



YORWASTE LTD
WASTE WOOD RECYCLING FACILITY

FIRE PREVENTION
PLAN

OPERATOR:	Yorwaste Limited Kiplin Hall Wood Recycling Facility Kiplin, Richmond, North Yorkshire, DL10 6AT
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PREPARED BY:	The logo for WISER ENVIRONMENT, featuring the word "WISER" in large blue letters with an orange swoosh above it, and "ENVIRONMENT" in smaller orange letters below it.
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DRAWINGS

Permit Boundary Plan	K257.2~20~001	April 2017
Sensitive Receptors Plan	K257.2~20~002	April 2017



APPENDICES

Appendix A	Proposed Wood Processing Site Design KIP-DE00-Y1610-001A	Rev. 1	April 2017
Appendix B	Nature & Heritage Screening Report	-	February 2017
Appendix C	Protected Species & Habitats Map	-	February 2017
Appendix D	Maintenance and Inspection		October 2017
Appendix E	Site Drainage Fall Detail		September 2017
Appendix F	Fire Hydrant Flow Rate Request		October 2017

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REVISION HISTORY

REFERENCE	V	DATE	AUTHOR	COMMENTS
K257.2~09~002	1	April 2017	SS	FINAL
K257.2~09~002	2	July 2017	SS	Minor amendments to reflect Technical Information Request from the Environment Agency on the 30/06/17.
K257.2~09~002	3	October 2017	SS	Revised to reflect amendments following the submission of a Schedule 5 notice by the Environment Agency on the 18 th September 2017.

QUALITY CONTROL

Quality control table removed at request of client for submission to planning authority. No other changes have been made to this document.



1 SCOPE

This Fire Prevention Plan (FPP) relates to the Kiplin Hall Wood Recycling Facility located at National Grid Reference NGR SE 27088 97651 Kiplin, Richmond, North Yorkshire, DL10 6AT where combustible waste will be accepted, treated and stored prior to onwards transportation for recovery, reuse or final disposal. All combustible waste activities will be carried out externally on an area previously used for excavating operations to the west of the Kiplin Hall Estate. Only activities associated with the recycling of wood will be carried out at the site.

Pre-application liaisons were carried out prior to the submission of the bespoke environmental permit application (EPR/EB3909FJ/A001) with the local officer Stephen Richardson. As part of the pre-application liaison process a site visit was undertaken on the 27th January 2017 in order to discuss the proposed layout of the wood recycling facility and the measures to be addressed with a Fire Prevention Plan for the site.

The proposed site will receive waste wood from Yorwaste Ltd owned and operated Household Waste Recycling Centres (HWRC's) and Waste Transfer Stations (WTS's) with a limited volume accepted from third parties. All incoming and outgoing loads will enter the site via the main entrance and will be processed at the weighbridge. All wastes will undergo the waste acceptance procedure (document reference EWP-L02.01) prior to unloading, during this stage any non-conforming, contaminated or hot loads will be identified. Covered vehicles which cannot be inspected at the weighbridge will still need to provide duty of care information prior to acceptance and inspection during unloading. Once accepted, loads will be directed to a designated tipping area for unloading and storage prior to processing.

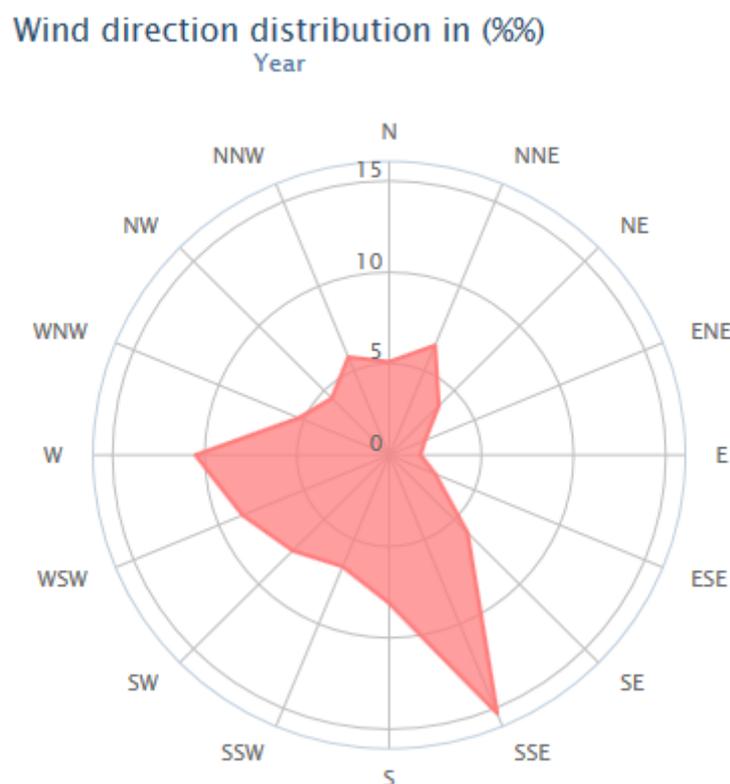
The North Yorkshire Fire and Rescue Service (NYFR) will be able to access the site via the main entrance in the event of a fire.



1.1 Prevailing Winds

Data taken from the closest weather station (RAF Leeming, approximately 5.9 miles to the south of the site) indicates that the prevailing winds are predominantly from the South-southeast. (Figure 1.)

Figure 1. Wind rose indicating prevailing wind directions



Data taken from www.windfinder.com

1.2 FPP Review

The Fire Prevention Plan will be reviewed at least annually, following any accident or incident which has the potential to change fire risk, changes to site operations, and sensitive receptors.

At the time of writing the Fire Prevention Plan, the development of the Wood Recycling Facility has yet to commence. Therefore once the site is operational any changes in currently intended operations or infrastructure which may change the level of fire risk at the site will be reviewed and where applicable the Fire Prevention Plan will be updated.



Records of the Fire Prevention Plans amendments will be recorded in the revision history of this document with dates and summaries of changes.

1.3 Fire Risk Assessment

The Regulatory Reform (Fire Safety) Order 2005 England and Wales provides the minimum fire safety standards for all non-domestic premises. It requires employers to undertake a Fire Risk Assessment in workplaces where 5 or more employees are present.

A Fire Risk Assessment will have been undertaken prior to commencement of operations. Where the Fire Risk Assessment identifies areas of risk or sources of ignitions not considered in this Fire Prevention Plan, the document will be reviewed and updated to reflect these findings.

2 METHODOLOGY

The Fire Prevention Plan for Kiplin Hall Wood Recycling Facility was drafted in accordance with the Environment Agency guidance "Fire Prevention Plans: Environmental Permits, issued 29th July 2016 and updated November 2016.

3 RESPONSIBILITY

The Technically Competent Manager (TCM) and any appointed internal or external Health and Safety advisor will be responsible for Fire Safety and any appointed Fire Marshalls at the site. In the event of a fire they will ensure that emergency procedures covered in this FPP and in any other Yorwaste Ltd H&S procedures are carried out effectively and promptly in the event of fire.



4 USING THE FIRE PREVENTION PLAN

The Fire Prevention Plan guidance applies to those activities where combustible wastes are stored at permitted sites. The guidance sets out the minimum standards which must be achieved to address fire risk relating to the bulk storage of materials such as paper, card, wood (processed and unprocessed), rubber, rags and textiles, WEEE, scrap metal and tyres.

All fire safety related emergency procedures, including relevant elements of the Fire Prevention Plan, are communicated to all staff members, contractors and visitors who attend site.

This Fire Prevention Plan details the measures to be implemented in order to achieve the following objectives;

- minimise the likelihood of a fire happening
- aim for a fire to be extinguished within 4 hours
- minimise the spread of fire within the site and to neighbouring sites

This Fire Prevention Plan relates to combustible waste activities carried out within the permit boundary of the Kiplin Hall Wood Recycling Facility, consideration has also been given to non-waste materials which carry a potential fire risk in relation to the receipt, treatment and storage of combustible waste at the site.

All waste and processing activities are carried out externally, with only shredding and screening activities undertaken as part of the recycling process.



5 ACTIVITIES AT THE SITE

5.1 Annual Tonnage

The site will accept up to 30,000 tonnes per annum of waste wood originating predominately from Yorwaste Ltd owned and operated Household Waste Recycling Centre's (HWRC's) and Waste Transfer Stations (WTS's). A limited volume of material will be accepted from third parties.

The volumes accepted may fluctuate seasonally, but will not exceed those stated in the Environmental Permit.

5.2 Waste Management Activities

Detailed below are the waste management activities to be undertaken at the site during normal operating conditions. Details of the actions to be taken during emergency working conditions can be found in Section 19 of this document.

5.3 Permitted Wastes

Permitted wastes will be listed within the site's Environmental Permit. The function of the Wood Recycling Facility will be to process and store waste wood prior to onwards transportation. As a result only waste wood will be accepted at the site.

Any non-permitted wastes identified prior to unloading are rejected. Upon identification these will be segregated and stored in a designated quarantine container prior to export from site to a suitably permitted waste facility.

5.4 Waste Receipt and Acceptance

Wastes will be delivered to site predominantly by Yorwaste Ltd vehicles from HWRC's and WTS's via a secured gated entrance off the B6271. Third parties wishing to deliver waste to the site must undergo the pre-acceptance commercial process detailed in the Waste Acceptance Procedure prior to entering into an agreement with Yorwaste Ltd.



Upon arrival at the site all deliveries will pass over the weighbridge where initial inspections of the loads (where possible) and written waste descriptions will be carried out.

All deliveries must meet the Waste Acceptance criteria detailed in the Waste Acceptance Procedure (Doc Ref: EWP-L02.01). Any loads which do not meet the waste acceptance criteria will be rejected.

Where inspections cannot be carried out at the weighbridge, the driver will be directed to the tipping area where initial inspections will then be carried out during the unloading process.

Once loads have been accepted and unloaded, vehicles will be required to return to the weighbridge for the completion of the relevant Duty of Care documentation.

5.5 Waste Inspection

Waste inspections will be undertaken prior to acceptance at the weighbridge and during unloading (where inspection at the weighbridge is not possible). Non permitted loads will be rejected upon detection, where identified after unloading non-permitted waste will be segregated and stored in a suitable quarantine container prior to removal from site.

Non-conforming loads identified during the initial inspection will be rejected and details of the rejection along with dates, times and reasons recorded and retained.

Where limited volumes of non-conforming material are identified the Technically Competent Manager (TCM) will be consulted. Where possible and if safe to do so non-conforming material will be picked out by hand and placed in a suitable quarantine container pending disposal at a suitably permitted disposal facility.

Where smouldering or burning material is identified during the initial inspection immediate action will be taken to extinguish the load, if safe to do so the load will be



directed to the quarantine area prior to action being taken (identified as the wood processing area on Appendix A). See Section 12 for further details on when and how the quarantine area will be utilised.

Where smouldering or burning material is identified during unloading, unloading will cease immediately and the material will be isolated and extinguished.

5.6 Waste Storage

The layout of the Wood Recycling Facility has been designed to accommodate the maximum waste pile sizes and separation distances detailed in Environment Agency's GOV.UK guidance '*Fire Prevention Plan: Environmental Permits*' (Published 29th July 2016).

Waste wood received at the site will be tipped in the allocated pre-processing storage area in accordance with the sites stock rotation procedure (see Section 9.1.1).

Unprocessed wood will be stored in up to 6 stockpiles, each with a maximum pile size of 750m³, on hardstanding (which is a compacted solid surface capable of withstanding the operation and the loading / unloading of wastes).

During normal conditions surface water run-off, not retained within the storage area, will collect in the sealed sump where it will then be used for dust suppression. In the event of a fire which cannot be extinguished by smothering with inert material, fire water run-off from the storage area will be managed in accordance with Section 17 of this FPP.

The storage time for unprocessed wood will be 14 days prior to processing however this storage time may fluctuate slightly (up to 7 days) depending on a number of variable such as incoming volumes (Operatives may wait to accumulate an appropriate volume prior to shredding), weather conditions, plant maintenance and



servicing. Unprocessed wood will be shredded within the wood processing area to the immediate south, and subsequent transfer to the processed storage area.

Only unloading and unprocessed wood storage activities will be carried out on hardstanding, all other waste activities will be carried out on an impermeable surface.

Processed wood will be stored in up to 18 stockpiles each with a maximum pile size of 150m³. The processed wood storage area will be underlain by an impermeable surface which is already existing at the site. Prior to commencement the integrity of the concrete pad will be checked, where maintenance is required it will be carried out prior to commencement of operations.

Processed wood will be stored to the south of the wood processing area for up to 14 days pending onwards transportation.

No waste wood storage activities will take place in the wood processing area.

The wood processing area will be cleared of material by the end of each working day.

Unprocessed and processed wood stockpiles will be managed and maintained in accordance with the dimensions listed in Table 4 of Section 10.

Suppression equipment will be located at strategic locations throughout the site for use in the event of a fire, see Section 14.1 for further details.

5.7 Site Inspections

Site inspections will be carried out both daily and once a week. Table 1 below details what elements will be captured by weekly and daily inspections and examples of the types of issued which will be looked for during the inspections.



Daily site inspections will focus on identifying potential fire risks and ignition sources and ensuring that measures to mitigate potential fire risks are being implemented at the site correctly. Weekly site inspections will be carried out at the end of day and will focus on ensuring that no potential fire risk remain for outside of operational hours (weekends and bank holidays).

TABLE 1 Site Inspections

Daily Inspections	Weekly Inspections
Access Road	
Build-up of mud and debris	Traffic signs in place
Leaks or spillages from vehicles	Well maintained
	Bunding maintained to the western edge
Environmental	
Spill kit in good condition	Any spill kits require replacing after use
	Oil / Fuel tanks in good condition (no leaks)
Dust control in use	All fuels and oils securely locked away in the designated container
Evidence of any leakages or spillages not cleaned up immediately	
Signs of litter or windblown debris	Any evidence of the build-up of combustible materials around the site or on static or mobile plant
Good housekeeping being carried out daily by operatives	
Drainage	
Sump levels checked	Sump infrastructure fit for purpose
Entrance to sump free from obstruction	Does an external contractor require contacting to empty the sump
Site Boundary	
Any signs of arson or vandalism around the site boundary	Adequate earth bunds and signs of damage or burrowing pest activity
Any build-up of debris at the site perimeter	
Waste Piles	
Unprocessed waste piles in accordance with pile sizes stated in the Fire Prevention Plan	Waste storage times being accurately recorded
Processed waste piles in accordance with pile sizes stated in the Fire Prevention Plan	
Adequate separation distances observed between waste piles	Any potential ignition sources less than 6m from combustible waste piles
Any non-permitted waste quarantined and ready for dispatch	
Signs of self-heating	
External Quarantine Area	
Flexible Quarantine Area predominately free from obstruction	Any damage to external yards surface which may affect its permeability.
Quarantine Area free from potentially flammable or combustible materials / liquids	



Fire Detection and Suppression	
Fire extinguishers in housing units and free from obstruction	Fire Alarms in site office/ welfare in working order
Fire Hydrant free from obstruction	Fire hydrant and pump house in working order

Housekeeping will be carried out daily by site operatives and over seen by site management, examples of the type of housekeeping activities to be carried out on a daily basis are as follows;

- Litter picking
- Cleaning down plant after use
- Sweeping up any windblown debris
- Ensuring operational and pedestrian areas are free from obstruction
- Ensuring all potentially flammable materials are stored securely and neatly in the designated storage containers.

6 SITE PLANS

The Layout Plan (KIP-DE00-Y1610-001A, dated April 2017) in Appendix A identifies the following key site features relating to fire risk and fire safety;

- The layout of all infrastructure & buildings within the permitted area;
- Storage locations;
- The location of static plant & mobile equipment;
- Water supplies;
- Weighbridges and weighbridge office;
- Location of unprocessed wood piles;
- Location of processed wood piles;
- Processing area;
- Storage location of hazardous materials (Fuel and oil storage only);
- Pollution control and firewater containment features;
- Quarantine Area;
- Areas of natural and unmade ground.
- Access routes for emergency services



The Sensitive Receptors Plan (K257.2~20~002) identifies all receptors within a 1km radius of the permit boundary that are considered sensitive to potential impact, these include but are not limited to human receptors (e.g. schools, hospitals, residential areas and work places), critical infrastructure receptors (e.g. Roads, railways, pylons) and environmental receptors (e.g. Surface and groundwater, protected habitats and air quality management areas).

7 SENSITIVE RECEPTORS

All sensitive receptors with a 1km radius of the site are identified in the Site Receptors Plan (K257.2~20~002).

Risk Level has been determined based on the probability of exposure (Table 2).

A summary of the receptors identified on the Sensitive Receptors Plan (K257.2~20~002) along with overall risks level and main receptor features can be found in Table 2 below.

Only the closest key sensitive receptors identified on the Sensitive Receptors Plan have been allocated a medium to high risk level based on their proximity to site, potential impact (economical, safety, environmental, etc.) and the location of the receptor in regards to the prevailing wind direction identified in Figure 1 of this document. These are identified individually in Table 3 below. The overall risk level has been determined based on dominant risk level considered for each receptor within the group.



TABLE 2: PROBABILITY OF EXPOSURE

PROBABILITY OF EXPOSURE
HIGH- exposure is probable: direct exposure likely with no / few barriers between source and receptor. Controls in place will not prevent direct exposure.
MEDIUM- exposure is fairly probable: feasible exposure possible. Controls in place but may not mitigate against exposure.
LOW- exposure is unlikely: several controls exist to prevent and mitigate against exposure.
VERY LOW- exposure is very unlikely: effective, multiple controls in place to mitigate against exposure.

TABLE 3: SUMMARY OF SENSITIVE RECEPTORS

	HUMAN RECEPTORS
	FACTORIES AND OTHER BUSINESSES
	There is one business identified within a 1km of the site boundary. This receptor is not in close proximity to the site or in the path of the prevailing wind direction. The overall risk level for this group of receptors is considered VERY LOW .
	INHABITANTS OF RESIDENTIAL AREAS
	The site is located within a predominately rural setting. The closest residential area is over 1km from the site boundary. The closest residential receptors are the dozen residential dwellings located along the B6271 to the north west of the site boundary. Due to the lack of sensitive receptors within close proximity and protection provided by the earth bunds and screening vegetation the overall risk level is considered LOW/MEDIUM .
	HERITAGE SITES (e.g. Scheduled Ancient Monuments, Battlefields, Historic buildings)
	There are ten Grade II listed structures within 1km of the site, the closest is Kiplin Hall Gateway and lodge located 63m to the north west off the B6271. The overall risk level of this receptor is considered LOW/MEDIUM based on the level of protection provided by the earth bunds and screening vegetation from the prevailing wind.
	RECREATIONAL AREAS
	There is 1 recreational area identified within 1km of the site. The record relates to the Kiplin Hall Estate approximately 42m to the east. The overall risk level of this receptor is considered LOW/MEDIUM based on the level of protection provided by the earth bunds and heavy vegetation from the prevailing wind.
	SENSITIVE PUBLIC USE



	<p>There are 2 receptors identified as being 'sensitive public uses' within 1km of the site boundary. The closest receptor is the Kiplin Eco Lodge Park located to the north east of the site.</p> <p>The overall risk level of this receptor is considered LOW/MEDIUM based on the level of protection provided by the earth bunds and heavy vegetation from the prevailing wind.</p>
ARABLE FARMLAND AND ALLOTMENTS	
	<p>The site is located within a predominately rural setting. Surrounding agricultural areas consist of arable farmland and grazing fields.</p> <p>Due to a lack of direct pathways for fire water to the receptors, the limited potential impacts from airborne emissions, the overall risk level is LOW.</p>
CRITICAL INFRASTRUCTURE RECEPTORS	
SERVICES	
	<p>There are no records of services within 1km of the site other than those which supply the site.</p> <p>The overall risk to these receptors is considered LOW due to the fact that services provided to the site and surround receptors do not cross over the storage or processing areas.</p>
PUBLIC RIGHTS OF WAY	
	<p>There are is 1 bridleway within 1km of the site boundary, this bridleway follows the field boundaries to the north west of the site across the B6271 and is not directly within the path of the prevailing wind therefore the overall risk level is considered LOW.</p>
ROADS AND RAILWAYS	
	<p>There are several roads within a 1km radius of the site, the closest being the B6271 located to the north of the site. In the event of a fire the road will provide access to the site for the NYFR. All other roads are either access tracks or provide access to rural residential properties.</p> <p>As the roads in closest proximity to the site and provides direct access for the Emergency Services in the event of an incident the overall risk level is considered LOW/MEDIUM.</p>
ENVIRONMENTAL RECEPTORS	
GROUNDWATER	
	<p>Records from the Environment Agency indicate a principle aquifer beneath the site.</p> <p>All waste related activities will be carried out on a surface which is either impermeable or has a low level of permeability. The discharge of fire water from site is not permitted.</p> <p>The overall risk level for groundwater receptors is considered LOW/MEDIUM.</p>
SURFACE WATER	



	<p>There are a number of surface water features within a 1km radius of the site. The closest is Bolton Beck located to the north of the site.</p> <p>Due to the controls in place and the design of the site there are no direct pathways to surface water features for fire water. Therefore the overall risk level for the surface water receptors is considered LOW/MEDIUM.</p>
	<p>PROTECTED NATURE CONSERVATION SITES AND ANCIENT WOODLANDS (e.g. RAMSAR, SSSI, LWS)</p>
	<p>There are 3 records for protected species and habitats within a 1km radius of the site. The closest is a priority protected habitat (deciduous woodland), located along the north east and eastern boundary of the site. The 4m high earth bund and separation distances to be maintained on site break the pathway between the receptors.</p> <p>Due to the close proximity of the sensitive receptors from the site the overall risk rating is considered MEDIUM.</p>
	<p>AIR QUALITY MANAGEMENT AREAS (AQMA's)</p>
	<p>The closest local authority AQMA designations are in the Durham County Council region over 10km from the site. Given the distance of the AQMA boundary from the site likelihood of a fire having a significant negative is minimal.</p>

Those receptors directly in the path of prevailing winds have the potential to be impacted by smoke produced from a fire on site. However based on the rapid turnaround times, composition of waste streams and the level of protection provided by bunding and vegetation around the site boundary, significant negative impacts are unlikely to arise from a fire.

In the event of an incident any human receptors which the NYFR identify as at risk will be informed and advised to remain indoors or evacuate the area.

Examples of the firefighting strategies which have been discussed and agreed with the North Yorkshire Fire and Rescue Service for other Yorwaste Ltd sites in the region can be found in Section 15 of this Fire Prevention Plan.



8 MANAGING COMMON CAUSES OF FIRE

The most likely causes of fire at the site have been identified below. Table 4 provides a summary of the management controls for restricting the possibility of a fire outbreak;

- Arson or vandalism
- Plant or equipment failure
- Electrical faults including damaged or exposed electrical cables
- Discarded smoking materials (matches, lighters, etc.)
- Hot works
- Industrial heaters
- Hot exhausts
- Ignition sources (naked flames, space heaters, incinerators, etc.)
- Batteries in ELV's
- Leaks and spillages of oils and fuels
- Build-up of loose combustible waste, dust and fluff
- Reactions between wastes
- Deposited hot loads

TABLE 4. FIRE RISK MANAGEMENT

CAUSES OF FIRE	RISK CONTROL
Arson or vandalism	<p>The site is accessed by gated entrance which will be secured outside operational hours.</p> <p>The site is located within a rural setting with only a limited number of residential properties located within the immediate area.</p> <p>Access onto the site can only be achieved via the gated entrance. Thick vegetation prohibits access to the site from north, east and south.</p> <p>The wider site to the west is also bound by earth bunds and thick vegetation which prevented access to the site during its time as a quarry. These barriers will remain in place to prevent</p>



CAUSES OF FIRE	RISK CONTROL
	<p>access to both the site and the wider area where inert stockpiles will remain (see Section 14.1 for these will be used to extinguish a fire at the site).</p> <p>Live 24 hour recording CCTV cameras will be located on site, these will provide surveillance of the entire site. CCTV cameras which will be installed at strategic locations throughout the site in order to provide an unobscured view of all areas will be monitored by 'on call' operatives who will monitor live CCTV footage via a smart phone application. Text alerts will be sent to nominated individuals when the motion detection is activated prompting them to access the monitoring application. The CCTV system will be used for both security and fire detection (see Section 13 for further details).</p> <p>Site inspections are carried out daily in accordance with Section 5.7.</p>
<p>Plant or equipment</p>	<p>All site equipment will be maintained and checked in accordance with the manufacturer's guidelines (see Appendix D for details), all breakdowns or faults will be recorded.</p> <p>Daily plant checks will encompass the following elements;</p> <ul style="list-style-type: none"> • Oils and Coolants; • Tyres • Lights, etc. • Brakes • Tracks, running gear, bucket pins • Screen decks • Machine guards • Steps, ladders, walkways <p>See Appendix D for further details of Plant maintenance and inspection.</p>



CAUSES OF FIRE	RISK CONTROL
	<p>All site vehicles, mobile and static plant will be fitted with suitable fire extinguishers and drivers cab dust filters. The mobile shredder will be installed with an inbuilt suppression system.</p> <p>An exclusion zone of 6m will be maintained between combustible waste and plant machinery and equipment when not in use.</p>
<p>Electrical faults (including damaged or exposed electrical cables).</p>	<p>Electrical and light fittings will be fully certified by qualified electrician.</p> <p>All electrical equipment will be routinely checked and maintained by an appropriately qualified individual.</p>
<p>Discarded materials smoking</p>	<p>The site operates a strict no smoking policy in all areas other than the designated and clearly marked smoking area.</p> <p>Regular housekeeping will be maintained throughout the site.</p>
<p>Hot works</p>	<p>Permit to work system in place throughout the company.</p> <p>Works which require the introduction of a source of ignition to the working area must provide be accompanied by an adequate Risk Assessment and 'Hot Work' permit.</p> <p>The only hot works that may be undertaken are those relating to the onsite repair and maintenance of plant where it is unfeasible to remove the plant from site for repair elsewhere.</p> <p>No hot works will take place within 6m of any combustible waste or material stored on site.</p> <p>Gas cylinders and other flammable or combustible materials required to undertake hot works will be brought to and removed from site by contractors carrying out the works. No flammable or combustible materials will be retained onsite when not in use.</p>



CAUSES OF FIRE	RISK CONTROL
	A fire watch will be carried during the period which the hot works are being undertaken and for 1 hour after hot works have concluded.
Industrial heaters	Industrial heater use is not associated with site operations.
Hot exhausts	<p>Operational staff will be required to remain vigilant when using plant and equipment for signs of fire caused by dust settling on hot exhaust and engine parts.</p> <p>There will be a minimum of 1 Fire Watch per shift/day carried out by trained operational staff.</p> <p>Plant and equipment will be checked prior to use for the build-up of combustible material and where required cleaned down before use.</p>
Ignition Sources (e.g. naked flames, space heaters, furnaces and incinerators)	<p>Open burning not permitted anywhere on the site.</p> <p>Space heaters, furnaces, incinerators, heating pipes and naked flames not permitted/ used on site.</p>
Batteries in ELV's	ELV batteries are not permitted on site.
Leaks and spillages of oils and fuels	<p>Spillages dealt with in accordance with the 'Spillage Procedure EWP 10.02'. All spillages will be cleaned up immediately upon detection.</p> <p>Spill kits will be stored onsite for use in the event of an incident.</p> <p>Regular site inspection and maintenance programme will be in place.</p> <p>Oils and fuels will be stored in appropriate secured containers, away from operational areas (see Appendix A).</p>
Build-up of loose combustible waste, dust and fluff	Regular housekeeping and inspection of the site will be carried out on a daily and weekly basis (see Section 5.7 for further details).



CAUSES OF FIRE	RISK CONTROL
	<p>All equipment is checked prior to use and inspected as part of the daily site inspection routine (see Appendix D).</p> <p>Dust filters in driver cabs.</p>
<p>Reactions between waste types</p>	<p>Non-permitted wastes are rejected during inspection and acceptance.</p> <p>Site staff trained in waste acceptance criteria 'Waste Acceptance EWP L02.01'.</p> <p>Site inspections are carried out on a daily basis (see Section 5.7 for further details).</p> <p>Only wood waste will be accepted on site therefore reactions are unlikely.</p> <p>In the event of a reaction the quarantine area can be utilised.</p>
<p>Deposited hot loads</p>	<p>Hot loads are not accepted.</p> <p>All loads are checked prior to acceptance.</p> <p>Quarantine area can be utilised in an emergency.</p>

9 PREVENTING SELF-COMBUSTION

Self-combustion can occur when biological decomposition or chemical oxidation generates an increase in temperature creating an exothermic reaction which cannot be dissipated at the rate it is being generated. This can lead to what is known as a thermal runaway with the end result being auto-ignition and self-combustion.

Although the risk of self-combustion is low due to the limited period of time that waste wood is to be stored, the following measures detailed in Table 5 will be implemented to mitigate a reaction occurring.



TABLE 5. STORAGE DURATIONS AND CONTROL MEASURES

CONTROL MEASURES						OPERATING CONDITIONS
STORAGE DURATION	FIFO PRINCIPLE	FIRE WATCH	ROUTINE INSPECTIONS	SUB-SURFACE MONITORING	DIVERSION OF WASTE TO ALTERNATIVE FACILITY	
24 hours	✓	✓	✓			NORMAL
72 hours	✓	✓	✓			
1 week	✓	✓	✓			
4 weeks	✓	✓	✓			
<3 months	✓	✓	✓	✓		ABNORMAL
>3 months	Waste will not be stored for 3 months or longer therefore extra measures are NOT required.					
6 months	Waste will not be stored for 6 months or longer therefore extra measures are NOT required.					

All operational staff will be required to remain vigilant throughout the day and implement a minimum of 1 formal fire watch per day.

Site inspections are carried out routinely each day with an informal 'End of Day' carried out to check for fire risks and signs of self-heating (see **Section 5.7** for further details).

Stockpiles will be managed in accordance with the measurements, pile sizes and separation distances set out in Sections 10 & 11.

Under abnormal working conditions (for the purpose of this FPP, abnormal working conditions refer to as a condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations e.g. Exceeding average storage times due to an off taker not fulfilling a contractual obligations to collect processed wood from the site) where storage times are likely to reach the



month period identified by the Environment Agency providing conditions which may increase the risk from self-combustion, the measures detailed in Tables 5 & 6 will be implemented.

In the event of a fire from self-combustion the firefighting techniques detailed in Section 15 will be implemented.

9.1 Managing Storage Times

Under normal operating conditions total turnaround time from receipt to dispatch will be 28 days. It is anticipated that all unprocessed wood will be processed within 14 days of receipt and all processed wood will be dispatched within 14 days of processing.

Stockpiles will be managed on a 'First in, First out' (FIFO) basis (see below) with all wood dispatched from site for onwards transportation is well within the 3 month period stipulated by the Environment Agency as being at lower risk from self-combustion.

The information detailed below and in tables 5 & 6 relates **ONLY** to abnormal working conditions where a malfunction or issues causes the site to deviate from normal working conditions. It is anticipated that storage times **WILL NOT** exceed 28 days and the inclusion of additional measures to cover abnormal working conditions is simply to satisfy the requirements of the Fire Prevention Plan Guidance and demonstrate that we have covered all eventualities within this Fire Prevention Plan.

In abnormal working conditions where it is anticipated that waste storage periods will exceed the 3 month storage period detailed within the Fire Prevention Plan Guidance measures will be implemented to divert waste to other suitably permitted Yorwaste Ltd facilities in the region.



9.1.1 Stock Rotation

In order to manage storage durations for both unprocessed and processed waste wood stockpiles, all piles will be managed on a FIFO basis. This will be achieved by implementing a pile queuing system which can be easily tracked by operational staff.

The FIFO policy will be implemented as follows;

- Waste wood will be accepted in accordance with the Waste Acceptance Procedure EWP L02.01 and placed in the designated unprocessed stockpile (see Appendix A).
- Processed wood will be placed in the designated processed stockpile (see Appendix A).
- Each stockpile will be numbered with a signpost.
- Each stockpile date, location and number will be recorded.
- The oldest stockpiles will then be processed (unprocessed wood) or dispatched from site (processed wood) first.

All staff will be trained in the adopted FIFO process and open lines of communication will be maintained at all times to ensure the queuing system is upheld.

The separation distance provided between each of the stockpiles ensures that even at full capacity all stockpiles can be easily accessed for unloading, processing and dispatch.

9.2 Contingency Plan

The Environment Agency's Fire Prevention Plan guidance (published 29th July 2016) requires variations in supply and demand such as seasonal fluctuations to be managed in a way which does not increase the fire risk associated with a back log in waste and extended storage periods.

Wastes accepted at the site will primarily originate from Yorwaste Ltd owned and operated HWRC's and WTS's, therefore incoming volumes will be dependent upon available volumes and procurement contracts in place at the points of origin. Where deemed necessary, Yorwaste Ltd may engage third parties in order to manage



fluctuations in unprocessed wood volumes. Yorwaste retain full control over input stock levels, and material flow into the site will be planned in advance to avoid overstocking.

The dispatch of processed wood from the site will be managed in accordance with long term tenders implemented by Yorwaste Ltd. Distribution routes for processed material have already been identified and receiving sites have already undergone the tender process ready for acceptance once the site becomes operational.

Where significant fluctuations in volumes are observed once operations have commenced, contingency plans will be reviewed to mitigate potential impacts. Actions to mitigate potential seasonal variation impacts may include the provision of extra staff members over busy periods, the tender of new contracts relating to the procurement, recycling and recovery of waste, etc.

9.3 Monitoring and Controlling Temperature

During normal working conditions, stockpiles will be visually monitored by operational staff throughout the day. Formal inspections will be carried out daily in order to identify any potential fire risks (see **Section 5.7** for further details). Informal checks will also be carried out at the end of each day to ensure all prevention controls are in place for non-operational hours.

Relevant members of staff will be trained in how to monitor stockpiles for signs of hot spots and what actions to take to mitigate any potential fire risks e.g. isolating material and cooling it in the quarantine area.

Where it is deemed necessary due to extreme weather conditions, stockpiles will be dampened down to reduce potential fire risks resulting from external heating.

Table 6 below summarises both visual and temperature action triggers and the actions that will be taken to mitigate any associated fire risk.



Temperature monitoring using equipment will only be undertaken on waste piles which have been stored for a period up to 3 months. Temperature probes which are commonly used for monitoring during the active composting process will be brought to site from other Yorwaste Ltd sites to be used for monitoring waste wood pile temperatures. Yorwaste Ltd owns and operates several composting sites throughout North Yorkshire therefore temperature probes will be readily available for use. Site Management will be responsible for monitoring temperatures within waste piles.

There are a number of other Yorwaste Ltd waste sites within North Yorkshire suitably permitted to accept waste wood in the event that it is deemed necessary for waste to be diverted. This will be accomplished by liaising with other Yorwaste Ltd site managers to ensure the site is capable of accepting the diverted material prior to dispatch from the site.

TABLE 6. VISUAL AND TEMPERATURE ACTION (TRIGGER) LEVELS FOR WASTE WOOD STOCKPILES

VISUAL & TEMPERATURE ACTION (TRIGGER) LEVEL	
STEAM	<p>On cool mornings steam emitting from the surface of the stockpile may be an indication of increased sub-surface temperatures.</p> <p>Where steam is observed in significant volume extends across the pile, investigations should be implemented immediately.</p> <p>Actions to be taken in the event of significant volumes of steam being observed include, isolating areas of the pile and spreading across the storage area floor to allow material to cool.</p>
SMOKE	<p>If smoke is observed immediate action should be taken. Actions include:</p> <ul style="list-style-type: none"> • Isolate the area of the stockpile where the smoke is observed. • If material is smouldering either remove to the quarantine area and extinguish or isolate from all combustible materials and extinguish.
HOT LOADS	See Section 8, Table 4.
TEMPERATURE ACTION TRIGGERS BELOW ARE ONLY FOR WASTES STORED FOR >3 MONTHS	
<30°C	No actions required
30°C to 50°C	<p>Stockpiles will be turned to dissipate any heat not being lost to the surrounding environment.</p> <p>Where temperatures are seen to be rising or at the higher end of the range potential hot spots will be isolated moved to the quarantine area and spread out and allowed to cool.</p>



>50°C

Where sub-surfaces exceed 50°C in wastes which have been stored for longer than 3 months action should be taken as soon as is reasonably possible.

Areas with hotspots of 50°C or more should be isolated from the stockpile and moved to the quarantine area where they can then be turned and spread out in order to dissipate the heat and allow the waste to be cooled. Waste should be checked to ensure no smouldering material is present.

10 MANAGING WASTE PILES

Detailed below are the steps which will be taken during normal operating conditions to manage stockpiles.

10.1 Maximum Pile Sizes

All stockpiles will be stored externally on either hardstanding (unprocessed wood) or impermeable surface (processed wood) (see Appendix A for locations).

Wastes will be tipped directly into the designated storage areas which will be developed in accordance with maximum pile dimensions detailed within the EA FPP guidance (29th July 2016) and Table 7 below.

Unprocessed wood stockpiles

All waste wood accepted at the site will not have undergone any treatment prior to arrival at the site and therefore will be stored prior to shredding in its largest form.

Up to six, 750m³, unprocessed wood stockpiles will be stored on an area of hardstanding to the north of the wood processing area (see Table 7 for dimensions).

Stockpiles will be filled and processed on a First In First Out basis (see Section 9.1.1).

Processed wood stockpiles

Up to eighteen, 150m³, processed wood stockpiles will be stored on the existing concrete pad to the south of the wood processing area (see Table 7 for dimensions).



Waste wood will be shredded to a size which adequately increases payload and reduces the risk of self-combustion.

Stockpiles will be filled and dispatched on a First In First Out basis (see Section 9.1.1).

The maximum volumes detailed in Table 7 below have been calculated based on the following contributing factors;

- Weekly throughput of unprocessed and processed waste wood (see Section 9.1 for details);
- Material Density (0.3 tonnes per m³);
- Proposed maximum storage periods (see Section 9.1 for details).

TABLE 7. MAXIMUM WASTE PILE MEASUREMENTS

	Unprocessed Wood piles	Processed Wood Piles
Pile Dimensions	18m x 20m	12.3 x 10m
Planned volume of stockpile	750m³	150m³
Maximum height based on EA guidance	4m	4m
Maximum Height	4m based on a 1 in 1.5 slope	4m based on a 1 in 1.5 slope

All waste piles will be managed and maintained in accordance with the 4m height limit and 20m length/width (whichever is longest) limits stated within the Fire Prevention Plan guidance (published 29th July 2016).



11 PREVENTING FIRE SPREADING

11.1 Separation Distances

The following minimum separation distances will be maintained at all times;

- A minimum 6m separation distance between all combustible stockpiles;
- A minimum 6m separation between all combustible stockpiles and the site perimeter, any buildings, and/or other combustible or flammable materials.
- A minimum separation distance of 6m around the Quarantine Area.

11.2 Fire Walls and Bays

The proposed development for the site does not include the installation of Fire Walls and Bays. Where it is deemed that containment measures for stockpiles in the form of bays are required, Yorwaste Ltd will ensure that they comply with the requirements of Section 11.2 'Fire Walls and bays' of the Fire Prevention Plan Guidance.

In the event that fire walls and bays are installed at the site this section will be updated to reflect changes in infrastructure and storage layout.

12 QUARANTINE AREA

The wood processing area identified on the Site Layout Plan (Appendix A), will be utilised in the event of a fire as the designated Quarantine Area.

The wood processing area which measures 45m by 30m exceeds the required holding capacity for a quarantine area as detailed in the Fire Prevention Plan guidance.

The only static plant used at the site will be the eddy current, all other plant and equipment used on site will be mobile.

In the event of a fire mobile plant and equipment will be moved to a safe area of the site a minimum of 6m from where the burning material is stored.



Due to the size of the quarantine area, a minimum 6m separation distance between the static eddy current and any burning material moved to the quarantine area is easily achievable.

In the event of a fire, burning or smouldering material will be isolated from the storage areas upon detection and transferred to the quarantine area for extinguishing.

Where it is deemed unsafe to move burning or smouldering material to the quarantine area, the quarantine area will instead be used to store the surrounding unburnt stockpiles. This will increase the separation distance by a minimum of 12m and allow the fire to be dealt with insitu without the risk of the fire spreading to surrounding piles.

Full details of the techniques used can be found in Section 15, though it should be noted that burning material will only be moved if safe to do so.

13 FIRE DETECTION

Once operational the site will be monitored 24/7 by a CCTV system which will have a panoramic, unobscured view of the site.

During operational hours fire detection will either be via CCTV or visually by operational staff. All staff will be required to remain vigilant during operational hours and will be trained in required actions to be taken upon detection of the fire.

Outside of operational hours the site will be monitored via CCTV which will be equipped with motion detection, In the event that the motion detection is activated an alert will be sent to a nominated individual's smart phone who will then investigate the cause of the alert. Nominated individuals will remain 'on call' outside of operational hours and will be responsible for monitoring the CCTV footage and investigating alerts.

In the event that a fire is detected outside of operational hours following actions will be implemented;



- The NYFR will be contacted immediately and informed of the incident along with the point of origin and the source (if known).
- A nominated member of Yorwaste Ltd who is trained in the measures detailed in this Fire Prevention Plan and certified to use the mobile plant onsite will be informed immediately and requested to attend site.
- A secondary nominated Yorwaste Ltd operative who lives in close proximity to the site will be required to attend site to provide assistance where required.

Two ways radios will enable operational staff to raise the alarm verbally.

Any internal fire detection systems comprising of smoke detectors will be installed in the site offices or weighbridge office will be maintained and serviced in accordance with a maintenance and servicing contract between Yorwaste Ltd and an appropriately qualified third party. Smoke detectors are a health and safety and are not associated with the acceptance or storage of waste.

No waste activities are carried out internally and therefore an internal suppression system other than that installed in the offices for the health and safety of employees would be inappropriate for the site.

14 FIRE SUPPRESSION

The following fire suppression equipment will be available for use in the event of a fire. Training will be provided on all aspects of fire suppression adopted at the site, training records will be retained on site and as electronic copies within the company's EMS.

14.1 Smothering Technique

Smothering a fire with inert material in order to starve the fire of oxygen will be the preferred method of extinguishing a fire at the site and will be used as an alternative to extinguishing a fire with water. It is the aim of the site to only use water in the event that smothering is unsuccessful.

Inert material stockpiles stored in the wider site which have been left from previous quarrying operations exceed 1000m³ (per stockpile), these stockpiles along with the



earth bund located to the east of the site (approximately 6226m³) will be used to smother burning material in either the quarantine area or insitu (see **Section 12** for details)

Using inert materials stored onsite to smother a fire can provide the following benefits;

- Where required the volume of water required for fighting a fire is greatly reduced.
- Where water is used, the volume of fire water generated will be greatly reduced and inert materials deployed prior to the use of water will act to absorb what fire water run-off is generated.
- The use of smothering technique will protect underlying ground water by absorbing or retaining potentially contaminated fire residues within the deployed inert material.
- Fire residues can be easily cleared up and removed from site for disposal at an appropriately permitted waste facility.
- Any potential impacts associated with fire water run-off from site will be removed/greatly reduced.
- Significant volumes of inert material which can be used to smother burning material is widely available throughout the site.
- The technique of smothering is considered more environmentally friendly than using water.
- Inert material can be used to create a thick crust which can greatly reduce emissions to air.
- Smothering a fire with inert material is a tried and tested method used by Fire Service worldwide to effectively extinguish fires and prevent pollution to the surrounding environment.



Once it is safe to do so mobile plant and Yorwaste Ltd.'s own fleet of vehicles will be used to remove the potentially contaminated inert material from the site and dispatch it onwards for disposal at a suitably permitted facility.

14.2 Fire Extinguishers

Class A fire extinguishers which are effective at extinguishing fires involving paper, wood, textiles and plastics will be located in strategic locations throughout the site (see Site Layout Plan Appendix A for locations) as well as within delivery vehicles and mobile plant equipment.

Staff will be trained in the use of fire extinguishers in emergency situations.

Maintenance and servicing contracts will be implemented between Yorwaste Ltd and an appropriately qualified third party to ensure all fire extinguishers are maintained and serviced at least annually.

14.3 Fire Hose and High Voltage Pump

Suitable hosing and a generator pump will be available for water supply extraction from the storage lagoons in the event of fire as contingency method for the pump house failing to supply water to the hydrant. During normal operating hours the fire hose will be used as part of dust mitigation measures and the generator will be used for recirculating water from the sump. Staff will be trained in the safe operation of the pump and use of the fire hose in the event of a fire.

14.4 Inbuilt Suppression System on the Shredder

The shredder to be used and stored on site will come equipped with an in-built detection and suppression system which will be maintained and serviced in accordance with manufacturers guidelines.

The inbuilt suppression system on the shredder will consist of both an automatic dry chemical fire suppression system with the following design features;

- Linear detection



- Internal and external mounted fire buttons
- Self-recharging back-up battery

Dependant on the source of a fire the initial system may not provide sufficient suppression and there a secondary liquid cooling system will be installed in order to provide a complete and efficient suppression system.

In the event of a fire within the shredder an automatic engine shutdown will be activated to prevent fuels and oils contained within the equipment providing an initial fuel source.

The proposed installation company are approved by British Approvals for Fire Equipment (BAFE) who are an independent UKAS Accredited third party registration scheme.

15 FIREFIGHTING TECHNIQUES

Detailed below are the responses and actions which may be undertaken by operational staff members to isolate and extinguish burning or smouldering material upon detection. All operational staff members will be trained in the below techniques and the principles identified within this document. It must be noted that firefighting techniques should only be used if safe to do so in the event of a fire becoming out of control precedent should be given to the safe evacuation of the site.

Some of the strategies below are examples of how NYFR have proposed to tackle waste fires at other Yorwaste Ltd sites. The actual actions taken by the NYFR at the site in the event of the fire will be subject to a number of factors which may be present on the day.

15.1 Initial Response (Operational Staff)

The aim of the initial response is to extinguish a fire in its earliest stage before it can take hold. Upon detection and only if safe to do so the burning or smouldering



material will be isolated from the rest of the pile and moved to the quarantine area for extinguishing. Burning or smouldering waste will then be fanned out and extinguished with either onsite suppression equipment (fire extinguishers) or with inert material located around the site.

It should be noted that the aim of the site is **NOT** to use water to extinguish the fire but instead to starve it of oxygen by smothering it with inert materials.

If moving material is not a viable option in order to prevent the fire spreading, the use of a fire extinguisher to extinguish the fire prior to isolation can also be used. Where deemed necessary a larger separation distance can be provided by leaving burning material insitu and transferring surrounding piles to the quarantine area (see **Section 12** for further details).

Once extinguished the NYFR should be notified and advice given on the next required steps. The NYFR may wish to attend site in the event that the fire is extinguished prior to arrival.

In the event that the fire cannot be extinguished 'in-situ' and in its earliest stages the NYFR must be contacted immediately and the site evacuated to a fire assembly point.

Upon arrival the NYFR should be directed to the site of the incident and provided with details such as the source of the outbreak (if known), materials present on site, any explosive or hazardous materials present, access routes and any pieces of equipment which may assist the Fire Service in extinguishing the fire (e.g. High Voltage Water Pumps).

15.2 North Yorkshire Fire and Rescue Service Strategies

The following 3 strategies are examples of the actions NYFR may take in the event of a fire at the site. Strategy examples are based on consultation responses provided by the NYFR for other Yorwaste Ltd waste sites operating in the region.

Early Intervention

- Apply extinguishing media to specific burning areas of small, localised fires.



- Isolate and transfer material to the quarantine area for spreading out and smothering.

Controlled Burn

- NYFR will allow waste to burn insitu.
- Working with Yorwaste personnel mobile plant will be used to remove unaffected waste from waste piles to the quarantine area to reduce the fire load.
- Hot materials may also be transferred to the quarantine area and cooled in limited quantities.

Defensive Approach

- To be used in the event of well-established or deep seated fires.
- Water will be applied via an Ariel ladder/ tower (difficult to target specific hotspots or areas).
- Defensive approach only to be used in the event of a significant fire occurring.

16 WATER SUPPLIES

The following water supplies will be available for use in the event of a fire occurring and the smothering technique being unsuccessful in extinguishing the fire.

The volumes detailed below are simply to demonstrate that the site is capable of providing the volume of water required to extinguish a worst-case scenario at the site and that it meets the requirements of the Fire Prevention Plan Guidance.

It is anticipated that less than 1% of the total volume available at the site will be required in the event of a fire due to the measures set out in this Fire Prevention Plan.

16.1 Volume required

The maximum volume of fire water required to extinguish a 'worst-case scenario' fire within the stated 3 hour burn time is 900,000 Litres (900m³).



This figure is derived from the Environment Agency's stipulated requirement of 2,000L per minute over a 3 hour period to extinguish a 300m³ stockpile, as stated in Section 16 of the Fire Prevention Plan guidance (published 29th July 2016).

The worst-case scenario, defined in the FPP guidance as a fire in the largest stockpile present on site, is 750m³ (see Section 10.1, Table 7).

The calculation is as follows;

Calculation:

1. 2,000L x 180 minutes = 360,000L per 300m³
2. 360,000/300m³ = 1,200L per m³ of waste
3. 750m³ x 1,200L = 900,000L / 1000 = **900m³**

16.2 Storage Lagoons

Two storage lagoons (approximately 60m x 28m and 54m by 57m) located to the west of the site boundary will be used as a water supply in the event of a fire (see Appendix A for location). The lagoons were constructed as part of a quarry restoration project.

The combined total holding capacities of the storage lagoons is estimated at a minimum of **14,274m³**.

Holding capacities are based on an assumed depth of 3m, however based on historical extraction plans and restoration plans for the surrounding water bodies it is likely that actual depths greatly exceed 3m.

The pumping station located to north of the site office provides water from the storage lagoon to a hydrant located on the eastern side of the site via an underground pipeline (see **Appendix A** for location). In the event of a fire a fire hose will be attached to the hydrant in order to extinguish waste in the earliest stages.

The pump house is equipped with a Worthington Simpson 8NL3 pump which is equipped with a 10inch valves and delivers 2000 gallons per minute (9092 Litres) to the



onsite hydrant. The pump is regularly inspected and maintained in accordance with manufacturer's guidelines which require annual servicing.

The hydrant will also be used alongside the sump for dust suppression and maintaining moisture content therefore it will be regular inspected to ensure it is available for use at all times.

The use of water to extinguish a fire at the site is a contingency plan in the event that smothering the fire with inert material is unsuccessful. Where the pumping station fails to supply water to the hydrant in the event of a fire the fire hose and generator pump can be used as an alternative.

16.3 North Yorkshire Fire Service Appliances

The closest Fire Stations are located at Colburn approximately 14 miles (24 minutes travel time) to the west and Northallerton approximately 8 miles (17 minutes travel time) to the east.

The closest known Fire Hydrant is located in the village of Great Langton approximately 162m to the south east of the site at the juncture between The Square and the B6271.

The location of the Fire Hydrant has been identified by the UK standard Fire Hydrant sign (H) on Figure 2 below.

North Yorkshire Fire Service have been contacted regarding the pressure and flow rate available from the Hydrant (see **Appendix F** for correspondence evidence). Once the flow rate has been provided this section will be revised to include flow rates and pressures.

Figure 2. Fire Hydrant Location



Image taken from Bingmaps.com

17 MANAGING FIRE WATER

As previously mentioned the aim of the site is not to use water in the event of a fire in order to eliminate any potential impacts fire water run-off may have on the site and surrounding environment. The information detailed below is to demonstrate that in the unlikely event water was required in addition to smothering the site would be capable of containing it and ensuring it did not discharge from the site.

Based on the standard absorption levels of inert material and how it is only to be used as an additional measure to smothering the anticipated volume of fire water required is 90m³.

In the event of a fire, the sealed sump which will be lined with an impermeable liner is used to capture surface water run-off during normal working conditions will be used to collect any fire water run-off not absorbed by inert materials in the quarantine area.

Permanent earth bunds approximately 300mm high will be formed along the western boundary of the concrete pad prior to operations commencing. In the event of a fire



this will prevent fire water discharging off the concreted areas into the surrounding environment.

Where water is required in addition to smothering, inert material will be transferred to the site of the fire using mobile to absorb any fire water generated, potentially contaminated fire residues used to absorb fire water run-off will then be onwards transportation for disposal at a suitably permitted facility.

17.1 Assessment of Potential Fire Water Run-off Impacts

The following table below provides an assessment of the sensitive receptors which may be impacted by fire water run-off;

- the local groundwater and surface water bodies
- any well, spring or borehole within 50 metres used for the supply of water for human consumption, including private water supplies

TABLE 8. FIRE WATER RUN-OFF ASSESSMENT

Sensitive Receptor	Distance and direction from site	Operational Controls	Residual Risk Rating
Storage Lagoons	35m West	<ul style="list-style-type: none"> • The Sump will be reconstructed prior to operations commencing to ensure it sealed and no linkage remains between the sump and lagoon. • An impermeable liner will be installed in the sump to ensure it is completely sealed. • The aim of the site is not to use water but to use inert materials to smother the fire, where fire water is required inert materials will be used to absorb it prior to it reaching the sump to prevent over flowing. • Where water is required an operative will be stationed at the sump to monitor water levels although it is envisioned that the sump will be capable of holding greater volumes than that required to extinguish to a fire alongside the smothering technique. • Fuels and oils will be stored in bunded containers on an impermeable surface. 	LOW



		<ul style="list-style-type: none"> Unprocessed storage area drain towards the sump and concrete pad (see Appendix E). Access routes, processing area and processed wood storage area are underlain by an impermeable surface. Hardstanding is heavily compacted with very low to no permeability. No direct link between permitted area and lagoons. 	
Secondary A Aquifer (<i>Superficial Deposits</i>)	Underlying Site	<ul style="list-style-type: none"> Hardstanding is heavily compacted with low to no permeability. Fuels and oils will be stored in bunded containers on an impermeable surface. 	LOW
Principle Aquifer (<i>Underlying bedrock</i>)	Underlying Site	<ul style="list-style-type: none"> Site drains towards the sump and across the concrete surface. Sump to be reconstructed prior to operations commencing to ensure it is sealed with an impermeable liner also installed. Access routes, processing area and processed wood storage area are underlain by an impermeable surface. Aggregates and soils which are stockpiled at the site and will be used to smother burning material and soak up any fire water are considered to have high absorption rates. 	LOW
Bolton Beck	10m North	<ul style="list-style-type: none"> Site falls away from Bolton Beck. Earth bunds inhibit direct discharges into the beck. Fuels and oils will be stored in bunded containers on an impermeable surface. 	LOW
River Swale	496m South	<ul style="list-style-type: none"> No direct pathways available. 	VERY LOW
Other surface water bodies	<i>Various distances</i> Surrounding Environment	<ul style="list-style-type: none"> No direct pathways available. 	VERY LOW
Wells, Springs or Boreholes	Not applicable, there are no wells, springs or boreholes within 50 metres used for the supply of water for human consumption, including private water supplies.		

17.2 Required Containment Facility

Based on the calculations provided in Section **16.1** the anticipated volume of fire water generated over a 3 hour period for a 750m³ waste pile is 900m³.



The total potential water supply available on site significantly exceeds the volumes required (see Section 16.1). By using the smothering technique as the primary extinguishing method in the event of the fire it is anticipated that the volume of fire water required would be reduced by up to 90% (90m³) and therefore the likelihood that fire water run-off generated in the event of a fire would exceed containment capacity is low.

Table 9 below summarizes maximum holding capacities for the impermeable surface.

Volumes and measurements have been calculated based on a 300mm high earth bund along the western boundary of the site.

TABLE 9. FIRE WATER CONTAINMENT CAPACITIES

FIRE WATER CONTAINMENT	
Maximum volume of fire water run-off (based on maximum pile size)	750m ³ x 1200l = 900m³
Bund height	300mm
Proposed Sump Capacity	450m ³
Dimensions of the impermeable surface encompassed within the bunded area (approx.)	90m x 60m
Estimated Total Catchment volume	2070m³



17.3 Drainage and Site Design

Earth bunding approximately 300mm high will be installed as a permanent structure along the western boundary of the impermeable surface this will prevent surface water run-off running off the western boundary.

During normal working conditions surface water run-off, which has not been absorbed within the stockpiles located in the storage areas, will be captured within the sealed sump which once reconstructed with an impermeable liner will have an approximate retention volume of 450m³. Surface water run-off captured within the sump will then be re-circulated within the site for dust suppression purposes.

In the event of a fire, fire water run-off not absorbed by inert material will be allowed to drain with the fall of the site (see **Appendix E** for fall details). The fall of the site to the drainage sump is approximately 1:100.

Where water is required inert materials will be placed in the quarantine area to capture fire water run-off and reduce the volume entering the sump. The site has significant quantities of inert material stockpiled at the site (see Section 14.1 for details) and can be easily accessed in the event of a fire.

An operative will be stationed next to the sump to monitor levels within the sump.

Once the fire has been extinguished, and it is safe to do so, fire water absorbed by inert materials or captured within the sump will be removed from site for treatment and disposal.

18 MAINTENANCE OF SURFACES AND DRAINAGE SYSTEM

In the unlikely event of a fire, surface cleaning, drain clearance and residue removal will be undertaken as will checks to the integrity of the site's surfaces and infrastructure. Site levels and construction details will be engineered to ensure that there is no potential for fire water to escape the site boundary.



The drainage sump will be checked daily as part of routine site inspections (see **Section 5.7** for further details) and maintained regularly to ensure blockages do not occur.

Site surfaces will be subject to regular housekeeping to ensure clear drainage routes for surface water run-off draining to the sump.

19 DURING AND AFTER AN INCIDENT

19.1 During an incident

Yorwaste Ltd operate several waste facilities in the region, in the event of a fire at the site all incoming deliveries expected for the period during and directly after an incident will be diverted to another suitably permitted Yorwaste Ltd waste site.

Any vehicles in the processing of delivering waste to the site at the time of the incident will either be required to evacuate site or directed to a safe location in the wider area.



The number sensitive receptors within a 1km is very limited, however any business residents and business in close proximity to the site and in the direct path of the prevailing wind will be notified in the event of a significant incident.

Yorwaste Ltd will hold regular community liaisons with the surrounding residents of Kiplin, during these meeting Yorwaste Ltd will cover their emergency procedures for the site. In the event of a fire a nominated operative will visit the properties in close proximity to the site and in the direct pathway of the prevailing wind and inform them of the incident and what actions to take.

Where deemed necessary the local media will be contacted to inform local residents of the incident and to avoid the area if possible.

Where applicable, and advised to do so by the FRS, the local media will be alerted in order to advise road users of status of the B2671.

19.2 After an incident

Once the fire has been extinguished, and it is safe to do so, checks will be carried out on the structural integrity of any critical infrastructure which may have been in close proximity to the fire and all external surfaces.

Where necessary the site will be decontaminated using appropriate remediation measures including but not limited to the cleaning down and replacing of surfaces and building materials, removal of contaminated fire water run-off, etc.

Inert material used to retain fire water run-off on the impermeable surface and prevent it entering the drainage sumps will be tested to assess the level of contamination present. Where material is free from contamination it will be retained on site, contaminated material will be transferred off site for disposal at a suitably permitted waste facility.

In the event of a site closure after a fire, provisions will be made to divert all deliveries to an alternative Yorwaste Ltd sites in the region.



Prior to commencement of operations after an incident a full review of the site's fire prevention measures, operating procedures and emergency procedures will be carried out. The review will include an assessment of the sites performance, the cause of the outbreak and corrective and preventative measures required in order to prevent a similar incident.

The discharge of fire residues to the surrounding environment will not be permitted.

Contaminated fire water will be contained within the bunds and transferred off site for treatment and disposal.

20 TRAINING AND COMPETENCE

All Yorwaste Ltd employees, contractors and visitors working and visiting the site will be required to complete a formal health and safety induction process prior to commencement of works.

The induction will include basic fire prevention measures, the location of the Fire Prevention Plan, site specific rules regarding smoking and the site emergency procedures.

Compliance with the site rules will be monitored continuously by the site's Operational Management Team, where necessary disciplinary actions will be taken.



Signs will be clearly visible indicating the locations of emergency exits (in the site office), fire extinguishers and spill kits.

All fire safety equipment will be serviced by a competent person and service periods are scheduled in accordance with manufacturer's guidelines.

Fire drills will be carried out every 6 months. During the drill emergency conditions will be simulated in order to assess the sites performance and efficiency when dealing with an incident. Results and observations will be recorded and reviewed to identify further training needs or required changes to the evacuation plan.

20.1 Operational Staff

Operational staff will be trained on fire safety and fire extinguisher use, staff will not be trained in the fighting of larger fires but instead will default to contacting the NYFR in the event that a fire becomes out of control and it is no longer reasonable or effective to carry on attempting to extinguish it with portable extinguishers.

Any work by Yorwaste Ltd which is likely to introduce an ignition source to the working area will be permitted only after an adequate risk assessment has been carried out and a 'Hot Work' permit has been issued by a responsible person.

20.2 Contractors

All contractors will work under the direct control of the nominated Yorwaste Ltd management representative, who will be sufficiently aware of the work to be carried out and the ongoing site operations to be able to issue a Permit to Work for the task.

Any work by contractors which is likely to introduce an ignition source to the working area will be permitted only after an adequate risk assessment has been carried out and a 'Hot Work' permit has been issued by a responsible person.



20.3 Visitors

All site visitors will be made aware of health and safety procedures, including the site's fire evacuation procedures and site specific smoking arrangements. In addition visitors will need to be accompanied by Yorwaste Ltd staff at all times.

21 INFORMING THE ENVIRONMENT AGENCY

The Environment Agency will be informed of any significant fire on site as soon as is reasonably practical.

22 INCIDENT REPORTING AND INVESTIGATION

Detail of any fire and actions taken will be recorded and retained at the site. The circumstances of any fire will be investigated by senior management and if applicable a Health and Safety advisor and their findings will be used to inform further preventative actions.



Emergency contacts for the site and local emergency services will be clearly displayed on the Emergency response information point board.