP guidance.

Table 2-2
Fire Sources and Preventative Measures

Cause	Preventative Measure
Arson and Vandalism	The site will have a number of security measures in place to limit the likelihood of arson or vandalism including: • 2.4m high security fencing and lockable site entrance gates; • Security lighting; • 24/7 CCTV in operation; • 24/7 site operatives presence; • Inspection and maintenance procedures for site security measures including daily perimeter checks and; and • A visitor sign in system. In the event of a breach of security at the site, the cause will be investigated and appropriate mitigation measures implemented. Records maintained will include inspections and maintenance of security fencing and gates, breaches of security, investigations and actions taken.
Self-	Effective stock management will limit the likelihood of the self-combustion of materials

Combustion	stored on site. As such, Biffa has waste acceptance and stock management procedures which will be upheld by all employees at the site, as detailed in Section 2.1. Waste stored in the bunker will be continuously turned over. Only waste included in Appendix 01, as detailed in the Environmental Permit Table S.2.2, will be accepted at the site. All fuel and oil will be stored at least 6m from any combustible waste or other hazardous materials.
Plant or Equipment Failure	Plant and equipment will be maintained in accordance with the manufacturer's recommendations. All plant will be fitted with a fire extinguisher. Induction training and refresher training will be provided to staff on the safe operation of plant and equipment relevant to their role, in accordance with the EMS. Inspection of plant and equipment will be undertaken prior to use to check for faults and ensure appropriate maintenance is undertaken. When not in use, mobile plant will be stored at least 6m from any storage areas of combustible materials. In the event of a failure or suspected fault with an item of plant or piece of equipment, the operator will ensure that the equipment is shut off in a safe manner and not used until the equipment can be repaired or replaced. No industrial heaters will be utilised on site. Electrical heaters will be provided at the weighing terminal. Records of operator failure or failure of equipment will be kept on site together with a summary of remedial action taken.
Electrical faults (Including Damaged or exposed electrical cables)	All electrics on site will be fully certified by a qualified electrician and regular safety inspections will be carried out in accordance with Biffa's EMS. Records of faults and/or daily electrical maintenance will be recorded in the site diary.
Naked lights	All ignition sources will be kept a minimum of 6m away from the storage of combustible and flammable wastes. No naked lights will be permitted on site.
Discarded Smoking materials	Smoking will not be permitted within operational areas of the site. A designated smoking area will be identified that is 6m from the storage of combustible wastes and hazardous materials.
Hot works	All hot works will be undertaken under a permit to work system which includes a 60 minute fire watch by a competent person at the end of the works. No hot works will be undertaken by staff unless they are trained and have the relevant permit to work. All hot works will be conducted in a cleared area of the site at least 6m from any combustible wastes. A site operative will perform a continuous fire watch during the hot work and for a minimum of 60 minutes after the work is completed.
Hot Exhausts	Vehicles and mobile plant will be turned off when not in use. Consideration will be given to the high risk time for hot exhausts (one hour after switch off when dust can settle on hot surfaces).

	Site operatives will keep a watch on the vehicles at regular intervals for signs of fire caused by the settlement of dust and also at the end of the day. Flammable/combustible materials will be stored in the designated areas ensuring they are located away from frequent vehicle movements.
Open Burning	Open burning will not be permitted on site.
Reactions between incompatible materials	To ensure that incompatible materials or reactions do not take place, waste will be offloaded at the site supervised by suitably qualified site operatives. Only vehicles that are accompanied by the correct documentation will be accepted onto site. Waste will then undergo visual inspection at the point of disposal into the bunker. Tanks containing fuel will be constructed so that any leaks/spillages are 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. Bunds will be impermeable and resistant to stored materials.
Neighbouring sites	The site is located within the wider Newhurst Quarry area. Beyond this lies an area of industrial premises and the M1 motorway. Employees will remain aware at all times and report activities or behaviour which could represent a fire risk from neighbouring sites to the Facility Manager. The manager will then take appropriate action to address the risk.
Sparks from loading buckets	Loading shovels used on site may have the potential to create sparks when used on the concrete flooring within the tipping hall. The use of rubber strips along the front of the loading shovels will be assessed prior to operations beginning on site.
Incompatible Wastes (Including reactions between incompatible materials)	All waste arriving onsite will be checked in accordance with the waste acceptance procedure detailed in Section 2.1 to ensure no materials of unknown composition are accepted at the site. Spillages and leakages of fuels and oils will be handled in accordance with the Accident Management Plan.
Hot loads deposited at site	No burning, reactive/reacting or visibly hot (producing steam or heat) loads will be accepted on site. In accordance with Section 2.3, all waste will be visually inspected upon arrival at the tipping hall, therefore minimising prohibited wastes and the acceptance of hot loads. Instructions will be given to customers to ensure no hot loads are accepted on site. Should a hot load be deposited on site, it will be handled via the procedures outlined in Section 3.3 of this FPP. In the unlikely event that a hot load is delivered to site, a suitable quarantine area will be in place to segregate the load.

3.0 Fire Management

3.1 Containing and Mitigating Fires

The building will be designed in accordance with BS9999:2008 – 'Fire Safety in the design, management and use of buildings'. This standard gives recommendations and guidance on the design, management and use of buildings to achieve reasonable standards of fire safety for all people in and around them. It also provides guidance on the on-going management of fire safety within a building throughout its entire life cycle. The waste bunker will be constructed of reinforced concrete and fire-retardant materials. A minimum of 2 hour fire protection will be provided to all buildings, rooms and panels around the waste bunker (excluding the tipping hall). The 2 hour protection will be applied to glass partitions and windows.

Automatic water based fire suppression on site will likely comprise of one or more of the following:

- Wet and dry, roof installed sprinkler systems;
- Deluge systems covering the feed hoppers and control room windows; and
- Waste bunker water cannons.

Automatic gaseous fire suppression systems will be considered for the suppression of fire involving flammable liquids, gases and Class A hazards especially electrical equipment. The system directs a mixture of inert gases into an enclosed hazard. The gases extinguish the fire by lowering the oxygen content below the level that supports combustion.

Fire extinguishers will be provided at designated points throughout the site.

All procedures relating to emergencies on site, inclusive of fires, will be held within the site office and be made easily accessible.

An up-to-date site plan will be on display in the site office and will identify:

- The site layout;
- Waste storage;
- The location of firefighting equipment; and
- Personal Protection Equipment.

3.2 Emergency Contact Details

An emergency contact sheet is included in Appendix 03. The contact sheet details the phone numbers for the Fire service, EA, local businesses, the local sewage service, Severn Trent Water who will be contacted if necessary in the event of a fire, and additional relevant contact numbers for the site.

3.3 Site Procedures

3.3.1 Small Fire

A small fire in the tipping hall will be dealt with as follows:

- A fire or area of smouldering waste will not be dealt with in-situ, a loading bucket will be utilised to pull the affected waste into the open and away from any further waste that could become alight on contact; and
- The fire will be extinguished immediately utilising the fire hoses or the fire extinguishers found in delivery vehicles or on items of mobile plant.

Once a small fire is dealt with the remaining pile will be visually inspected immediately by site operatives for any signs that a fire / smouldering waste still remains within the waste pile. The same procedure, detailed in this section, will be implemented should this be the case.

3.3.2 Uncontainable Small Fire or Large Fire

The following procedure will be followed in the event of a small fire in the tipping hall becoming uncontainable or in the event of a major fire onsite:

- The Facility Manager, Fire Service and EA will be notified immediately;
- If it is safe do so, a temporary bund (using flood barriers held on site) will be constructed by site operatives and managed by the Site Manager to ensure that firewater is kept primarily within the tipping hall. Roller shutter doors will be closed and flood barriers utilised to ensure no release of water under the door. Any firewater held within the bunded area will be tested before removal offsite to a suitably licensed facility, or will drain into the surface water attenuation lagoon after passing through a hydrocarbon and silt interceptor;
- If possible, waste that is unburnt will be dampened down to prevent the fire from spreading further and any contaminated runoff will be held within the temporary bunded area;
- If possible, unburned material will be separated from the fire using heavy plant;
- The burning area will be isolated and attempts will be made to extinguish the fire utilising the onsite fire extinguishers or fire hoses if safe to do so; and
- The site and buildings will be evacuated.

3.4 Fire Waters

The site will benefit from an engineered containment system with impermeable surfacing.

3.4.1 Waste Bunker (primary firewater containment)

In the event of a fire within the waste bunker, any firewater generated from the use of the water cannons, deluge systems or sprinklers will be contained within the bunker. The height of the waste bunker from the floor up to the tipping bay elevation is approximately 14 m. Up to this height, 2,450,000 litres[8] of firewater can be safely contained. The use of water within the waste bunker is likely to be localised, for example, a water cannon aimed at a hotspot. Therefore it is reasonable to conclude that large quantities of water will not be used and the maximum containment capacity of the bunker will not be reached.

3.4.2 Tipping Hall (secondary firewater containment)

There will be very little run-off generated under normal site operating conditions within the tipping hall. The area will be sloped to the waste bunker to prevent the release of potentially contaminated runoff entering the surface water drainage system.

Any firewater used in the tipping hall will drain towards the waste bunker where it will be fully contained.

If necessary, the tipping hall can be bunded to prevent the release of firewaters into the yard. Flood barriers will be stored on site and can be used to bund the building by placing them across open doorways to ensure that no firewater is released from the tipping hall.

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[8] Fire water containment calculation: Below tipping floor bunker volume (9,800m^3) * void space (25%)* 1,000 = 2,450,000 litres.

If required, the tipping hall is capable of containing an amount of firewater that far exceeds the amount deemed to be required in the worst case scenario described in Section 3.4.3 below. In the event that any of the building doors needed to be opened, flood barriers will be used to create a bund capable of containing all fire water within the tipping hall. For example, if a Darcy Spillstop (0.5m) is used, it will allow 1,035,500 litres[9] of firewater to be contained within the building. This therefore provides sufficient capacity to contain the 45,948.6 litres of water deemed to be produced in the worst case scenario described in Section 3.4.3 below.

3.4.3 Firewater Calculations

Assumption: Multimodal Refuse Collection Vehicle (RCV) Carrying 8 Tonnes of Waste

Conducting firewater calculations based on the capacity of the waste bunker is not considered reasonable due to the bunker's ability to fully contain any firewater generated. Therefore, the following calculations are based on the assumption that the worst case scenario on site would be a Refuse Collection Vehicle (RCV) delivering a hot load into a bay. Based upon the FPP guidance firewater calculations, it is estimated that approximately 45,900 litres of water would be required to put out the entire load if it were to become alight.[10]

Should the release of firewater from the site be an issue during firefighting or after the fire is extinguished, action will be taken to rectify the situation immediately. All remediation action will be recorded and advice sought from the EA if necessary.

3.4.4 Firewater Sources

Potential sources of water available will be:

- Firewater storage tank and associated pumps;
- Fire hydrants;
- Adjacent Quarry Lake; and
- On board water supply from Fire Service vehicles.

The firewater tank will be connected to the local water supply and will be fitted with a flowmeter to ensure the required flow rate and performance can be tested.

The Fire Service will collect and reuse firewater run off as part of normal operating procedures.

3.5 Management after a Fire Event

After a fire event, the following procedure will be implemented depending on the severity of the fire:

1. A small and containable fire that can be dealt with in-house using suitably trained staff and firefighting equipment located on site: The fire will be recorded in the site log, including the causes of the fire and methods used to manage the fire. An assessment will be carried out to determine whether further mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this FPP and the site's EMS as required.

2. A larger fire that requires the presence of the Fire Service: If the site operatives have been told to evacuate or cease operations by the EA and/or Fire Service, the site will wait until told it is safe to re-

[9] Fire water containment calculation: Area of building (2071m^2) * height of flood barrier (0.5m) = Volume of water to be contained (1035.5m^3). Volume of water to be contained (1035.5m^3) * 1,000 = 1,035,500 litres

[10] Based on a 38.1m^3 RCV delivering a hot load to site and it requiring 6.7 litres of water per cubic metre to extinguish. 6.7 * 38.1 = 255.27 litres/min. 255.27 * 60 = 15,316.2 litres/hour. 15,316.2 * 3 =45,948.6 litres/3 hours

enter site and resume operations. The fire will be recorded in the site log, including the causes of the fire and methods used to manage the fire. An assessment will be carried out to determine whether further mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this FPP and the site's EMS as required.

Should damage be sufficient to prevent the site from being able to treat and store waste, the site will cease accepting waste and will divert to a suitably licensed facility.

The Facility Manager will liaise with the EA to determine a plan-of-action to introduce waste treatment and storage operations at the site, and the timescales involved to achieve this.

3.6 Fire Damaged Waste

A visual assessment will be carried out by the Facility Manager to determine whether the waste can be treated on site. Wherever possible, unburnt wastes will be separated from fire damaged piles. Due to the nature of the operations at the Newhurst ERF (the incineration of waste and its role as a recovery site) the burnt waste could potentially be processed/disposed of on site. However, this decision will ultimately be made by the Facility Manager with the EA's agreement.

3.6.1 Quarantine Area

Due to the nature of the operations on site, it is not deemed necessary to supply a quarantine area that meets the requirements of the FPP guidance.

As detailed in Section 3.3 above, burnt or burning waste will be kept within the bunker in order to ensure coverage by the comprehensive automated suppression system. Waste that typically would be moved to a quarantine area, as stated in the FPP guidance, will remain in the waste bunker and processed through the incinerator as opposed to being removed from site.

4.0 Conclusion

This FPP is considered to be a 'working' document that is reviewed and updated annually or as required should any of the following occur:

- A fire on site;
- A change or review of legislation; or
- If the site is instructed to do so by the EA.

It is the responsibility of the Facility Manager or nominated person to maintain this FPP and to ensure it is adhered to in the event of a fire on site.

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